

A young boy with short dark hair, wearing a light blue polo shirt with a logo, is watering plants in a garden. He is holding a green and brown watering can and pouring water onto a row of green plants. The background is a blurred garden setting.

INSTRUCTION

— Emeril's —
CULINARY GARDEN &
TEACHING KITCHEN

CURRICULUM OVERVIEW

Emeril's Culinary Garden & Teaching Kitchen provides school partners with resources and standards necessary for achieving the program goals and outcomes introduced in the Program Overview.

The four program pillars served as a guide in creating the program standards, instruction topics, learning objectives, and suggested lesson activities.

The **CURRICULUM** includes an outline, or scope and sequence, of the learning objectives and the recommended teaching order for Grades K-8 garden and kitchen lessons, program standards, one complete lesson plan per grade for garden and kitchen courses of instruction, editable lesson plan templates for instructors to create their own lessons, and an appendix of resource materials to support instruction.

The **SCOPE AND SEQUENCE** includes 18 suggested lesson activities per grade for both the garden and kitchen courses of instruction. All activities support the program standards, meet the program learning objectives, and are aligned to national academic standards.

The **PROGRAM STANDARDS** include anchor standards and grade level standards for both garden and kitchen courses of instruction. Anchor standards are broad end point goals that span a grade cluster, or series of grades, such as K-2, 3-5, 6-8. The anchor standards are further supported by specific grade level standards, found at the beginning of each scope and sequence. Instructors working with varied student readiness have the flexibility to make adjustments within the program by referencing the program standards.

The **LEARNING OBJECTIVES** include content and life skills goals that students are expected to meet at the end of each course of instruction for every grade level. Learning objectives are organized by topic and sophisticate over time.

There are several **IMPLEMENTATION** tactics to fully integrate the program curriculum across all grade levels. Schools should start slow and set realistic goals. Below is an example of a suggested implementation timeline, beginning with the grade K-2 cluster. Each year one additional grade can be added from the other two grade clusters. Using this approach, the curriculum will be fully integrated across all grades in 5 years, creating institutional knowledge among both students and staff.

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
K-2	K-2	K-2	K-2	K-2	K-2
3-5	-	3	3,4	3-5	3-5
6-8	-	6	6,7	6-8	6-8

CURRICULUM DETAILS

SCOPE AND SEQUENCE

One Scope and Sequence document serves as an outline for each course of instruction (garden and kitchen). Each Scope and Sequence is organized by grade (K-8) and includes: lesson # and title, topic, content learning objective(s), a suggested lesson activity, life skills learning objective(s), a garden/kitchen connection, possible extensions, academic standard connections, and health standard connections. The recommended number of days/lessons is less than the number of days in the grading cycle/academic year in order to accommodate differentiated instruction and to allow school partners flexibility with schedules.

SCOPE AND SEQUENCE KEY ELEMENTS:

Grade Level Standards: The grade specific standards for garden/kitchen that students are expected to meet each year.

Lesson # & Title: The name and lesson number (1–18) for the suggested lesson activity. Each course of instruction and grade's Scope and Sequence begins numbering lessons at 1 and ends at 18.

Topic: The main theme of the suggested lesson activity.

Content Learning Objective(s): The main goal(s) of the suggested lesson that students are expected to learn. Objectives are classified by topic area.

Suggested Lesson Activity: A detailed overview of how to teach the lesson topic. Suggested Lesson Activities are intended to be taught sequentially, building on one another. However, the majority will also work as standalone lessons. The exception to this applies to any lesson titled Part 1, Part 2, etc. If there is a need to teach a lesson out of sequence, instructors can check the lesson description for any skills or concepts that are to be reviewed, and, if those skills are new to students, introduce them as part of the lesson.

Life Skills Learning Objective(s): The main social/emotional goal(s) of the suggested lesson that students are expected to learn and further develop.

Connections to Garden/Kitchen Lessons:

Opportunities to connect with specific garden or kitchen lessons from the Scope and Sequence, or general ideas for connecting instruction with the garden or kitchen. Garden and Kitchen Educators should read through both the Garden and Kitchen Scope and Sequences, and communicate with one another regularly to ensure they are making clear connections between the garden and kitchen classrooms.

Possible Extensions: Ideas for extending the concepts learned in the lesson beyond the garden or kitchen environment. Includes classroom extension ideas, community extension ideas and BAM! Box Activities (suggestions to incorporate activities related to the curriculum at home with the family).

Academic Standard Connections: Connections to the applicable national core standards the suggested lesson complements (Common Core and Next Generation Science Standards), as well as suggestions for connecting to other relevant state standards.

Health Standard Connections: Connections to the applicable common health standards the suggested lesson complements (instructors should refer to any state health standards as well).

INSTRUCTION METHODOLOGY

Lessons are designed to last approximately 45 minutes and can easily be adapted for instructional needs. If a lesson requires more time, it is indicated on the scope and sequence for instructors. There is one type of garden lesson and two types of kitchen lessons—cooking concept and cooking. All lessons begin with a brief engaging activity and end with time for students to reflect and discuss what they learned and/or experienced. Garden lessons and cooking concept lessons follow the [5E Instructional Model from the Biological Sciences Curriculum Study \(BSCS\)](#). Cooking lessons follow one of Emeril’s recipes to guide the instruction sequence.

The 5E model is a student-centered approach that sequences instruction using the following terms: engage, explore, explain, elaborate and evaluate. Students become the center of their learning experience through hands-on activities, develop their own understanding of a concept and then relate their understanding to other concepts.

Lesson plan templates for garden and kitchen that follow the instruction sequence are included in the Appendix of this book for instructors to use when creating their own lesson plans.

Below is a table of the 5E terms, how they are labeled in the garden and cooking concept lesson plans and what each term means / how to use them in a lesson plan.

5E TERMS	GARDEN	COOKING CONCEPT	MEANING
<i>Engage</i>	Cultivate Curiosity	Ignite Interest	A “hook,” or opening activity to engage students with the essential question driving the lesson. Connect to students prior knowledge on the subject and inspire in them a thirst to learn more.
<i>Explore</i>	Root Around	Stir Discoveries	An opportunity for students to explore physical materials and/or open-ended questions related to the lesson topic. Ensure time for students to make discoveries and raise questions.
<i>Explain</i>	Grow Understanding	Clarify New Ideas	The steps for leading a discussion and introducing new information to students once they are fully engaged with a topic and have questions and discoveries to share. When introducing new, important vocabulary to students, write the terms in bold and define them.
<i>Elaborate</i>	Observe the Fruits	Watch It Rise	An opportunity for students to apply their new learning in a meaningful, real-world context, and an opportunity for instructors to measure how well students have achieved the learning objectives. Use the Observational Checklist while students are working to assess development of Personal and Community Life Skills.
<i>Evaluate</i>	Reflect	Reflect	Guiding questions used to engage students in a reflective discussion about what they’ve learned, and also about collaboration, communication, or other Personal and Community Life Skills they practiced.

Adapted from the Biological Sciences Curriculum Study (BSCS) 5E Instructional Model.

LESSON PLAN KEY ELEMENTS:

Each grade, K-8, has one complete garden lesson plan and one complete kitchen lesson plan. Additionally, there are 2 welcome to the garden lesson plans and 2 welcome to the kitchen lesson plans that may be adapted to meet the grade level of the class. All lesson plans include the following key elements. Some key elements are outlined in the Scope and Sequence, while some are developed further in a lesson plan.

Lesson # and Title:* The name and number of the lesson.

Time and Length: The suggested season and duration for the lesson.

Location: The intended location for instruction (garden, kitchen).

Essential Question: The “big idea” of the lesson or the overarching theme to build upon. The conceptual question students will be exploring and working toward answering in the lesson.

Lesson Description: A 1-2 sentence overview of the lesson, describing what students will do.

Academic Standards:* Connections to national academic standards as well as any other relevant state standards.

Health Standards:* Connections to relevant health standards.

Learning Objective:* The main goal(s) of the lesson (outlined in the scope and sequence) that completes the sentence: “Students will be able to”. Includes content learning objectives and life skills learning objectives.

Materials: Materials needed for students and/or teachers in the lesson.

Vocabulary: New words that need to be defined before the lesson (for the teacher/student).

Preparation (time): The time it will take and the steps the educator will need to take to prepare for the lesson.

Instruction Sequence (5E’s): The order and organization of learning activities. In garden and cooking concept lessons: the steps to engage students, encourage exploration, explain ideas, elaborate on concepts learned and evaluate learning.

Possible Extensions:* Ideas for extending the concepts learned beyond the classroom. Includes classroom extension ideas, community extension ideas and BAM! Box Activities (suggestions to incorporate activities related to the curriculum at home with the family).

Teacher Background: Major concepts the educator needs to know to teach the lesson effectively.

Additional Resources: Additional, relevant resources that might be useful to educators teaching the lesson (such as links to visual aids, other published lesson plans, Emeril recipes, etc).

Adaptations: Notes or ideas to modify a lesson to work indoors in inclement weather.

Connections to the Garden / Kitchen Lessons:* Opportunities to connect with specific garden or kitchen lessons from the Scope and Sequence, or general ideas for connecting with the garden or kitchen. Garden and kitchen instructors should read through both the garden and kitchen Scope and Sequences, and communicate with one another regularly to ensure they are making clear connections.

**elements taken from the scope and sequence*



PROGRAM STANDARDS *Garden*

ANCHOR STANDARDS

GRADES K-2

At the end of Grades K-2, students know where the garden is located, that it is a learning environment, and they understand how to be in the garden in a safe and caring way. They begin to understand that the garden is integrated with and complements the teaching kitchen. Students can describe structure and function of plants, identify edible parts of plants and they understand what plants need to grow. Students can describe the life cycle of a plant and explain the concepts of soil web and food web. Students understand how seasons, climate, and geography play a role in food production, and they begin to understand that a garden is a natural system that produces food. Students develop key observational, data collection, and critical thinking skills in support of activities they will conduct in later grades.

GRADES 3-5

At the end of Grades 3-5, students understand the structure and function of plant parts and how to propagate plants. They are able to identify components of and build soil. Students are able to define what local means, and they can map local food regions. Students understand the environmental factors that shape food regions. They acquire a foundational understanding of the garden as a natural system. They are able to design, plot and implement elements of a school garden. Students perform these skills with appropriate grade level personal and community life skills that include and/or benefit their families and communities.

GRADES 6-8

At the end of Grades 6-8, students understand how the culinary garden is complementary to and wholly integrated with the teaching kitchen by growing foods to use in the kitchen. Students understand basic garden maintenance and safety skills, how to build and amend soil, how to build and use compost, the seed-to-plant cycle, and how to harvest plants for food. They perform these skills while applying social and emotional life skills that include and/or benefit their families and communities.



PROGRAM STANDARDS *Kitchen*

ANCHOR STANDARDS

GRADES K-2

At the end of Grades K-2, students know where the teaching kitchen is located, understand that it is a learning environment and model proper safety and sanitary practices in the kitchen. They begin to understand that the kitchen is integrated with and complements the culinary garden. Students can identify and name various fruits, vegetables, grains, and legumes. Students can identify food groups and categorize different foods into the correct food group. They can describe taste and texture sensations. Students understand how to use their hands as tools along with basic kitchen tools to safely carry out simple cooking tasks.

GRADES 3-5

At the end of Grades 3-5, students understand the parts of a recipe, ingredients, flavors and basic cooking techniques. Students demonstrate knowledge of proper safety and sanitation in the kitchen environment. Students understand the basic concepts of a food system, principals of home economics and nutrition. Students perform these skills with appropriate grade level personal and group skills that include and/or benefit their families and communities.

GRADES 6-8

At the end of Grades 6-8, students demonstrate mastery of culinary flavors and textures, recipe concepts, food preparation, menu development and health concepts. Students can identify seasonal ingredients, spices and flavors through taste and texture. They can cook independently using various cooking methods and describe the reason they selected a specific cooking method. Students can read, follow, modify and create recipes for a variety of occasions and they are knowledgeable of food traditions in their community and in other cultures. Students understand the origin of food, can explain how the kitchen is integrated with the garden, and can apply principals of home economics and food business skills outside the classroom to include and/or benefit their families and communities.



LEARNING OBJECTIVES *Life Skills*

GRADES K-8

Throughout the program, students receive guidance and opportunities to develop life skills benefiting, themselves, their families and the community.

Personal Life Skills	
PLS.1	Students are self-aware and show respect for their own needs, the needs of others and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.
PLS.2	Students are able to express empathy and caring for themselves, others and the environment.
PLS.3	Students cultivate honest and responsible behaviors that contribute to the learning of the community.
PLS.4	Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.
PLS.5	Students develop the ability to make informed and responsible decisions.
PLS.6	Students actively seek creative and resourceful solutions.

Community Life Skills	
CLS.1	Students demonstrate problem solving and resolve conflict as a team.
CLS.2	Students cooperate and communicate well with each other.
CLS.3	Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.
CLS.4	Students appreciate and are respectful of differences and diversity in their communities.
CLS.5	Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.

LEARNING OBJECTIVES *Garden*

GRADES K-2			
TOPIC	KINDERGARTEN	GRADE 1	GRADE 2
Garden Planning and Maintenance (GPM)	<p>GPM.K.1 Describe what lives in a garden and name what it needs to live.</p> <p>GPM.K.2 Understand how to be present in the garden with all five senses.</p>	<p>GPM.1.1 Decide as a group what to plant in the garden.</p> <p>GPM.1.2 Demonstrate knowledge of what plants need.</p> <p>GPM.1.3 Demonstrate ability to plan a garden that has a diversity of plants.</p> <p>GPM.1.4 Understand the difference between a weed and a cultivar.</p>	<p>GPM2.1 Understand how to prepare soil for planting in terms of weeding and cultivating.</p> <p>GPM.2.2 Understand when to plant seeds and transplant seedlings into the garden</p>
Garden Tools and Equipment (GTE)	<p>GTE.K.1 Name, identify, and safely use new tools.</p> <p>GTE.K.2 Match new tools to tasks.</p> <p>GTE.K.3 State how to properly care for new tools.</p> <p>GTE.K.4 Describe the purpose of a new tool.</p> <p>New Tools: Hands, hand trowel, harvest basket and 5-gallon bucket</p>	<p>GTE.1.1 Use tools introduced in previous grades independently.</p> <p>GTE.1.2 Name, identify, and safely use new tools.</p> <p>GTE.1.3 Match tools to tasks.</p> <p>GTE.1.4 State how to properly care for tools.</p> <p>New Tools: Garden string, hand weeding tool, cleaning brush, and watering can</p>	<p>GTE.2.1 Use tools introduced in previous grades independently.</p> <p>GTE.2.2 Name, identify, and safely use new tools.</p> <p>GTE.2.3 Select the correct tool to perform and complete a task with minimal instructor input.</p> <p>GTE.2.4 Explain the reason for selecting a tool for a task.</p> <p>New Tools: Spading fork, hand fork, rain gauge, and air thermometer</p>
Soil (S)	<p>S.K.1 Identify the difference between brown (carbon) and green (nitrogen) in a compost system.</p> <p>S.K.2 Identify living and non-living components of soil.</p> <p>S.K.3 Identify different types of soil in the garden.</p> <p>S.K.4 Describe what lives and what does not live in soil.</p>	<p>S.1.1 Identify and draw organisms living in various soil samples.</p> <p>S.1.2 Describe how soil is living and how it is not living.</p> <p>S.1.3 Describe the relationship between living and non-living things in soil.</p>	<p>S.2.1 Explain how soil is made.</p> <p>S.2.2 Describe characteristics and components of soil.</p> <p>S.2.3 Balance carbon (browns) and nitrogen (greens) in compost.</p>

TOPIC	KINDERGARTEN	GRADE 1	GRADE 2
Weather and Seasons, Climate and Geography (WSCG)	<p>WSCG.K.1 Name the four seasons and what foods grow in each season.</p> <p>WSCG.K.2 Describe where you live and the foods that grow there.</p>	<p>WSCG.1.1 Describe weather.</p> <p>WSCG.1.2 Describe what foods grow nearby and what foods come from other places.</p>	<p>WSCG.2.1 Name, describe, and collect data on local weather events.</p> <p>WSCG.2.2 Describe how geographic place influences what grows in the garden.</p> <p>WSCG.2.3 Predict and apply weather patterns to the garden.</p>
Plants (P)	<p>P.K.1 Describe the life cycle of a plant.</p> <p>P.K.2 Identify edible and non-edible plants in the garden.</p> <p>P.K.3 Understand what above ground and underground mean.</p>	<p>P.1.1 Understand what a seed is and what it does.</p> <p>P.1.2 Understand that a plant produces another plant like itself.</p> <p>P.1.3 Understand form and function of seed design.</p> <p>P.1.4 Identify edible seeds in the garden.</p>	<p>P.2.1 Describe the structure and functions of plant parts.</p> <p>P.2.2 Identify edible leaves and stems in the garden.</p> <p>P.2.3 Identify weeds.</p> <p>P.2.4 Describe the role of plants in the food web.</p>
Garden and Food Systems (GFS)	<p>GFS.K.1 Identify insects in the garden.</p> <p>GFS.K.2 Develop an understanding of abundance and scarcity in the garden.</p>	<p>GFS.1.1 Identify the roles beneficial insects and pests play in the garden.</p> <p>GFS.1.2 Describe a soil web. Identify fungi, bacteria, and invertebrates.</p>	<p>GFS.2.1 Identify pollinators in the garden, what service they perform, and how to increase the number of them living in the garden.</p> <p>GFS.2.2 Describe structure and function of insect parts.</p> <p>GFS.2.3 Strategize solutions for abundance and scarcity in the garden.</p>

GRADES 3-5			
TOPIC	GRADE 3	GRADE 4	GRADE 5
Garden Planning and Maintenance (GPM)	<p>GPM.3.1 Calculate number of seeds and seed spacing for garden beds.</p> <p>GPM.3.2 Describe and/or demonstrate proper weeding techniques.</p> <p>GPM.3.3 Identify needs and create support systems for various plants (beans, peas, tomatoes, cane fruit).</p>	<p>GPM.4.1 Demonstrate ability to create a planting map for the garden.</p> <p>GPM.4.2 Calculate amounts of produce to grow in school garden.</p> <p>GPM.4.3 Calculate square footage of garden beds and paths.</p>	<p>GPM.5.1 Calculate volumes of soil, compost, and/or amendments for garden beds.</p> <p>GPM.5.2 Demonstrate understanding of when to water by observing plants and soil for signs of no or low moisture.</p> <p>GPM.5.3 Demonstrate ability to create watering system for plants.</p> <p>GPM.5.4 Identify a need in the school or community and create a garden plan to address it.</p>
Garden Tools and Equipment (GTE)	<p>GTE.3.1 Use tools introduced in previous grades independently.</p> <p>GTE.3.2 Name, identify, and safely use new tools.</p> <p>GTE.3.3 Select the correct tool to perform and complete a task with minimal instructor input.</p> <p>GTE.3.4 Explain form and function of tools in garden environment.</p> <p>GTE.3.5 Apply skills to solutions in garden environment.</p> <p>New Tools: Staking and trellising equipment, hoe, measuring tape</p>	<p>GTE.4.1 Use tools introduced in previous grades independently.</p> <p>GTE.4.2 Name, identify, and safely use new tools.</p> <p>GTE.4.3 Demonstrate proper care and storage of tools.</p> <p>GTE.4.4 Practice various tool techniques with increasing independence.</p> <p>New Tools: Round point shovel, worm box</p>	<p>GTE.5.1 Use tools introduced in previous grades independently.</p> <p>GTE.5.2 Name, identify, and safely use new tools.</p> <p>GTE.5.3 Investigate different uses and techniques of tools to complete various tasks.</p> <p>GTE.5.4 Practice various tool techniques with increasing independence.</p> <p>New Tools: Wheelbarrow, hose and nozzle, drip watering systems</p>
Soil (S)	<p>S.3.1 Describe and/or create a planting medium for different types of gardens</p>	<p>S.4.1 Identify and describe structure and function of organisms living in soil.</p> <p>S.4.2 Describe the role of fungi, bacteria, and invertebrates in soil.</p>	<p>S.5.1 Describe the various activities that create soil.</p>

TOPIC	GRADE 3	GRADE 4	GRADE 5
Weather and Seasons, Climate and Geography (WSCG)	<p>WSCG.3.1 Define and map the bioregions of your state</p>	<p>WSCG.4.1 Understand and describe how geographic place and cultural significance might influence what and when foods grow in your location.</p> <p>WSCG.4.2 Understand the effect of latitude on foods from various places around the world.</p>	<p>WSCG.5.1 Describe the effect of human migration on seeds and plants.</p> <p>WSCG.5.2 Map the geographic, cultural, and historical influences that shape what is grown (maritime climate, altitude, soil composition, climate) in your bioregion.</p>
Plants (P)	<p>P.3.1 Describe structures and functions of flowers.</p> <p>P.3.2 Create an experiment (inquiry, observe, collect data, and make conclusions) to test various growing environments for plants.</p>	<p>P.4.1 Describe structures and functions of seeds.</p> <p>P.4.2 Explain photosynthesis.</p> <p>P.4.3 Know how and when to plant seeds.</p> <p>P.4.4 Understand signs of distress or poor health in plants and create solutions.</p>	<p>P.5.1 Understand how to identify and cultivate genetic traits in plants.</p>
Garden and Food Systems (GFS)	<p>GFS.3.1 Understand how to increase the beneficial insects in a garden environment.</p> <p>GFS.3.2 Design a plan to support and increase beneficial insects in the garden.</p> <p>GFS.3.3 Describe a food web.</p> <p>GFS.3.4 Define local food system.</p>	<p>GFS.4.1 Identify pests in the garden.</p> <p>GFS.4.2 Create a plan to mitigate pests in the garden.</p> <p>GFS.4.3 Define a regional food system.</p>	<p>GFS.5.1 Describe the roles beneficial insects and pests play in the garden.</p> <p>GFS.5.2 Understand the relationship between weather patterns and watering in garden.</p> <p>GFS.5.3 Demonstrate ability to identify and map a food system; include a historical or cultural perspective.</p>

GRADES 6-8			
TOPIC	GRADE 6	GRADE 7	GRADE 8
Garden Planning and Maintenance (GPM)	<p>GPM.6.1 Understand and apply basic garden math skills to the design of a garden.</p> <p>GPM.6.2 Demonstrate understanding of compost and/or vermi-culture system.</p>	<p>GPM.7.1 Understand and apply basic garden math skills to the design and planning of school/ community gardens.</p>	<p>GPM.8.1 Identify and utilize community resources available to support business project.</p> <p>GPM.8.2 Resolve watering, weeding, harvest and distribution challenges that exist in a garden.</p>
Garden Tools and Equipment (GTE)	<p>GTE.6.1 Use tools introduced in previous grades independently.</p> <p>GTE.6.2 Name, identify, and safely use new tools.</p> <p>GTE.6.3 Match tools to tasks and explain selection process.</p> <p>GTE.6.4 Demonstrate proper and safe use of tools and equipment with independence.</p> <p>New Tools: Stirrup hoe, four-tined cultivator, digging fork, rake, leaf rake, pruning shears/scissors</p>	<p>GTE.7.1 Use tools introduced in previous grades independently.</p> <p>GTE.7.2 Name, identify, and safely use new tools.</p> <p>GTE.7.3 Match tools to tasks and explain selection process.</p> <p>GTE.7.4 Determine different uses and techniques of tools to complete various tasks.</p> <p>GTE.7.5 Model gardening independently.</p> <p>New Tools: Grafting and propagation tools</p>	<p>GTE.8.1 Use tools introduced in previous grades independently.</p> <p>GTE.8.2 Correlate measuring tools and mathematical functions.</p> <p>GTE.8.3 Investigate different uses and techniques of garden tools to complete various tasks and solve problems.</p>
Soil (S)	<p>S.6.1 Identify soil compositions.</p> <p>S.6.2 Understand how to assess and mitigate soil.</p> <p>S.6.3 Build a balanced soil medium.</p>	<p>S.7.1 Identify soil compositions in the school environment.</p> <p>S.7.2 Recognize and classify various soils types.</p>	<p>S.8.1 Describe soil components and explain the proportional relationships.</p>
Weather and Seasons, Climate and Geography (WSCG)	<p>WSCG.6.1 Describe the growing climate and seasons of your school/home garden.</p> <p>WSCG.6.2 Compare and contrast your climate and a climate in a different geographic location in terms of growing food.</p> <p>WSCG.6.3 Describe the impact of seasonal weather patterns on edible gardens.</p>	<p>WSCG.7.1 Understand and identify microclimates around your school, what foods grow best in each one, and why.</p> <p>WSCG.7.2 Demonstrate knowledge of seasonal gardening.</p>	<p>WSCG.8.1 Utilize knowledge of weather and seasonal changes to create a 12-month planting calendar.</p>

TOPIC	GRADE 6	GRADE 7	GRADE 8
Business Planning (BP)	<p>BP.6.1 Compare and contrast a home garden to a school garden.</p> <p>BP.6.2 Create a garden planting list.</p> <p>BP.6.3 Create project expense list.</p>	<p>BP.7.1 Demonstrate the ability to create a food business project.</p> <p>BP.7.2 Create a garden planting list.</p> <p>BP.7.3 Create a basic income/expense model.</p>	<p>BP.8.1 Demonstrate the ability to run a food business project.</p> <p>BP.8.2 Understand Profit/Loss for project.</p> <p>BP.8.3 Create a marketing, outreach, communications plan for project.</p>
Plants (P)	<p>P.6.1 Interpret directions on seed packets.</p> <p>P.6.2 Describe seed germination.</p> <p>P.6.3 Understand best harvest practices for food grown in garden.</p>	<p>P.7.1 Describe and perform grafting, slips, and cutting propagation methods.</p> <p>P.7.2 Explain photosynthesis.</p>	<p>P.8.1 Identify and describe structure and function of edible plants.</p> <p>P.8.2 Identify and describe full cycle of a diversity of plants in the garden.</p>
Garden and Food Systems (GFS)	<p>GFS.6.1 Identify and create attraction strategies for beneficial insects in the home or school garden.</p> <p>GFS.6.2 Understand what foods grow best in your specific geographic location and why.</p> <p>GFS.6.3 Compare and contrast your geographic location to various other locations around in the world and understand how seasonality influences foods in other cultures</p> <p>GFS.6.4 Describe producer and consumer in the garden environment.</p> <p>GFS.6.5 Define local and seasonal eating.</p>	<p>GFS.7.1 Identify beneficial and non-beneficial insects in the soil and garden environments and create management strategies.</p> <p>GFS.7.2 Evaluate the interdependence of organisms in the garden environment.</p> <p>GFS.7.3 Describe the relationship between producers and consumers</p>	<p>GFS.8.1 Understand physical changes in the garden environment.</p> <p>GFS.8.2 Apply basic home and garden economics to the garden system.</p> <p>GFS.8.3 Describe and characterize the differences between foods grown locally and those imported from other parts of the United States and the world.</p>

GRADES K-8 GARDEN TOOLS & EQUIPMENT		
TOPIC	GRADE	GRADE 7
GTE	K	<p>GTE.K.1 Name, identify, and safely use new tools.</p> <p>GTE.K.2 Match new tools to tasks.</p> <p>GTE.K.3 State how to properly care for new tools.</p> <p>GTE.K.4 Describe the purpose of a new tool.</p> <p>New Tools: Hands, hand trowel, harvest basket and 5-gallon bucket</p>
GTE	1	<p>GTE.1.1 Use tools introduced in previous grades independently.</p> <p>GTE.1.2 Name, identify, and safely use new tools.</p> <p>GTE.1.3 Match tools to tasks.</p> <p>GTE.1.4 State how to properly care for tools.</p> <p>New Tools: Garden string, hand weeding tool, cleaning brush, and watering can</p>
GTE	2	<p>GTE.2.1 Use tools introduced in previous grades independently.</p> <p>GTE.2.2 Name, identify, and safely use new tools.</p> <p>GTE.2.3 Select the correct tool to perform and complete a task with minimal instructor input.</p> <p>GTE.2.4 Explain the reason for selecting a tool for a task.</p> <p>New Tools: Spading fork, hand fork, rain gauge, and air thermometer</p>
GTE	3	<p>GTE.3.1 Use tools introduced in previous grades independently.</p> <p>GTE.3.2 Name, identify, and safely use new tools.</p> <p>GTE.3.3 Select the correct tool to perform and complete a task with minimal instructor input.</p> <p>GTE.3.4 Explain form and function of tools in garden environment.</p> <p>GTE.3.5 Apply skills to solutions in garden environment.</p> <p>New Tools: Staking and trellising equipment, hoe, measuring tape</p>

TOPIC	GRADE 6	TOOLS & EQUIPMENT
GTE	4	<p>GTE.4.1 Use tools introduced in previous grades independently.</p> <p>GTE.4.2 Name, identify, and safely use new tools.</p> <p>GTE.4.3 Demonstrate proper care and storage of tools.</p> <p>GTE.4.4 Practice various tool techniques with increasing independence.</p> <p>New Tools: Round point shovel, worm box</p>
GTE	5	<p>GTE.5.1 Use tools introduced in previous grades independently.</p> <p>GTE.5.2 Name, identify, and safely use new tools.</p> <p>GTE.5.3 Investigate different uses and techniques of tools to complete various tasks.</p> <p>GTE.5.4 Practice various tool techniques with increasing independence.</p> <p>New Tools: Wheelbarrow, hose and nozzle, drip watering systems</p>
GTE	6	<p>GTE.6.1 Use tools introduced in previous grades independently.</p> <p>GTE.6.2 Name, identify, and safely use new tools.</p> <p>GTE.6.3 Match tools to tasks and explain selection process.</p> <p>GTE.6.4 Demonstrate proper and safe use of tools and equipment with independence.</p> <p>New Tools: Stirrup hoe, four-tined cultivator, digging fork, rake, leaf rake, pruning shears/scissors</p>
GTE	7	<p>GTE.7.1 Use tools introduced in previous grades independently.</p> <p>GTE.7.2 Name, identify, and safely use new tools.</p> <p>GTE.7.3 Match tools to tasks and explain selection process.</p> <p>GTE.7.4 Determine different uses and techniques of tools to complete various tasks.</p> <p>GTE.7.5 Model gardening independently.</p> <p>New Tools: Grafting and propagation tools, soil thermometer</p>
GTE	8	<p>GTE.8.1 Use tools introduced in previous grades independently.</p> <p>GTE.8.2 Correlate measuring tools and mathematical functions.</p> <p>GTE.8.3 Investigate different uses and techniques of garden tools to complete various tasks and solve problems.</p>

GRADES K-8 GARDEN BEHAVIORS		
TOPIC	GRADE	BEHAVIORS
GB.1	K-8	Identify where the garden is located, how to enter and exit the garden respectfully and safely.
GB.2	K-8	Recognize the garden is a learning environment.
GB.3	K-8	Use the five senses and when present in the garden environment.
GB.4	K-8	Apply best food safety practices when harvesting, washing, and preparing fruits and vegetables from the garden.
GB.5	K-8	Manage garden waste (weeds, end of season plants, etc.)

LEARNING OBJECTIVES *Kitchen*

GRADES K-2			
TOPIC	KINDERGARTEN	GRADE 1	GRADE 2
Culinary Flavors and Textures (CFT)	<p>CFT.K.1 Name the five senses.</p> <p>CFT.K.2 Identify a variety of tastes and textures.</p>	<p>CFT.1.1 Describe the differences between a number of same fruits or vegetables.</p> <p>CFT.1.2 Name and describe taste sensations.</p> <p>CFT.1.3 Demonstrate an understanding of the flavors of various world cultures.</p>	<p>CFT.2.1 Identify and describe basic textures.</p> <p>CFT.2.2 Categorize familiar and unfamiliar foods by flavor and texture.</p>
Food Preparation (FP)	<p>FP.K.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables.</p>	<p>FP.1.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables.</p>	<p>FP.2.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables.</p>
Kitchen Tools and Equipment (KTE)	<p>KTE.K.1 Name, identify, and safely use new tools.</p> <p>KTE.K.2 Select the correct tool to perform a task.</p> <p>KTE.K.3 State how to properly care for tools.</p> <p>KTE.K.4 Describe the purpose of a tool.</p> <p>New Tools: Hands, colander, mixing bowls, mixing spoons, spatula, vegetable brush, pastry brush, juicer, compost bucket, and, with help from an adult, blender/Vitamix/food processor</p>	<p>KTE.1.1 Use tools introduced in previous grades independently.</p> <p>KTE.1.2 Name, identify, locate and safely use new tools.</p> <p>KTE.1.3 Select the correct tool to perform a task.</p> <p>KTE.1.4 State how to properly care for new tools.</p> <p>New Tools: Cutting board or mat, spatula, tasting spoons, small tongs, can opener, and measuring spoons and cups</p>	<p>KTE.2.1 Use tools introduced in previous grades independently.</p> <p>KTE.2.2 Name, identify, locate, and safely use new tools.</p> <p>KTE.2.3 List tools in recipes.</p> <p>KTE.2.4 Select the correct tool to perform and complete a task with minimal instructor input.</p> <p>KTE.2.5 Explain the reason for selecting a tool for a task.</p> <p>New Tools: Salad spinner, strainer, peeler, strawberry huller, whisk, scale, food mill, rolling pin, muffin pan, and sifter</p>
Recipe Concepts (RC)	<p>RC.K.1 Describe what a recipe is.</p> <p>RC.K.2 Recognize how families share and maintain food and cultural traditions.</p>	<p>RC.1.1 Demonstrate an understanding of recipes and how they reflect the people and cultures of their community.</p>	<p>RC.2.1 Describe how traditional foods and recipes function in social contexts of families and communities, and cultural traditions and celebrations.</p>

TOPIC	KINDERGARTEN	GRADE 1	GRADE 2
Health Concepts (HC)	<p>HC.K.1 Explain where fresh foods come from.</p> <p>HC.K.2 Explain what Eat a Rainbow means.</p> <p>HC.K.3 Name a food group.</p> <p>HC.K.4 Identify a food group in the garden.</p> <p>HC.K.5 Make healthy food choices.</p>	<p>HC.1.1 Create a healthy snack from the garden.</p> <p>HC.1.2 Harvest foods from the garden for taste and nutrition with guidance.</p> <p>HC.1.3 Describe the food groups.</p> <p>HC.1.4 Describe what a balanced meal is.</p>	<p>HC.2.1 Demonstrate the ability to design a garden that incorporates various world cultures.</p> <p>HC.2.2 Recognize local and seasonal foods.</p> <p>HC.2.3 Define whole fresh foods in each food group.</p> <p>HC.2.4 Create a healthy snack using whole fresh foods.</p>
Home Economics (HE)	<p>HE.K.1 Understand and describe a variety of food related professions.</p> <p>HE.K.2 Understand abundance in terms of seasonality.</p>	<p>HE.1.1 Understand what chefs and food producers do.</p> <p>HE.1.2 Understand scarcity in terms of seasonality.</p>	<p>HE.2.1 Manage garden scarcity and abundance with cooking techniques.</p>

GRADES 3-5			
TOPIC	GRADE 3	GRADE 4	GRADE 5
Culinary Flavors and Textures (CFT)	<p>CFT.3.1 Demonstrate an understanding of taste sensations.</p> <p>CFT.3.2 Describe foods and their flavor attributes.</p> <p>CFT.3.3 Describe what texture means; use examples.</p> <p>CFT.3.4 Identify flavors, foods, and dishes from other cultures</p>	<p>CFT.4.1 Review basic sensory attributes of flavors</p> <p>CFT.4.2 Create basic flavor combinations using international cuisines.</p> <p>CFT.4.3 Assess main ingredients, seasonings and dishes of other cultures.</p>	<p>CFT.5.1 Describe how other cultures use flavors in their cuisines.</p> <p>CFT.5.2 Explain food traditions of other cultures using sensory language to describe flavor and ingredients.</p>
Food Preparation (FP)	<p>FP.3.1 Describe how and when to harvest food from the garden.</p> <p>FP.3.2 Demonstrate an understanding of whole grain preparations.</p> <p>FP.3.3 Create a healthy snack using food from the garden or farmers market</p>	<p>FP.4.1 Demonstrate knowledge of how to wash and store fruits and vegetables.</p> <p>FP.4.2 Describe and perform food preservation processes such as drying, freezing, pickling.</p> <p>FP.4.3 Demonstrate ability to make simple recipes inspired by world cultures.</p> <p>FP.4.4 Explain cultural and historical significance of preservation methods.</p>	<p>FP.5.1 Demonstrate understanding of how to handle, prepare, and process proteins using a variety of cultural traditions.</p> <p>FP.5.2 Design and/or create complete protein meal using a variety of cultural traditions.</p>
Kitchen Tools and Equipment (KTE)	<p>KTE.3.1. Use tools introduced in previous grades independently.</p> <p>KTE.3.2. Name, identify, locate and safely use new tools.</p> <p>KTE.3.3. Explain form and function of new tools/equipment.</p> <p>KTE.3.4 Select the correct tool to perform and complete a task with minimal instructor input.</p> <p>New Tools: Paring knife, mortar & pestle, potato masher, melon baller, apple-corer, garlic press, zester, box-grater, micro-planer</p>	<p>KTE.4.1. Use tools introduced in previous grades independently.</p> <p>KTE.4.2. Name, identify, locate, and safely use new tools.</p> <p>KTE.4.3. Demonstrate proper care and storage of tools/equipment.</p> <p>KTE.4.4 Practice various tool techniques with increasing independence.</p> <p>New Tools: Manual pasta machine, food mill, food dehydrator, airtight container, ladle, and with the assistance of an adult, the stove</p>	<p>KTE.5.1. Use tools introduced in previous grades independently.</p> <p>KTE.5.2. Name, identify, locate and safely use new tools.</p> <p>KTE.5.3. Select the correct tool and explain the reason for selecting the tool.</p> <p>KTE.5.4 Practice tool skills with increasing independence.</p> <p>New Tools: Small chef’s knife, bread knife, spice grinder, pastry blender, blender/Vitamix/food processor, casserole/soufflé dish, roasting pan, and standing and hand-held mixers</p>

TOPIC	GRADE 3	GRADE 4	GRADE 5
Recipe Concepts (RC)	<p>RC.3.1 Describe the structure and function of a recipe.</p> <p>RC.3.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.</p> <ul style="list-style-type: none"> • Cut • Peel, zest, and grate • Core, hull, and pit • Mash and puree 	<p>RC.4.1 Relate the parts of recipe.</p> <p>RC.4.2 Demonstrate the ability to follow recipe instructions with increased independence.</p>	<p>RC.5.1 Summarize cultural and historical significance in recipes.</p> <p>RC.5.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.</p> <ul style="list-style-type: none"> • Cut, cube, rough chop, fine chop, dice, and slice. • Mix, stir, cream, puree, whip, fold, and toss. • Pulverize
Health Concepts (HC)	<p>HC.3.1 Create a healthy snack plan to grow in the school garden.</p> <p>HC.3.2 Demonstrate an understanding of local and seasonal foods.</p> <p>HC.3.3 Define and describe grain based carbohydrates.</p> <p>HC.3.4 Compare and contrast processed and whole grains.</p> <p>HC.3.5 Identify where grains are sourced locally.</p> <p>HC.3.6 Read and interpret a food label.</p>	<p>HC.4.1 Create a calendar of seasonal menus that reflect local and seasonal foods.</p> <p>HC.4.2 Understand that nutrients in soil and plants are assimilated into the body.</p> <p>HC.4.3 Describe fruits and vegetables in relation to the food groups.</p> <p>HC.4.4 Identify where fruits and vegetables are sourced locally.</p> <p>HC.4.5 Compare and contrast fresh, canned, and frozen fruits and vegetables.</p> <p>HC.4.6 Collect and display data from weekly food purchases for family or community.</p>	<p>HC.5.1 Summarize seed to plate process.</p> <p>HC.5.2 Define and describe what a protein is.</p> <p>HC.5.3 Describe the benefits of a nutrient rich diet.</p> <p>HC.5.4 Identify where proteins are sourced locally.</p>
Home Economics (HE)	<p>HE.3.1 Apply critical thinking skills to budgeting in a home kitchen.</p> <p>HE.3.2 Compare and contrast cost of store bought processed foods, home processed foods, and foods grown in the garden.</p> <p>HE.3.3 Describe abundance and the causes of abundance in the garden</p>	<p>HE.4.1 Calculate expansion and contraction of volumes of foods.</p> <p>HE.4.2 Understand multiple uses of vegetable scraps and strategies to reduce waste.</p>	<p>HE.5.1 Demonstrate knowledge of shopping for groceries on a budget.</p> <p>HE.5.2 Understand the economic impact of growing your own food and using it in the kitchen.</p>

GRADES 6-8			
TOPIC	GRADE 6	GRADE 7	GRADE 8
Culinary Flavors and Textures (CFT)	<p>CFT.6.1 Utilize taste sensations to describe a series of breakfast items.</p> <p>CFT.6.2 Understand the relationship between smell and taste in culinary practices.</p>	<p>CFT.7.1 Utilize taste sensations to describe various hot and cold food items.</p> <p>CFT.7.2 Describe the relationship between culinary arts and sight, smell, and taste. Use traditional world cuisines as examples.</p>	<p>CFT.8.1 Demonstrate mastery of tasting skills to create a dinner menu.</p> <p>CFT.8.2 Create a menu that includes combinations of basic textures and taste sensations from a variety of cultures.</p>
Food Preparation (FP)	<p>FP.6.1 Demonstrate knowledge of safe food handling practices</p> <p>FP.6.2 Name and describe basic cooking techniques and use them as instructed to prepare recipes.</p>	<p>FP.7.1 Demonstrate knowledge of safe food handling practices with increased skill.</p> <p>FP.7.2 Use a variety of cooking techniques</p> <p>FP.7.3 Identify the right cooking technique to complete a task and articulate why it is the correct technique.</p>	<p>FP.8.1 Demonstrate mastery of skill and knowledge of safe food handling practices.</p> <p>FP.8.2 Demonstrate mastery of a variety of cooking techniques</p> <p>FP.8.3 Summarize benefits of different cooking techniques for retaining nutrients.</p>
Kitchen Tools and Equipment (KTE)	<p>KTE.6.1 Use tools introduced in previous grades independently.</p> <p>KTE.6.2 Name, identify, locate, and safely use new tools.</p> <p>KTE.6.3 Match tools to tasks and explain selection process.</p> <p>KTE.6.4 Demonstrate proper and safe use of tools and equipment with independence.</p> <p>New Tools: Oven, parchment, foil, plastic wrap, baking sheets, muffin pans, cooling rack, thermometers, and oven mitts and hot pads</p>	<p>KTE.7.1 Use tools introduced in previous grades independently.</p> <p>KTE.7.2 Name, identify, locate, and safely use new tools/equipment.</p> <p>KTE.7.3 Match tools to tasks and explain selection process.</p> <p>KTE.7.4 Demonstrate ability to use tools and equipment independently.</p> <p>New Tools: Stove, pots, pans, skillets, steamer insert, and griddle</p>	<p>KTE.8.1 Name, identify, locate, and safely use all tools and equipment.</p> <p>KTE.8.2 Recommend proper tool and equipment selection and match tool/equipment to task.</p> <p>KTE.8.3 Practice tool and equipment use independently.</p> <p>New Tools: Standing mixer and hand-held mixer, baking pans, instant read thermometer</p>

TOPIC	GRADE 6	GRADE 7	GRADE 8
Recipe Concepts (RC)	<p>RC.6.1 Understand the importance of and how to measure various food, storage and cooking temperatures</p> <p>RC.6.2 Demonstrate ability to decrease and increase portions using US customary standards.</p> <p>RC.6.3 Read and follow a recipe inferring whether it can be modified.</p>	<p>RC.7.1 Compare and contrast recipes from various world cultures</p> <p>RC.7.2 Perform entry-level culinary measurements using metric system measurements of volume, weight, and whole, decimal, and fractional numbers.</p> <p>RC.7.3 Follow a recipe with increased independence and make modifications with the ingredients.</p>	<p>RC.8.1 Convert recipes from US customary into metric standards and vice versa.</p> <p>RC.8.2 Follow and modify a recipe independently to include seasonal ingredients.</p>
Menu Development (MD)	<p>MD.6.1. Research and plan a menu using world culture theme.</p> <p>MD.6.2. Create recipes to scale.</p> <p>MD.6.3. Harvest, cook and serve food.</p>	<p>MD.7.1. Demonstrate ability to develop and plan large event using world culture theme.</p>	<p>MD.8.1. Create a menu using world culture theme.</p> <p>MD.8.2. Create a planting list for a farm or garden to grow.</p>
Health Concepts (HC)	<p>HC.6.1 Describe the health benefits of eating seasonal foods.</p> <p>HC.6.2 Identify ingredients by name</p> <p>HC.6.3 Describe how the body uses nutrients from food to function.</p> <p>HC.6.4 Identify where products from different food groups are sourced locally.</p> <p>HC.6.5 Understand how to create complete protein dishes with vegan, vegetarian, and/or animal proteins.</p> <p>HC.6.6 Demonstrate knowledge of whole foods, minimally processed foods and processed foods.</p>	<p>HC.7.1 Demonstrate an understanding of how seasonality influences traditional cultural dishes.</p> <p>HC.7.2 Identify and harvest foods from the garden when they are at their peak for preserving.</p> <p>HC.7.3 Relate seasonality to availability of ingredients.</p> <p>HC.7.4 Demonstrate understanding of how cooking techniques can alter nutrients in food.</p> <p>HC.7.5 Identify various ways cultures incorporate food groups into their diets.</p> <p>HC.7.6 Read and interpret food labels and terms.</p>	<p>HC.8.1 Design a seasonal menu plan that reflects the foods grown in your bio-region/state.</p> <p>HC.8.2 Understand and articulate the relationship between healthy soil, healthy foods, and healthy bodies.</p> <p>HC.8.3 Describe seasonality and name ingredients that are grown in different seasons.</p> <p>HC.8.4 Demonstrate understanding of how the body uses fats and carbohydrates.</p> <p>HC.8.5 Analyze a recipe for nutritional values.</p> <p>HC.8.6 Reflect on personal and communal eating in terms of daily habits and celebrations.</p>

TOPIC	GRADE 6	GRADE 7	GRADE 8
Home Economics (HE)	<p>HE.6.1 Compare and contrast economics of cooking from single ingredients at home, foods grown in the garden, and purchasing ready-made foods.</p> <p>HE.6.2 Demonstrate knowledge of planning and cooking healthy meals on a budget.</p>	<p>HE.7.1 Explore the economic impact of preserving foods (freezing, canning, and drying foods at the peak of their ripeness for winter use).</p>	<p>HE.8.1 Design and produce a week of healthy and seasonal recipes on a budget</p> <p>HE.8.2 Explain cost and health benefit of farm to table.</p>
Business Planning (BP)	<p>BP.6.1 Demonstrate ability to plan and stage a classroom event that promotes healthy eating, reflects a world culture, and includes family and community.</p> <p>BP.6.2 Create simple financial plan.</p> <p>BP.6.3 Balance the income and expenses. Plan for shortfall or excess.</p>	<p>BP.7.1 Demonstrate ability to plan and stage a school event that promotes healthy eating, reflects a world culture, and includes family and community.</p> <p>BP.7.2 Understand simple profit and loss balance sheet for event.</p>	<p>BP.8.1 Create a business plan to bring a food related product to market.</p> <p>BP.8.2 Create basic Profit/Loss for business.</p>

GRADES K-8 KITCHEN TOOLS & EQUIPMENT		
TOPIC	GRADE	GRADE 7
TE	K	<p>KTE.K.1 Name, identify, and safely use new tools.</p> <p>KTE.K.2 Select the correct tool to perform a task.</p> <p>KTE.K.3 State how to properly care for tools.</p> <p>KTE.K.4 Describe the purpose of a tool.</p> <p>New Tools: Hands, colander, mixing bowls, mixing spoons, spatula, vegetable brush, pastry brush, juicer, compost bucket, and, with help from an adult, blender/Vitamix/food processor</p>
TE	1	<p>KTE.1.1 Use tools introduced in previous grades independently.</p> <p>KTE.1.2 Name, identify, locate and safely use new tools.</p> <p>KTE.1.3 Select the correct tool to perform a task.</p> <p>KTE.1.4 State how to properly care for new tools.</p> <p>New Tools: Cutting board or mat, spatula, tasting spoons, small tongs, can opener, and measuring spoons and cups</p>
TE	2	<p>KTE.2.1 Use tools introduced in previous grades independently.</p> <p>KTE.2.2 Name, identify, locate, and safely use new tools.</p> <p>KTE.2.3 List tools in recipes.</p> <p>KTE.2.4 Select the correct tool to perform and complete a task with minimal instructor input.</p> <p>KTE.2.5 Explain the reason for selecting a tool for a task.</p> <p>New Tools: Salad spinner, strainer, peeler, strawberry huller, whisk, scale, food mill, rolling pin, muffin pan, and sifter</p>
TE	3	<p>KTE.3.1 Use tools introduced in previous grades independently.</p> <p>KTE.3.2 Name, identify, locate and safely use new tools.</p> <p>KTE.3.3 Explain form and function of new tools/equipment.</p> <p>KTE.3.4 Select the correct tool to perform and complete a task with minimal instructor input.</p> <p>New Tools: Paring knife, mortar & pestle, potato masher, melon baller, apple-corer, garlic press, zester, box-grater, micro-planer</p>

TOPIC	GRADE 6	TOOLS & EQUIPMENT
TE	4	<p>KTE.4.1 Use tools introduced in previous grades independently.</p> <p>KTE.4.2 Name, identify, locate, and safely use new tools.</p> <p>KTE.4.3 Demonstrate proper care and storage of tools/equipment.</p> <p>KTE.4.4 Practice various tool techniques with increasing independence.</p> <p>New Tools: Manual pasta machine, food mill, food dehydrator, airtight container, ladle, and with the assistance of an adult, the stove</p>
TE	5	<p>KTE.5.1 Use tools introduced in previous grades independently.</p> <p>KTE.5.2 Name, identify, locate and safely use new tools.</p> <p>KTE.5.3 Select the correct tool and explain the reason for selecting the tool.</p> <p>KTE.5.4 Practice tool skills with increasing independence.</p> <p>New Tools: Small chef’s knife, bread knife, spice grinder, pastry blender, blender/Vitamix/food processor, casserole/soufflé dish, roasting pan, and standing and hand-held mixers</p>
TE	6	<p>KTE.6.1 Use tools introduced in previous grades independently.</p> <p>KTE.6.2 Name, identify, locate, and safely use new tools.</p> <p>KTE.6.3 Match tools to tasks and explain selection process.</p> <p>KTE.6.4 Demonstrate proper and safe use of tools and equipment with independence.</p> <p>New Tools: Oven, parchment, foil, plastic wrap, baking sheets, muffin pans, cooling rack, thermometers, and oven mitts and hot pads</p>
TE	7	<p>KTE.7.1 Use tools introduced in previous grades independently.</p> <p>KTE.7.2 Name, identify, locate, and safely use new tools/equipment.</p> <p>KTE.7.3 Match tools to tasks and explain selection process.</p> <p>KTE.7.4 Demonstrate ability to use tools and equipment independently.</p> <p>New Tools: Stove, pots, pans, skillets, steamer insert, and griddle</p>
TE	8	<p>KTE.8.1 Name, identify, locate, and safely use all tools and equipment.</p> <p>KTE.8.2 Recommend proper tool and equipment selection and match tool/equipment to task.</p> <p>KTE.8.3 Practice tool and equipment use independently.</p> <p>New Tools: Standing mixer and hand-held mixer, baking pans, instant read thermometer</p>

GRADES K-8 KITCHEN BEHAVIORS		
TOPIC	GRADE	BEHAVIORS
KB.1	K-8	Recognize where the kitchen is located, how to move in it respectfully and safely, and understand the kitchen is a learning environment.
KB.2	K-8	Understand and practice proper safety and sanitation practices in the kitchen. Students wash hands and pull hair back. Gloves are used when applicable. Clothing is tucked in, tied, clean and covered with aprons.
KB.3	K-8	Students handle, wash, and prepare foods safely.
KB.4	K-8	Students clean up the kitchen after they use it, and know that the kitchen is a shared space to be left as it was found.
KB.5	K-8	Students use healthy practices and know how to avoid spreading bacteria and viruses.

ICON KEY *Garden*



HOUSE ICON

Indicates suggested lesson activities that work just as well indoors as out.



HOUSE WITH PLUS SIGN

Indicates suggested lesson activities that can be modified fairly easily to work indoors in the case of inclement weather.



WHEELBARROW

Indicates materials section of a garden lesson plan.



DIAMOND

Indicates to use extra caution.



PAPER

Indicates that this lesson has a full lesson plan developed for the instructor's use.



QUESTION(S)

Indicates the essential questions of the lesson.



CHECKMARK

Indicates opportunities to assess student learning and development.



ABC

Indicates vocabulary words used in the lesson.

ICON KEY *Kitchen*



CLOCK ICON

Indicates recipes that require more than 45 minutes to prepare and cook. Consider one of the following strategies:

1. Prepare the recipe together, and arrange with their classroom teacher to deliver (or have some student volunteers come pick up) the final product later in the day.
2. Pre-make one batch of dough or something similar. Then use the batch of dough made in class as the pre-made batch for the next group.
3. For some recipes, and particularly canning recipes it would be ideal to work with school staff to extend the students time in the kitchen to about 3 hours, because the preserves should be prepared and canned in the same day.



COOK'S NOTES ICON

Indicates that students elaborate and reflect skills from the lesson on a Cook's Notes worksheet. Suggested lesson activities in Grades 5-8 call for Cook's Notes, but instructors are encouraged to use this teaching tool at any grade level.



POT

Indicates materials section of a cooking or cooking concept lesson plan.



DIAMOND

Indicates to use extra caution.



PAPER

Indicates that this lesson has a full lesson plan developed for the instructor's use.



QUESTION(S)

Indicates the essential questions of the lesson.



CHECKMARK

Indicates opportunities to assess student learning and development.



ABC

Indicates vocabulary words used in the lesson.

SCOPE & SEQUENCE

Garden

GRADE K | Garden

SCOPE & SEQUENCE




GRADE K STANDARDS

At the end of Grade K, students will be able to:

- Locate the garden and recognize that it is a learning environment.
- Participate in school garden activities with safe and caring behaviors.
- Demonstrate understanding of what a plant is, recognize plant parts and identify soil.
- Demonstrate understanding through inquiry and observation about the life cycle of plants, plant parts and soil.
- Demonstrate understanding of what weather is and name the seasons.
- Identify living and nonliving things in the garden.
- Recognize and name what plants and a garden need to thrive.
- Demonstrate understanding of abundance (a lot/more) and scarcity (few/less) in the garden.


GRADE K | FALL



Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
START THE YEAR <i>Schoolwide Garden Work Party with Families/Local Community</i>								
1. Welcome to the Garden! 	Personal and Community Life Skills (PLS and CLS)		Engage students by leading them in a silent observation of the outdoor space then have them share their names and what they observed. Explore ideas about how we can be best for ourselves, our community, and our environment while we're in the outdoor learning space. Explain by modeling those behaviors for students. Have students elaborate by exhibiting those behaviors while completing a garden scavenger hunt. Evaluate their understanding by having them reflect on what it means to be the best for themselves, their community, and their environment, not only in the garden but at home or in school.	PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.	Compare group agreements for the garden with agreements students have in the kitchen. How are behavior expectations similar in both places? How are they different?	Classroom: Compare group agreements for the garden with agreements students have in the classroom. How are behavior expectations similar in both places? How are they different?	CCSS.ELA-LITERACY.SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly. CCSS.ELA-LITERACY.SL.K.1 Participate in collaborative conversations with diverse partners about <i>kindergarten topics and texts</i> with peers and adults in small and larger groups. Social Studies: Citizenship.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
2. Rainbow Scavenger Hunt	Garden Planning and Maintenance (GPM)	GPM.K.2 Understand how to be present in the garden with all five senses.	Hand out journals that students will use for reflection at the end of each lesson. Give students paint color samples or crayons of different colors, and challenge them to explore the garden to find natural objects that match those colors. Explain the value of diversity in the garden and also in our communities.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	Have students prepare a dish with a variety of colors, such as in Kitchen Lesson #3: Yummy Wake-Up Smoothie.	Community: Have kids go on a rainbow scavenger hunt in their homes or neighborhoods.	<p>CCSS.ELA-LITERACY.L.K.5 With guidance and support from adults, explore word relationships and nuances in word meanings.</p> <p>CCSS.ELA-LITERACY.L.K.5.C Identify real-life connections between words and their use (e.g., note places at school that are colorful).</p> <p>CCSS.ELA-LITERACY.L.K.5.A Sort common objects into categories (e.g. shapes, foods) to gain a sense of the concepts the categories represent.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
3. Seasonal Planting	Garden Tools and Equipment (GTE)	GTE.K.1-4 Garden Tools and Equipment	Demonstrate safe and proper use of hand trowels. Then have students use them to plant a seasonal item that will be useful in the kitchen this fall/winter, such as sugar snap peas or carrots. Explain that all of our food comes from plants and animals.	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p> <p>CLS.2 Students cooperate and communicate well with each other.</p>	Have students prepare a dish that incorporates carrots and peas, such as the dish prepared in Kitchen Lesson #10: Herbed Mediterranean Yogurt Cheese Spread.	Cafeteria: Ask if your food service director can incorporate your crop into a school lunch or salad bar.	<p>NGSS.K.LS1.C. Organization for Matter and Energy Flow in Organisms All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.</p>	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Mystery Objects	Garden Planning and Maintenance (GPM)	<p>GPM.K.2 Understand how to be present in the garden with all 5 senses.</p>	<p>To engage students, have them pair up to find and feel “Mystery Objects” from the garden. Have one student in each pair close his/her eyes while the other student finds an object in the garden to give to his/her partner. Prompt them to focus on 1 sense at a time. Explain how to make arguments from evidence for what each object is before opening their eyes to see the object. Have them practice in pairs, trading roles each time.</p> 	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p> <p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>In Kitchen Lesson #4: 5 Sense Tasting students explore a food with all of their senses.</p>	<p>BAM! Box: Go on a 5 Senses Scavenger Hunt with a family or community member.</p> <p>Classroom: Have students pair up and do the same “Mystery Object” activity with objects in the classroom.</p>	<p>CCSS.ELA-LITERACY.SL.K.4 Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.</p> <p>NGSS Science and Engineering Practice: Engaging in Argument from Evidence.</p> <p>VA:Cr1.1.Ka. Engage in exploration and imaginative play with materials.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>5. Living or Nonliving?</p> 	<p>Garden Planning and Maintenance (GPM)</p>	<p>GPM.K.1 Describe what lives in a garden and name what it needs to live.</p> <p>GTE.K.1-4 Garden Tools and Equipment</p>	<p>Engage students by giving them a picture of the garden and asking them to circle 5 living things and 5 nonliving things. Discuss together which living things are plants and how they know. Then review safe tool use. Finally, have students work together with hands and hand trowels to plant transplants in the garden. Work together to explain what the plants need to grow, and have students elaborate by making a plan together for giving the plants everything they need.</p> 	<p>PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.</p> <p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	<p>In the kitchen, before you eat a dish featuring fruits or vegetables, celebrate the sun, soil, water, air, and nutrients that made those fruits and vegetables grow.</p>	<p>Community: Draw a picture of your home or neighborhood and circle 5 living and 5 non-living things.</p> <p>Cafeteria: Look at a school lunch and discuss which foods came from plants and which came from animals.</p>	<p>CCSS.ELA-LITERACY.SL.K.1 Participate in collaborative conversations with diverse partners about <i>kindergarten topics and texts</i> with peers and adults in small and larger groups.</p> <p>NGSS.K.LS1.C Organization for Matter and Energy Flow in Organisms All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants (P) need water and light to live and grow.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>6. Mini Compost Piles</p>	<p>Soil (S)</p>	<p>S.K.1 Identify the difference between brown (carbon) and green (nitrogen) in a compost system.</p> <p>GTE.K.1-4 Garden Tools and Equipment</p>	<p>Have each student explore the components of compost by building a miniature compost pile. Layer browns, such as dry straw, with greens, such as food waste or garden clippings. Explain the importance of diversity for a healthy compost pile that will produce compost to feed plants. Elaborate by relating to the importance of diversity for a fun and interesting community. Incorporate mini-piles into a larger compost pile, and deliver finished compost (either from your garden or purchased from a garden store) to growing plants.</p>	<p>PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.</p> <p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	<p>In Kitchen Lesson #5: Edible “Compost Piles,” students make miniature, edible “compost piles” by layering brown crackers with dip and green vegetables, such as rice crackers with hummus and sugar snap peas or alfalfa sprouts.</p>	<p>Classroom: Have students illustrate their compost pile once a month, depicting change over time. Working with an adult, students can label different parts of the pile.</p>	<p>CCSS.ELA-LITERACY.SL.K.1 Participate in collaborative conversations with diverse partners about <i>kindergarten topics and texts</i> with peers and adults in small and larger groups.</p> <p>NGSS.K.ESS2.C Biogeology. Human Impacts on Earth Systems Plants and animals can change their environment</p> <p>NGSS Science and Engineering Practice: Develop and Use Models.</p> <p>Social Studies: Diversity and Community.</p>	


GRADE K | WINTER


Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Tracking Garden Changes	Garden and Food Systems (GFS)	GFS.K.2 Develop an understanding of abundance and scarcity in the garden.	Have student teams explore the garden, using <u>data tracking sheets</u> to count certain plants. Explain the value of tracking data for making predictions in the garden, and then have students tally and share their results. Keep data to track over time. Have students record changes in the garden at the end of each class for the remainder of the year, as time allows, using the data tracking sheets. Prepare the garden for winter if necessary.	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely. CLS.2 Students cooperate and communicate well with each other.	In the kitchen, prepare a dish highlighting the crops that are in abundance in your garden.	Community: Have students track similar data from home or community gardens.	CCSS.MATH.CONTENT.K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. NGSS Science and Engineering Practice: Analyzing and Interpreting Data.	
8. Above and Below the Ground	Soil (S)	S.K.4 Describe what lives and what does not live in soil.	Send students on a pictograph scavenger hunt to explore and find common garden objects. Include objects that would normally be found in soil, such as roots, worms, and dead sticks. Include others that would be above ground, such as a living leaf, a flower, and a flying insect. Then have students categorize found objects by whether they are found above or below the soil surface. Explain the importance of each of these garden ecosystems.	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment. CLS.2 Students cooperate and communicate well with each other.	In the kitchen, prepare a dish that includes root crops from below the ground and stem, leaf, flower, or fruit crops from above ground such as the dish prepared in Kitchen Lesson #10: Herbed Mediterranean Yogurt Cheese Spread .	Classroom: Read aloud <i>Tops and Bottoms</i> by Janet Stevens.	CCSS.ELA-LITERACY.L.K.5.A Sort common objects into categories (e.g. shapes, foods) to gain a sense of the concepts the categories represent. NGSS Crosscutting Concept: Patterns Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. What is Soil Made Of?	Soil (S)	S.K.2 Identify living and nonliving components of soil.	Review safe use of hand trowels. Have students explore a scoop of soil under magnifying glasses. Then, have students pull out, name and list every soil “ingredient” they can find, such as rocks, dead plant material, and the like. Demonstrate how to treat living animals carefully. Have students work together to classify ingredients as living, once-living, and non-living. Share out, working with students to explain key characteristics of living things. Elaborate by connecting this idea with the greens and browns in the compost pile, which were once living plants.	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment. CLS.2 Students cooperate and communicate well with each other.	Prepare a dish that includes some fruits or vegetables, such as in Kitchen Lesson #8: Sugar-and-Spice Acorn Squash. Before eating, celebrate the different components of soil that helped grow the food by thanking out loud the worms, sticks, and rocks that helped make the soil, for example.	Classroom: Read aloud <i>Diary of a Worm</i> by Doreen Cronin. Cafeteria: Work with older students to create signage for the cafeteria tracing school lunch foods back to soil.	NGSS.K.ESS3.A <i>Natural Resources</i> Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. CCSS.ELA-LITERACY.L.K.5.A Sort common objects into categories (e.g. shapes, foods) to gain a sense of the concepts the categories represent.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>10. What Grows in our Garden?</p>	<p>Weather and Seasons, Climate and Geography (WSCG)</p>	<p>WSCG.K.2 Describe where you live and the foods that grow there.</p>	<p>Review the major food groups. Have students explore, looking for major food groups growing in the garden, such as grains, fruits, vegetables, and beans, nuts, or animal proteins. Together with your students, explain which food groups are not present in the garden. Discuss other examples of food from these groups grown in other parts of the world. Ask students what makes their region unique. Emphasize the role of climate in determining what you can grow in a region. Demonstrate how to harvest, then harvest and gather something to share.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p> <p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	<p>Use the introduction to this garden lesson to review the concepts students learned in Kitchen Lesson #9: Discovering Food Groups.</p>	<p>Cafeteria: Discuss a school lunch in terms of food groups represented.</p>	<p>CCSS.ELA-LITERACY.L.K.5.A Sort common objects into categories (e.g. shapes, foods) to gain a sense of the concepts the categories represent.</p> <p>Social Studies: Geography.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
11. Season Collage	Weather and Seasons, Climate and Geography (WSCG)	WSCG.K.1 Name the four seasons and what foods grow in each season.	Engage students by reading aloud <i>Mama, Is it Summer, Yet?</i> by Nikki McClure. Create a large class poster showing each season. Have each student explore by illustrating and, with support, labeling a favorite activity for each season. Together with your students, define each season as you add these to your poster to make a class-wide collage. Elaborate by adding foods that are locally available in each season to the collage. 	PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community. CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In the kitchen, prepare a recipe and highlight which ingredients were grown or sourced in the school garden and/or locally, and which were grown locally in a different season and preserved for later use.	Classroom: <i>A Simple Brown Leaf</i> by L.J. Davis. Cafeteria: Identify any seasonal ingredients that were grown locally, and any that were grown locally in a different season and preserved for later use.	NGSS Crosscutting Concept: Patterns Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. CCSS.ELA-LITERACY.RL.K.1 With prompting and support, ask and answer questions about key details in a text. CCSS.ELA-LITERACY.RL.K.7 With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g., what moment in a story an illustration depicts). CCSS.ELA-LITERACY.SL.K.4 Describe familiar people, places, things, and events and, with prompting and support, provide additional detail. VA:Cr2.1.Ka Through experimentation, build skills in various media and approaches to artmaking.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Local Foods Collage	Weather and Seasons, Climate and Geography (WSCG)	WSCG.K.2 Describe where you live and the foods that grow there.	Help student teams engage with the concept of local foods by sorting pictures of familiar fruits and vegetables into categories: those that grow in our garden or community, and those that grow far away. Have teams explore seed catalogs and share out to make a class list or collage of fruits and vegetables to plant in their garden based on their region. 	PLS.5 Students develop the ability to make informed and responsible decisions. CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In the kitchen, prepare a dish featuring only locally-grown foods. In the winter, this may center around storage crops and preserved foods, such as roasted root vegetables with dried herbs.	Community: Take a field trip to a local farm or farmers' market.	CCSS.ELA-LITERACY.L.K.5.A Sort common objects into categories (e.g. shapes, foods) to gain a sense of the concepts the categories represent. CCSS.MATH.CONTENT.K.MD.B.3 Classify objects into given categories; count the number of objects in each category and sort the categories by count. Social Studies: Geography. VA:Cr2.1.Ka Through experimentation, build skills in various media and approaches to artmaking.	

GRADE K | SPRING


Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Making Soil Mixes	Soil (S)	<p>S.K.3 Identify different types of soil in the garden.</p> <p>GTE.K.1-4 Garden Tools and Equipment</p>	<p>Have students explore and compare and contrast soil from different spots in the garden—including the beds, pathways, compost bins, and anywhere else unique. Discuss and explain key components of healthy soil and how it helps us grow healthy food. Then have student teams elaborate by making their own soil mixes in 5-gallon buckets. Challenge them to make a mix that they think would best support plant growth. Then test by growing plants in various mixes.</p>	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	<p>Prepare a dish that includes fruits or vegetables, such as in Kitchen Lesson #16: Mmmm-Hmmm Hummus. Trace the ingredients back to the soil.</p>	<p>Community: Have students bring in soil samples from home to compare to those found at school.</p>	<p>CCSS.ELA-LITERACY.SL.K.4 Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.</p> <p>NGSS.ETS1.B <i>Developing Possible Solutions</i></p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Insect Explorations	Garden and Food Systems (GFS)	GFS.K.1 Identify insects in the garden.	Use magnifying bug boxes to explore, catch, observe, and diagram insects. Then use a simple, regional field guide to identify them. Have students share illustrations and explain why insects are critical in the garden ecosystem. Elaborate by harvesting and enjoying a fresh fruit or vegetable and giving thanks to the beneficial insects that helped it grow.	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment. CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In the kitchen, prepare a dish featuring fresh fruits and vegetables, such as in Kitchen Lesson #14: Fresh-and-Fruity Freeze Pops . Before you eat, thank the insects which are a critical part of the garden ecosystem, and discuss a few ways insects help plants grow.	Classroom: Read aloud <i>Hey, Little Ant</i> by Phillip Hoose.	NGSS Science and Engineering Practice: Obtaining, Evaluating and Communicating Information CCSS.ELA-LITERACY.SL.K.4 Describe familiar people, places, things, and events and, with prompting and support, provide additional detail. VA:Cr2.1.Ka Through experimentation, build skills in various media and approaches to artmaking.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. How Has Our Garden Changed?	Garden and Food Systems (GFS)	GFS.K.2 Develop an understanding of abundance and scarcity in the garden.	Have each pair of students explore the garden and use data tracking sheets to find and count a specific plant or insect. Explain the value of collecting data for making predictions and understanding seasonal cycles. Then have pairs return to the larger group and share out the amounts they found, recording answers. Finally ask questions comparing quantities and asking students to elaborate, such as “Do we have more snails or butterflies? How many more? How did you figure that out?” Have students compare these to the data they collected in Lesson #7: Tracking Garden Changes , and predict how these numbers might change in different seasons. Repeat throughout the year to test hypotheses.	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely. CLS.2 Students cooperate and communicate well with each other.	In the kitchen, identify the most abundant crop in the garden, and prepare a dish that uses this crop.		CCSS.MATH.CONTENT.K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g. by using objects or drawings to represent the problem. NGSS Crosscutting Concept: Patterns Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Planting Root Crops	Plants (P) Garden Tools and Equipment (GTE)	P.K.3 Understand what above ground and underground mean. GTE.K.1-4 Garden Tools and Equipment	Review safe use of hand trowels. Have students dig holes in the garden, shine flashlights into them, explore, and describe what they see. Then explain what crops are root crops and have students observe and plant root crops in the garden.	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	In the kitchen, give students produce or pictures of produce and have them sort based on where they grow: above ground or below.	Cafeteria: Identify vegetables served at lunch that are root crops grown below ground (carrots) and crops that are grown above ground (tomatoes).	NGSS K.LS1.C <i>Organization for Matter and Energy Flow in Organisms</i> All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. CCSS.ELA-LITERACY.SL.K.1 Participate in collaborative conversations with diverse partners about <i>kindergarten topics and texts</i> with peers and adults in small and larger groups.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Plant Life Cycles	Plants (P)	<p>P.K.1 Describe the life cycle of a plant.</p> <p>GTE.K.1-4 Garden Tools and Equipment</p>	<p>Explain the life cycle of a plant to students by guiding them through a role play in which they are seeds: growing up, sprouting leaves, making flowers, and then making seeds to start over again. Then have students elaborate, using real garden objects to create an art piece that shows the life cycle of a plant. For example, have them glue a real seed, a sprout, and a larger plant with a flower to a piece of paper in a circle that connects the larger plant back to the seed. Share out.</p> 	<p>PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.</p> <p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	In the kitchen, sprout garbanzo beans. Enjoy bean sprouts together with un-sprouted, cooked garbanzo beans from Kitchen Lesson #16: Mmmm-Hmmm Hummus (or store-bought) to highlight a particular crop at different stages of its life cycle (in this case, garbanzo bean seeds and sprouts).	<p>BAM! Box: Plant seeds together in containers for students to take home, care for, and observe over time. Send students home with their plants and observation journals to record their plant's growth over time. Have students share out observations in class.</p> <p>Community: Discuss other life cycles that children may see in their communities, such as babies growing into kids, teenagers, and adults; chickens hatching from eggs; butterflies metamorphosing, etc.</p>	<p>NGSS Science and Engineering Practice: Developing and Using Models.</p> <p>CCSS.ELA-LITERACY.SL.K.1 Participate in collaborative conversations with diverse partners about <i>kindergarten topics and texts</i> with peers and adults in small and larger groups.</p> <p>VA:Cr2.1.Ka Through experimentation, build skills in various media and approaches to artmaking.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Edible vs. Toxic Plants	Plants (P)	<p>P.K.2 Identify edible and non-edible plants in the garden.</p> <p>GTE.K.1-4 Garden Tools and Equipment</p>	Engage students by having them identify food plants they recognize in the garden. Then explore, using harvest baskets to gather and enjoy a garden snack. Explain that some plants use poison as a defense against pests. Show students any toxic or dangerous plants. Give them a moment to study the dangerous plant, focusing on any defining characteristics that would help them recognize it. Then have them look away and quiz them on its characteristics. Evaluate their learning by having them look around the garden for more examples of that plant. Together, create signs labeling different edible and inedible plants, and brainstorm how to be safe around these plants. Remove any toxic plants you do not want in your garden.	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p> <p>PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.</p>	In the kitchen, prepare a dish that includes an edible plant that your students have harvested from the garden.	<p>Classroom, Community: Use a children’s plant field guide to identify various common, local plants.</p> <p>Cafeteria: Identify edible plants available in the lunch line.</p>	<p>CCSS.ELA-LITERACY.SL.K.4 Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.</p> <p>NGSS.K.LS1.C <i>Organization for Matter and Energy Flow in Organisms</i> All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.</p>	

GRADE 1 | Garden

SCOPE & SEQUENCE



GRADE 1 STANDARDS

At the end of Grade 1, students will be able to:

- Demonstrate knowledge of plant parts and name specific edible parts of plants in the garden.
- Demonstrate understanding of how seeds transport.
- Demonstrate understanding of the role a seed plays in the life cycle of a plant.
- Demonstrate knowledge of what forms a soil web.
- Demonstrate understanding of living and non-living organisms in the garden.
- Identify, count, and draw living organisms in the garden.
- Demonstrate ability to distinguish a variety of similar and different plants, and collaborate to select plants to grow in the garden.
- Demonstrate knowledge of what plants and gardens need to thrive, and explain how to provide those needs.

GRADE 1 | FALL


Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
START THE YEAR <i>Schoolwide Garden Work Party with Families/Local Community</i>								
1. Welcome to the Garden!	Personal and Community Life Skills (CLS and PLS)		Engage students in an age-appropriate name game. Explore teamwork through a teambuilding exercise. Explain teamwork by establishing garden agreements together. Introduce Personal and Community Life Skills. Then have students elaborate by practicing these agreements as you assign or give each pair of students an object to find together in the garden. When students have found their object, have them trade with a classmate and find a new object. Finally, review safe harvesting techniques before harvesting fresh produce together to enjoy.	PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.	Compare group agreements for the garden with agreements students have in the kitchen. How are behavior expectations similar in both places? How are they different?	Classroom: Compare group agreements for the garden with agreements students have in the classroom. How are behavior expectations similar in both places? How are they different?	CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about <i>grade 1 topics and texts</i> with peers and adults in small and larger groups. CCSS.ELA-LITERACY.SL.1.6 Produce complete sentences when appropriate to task and situation.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>2. Edible Seeds</p>	<p>Plants (P)</p>	<p>P.1.4 Identify edible seeds in the garden.</p>	<p>Identify and photograph edible seeds in the garden ahead of the lesson. Give student teams each a photograph of an edible seed and have them find it in the garden. Look at the seeds together and discuss how they are all similar and different. Then harvest and enjoy some of the edible seeds. Finally, harvest more of the edible seeds to save for planting in the future. Toward the end of class, hand out journals for students to use BOTH for reflection at the end of each lesson this year and to record and track weather in the garden over time.</p>	<p>PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.</p> <p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>Prepare a dish featuring edible seeds, such as in Kitchen Lesson #3: Crispy-Crunchy Granola Munchies.</p>	<p>Community: Together with an adult, look through your kitchen at home for foods made from edible seeds, such as wheat, corn, popcorn, rice, etc. Make a list to bring back to school.</p>	<p>NGSS.1.LS1.A Structure and Function—All organisms have external parts... Plants have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.</p> <p>CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about <i>grade 1 topics and texts</i> with peers and adults in small and larger groups.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
3. What's Living in Our Soil?	Soil (S)	<p>S.1.2 Describe how soil is living and how it is not living.</p> <p>GTE.1.1-4 Garden Tools and Equipment</p>	Collect soil samples from the garden and “dissect” the soil, making separate piles of each type of soil component. Categorize each component as living, once-living, or nonliving. Create a collective class list of soil components, which you’ll add to over time. Add compost to a garden bed to amend the soil, and then plant seeds or transplants and water in.	<p>PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.</p> <p>CLS.2 Students cooperate and communicate well with each other.</p>	Collect compost in the kitchen to bring to the garden. As you do, ask students if the food scraps are living, once-living, or nonliving.	Cafeteria: Collect food scraps from the cafeteria to add to the compost pile in the garden.	<p>CCSS.MATH.CONTENT.1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Cycles in the Garden	Soil (S)	S.1.3 Describe the relationship between living and non-living things in soil.	Give each team of 3 students a living plant, a decaying plant, a picture of a decomposer, and a pile of soil. Ask them to sort their objects into a story with a beginning, middle, and an end. Have teams share their stories. As they share out, explain that fungus, bacteria and invertebrates (the Garden “FBI”) are decomposers, and their role in the garden ecosystem is to turn once-living matter into soil to feed the plants.	PLS.6 Students actively seek creative and resourceful solutions. CLS.1 Students demonstrate problem solving and resolve conflict as a team.	Take food scraps from the kitchen out to the garden and add to the compost pile. As you do, discuss what living things they have seen in the soil. Who will these food scraps feed? Why do we feed the small animals in the soil? How do they help feed us?	Classroom: Create a class book about the story they created with their garden objects. Each student can illustrate one object, and then the teacher can transcribe the words as they share their story.	NGSS Science and Engineering Practice: Developing and Using Models.	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
5. Soil Web 	Garden and Food Systems (GFS)	GFS.1.2 Describe a soil web. Identify fungi, bacteria, and invertebrates.	Engage students by leading them in a brainstorm of what is growing and what is breaking down in the garden. Then sing the song “Decomposition.” Allow students to explore decomposition by looking for evidence of decomposition in the garden. Explain to students that the main decomposers are the Garden FBI: fungus, bacteria, invertebrates. Allow students to elaborate that understanding by looking for decomposers in the garden. Evaluate their understanding by asking students to draw decomposers in their journal.	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment. CLS.2 Students cooperate and communicate well with each other.	In Kitchen Lesson #8: Eat-a-Pita Pizzas , add mushrooms to the pizzas, and highlight that mushrooms are fungi and serve as decomposers.	Classroom: Read aloud <i>Diary of a Worm</i> by Doreen Cronin.	NGSS Science and Engineering Practice: Engaging in Argument from Evidence. CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about <i>grade 1 topics and texts</i> with peers and adults in small and larger groups.	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>6. Insect Illustrations</p>	<p>Soil (S)</p>	<p>S.1.1 Identify organisms living in various soil samples.</p>	<p>Have students collect soil samples from around the garden. With bug boxes, have students gently collect living organisms from the soil. Pass around so each student sees each insect. Then have students draw detailed illustrations of each organism found, and try to identify them using a kid-friendly field guide to identify common garden insects for your region.</p>	<p>PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.</p>	<p>While enjoying a dish featuring fresh produce, give thanks together for the insects that helped make the soil which fed the plants which are feeding the students.</p>	<p>Community: Bring soil samples from home into the garden to dissect and compare with the garden soil.</p>	<p>NGSS Science and Engineering Practice: Obtaining, Evaluating and Communicating Information.</p> <p>NGSS.LS3.B <i>Variation of Traits</i> Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways.</p> <p>CCSS.ELA-LITERACY.RI.1.5 Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.</p>	

GRADE 1 | WINTER


Each activity described below should be designed to last approximately 45 minutes.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Planning a Spring Garden	Garden Planning and Maintenance (GPM)	GPM.1.1 Decide as a group what to plant in the garden.	Have students explore various herbs using all of their senses. Have them research which will grow well in your region. Then have students share which they would like to plant and why. Conduct a vote to determine which herbs to plant in shared beds.	CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.	In the garden, conduct a comparative taste test between herbs, and have students use words learned in Kitchen Lesson #5: Taste Sensations to describe the flavors of each herb.	Classroom: Read aloud <i>How Groundhog's Garden Grew</i> by Lynne Cherry.	CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about <i>grade 1 topics and texts</i> with peers and adults in small and larger groups. Social Studies: Democracy/Voting	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
8. Mapping Garden Beds	Garden Planning and Maintenance (GPM)	GPM.1.2 Demonstrate knowledge of what plants need.	On butcher paper with the cardinal directions, draw a blank, life-size garden bed, including irrigation lines. Give each pair of students the name of a plant and its spacing requirements when full grown (from the seed packet). Give them a square with those dimensions and have them measure the edges and then draw and cut out a life size picture of their plant on their square. Review with students what plants need (sun, soil, water, air, and space) and then work together with students to place their plants on the paper bed, moving them around to maximize water (planting near irrigation lines); sunlight (tall plants on the north so they don't shade shorter plants); space (making sure squares don't overlap); and anything else important to consider in your garden. 	PLS.6 Students actively seek creative and resourceful solutions. CLS.1 Students demonstrate problem solving and resolve conflict as a team.	Plan a bed that aligns specifically to a recipe you plan to prepare with this class, such as a salad bed for Kitchen Lesson #14: You-Pick-the-Greens Salad.	Classroom: Measure other common objects and compare to the length of their garden bed and/or to the width of their plant (i.e. a cabbage plant grows wider than this pencil).	CCSS.MATH.CONTENT.1.MD.A.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the same length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. NGSS Science and Engineering Practice: Constructing Explanations and Designing Solutions. NGSS Science and Engineering Practice: Developing and Using Models. VA:Cr1.1.1a Use observation and investigation in preparation for making a work of art.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>9. Mapping Your Own Garden Bed</p>	<p>Garden Planning and Maintenance (GPM)</p>	<p>GPM.1.3 Demonstrate ability to plan a garden that has a diversity of plants.</p>	<p>Using the group garden bed map from Lesson #8: Mapping Garden Beds as an example, have students map their own imaginary garden beds. Have them include 3 or more plants they would like to grow, and space them to maximize plants’ abilities to meet their needs for sun, water, and space. Share out.</p> 	<p>PLS.6 Students actively seek creative and resourceful solutions.</p> <p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	<p>In the kitchen, have each student plan a dish that would use all of the crops growing in his/her imaginary beds.</p>	<p>Community: Draw a simple diagram of another space in the community showing how a plant gets what it needs to grow there.</p>	<p>CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about <i>grade 1 topics and texts</i> with peers and adults in small and larger groups.</p> <p>CCSS.ELA-LITERACY.SL.1.6 Produce complete sentences when appropriate to task and situation.</p> <p>NGSS Science and Engineering Practice: Constructing Explanations and Designing Solutions.</p> <p>NGSS Science and Engineering Practice: Developing and Using Models.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
10. Planning a Pizza Bed	Garden Planning and Maintenance (GPM)	GPM.1.3 Demonstrate ability to plan a garden that has a diversity of plants.	Use the same method you used in Lesson #9: Mapping Your Own Garden Bed to plan out a Pizza Bed that you'll plant together in the spring. Include plants and herbs for tomato sauce and other good plants for toppings, like zucchini, peppers, eggplant, onions, and the like. Ideally, this bed can be in the shape of a pizza with wheat around the crust; tomatoes, basil and other vegetables in the "slices." It can include a statue of a cow placed inside somewhere for the cheese.	PLS.6 Students actively seek creative and resourceful solutions. CLS.1 Students demonstrate problem solving and resolve conflict as a team.	Prepare pocket bread pizzas such as in Kitchen Lesson #8: Eat-a-Pita Pizzas.	Classroom: Read <i>Curious George and the Pizza</i> by H.A. and Margaret Rey.	CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about <i>grade 1 topics and texts</i> with peers and adults in small and larger groups. CCSS.ELA-LITERACY.SL.1.6 Produce complete sentences when appropriate to task and situation. NGSS Science and Engineering Practice: Constructing Explanations and Designing Solutions NGSS Science and Engineering Practice: Developing and Using Models	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
11. Weather Tracking	Weather and Seasons, Climate and Geography (WSCG)	WSCG.1.1 Describe weather.	Engage students by asking them to review weather tracking data from their journals. Look for and discuss patterns in the data. Is it getting colder or warmer? Sunnier or cloudier? etc. Then use thermometers to find the hottest and coldest places out in the garden. 	PLS.6 Students actively seek creative and resourceful solutions. CLS.2 Students cooperate and communicate well with each other.	In the kitchen, discuss what was in season in the fall, what's in season now, and what you're looking forward to having in season in the spring and summer.	Classroom: Choose a sister city in a very different climatic region and compare your weather with theirs.	NGSS Crosscutting Concept: Patterns Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about <i>grade 1 topics and texts</i> with peers and adults in small and larger groups.	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Finding Food on a Map	Weather and Seasons, Climate and Geography (WSCG)	WSCG.1.2 Describe what foods grow nearby and what foods come from other places.	Engage students by recalling from fall what foods you grew together in the garden. Ask for examples of other foods students have seen growing locally. Bring in some foods or pictures of foods that can't be grown in your region, labeled with where they were grown. Have teams work together to locate where they were grown on a world map. Discuss how they might have ended up in a local store, and the advantages and disadvantages of shipping foods around the world. Read aloud <i>How to Make an Apple Pie and See the World</i> by Marjorie Priceman. 	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely. CLS.2 Students cooperate and communicate well with each other.	In the kitchen, make a dish featuring locally grown foods (fresh or preserved).	Community: Take a field trip to a local farm or farmers market, or invite a farmer in to speak to the class.	Social Studies: Geography. CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about <i>grade 1 topics and texts</i> with peers and adults in small and larger groups.	

GRADE 1 | SPRING


Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. What is a Seed?	Plants (P)	<p>P.1.1 Understand what a seed is and what it does.</p> <p>GTE.1.1-4 Garden Tools and Equipment</p>	<p>Discuss the function of a seed. Have students explore, sort, and count a variety of seeds. Then have them start seeds in containers. If possible, use the seeds you saved together in the fall. As you work together, review everything the seed will need to grow and thrive. Demonstrate how to water gently using a watering can, and then have students water.</p> 	<p>PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.</p>	<p>Prepare a dish featuring seeds such as in Kitchen Lesson #13: Three Bean Salad.</p>	<p>Community: Go on a seed scavenger hunt in a field or nature area.</p>	<p>NGSS.1.LS1.A <i>Structure and Function</i> All organisms have external parts... Plants have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.</p> <p>CCSS.MATH. CONTENT.1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Bean Babies	Plants (P)	P.1.2 Understand that a plant produces another plant like itself.	Engage students by looking together at a variety of beans and sorting by similarities and differences. Then have each student make a “Bean Baby” by placing a bean and wet cotton ball in a small plastic bag. Tape them into the window of their classroom so students can watch them germinate over time. Have them notice similarities and differences in the plants as they observe and illustrate growth over time in their journals. 	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment. CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	Prepare a dish featuring seeds such as in Kitchen Lesson #18: Super-Stuffed Burritos , and explain that beans are seeds.	BAM! Box: Take your Bean Baby home and care for it for 4 weeks. Then bring it back to class for a “reunion” to compare and contrast all the different seeds. Note: Make some extra Bean Babies for students who lose theirs or fail to care for them properly. Classroom: Read aloud <i>Ten Seeds</i> by Ruth Brown. Make predictions about what will happen next as you turn each page (this involves some simple math).	NGSS.1.LS1.A <i>Structure and Function</i> All organisms have external parts ... Plants have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Seed Dissection	Plants (P)	P.1.3 Understand structure and function of seed design.	Read aloud <i>One Bean</i> by Anne Rockwell. Have students work in pairs to dissect pre-soaked bean seeds to find the baby plant (embryo), seed coat, and seed food (endosperm) inside. Then enjoy together a snack made from seeds, such as sunflower seeds or a trail mix featuring lots of seeds. 	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment. CLS.2 Students cooperate and communicate well with each other.	In the kitchen, have students brainstorm all the seeds they eat.	BAM! Box: Make granola with seeds! Community or Cafeteria: Search for bread, tortillas, beans, nut butters, and other foods made from seeds in the cafeteria or at home.	NGSS.1.LS1.A <i>Structure and Function</i> All organisms have external parts... Plants have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. CCSS.ELA-LITERACY.RL.1.1 Ask and answer questions about key details in a text.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Plant a Pizza Bed	Garden Tools and Equipment (GTE)	GTE.1.1-4 Garden Tools and Equipment	Have students share what they remember about proper use of hands, hand trowels, harvest baskets, and buckets. Then demonstrate proper use of garden string to mark beds and hand weeding tools. Next, have them use all of these tools to clear a bed, harvesting any edibles and collecting non-noxious weeds for the compost pile. Finally, have them plant a pizza bed using the plans students created in Lesson #10: Planning a Pizza Bed . You may also choose to add a salad bed next to the pizza bed. Show students how to clean tools with cleaning brushes before having them clean their tools.	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments. PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.	In the garden, discuss how to ensure that you get all of the food groups when you eat pizza by adding lots of vegetable toppings to your pizza bed, and/or adding a salad on the side of your pizza. Incorporate these ideas into your pizza bed.	Classroom: Make signs together for the pizza bed with the names and illustrations of various ingredients.	CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about <i>grade 1 topics and texts</i> with peers and adults in small and larger groups.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Weeds vs. Cultivars	Garden Planning and Maintenance (GPM) Garden Tools and Equipment (GTE)	GPM.1.4 Understand the difference between a weed and a cultivar. GTE.1.1-4 Garden Tools and Equipment	Show students illustrations or photos of 5 common garden cultivars and 5 common weeds, each time letting them look for only 3 seconds. After each one, hide the picture and ask them for defining characteristics. Then show again and share the name of the plant. Send teams on a pictograph scavenger hunt looking for those same 10 plants. Then sort the pictures into cultivars and weeds, and discuss the difference. Finally, review safe use of hand weeding tools and have students mark all cultivars in a bed, and then weed that bed together. 	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments. CLS.2 Students cooperate and communicate well with each other.	In the kitchen, prepare a dish featuring edible wild plants, which are sometimes considered weeds.	Classroom: Bring weeds indoors and look at them closely. Observe physical adaptations that help weeds survive and thrive despite humans trying to stop them.	CCSS.ELA-LITERACY.L.1.5 With guidance and support from adults, explore word relationships and nuances in word meanings. CCSS.ELA-LITERACY.L.1.5.C Identify real-life connections between words and their use (e.g., note places at home that are cozy). CCSS.MATH.CONTENT.1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Sheet Shake	Garden and Food Systems (GFS)	GFS.1.1 Identify the roles beneficial insects and pests play in the garden.	Do a “sheet shake” with your students. Put an old sheet on the ground under a bush. Shake the branches and let the insects fall out. (It can be useful to try this on a nearby bush ahead of time to ensure you have enough insects to work with). Give students bug boxes to collect insects. Have them compare and sort. Then have students work together with a kid-friendly field guide to identify the insects they found, looking up if they are pests that eat our plants or beneficial insects that pollinate our plants and/or eat our pests. Discuss the benefits of attracting a diverse set of beneficial insects into the garden. Together, plant some plants that attract beneficial insects in your region. You can find good options on the Pollinator Partnership website.	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment. CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In the kitchen, prepare a dish featuring fruits and vegetables. Prior to eating, discuss how predatory insects helped protect these crops from pests, and how pollinators helped the plant produce the fruits in the dish.	Cafeteria: Look together at the salad bar or for plant-based foods on the school lunch tray. Discuss how predatory insects helped protect these crops from pests, and how pollinators helped the plant produce the fruits in the dish.	CCSS.MATH.CONTENT.1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. CCSS.ELA-LITERACY.RI.1.5 Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.	

GRADE 2 | Garden

SCOPE & SEQUENCE



GRADE 2 STANDARDS

At the end of Grade 2, students will be able to:

- Identify elements in a food web.
- Demonstrate understanding of the role of plants in the food web.
- Demonstrate knowledge of the structure and functions of plant parts, specifically stems and leaves.
- Demonstrate knowledge of planting seeds, transplanting seedlings and seed saving.
- Demonstrate knowledge of how soil is made.
- Demonstrate knowledge of how plant and other matter is broken down.
- Demonstrate ability to construct planting mediums.
- Demonstrate knowledge of beneficial and non-beneficial insects.
- Demonstrate understanding of how the environment and weather shape the garden and its inhabitants.
- Begin managing scarcity and abundance in the garden environment.

GRADE 2 | FALL

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
START THE YEAR <i>Schoolwide Garden Work Party with Families/Local Community</i>								
1. Welcome to the Garden!	Personal and Community Life Skills (PLS and CLS)		Engage students by playing an age-appropriate name game. Explore teamwork by leading a team-building exercise. Explain teamwork by establishing garden agreements together. Introduce the Community and Personal Life Skills. Then have students elaborate, practicing these agreements by exploring the garden and playing a game such as “ <u>meet a plant.</u> ” Choose one edible plant to harvest and enjoy together.	PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.	In the garden, review safe food harvesting and handling practices from the kitchen as you harvest and enjoy a snack together.	Classroom: Compare group agreements for the garden with those students have in the classroom. How are behavior expectations similar in both places? How are they different?	CCSS.ELA-LITERACY.SL.2. Participate in collaborative conversations with diverse partners about <i>grade 2 topics and texts</i> with peers and adults in small and larger groups.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>2. Comparing Food Textures</p>	<p>Plants (P)</p>	<p>P.2.2 Identify edible leaves and stems in the garden.</p>	<p>Hand out journals that students will use to reflect at the end of each lesson. Engage students by challenging them to find edible stems and leaves in the garden. Have them explore by sorting their findings based on plant structure (stems vs. leaves). Explain the function of stems (water and nutrient transport) and leaves (photosynthesis). Then conduct a comparative tasting between various edible leaves and stems. Focus especially on feeling and describing different food textures.</p>	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	<p>In the garden, have students preview or review adjectives that describe texture from Kitchen Lesson #2: Food Texture as they describe the textures of each stem or leaf. In the kitchen, prepare a dip or dressing to enjoy with the edible stems and leaves in the garden.</p>	<p>Cafeteria: Identify edible stems and leaves in the school lunch or salad bar.</p>	<p>CCSS.ELA-LITERACY.L.2.5.A Identify real-life connections between words and their use (e.g., describe foods that are spicy or juicy).</p> <p>CCSS.ELA-LITERACY.L.2.5.B Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny).</p> <p>NGSS Crosscutting Concept: Structure and Function The shape and stability of natural and designed objects are related to their function(s).</p>	<p>National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
3. Building Compost	Soils (S) Garden Tools and Equipment (GTE)	S.2.3 Balance carbon (browns) and nitrogen (greens) in compost. GTE.2.1-4 Garden Tools and Equipment	Explain and demonstrate safe use of spading forks. Then have students practice these skills by building a compost pile together. Explain that we build healthy soil to grow healthy plants. To elaborate, ask teams to work together on developing systems to ensure that carbon and nitrogen are in balance in the compost pile. Demonstrate how to use a soil thermometer, and then stick one in the center of your pile. Together with students, check, record, and graph the temperature of your pile over time.	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments. CLS.2 Students cooperate and communicate well with each other.	Collect plant-based food scraps from the kitchen to build the compost pile in the garden.	Cafeteria: Collect plant-based food scraps from the cafeteria to build the compost pile in the garden.	CCSS.MATH.CONTENT.2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. NGSS.2.ETS1.B <i>Developing Possible Solutions</i>	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Tending the Garden	Garden Planning and Maintenance (GPM) Garden Tools and Equipment (GTE)	GPM.2.1 Understand how to prepare soil for planting in terms of weeding and cultivating. GTE.2.1-4 Garden Tools and Equipment	Engage your students by having each student share one of his/her favorite fruits or vegetables growing in the school garden. Explain that preparing the soil is an essential step in growing healthy, tasty plants. Review safe use of spading forks and demonstrate safe use of hand forks. Divide your group in half. Have one half work with you to prepare beds by weeding and adding compost. With an adult volunteer, have the other half listen to and discuss <i>How Groundhog's Garden Grew</i> by Lynn Cherry, and then switch.	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments. CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.	Prepare a recipe that involves stirring, such as in Kitchen Lesson #3: Make-Yourself-Some-Applesauce . Discuss how stirring is similar to preparing a bed for planting (mixing ingredients; stirring in air; using tools; etc).	BAM! Box: Plant an extra set of plants in containers to send home with students. Have them care for their plants over time and compare them to the ones planted in the garden.	CCSS.ELA-LITERACY.RL.2.7 Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot. CCSS.MATH.CONTENT.2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
5. Planting Together	Garden Planning and Maintenance (GPM)	<p>GPM.2.2 Understand when to plant seeds and transplant seedlings into the garden.</p> <p>GTE.2.1-4 Garden Tools and Equipment</p>	Have your students explore a regional planting guide and local weather data (including your average last frost date) to determine particular seeds and/or transplants that can be planted at this time in your region. Review safe tool use. Then plant them together in the beds you prepared at the appropriate time.	PLS.5 Students develop the ability to make informed and responsible decisions.	In the garden, use the “Days to Harvest” on your planting guide to determine when your crops will be ready to harvest. In the kitchen, plan a dish that includes that crop. Then mark your calendar for when you should be able to prepare it.	Classroom: Give teams a calendar, a planting guide, your average last frost date, and a list of 3 crops. Have them work together to calendar out when they could plant and harvest their crops.	<p>CCSS.MATH.CONTENT.2.OA.A.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</p> <p>CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about <i>grade 2 topics and texts</i> with peers and adults in small and larger groups.</p>	



Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Soil vs. Dirt	Soil (S)	<p>S.2.2 Describe characteristics and components of soil.</p> <p>GTE.2.1-4 Garden Tools and Equipment</p>	Provide groups of 4–6 students with a scoop of non-living dirt (such as you might find in a parking lot median) and a scoop of healthy garden soil. Have them explore with magnifying glasses, sort ingredients, and record differences in their journals. Discuss/explain soil components. Review safe tool use. Then elaborate by planting a crop in both kinds of soil and measuring and observing plant growth over time.	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p> <p>CLS.2 Students cooperate and communicate well with each other.</p>	In the garden, do a comparative taste test of the crop planted in the dirt and the one planted in the soil. Have students use concepts from Kitchen Lesson #2: Food Texture and Grade 1 Kitchen Lesson #5: Taste Sensations to describe each food.	Community: Have students gather dirt and soil from various locations around their communities. Bring them in and compare them all.	<p>NGSS Science and Engineering Practice: Planning and Carrying Out Investigations</p> <p>CCSS.MATH.CONTENT.2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.</p>	

GRADE 2 | WINTER

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Making Soil	Soil (S)	S.2.1 Explain how soil is made.	To engage students, brainstorm soil “ingredients” together, such as rocks, dead plant material, and the like. Have students explore and gather those ingredients and challenge them to make soil. Then, challenge teams to look around the garden for evidence that explains how this process happens naturally. Gather together to share findings and discuss natural processes, including weathering of rocks and decomposition of once-living materials over time.	PLS.6 Students actively seek creative and resourceful solutions. CLS.1 Students demonstrate problem solving and resolve conflict as a team.	Prepare a dish that features fruits and vegetables, such as in Grade 1 Kitchen Lesson #6: Salsas . Before you eat, trace the food back to the plants, the soil, and discuss the ingredients and processes that made the soil.	Classroom: Sing “Dirt Made My Lunch” by the Banana Slug String Band.	NGSS.2.ESS1.C <i>The History of Planet Earth</i> Some events happen very quickly; others occur very slowly over a time period much longer than one can observe. NGSS Science and Engineering Practice: Engaging in Argument from Evidence	
8. Weather Station Creation	Weather and Seasons, Climate and Geography (WSCG)	WSCG.2.1 Name, describe, and collect data on local weather events. GTE.2.1-4 Garden Tools and Equipment	Create a weather station with an air thermometer, rain gauge, visual cloud identification chart and the like. Explore these tools together. Explain how to make a wind sock, and then have students make their own wind socks. Then, teach students how to use all instruments. For the remainder of the year, have rotating student teams elaborate by visiting the station to record and report on the weather each time they visit the garden. 	CLS.2 Students cooperate and communicate well with each other.	In the garden, share dishes you crave on hot and cold days.	Classroom: Create a collage of favorite activities in each season (i.e. playing in the sprinklers in the summer, making snowmen in winter, etc).	NGSS Crosscutting Concept: Patterns Patterns in the natural world can be observed. CCSS.ELA-LITERACY.SL.2.6 Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. Researching Regions	Weather and Seasons, Climate and Geography (WSCG)	WSCG.2.2 Describe how geographic place influences what grows in the garden.	Engage students by challenging them to find 3 different locations that you've pre-selected on a world map. Provide descriptions of the climate in all 3 places, and have students explore and discuss how this impacts what can grow there at a given time. Divide class into teams of 4. Assign each team a different location and a list of common crops in that region during this time of year. Have teams present their region and crops and discuss similarities and differences. If working in the garden, have students compare the list to the crops in their garden. 	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely. CLS.2 Students cooperate and communicate well with each other	In the kitchen, prepare dishes from different regions, featuring foods grown in those regions.	BAM! Box: Find a class from another state or country with a different climate to be pen pals. Have students work at home with their community members to write to students in the other class. Have them ask about the food, culture, and weather in their pen pal's region, and elaborate on what foods they have growing near themselves, and what they are eating.	NGSS Crosscutting Concept: Patterns Patterns in the natural world can be observed. CCSS.ELA-LITERACY.SL.2.6 Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
10. Finding Weather Patterns	Weather and Seasons, Climate and Geography (WSCG)	WSCG.2.3 Predict and apply weather patterns to the garden.	<p>Elaborate on student understanding of weather and climate. Once they have logged the weather in their journals for a few months, have them look together for weather patterns, such as:</p> <ul style="list-style-type: none"> • Is it raining now more or less than before? • Is it warmer or cooler? <p>As a class, use these patterns, with historical weather data for your region, to make weather predictions and garden plans.</p> 	<p>PLS.6 Students actively seek creative and resourceful solutions.</p> <p>CLS.2 Students cooperate and communicate well with each other.</p>	Prepare a dish featuring storage crops, such as in Kitchen Lesson #11: Maple-Buttery Corn Muffins , highlighting that the grain corn was grown in summer, harvested in fall, and then stored for use in winter.	Classroom: Set up a weather log in the classroom where students can observe and record basic weather phenomena (temp, clouds, precipitation, wind direction) daily.	<p>NGSS Crosscutting Concept: Patterns Patterns in the natural world can be observed.</p> <p>CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about <i>grade 2 topics and texts</i> with peers and adults in small and larger groups.</p>	
11. Tracking the Seasons	Weather and Seasons, Climate and Geography (WSCG)	WSCG.2.3 Predict and apply weather patterns in the garden.	<p>Give students a paper with each season labeled. Have them explore their ideas about each season by adding images (collage or illustrations) of favorite activities in each season. Have them share out and find commonalities and differences. Over time, have them elaborate by recording produce available in their garden in each season on their paper.</p> 	<p>PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.</p> <p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	In the kitchen, prepare a dish featuring foods that are in season in the winter in your region, and/or have been preserved or stored from the fall.	Classroom: Keep a calendar posted in the classroom and have students record first harvests onto the calendar.	<p>NGSS Crosscutting Concept: Patterns Patterns in the natural world can be observed.</p> <p>CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about <i>grade 2 topics and texts</i> with peers and adults in small and larger groups.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Tracking Garden Data	Garden and Food Systems (GFS)	GFS.2.3 Strategize solutions for abundance and scarcity in the garden.	Divide into teams and have each team explore, count, record, and share a type of an item in the garden. Have some teams focus on produce (i.e. the number of lemons on the lemon tree) and some on environmental factors (i.e. the number of pollinators seen in the pollinator bed or inches of rain collected in the rain gauge). Have students share findings and record. Continue this throughout the year and look for patterns. Have students discuss possible explanations for the abundance or scarcity of things in the garden and elaborate by brainstorming possible solutions (for example, making lemonade from a lot of lemons, or planting drought-resistant plants if it's a year in which water is scarce).	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely. CLS.2 Students cooperate and communicate well with each other.	In the garden, brainstorm together good dishes for each season based on what is in abundance in your region in each season.	Classroom: Add notes on what is in abundance to the classroom garden calendar where students are recording first harvests.	NGSS Crosscutting Concept: Patterns Patterns in the natural world can be observed. CCSS.MATH.CONTENT.2.OA.A.1 Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	

GRADE 2 | SPRING


Each activity described below should be designed to last approximately 45 minutes.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Getting to Know Our Weeds	Plants (P)	P.2.3 Identify weeds. GTE.2.1-4 Garden Tools and Equipment	Give each pair of students a photograph of a common garden weed from your garden. Challenge them to explore and find that plant. Once students have found their weed, invite them to share it with the class, explaining to their peers how to identify it by pointing out any defining characteristics. Review why it is important to remove weeds from the garden. Then pass out hoola hoops or string circles and have pairs put them down in areas that need weeding. Have pairs work together to clear their entire circle. You can even host a weeding contest to see who can build the tallest pile of weeds.	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In the kitchen, prepare a dish featuring some local edible wild plants or weeds.	Classroom: Measure and graph the piles of weeds from the garden to identify a winner for the weeding contest.	NGSS.2.LS.2.A <i>Interdependent Relationships in Ecosystems</i> Plants depend on water and light to grow. CCSS.MATH.CONTENT.2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Dissecting Weeds	Plants (P)	P.2.1 Describe the structure and functions of plant parts.	Have student teams pull weeds and choose one to dissect. Challenge them to explore it by separating all the different parts they can find (i.e. roots, stems, leaves, etc). As you go through explaining each of the 6 plant parts, challenge them to look carefully at each structure and see if they can infer its function. Have them share out, clarifying the accurate function for each plant structure as you go. To elaborate, sing "Roots, Stems, Leaves," by the Banana Slug String Band. 	CLS.2 Students cooperate and communicate well with each other. CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In the garden, review safe food harvesting and handling procedures learned in the kitchen. Then make a "6 plant part" salad, spring roll, or wrap. You can even use a large leaf to wrap everything together!	Community: Have students go on a "6 plant part" scavenger hunt and find and collect or photograph each of the 6 parts they find.	NGSS Crosscutting Concept: Structure and Function CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about <i>grade 2 topics and texts</i> with peers and adults in small and larger groups.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Eating Stems and Leaves	Plants (P)	P.2.2 Identify edible leaves and stems in the garden.	To engage students, have them identify and harvest edible leaves and stems in the garden. Have students explore each, asking what similarities and differences students observe between them. Review the function of stems (nutrient and water transport) and leaves (photosynthesis). Then have students wash and tear them up to make a garden salad with a simple dressing.	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments. CLS.2 Students cooperate and communicate well with each other.	In the kitchen, make a homemade dressing for the garden leaf and stem salad.	Cafeteria: Work with the food service director to incorporate harvested leaves and stems into the salad bar or school lunch menu.	NGSS Crosscutting Concept: Structure and Function. CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about <i>grade 2 topics and texts</i> with peers and adults in small and larger groups.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Investigating Pollination	Garden and Food Systems (GFS)	<p>GFS.2.1 Identify pollinators in the garden, what service they perform, and how to increase the number of them living in the garden.</p> <p>GTE.2.1-4 Garden Tools and Equipment</p>	Explore the garden for insects landing on flowers and try to determine what they're doing. Explain the role of pollinators in plant reproduction. Have students elaborate by making "bees" by wrapping yellow and black pipe cleaners together in a ball. Then have them go around the garden moving pollen between flowers. Apply your learning by planting together some plants that attract pollinators. You can find regional guides at Pollinator.org .	<p>PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.</p> <p>CLS.2 Students cooperate and communicate well with each other.</p>	Make a dish that features fruits that require pollinators, such as in Grade 1 Kitchen Lesson #16: Mixed Berry Crumble . As you enjoy, thank the pollinators.	<p>Community: Take a field trip to look for pollinators around the community, in parks, or in natural settings.</p>	<p>NGSS 1.LS1.A <i>Structure and Function</i> All organisms have external parts... Plants have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.</p> <p>NGSS.2.LS2.A <i>Interdependent Relationships in Ecosystems</i> Plants depend on animals for pollination or to move their seeds around.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Insect Structures 	Garden and Food Systems (GFS)	GFS.2.2 Describe structure and function of insect parts.	Engage students by discussing plant parts and how each part helps plants live, thrive, and contribute to the garden. Then ask students to consider what parts insects may have and how they help them live, thrive, and contribute to the garden. Explore this idea by allowing students to collect an insect from the garden in a magnifying bug box to observe. As students are observing their insects, explain that insects have 3 body parts—head, thorax, and abdomen (along with the features on each). Discuss how these structures help insects live, thrive, and contribute to the garden. Students can elaborate on their understanding by drawing a scientific model of their insect and labeling the parts in their journal. These journals can be used to evaluate student understanding of insect structures.	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment. CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In the kitchen, research insects eaten around the world.	Classroom: Create imaginary insects in teams of 3. Give each team a blank piece of paper folded in thirds. Have each student draw an insect head on the top third, with the neck just passing the top fold. Fold to hide the head, then pass the papers, and have everyone add a thorax to their new paper. Pass one last time to add an abdomen. Open up to see your collective insect creations.	NGSS Crosscutting Concept: Structure and Function The shape and stability of natural objects are related to their function(s). VA:Cr2.1.2a Experiment with various materials and tools to explore personal interests in a work of art or design.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Web of Life	Plants (P)	P.2.4 Describe the role of plants in the food web.	Give each student a card representing a plant, animal, or other key feature in your garden ecosystem. Have them look for that object in the garden. Then give one student a ball of string. To explore the concept of interdependence, the first student's job is to hold one end of the string and then toss the ball to anyone he/she thinks the garden object interacts with. For example, "I'm a butterfly and I interact with the flowers because I drink nectar from flowers." Then have the next person continue, until you've created a web of yarn. Use the web to explain interdependence and the role of plants as producers, making food for themselves and the animals in the garden. 	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In the kitchen, prepare a dish featuring fruits and vegetables and then create a web connecting the ingredients to other members of the garden ecosystem, such as pollinators, sunlight, earthworms, and the like.	Classroom: Do the same activity, but focused on human communities. Each student can play a community role such as a teacher, firefighter, mother, or farmer.	NGSS.2.LS2.A <i>Interdependent Relationships in Ecosystems</i> Plants depend on water and light to grow. NGSS.2.LS2.A <i>Interdependent Relationships in Ecosystems</i> Plants depend on animals for pollination or to move their seeds around. Social Studies: Diversity and Community	

GRADE 3 | Garden

SCOPE & SEQUENCE



GRADE 3 STANDARDS


At the end of Grade 3, students will be able to:

- Demonstrate increased understanding of the structure and function of plant parts, specifically of flowers.
- Demonstrate knowledge of germination, propagation, and plant growth.
- Demonstrate ability to design and conduct science experiments in the garden.
- Demonstrate knowledge of geographic and climate influences on food.
- Demonstrate knowledge of food systems.
- Demonstrate knowledge of beneficial insects in the garden.
- Demonstrate knowledge of pollinators and predators in the garden.
- Demonstrate knowledge of basic garden design using basic math.


GRADE 3 | FALL

Each activity described below should be designed to last approximately 45 minutes.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
START THE YEAR <i>Schoolwide Garden Work Party with Families/Local Community</i>								
1. Welcome to the Garden!	Personal and Community Life Skills (PLS and CLS)		Engage students by having each student share their name and something interesting they notice in the garden. Explore teamwork by doing an age-appropriate team-building exercise. Explain how to work together as a team by establishing garden agreements together. Review Personal and Community Life Skills. Then have students elaborate, practicing these agreements as you explore the garden using a scavenger hunt.	PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.	Compare group agreements for the kitchen with agreements students have in the garden. How are behavior expectations similar in both places? How are they different?	Read <i>Chrysanthemum</i> by Kevin Henkes, a story about acceptance and appreciation for new friends on the first days of school.	CCSS.ELA-LITERACY.SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 3 topics and texts</i> , building on others' ideas and expressing their own clearly.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
2. Bread is for Eating	Garden and Food Systems (GFS)	GFS.3.4 Define local food system.	Engage students by reading aloud <i>Bread is for Eating</i> by David and Phillis Gershator. When the book is finished, have each student explore wheat by picking a wheat seed from a wheat plant and chew it like gum. Explain how these seeds are ground to make flour and bread. Then have students prepare a snack with bread, such as avocado toast, together. As they enjoy, have them elaborate by discussing the elements of the food system that went into the bread. 	PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.	Students will process whole wheat into pretzels in Kitchen Lesson #9: Threshing, Winnowing and Grinding Wheat and Kitchen Lesson #10: Old-Fashioned Pretzels.	Classroom: Have each student write a story—each from a different perspective of someone or something along the same food system. Community: Visit the people in your community that interact along this food system towards baking bread. Cafeteria: Trace an item in the lunch line back to its source.	NGSS Science and Engineering Practice: Developing and Using Models. CCSS.ELA-LITERACY.W.3.3 Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
3. Seed Starting Mix	Soil (S)	<p>S.3.1 Describe and/or create a planting medium for different types of gardens</p> <p>GTE.3.1-5 Garden Tools and Equipment</p>	<p>Explain that seed starting mixes are important for giving seeds the best chance of sprouting by providing them with everything they need. Demonstrate how to follow a “recipe” to make a seed starting mix. Have students make and use the mix to fill containers and then plant seeds. Have them plant peas, sunflowers, or other plants with edible sprouts. Challenge teams to elaborate by modifying the “recipe” and make their own seed starting mixes that they think would be good for plants. Hand out journals that students will use to reflect at the end of each lesson, and have students record their own “recipes.”</p>	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	<p>In the garden, discuss how a “recipe” for seed starting mix compares to with a kitchen recipe.</p>	<p>Classroom: Describe the parts that make up the soil recipe as fractions of the whole.</p>	<p>NGSS Science and Engineering Practice: Constructing Explanations and Designing Solutions.</p> <p>CCSS.MATH.CONTENT.3.NF.A.1 Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>4. Seed Starting Mix Experiments</p>	<p>Plants (P)</p>	<p>P.3.2 Create an experiment (inquiry, observe, collect data, and make conclusions) to test various growing environments for plants.</p> <p>GTE.3.1-5 Garden Tools and Equipment</p>	<p>Using the soil mixes created by the teams of students in Lesson #3: Seed Starting Mix, have teams plant the same type of seed in all of their containers. Have them post their soil recipe in front of their container of seeds. Then have them explore, observe, and record the differences in each team’s germination rates, plant growth, and the like in their journals over time.</p> 	<p>PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.</p>	<p>Once their seeds germinate, have them harvest the sprouts and conduct a comparative taste test in the garden with sprouts of the same type grown in different soil mixes. Discuss any flavor or texture differences using Culinary Flavor and Texture concepts and terms learned in the kitchen.</p>	<p>Classroom: Create a line graph to chart and compare the growth of different plants.</p>	<p>CCSS.MATH.CONTENT.3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.</p> <p>NGSS Science and Engineering Practice: Planning and Carrying Out Investigations</p>	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
5. Discovering Our Pests	Garden and Food Systems (GFS)	GFS.3.1 Understand how to increase the beneficial insects in a garden environment.	Have student teams explore the garden looking for pests and evidence of pests. Use a garden field guide such as the one found at Dave's Garden online, to try to identify what types of pests are causing the damage. Then explain the role of predatory insects in keeping down pest populations in gardens. Have teams research which types of predatory insects reduce the populations of your most common pests using a resource such as Permaculture Research Institute's Guide to Plants that Attract Beneficial Insects .	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	In the garden, discuss the "seconds" that farmers often sell at a reduced rate, which can include irregular or pest-damaged produce. Discuss culinary options for using cost-saving seconds, such as cutting off the damaged parts or using the produce in recipes where the damage will be less noticeable, such as in pies, smoothies, or casseroles.	Classroom: Tally the amount of each insect found in the garden. Compare and contrast the numbers of pests to predators. Community: Create informational flyers to distribute throughout the neighborhoods to home gardeners to present images and descriptions of beneficial insects to protect and harmful insects to beware of.	NGSS Science and Engineering Practice: Asking Questions and Defining Problems CCSS.ELA-LITERACY.SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Discovering Beneficial Insects	Garden and Food Systems (GFS)	<p>GFS.3.2 Design a plan to support and increase beneficial insects in the garden.</p>	<p>Have teams elaborate on their research by preparing and presenting a plan for increasing beneficial insects in their garden, for example by planting a particular perennial to attract them. Conduct a class vote on which plan to pursue.</p> 	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>Enjoy a farm fresh dish, such as that prepared in Kitchen Lesson #6: Cooking with What's In Abundance. As you enjoy it, give thanks to the predatory insects that ate the pests and allowed your crop to grow.</p>	<p>Classroom: Chart votes on a bar graph to compare.</p>	<p>NGSS Science and Engineering Practice: Constructing Explanations and Designing Solutions.</p> <p>CCSS.MATH.CONTENT.3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.</p>	


GRADE 3 | WINTER


Each activity described below should be designed to last approximately 45 minutes.



Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Planting for Beneficial Insects	Garden and Food Systems (GFS) Garden Tools and Equipment (GTE)	GTE.3.1-5 Garden Tools and Equipment	Explain how to use measuring tape and garden string to measure, stake out, and mark a new bed. Then demonstrate safe and proper use of a hoe for weeding. Have students elaborate by preparing the bed for planting together. As a class, implement the plan that won votes in Lesson #6: Discovering Beneficial Insects (for example by strategically planting certain plants to attract predatory insects that will reduce the population of a specific pest). Have students create signs for the beneficial insect garden bed and include information about which insects the plants are meant to attract, pests they eat, and crops they're helping guard. For example, a sign might say: "This calendula attracts lady bugs which eat our aphids and protect our salad greens!"	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	As you enjoy any garden fresh produce in the kitchen, look for any evidence of crop damage by pests. Then review and celebrate the role of beneficial insects in protecting that crop from any more damage.	Community: Start seeds for perennials that attract beneficial insects in containers. Send seedlings home with students to plant at home or to give to others.	CCSS.MATH.CONTENT.3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. CCSS.ELA-LITERACY.SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on <i>grade 3 topics and texts</i> , building on others' ideas and expressing their own clearly.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
8. Web of Life	Garden and Food Systems (GFS)	GFS.3.3 Describe a food web.	Give each student a card with a plant or animal from your garden on it. Also include a card with a farmer or gardener on it, and one with a person who buys and eats food on it. Have students stand in a circle and give a ball of yarn to one student in the circle. Challenge them to explore interdependence by tossing the yarn to another student and suggesting how they are connected. For example, "I'm a sunflower and I'm connected to the worm because the worm made soil for me to grow in." Continue until you have a web. Discuss how everything in the garden is interconnected. Use this to explain the term food web. 	CLS.2 Students cooperate and communicate well with each other.	In the garden, ask students to add cards representing different roles they know people play in kitchens (chefs, dishwashers, etc). Add these people to the web and discuss how they interact with the food web.	Classroom: Write a narrative in sequence in which each of the "characters" from the webbing activity in this garden lesson connects to the next. Instead of a plot of beginning, middle, and end it can be modeled as a "circular tale" like <i>If You Give a Mouse a Cookie</i> by Laura Numeroff.	CCSS.ELA-LITERACY.W.3.3.A Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally. NGSS Science and Engineering Practice: Developing and Using Models.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>9. Mapping Magic Spaces</p>	<p>Garden and Food Systems (GFS)</p>	<p>GFS.3.3 Describe a food web.</p>	<p>Give each student a string tied in a circle with about a 2-foot diameter. Have students find a “Magic Space” where they can sit alone in the garden and place their string circles. Once in their spots, have them explore, drawing maps showing everything they can see in their circles. Then have them draw arrows connecting as many things they can, labeling the arrows. For example, you might have an arrow from a bird to a bug to a plant that says “Bird eats bugs off plants.” Challenge them to find as many arrows as they can. Come together, share out the connections, add your own ideas, and explain that all of these connections represent the food web in the garden. Have students look for arrows that would connect between their circles.</p>	<p>PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.</p>	<p>When students work with wheat in Kitchen Lesson #9: Threshing, Winnowing, and Grinding Wheat, they will explore systems in a similar way to reinforce the idea that things work together. In the kitchen lesson, they will discuss or diagram connections between different elements of the wheat process, such as “Wheat goes into bread which goes into us; wheat stalks go into compost which goes out to the garden,” etc.</p>	<p>Classroom: Write a narrative story with the “Magic Space” as the setting and the animal inhabitants as the characters.</p> <p>Community: Imagine “Magic Spaces” throughout your community and what connections may exist in them between the humans, the land, and the animals.</p>	<p>NGSS Science and Engineering Practice: Developing and Using Models.</p> <p>Social Studies: Geography.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
10. Researching Biogerions	Weather and Seasons, Climate and Geography (WSCG)	WSCG.3.1 Define and map the bioregions of your state	Assign each team of students a bioregion from your state to explore via research. Provide them with key questions to answer, including ecology, elevation, climate, population centers, and the like. Have each team research and then elaborate by presenting their bioregion. As they share out, add their bioregion to a large, collective map of your state for the entire class to see. Save your map for future lessons. 	CLS.2 Students cooperate and communicate well with each other.	In the garden, bring in a common item of produce from each bioregion and do a tasting of a regional food after each research team presents their findings on their region. Discuss the benefits of local, seasonal foods.	Classroom: Have each group write an informational paragraph about their bioregion including a main idea, detail sentences, and a conclusion sentence. Community: Interview people that live in each of the bioregions to learn about how the ecology of the region affects their lifestyle and livelihood.	NGSS Science and Engineering Practice: Analyzing and Interpreting Data. Social Studies: Geography CCSS.ELA-LITERACY.SL.3.2 Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
11. Tracing the Journey of Food	Weather and Seasons, Climate and Geography (WSCG)	WSCG.3.1 Define and map the bioregions of your state. GFS.3.4 Define local food system.	Select one bioregion from your state and one crop that is grown there. Have student teams work together to trace the journey that crop would take to turn from a plant or animal in that region into a processed food in a store in another region. Discuss as a class how all of the bioregions interact in the food system as we grow crops in one place, process them in another, transport them for sale in another, and so on. 	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In the garden, have students contrast the journey of food they just researched with the journey of wheat from farm to table in Kitchen Lesson #9: Threshing, Winnowing, and Grinding Wheat and Kitchen Lesson #10: Old-Fashioned Pretzels.	Classroom: Write letters from a crop as it travels along its journey, similar to the model of <i>The Adventures of a Plastic Bottle</i> by Alison Inches. Community: Work with the local farmers market to highlight the journey of certain local products from the farm to the market.	Social Studies: Geography. CCSS.ELA-LITERACY.W.3.3 Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.	National Health Education Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>12. Bioregions and Local Food Systems</p> 	<p>Garden and Food Systems (GFS)</p>	<p>GFS.3.4 Define local food system.</p> <p>WSCG.3.1 Define and map the bioregions of your state</p>	<p>Engage students by leading a kinesthetic activity reviewing the plant life cycle from seed to plant for a plant that grows in your bioregion. Explore how that food (oranges, for example) is harvested, then travels across the state to be juiced and frozen into popsicles before traveling to the farmers market to be sold to the community. Explain this process further by reading a text about local food systems and elaborate on student understanding by writing a letter to a local farmer showing gratitude for the work and care they contributed to every step from farm to market. Students can be evaluated based on the understanding of the local food system they express in their letter.</p> 	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	<p>Prepare a dish in the kitchen featuring key crops from your state. For each crop, highlight the region it was grown and discuss all of the people that got it to where it is now.</p>	<p>Community: Create a market stand and sell (or give away!) your food products, for example in front of the school at the end of the school day.</p>	<p>Social Studies: Economics.</p> <p>CCSS.ELA-LITERACY.W.3.3 Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.</p>	<p>Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>


GRADE 3 | SPRING


Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Garden Caretakers	Garden Planning and Maintenance (GPM)	GPM.3.2 Describe and/or demonstrate proper weeding techniques. GTE.4.1-4 Garden Tools and Equipment	Review safe use of hoes, digging forks, hand forks, or any other relevant tools. Guide students in using division strategies to divide tasks and tools. Then rotate through a Garden Care Station Rotation: <ul style="list-style-type: none"> • Weed a bed together and prepare it for planting • Flip the compost pile • Plant a Healthy Snack Bed (designed in Kitchen Lesson #12: Healthy Snack Plan) or identify other necessary tasks at the time, such as harvesting something in abundance, picking snails off of plants, or removing dead flowers from a bush. <p>If you made popsicles in Lesson #12: Bioregions and Local Food Systems, celebrate your hard work by enjoying them together.</p>	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	During this garden lesson, as you frame the student roles as garden caretakers, make the connection between the work they're doing in the garden, the food growing, and the dishes they're preparing in the kitchen.	Community: Plan workdays at other community gardens to weed, flip compost, and whatever else needs to be accomplished.	CCSS.MATH. CONTENT.3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Preparing a Bed for Planting	Garden Planning and Maintenance (GPM)	GPM.3.1 Calculate number of seeds and seed spacing for garden beds. GTE.3.1-5 Garden Tools and Equipment	Review safe use of hand weeding tools, hand trowels, and any other relevant tools. Have students explore gardening by preparing a bed together where they will plant plants that require supports, such as sugar snap peas, pole beans, cane fruits, or tomatoes. Then have them use spacing information from a seed packet, transplant label, or planting guide to map out where in the bed you will plant each plant. Have them measure with rulers, and mark each planting area with a hand trowel, chopstick, or the like. Once spacing looks good, have them plant seeds or transplant plants that require support into each spot and water in.	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	Incorporate peas and/or beans into recipes such as in Kitchen Lesson #18: Sesame Peanut Noodle Salad or Grade 4 Kitchen Lesson #6: Nutty Buttery Green Beans.	Classroom: Write a poem about what is your support to help you climb higher to your fullest potential. Community: Teach others at a community garden how to use spacing information from seed packets and map out where to plant each seed.	NGSS Science and Engineering Practice: Using Mathematics and Computational Thinking. CCSS.MATH.CONTENT.3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Designing Supports	Garden Planning and Maintenance (GPM)	<p>GPM.3.3 Identify needs and create support systems for various plants (beans, peas, tomatoes, cane fruit).</p> <p>GTE.3.1-5 Garden Tools and Equipment</p>	Have students explore various trellising equipment in the garden. Demonstrate how to safely and properly install trellising equipment. Assign a plant to each team of 4–6 students. Challenge teams to elaborate on their learning by designing and building their own support structure for their plant. Have them revisit to compare designs and modify as plants grow over time.	<p>PLS.6 Students actively seek creative and resourceful solutions.</p> <p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	Compare support structures in the garden with those in cooking (tiered cakes, braided pie tops, etc). Discuss how you might use climbing plants grown in the garden for cooking. In the kitchen, prepare a dish using the climbing plants students grew in the garden. For example, you can incorporate peas or beans into Kitchen Lesson #18: Sesame Peanut Noodle Salad or Grade 4 Kitchen Lesson #6: Nutty Buttery Green Beans .	<p>Classroom: Write a “How to” Guide for the developed trellis design.</p> <p>Community: Build a bean teepee, tunnel, or other design for a local preschool or community garden.</p>	<p>NGSS Science and Engineering Practice: Constructing Explanations and Designing Solutions.</p> <p>NGSS.3.ETS1.A Defining and Delimiting Engineering Problems.</p> <p>NGSS.3.ETS1.B Developing Possible Solutions.</p> <p>NGSS.3.ETS1.C Optimizing the Design Solution.</p> <p>CCSS.ELA-LITERACY.SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Flower Dissection	Plants (P)	P.3.1 Describe structures and functions of flowers.	Have students dissect flowers with easily visible structures, such as passion flowers, lilies, gladioli, tulips, or daffodils. Have them explore, looking at each part and guessing what its function is based on its structure. Have them share out and explain the scientific name for a few key parts: pistil, stamen, petals, and ovary. Then have them elaborate, finding another flower in the garden and look for those same structures, which they can draw and label in their journals. 	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.	Garnish a salad or a dish such as in Kitchen Lesson #14: Biscuits with Berries with edible flowers from the garden.	Classroom: Read <i>The Reason for a Flower</i> by Ruth Heller. Community: Find flowers growing in your community and look closely to identify parts.	NGSS Science and Engineering Practice: Engaging in Argument from Evidence. CCSS.ELA-LITERACY.SL.3.1.D Explain their own ideas and understanding in light of the discussion.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Build a Flower	Plants (P)	P.3.1 Describe structures and functions of flowers.	Have students elaborate on what they learned from dissecting flowers to build their own model flowers, using recycled crafting materials such as cardboard, construction paper, etc. Each flower must include a structure for attracting pollinators, one for giving off pollen, and one for collecting pollen. 	PLS.6 Students actively seek creative and resourceful solutions.	In the kitchen, use the concept of structure and function as you introduce or review kitchen tools in order to help students recognize how this concept cuts across disciplines. For example, the shape of a spatula is flat (structure) in order to slide under things (function).	Classroom: Write an informational paragraph to accompany the flower model describing each of the structures and their purpose. Community: Display models in a local library to inform patrons of the flower parts and the purpose of flowers.	NGSS Science and Engineering Practice: Developing and Using Models. CCSS.MATH.CONTENT.3.G.A.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Planting Wheat for Next Year's Grade 3 Class	Garden Planning and Maintenance (GPM)	<p>GPM.3.1 Calculate number of seeds and seed spacing for garden beds.</p> <p>GPM.3.2 Describe and/or demonstrate proper weeding techniques.</p>	Have students explore and measure a garden bed that is prepared for planting. Guide them in calculating the number of wheat seeds needed to fill the bed. Explain that they are planting the wheat now for next year's Grade 3 class to harvest. Then plant that crop together.	CLS.2 Students cooperate and communicate well with each other.	Remind students of their experience threshing, winnowing, and grinding wheat in Kitchen Lesson #9: Threshing, Winnowing, and Grinding Wheat . Review the anatomic and nutritional differences between whole wheat and white flour.	Classroom: Read <i>From Wheat to Bread</i> by Stacy Taus-Bolstad.	<p>NGSS Science and Engineering Practice: Using Mathematics and Computational Thinking.</p> <p>CCSS.MATH.CONTENT.3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</p>	

GRADE 4 | Garden

SCOPE & SEQUENCE



GRADE 4 STANDARDS

At the end of Grade 4, students will be able to:

- Demonstrate knowledge of the structure and function of plant parts, specifically of seeds and seed parts.
- Demonstrate knowledge of photosynthesis.
- Demonstrate knowledge of soil management strategies in the garden.
- Demonstrate knowledge of how geographic place and climate influence the foods growing in a bioregion.
- Demonstrate knowledge of how latitude and altitude influence plant growth.
- Demonstrate knowledge of how to identify, assess, and resolve stress and/or poor health of plants.
- Demonstrate knowledge of a regional food system.
- Demonstrate knowledge of urban garden design.


GRADE 4 | FALL

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
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START THE YEAR *Schoolwide Garden Work Party with Families/Local Community*

<p>1. Welcome to the Garden!</p>	<p>Personal and Community Life Skills (PLS and CLS)</p>		<p>Engage students by having them share their names and something in the garden they think might have changed over the summer. Have them explore teamwork through an age-appropriate a teambuilding exercise. Explain behavior expectations by reviewing garden agreements established in Grade 3 Lesson #1: Welcome to the Garden! Review Personal and Community Life Skills. Then have students elaborate upon these agreements as they walk around the space and explore the garden in search of things that changed over the summer. Gather, share out, and record observations together.</p>	<p>PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.</p>	<p>Draw connections between garden agreements and kitchen agreements.</p>	<p>Draw connections between garden agreements and classroom agreements.</p>	<p>CCSS.ELA.4.SL.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse patterns building on others' ideas and expressing their own clearly.</p>	
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Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>2. Dissecting Seeds</p>	<p>Plants (P)</p>	<p>P.4.1 Describe structures and functions of seeds.</p>	<p>Give students pre-soaked bean seeds to dissect. Have them explore, looking closely with magnifying glasses and drawing each structure they can find. Challenge students to look at the structures for evidence of the function they serve, and write their best guesses. Then tell students the scientific name of each structure and explain the function each serves: Use an analogy of a baby plant (embryo) needing a coat (seed coat) for protection and a lunchbox (endosperm) to provide food while it's underground.</p> 	<p>PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.</p>	<p>As students dissect seeds and learn the names of each part in the garden, ask them to remind you of the difference between whole wheat and white wheat in terms of seed structures and functions (learned in Grade 3 Kitchen Lesson #9: Threshing, Winnowing, and Grinding Wheat). Both wheat flours contain the seed's endosperm, but in white wheat the germ (embryo) and bran (seed coat) have been removed. Review the nutritional benefits of whole wheat.</p>	<p>Classroom: Write a fictional descriptive paragraph about a baby seed that includes facts about its structure and features that prepare it for growth.</p>	<p>NGSS Science and Engineering Practice: Engaging in Argument from Evidence.</p> <p>CCSS.ELA-LITERACY.SL.4.1.D Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
3. Planting Seeds	Plants (P)	<p>P.4.1 Describe structures and functions of seeds.</p> <p>GTE.4.1-4 Garden Tools and Equipment</p>	Review safe tool use, and then have students explore seed planting by planting some cool weather crops from seed, such as radishes or greens. After they plant, review the structures inside those seeds (from Lesson #2: Dissecting Seeds) and explain how the baby plants will get food while they're underground. Then explain how they will get food once their sprouts come up above the ground by making their own food through a process called photosynthesis.	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p> <p>PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.</p>	If possible, incorporate the radishes and greens planted in this lesson into Kitchen Lesson #7: Green Salad with French Dressing.	<p>Classroom: Create a timeline of a seed's life showing how the structures develop and where the energy comes from to stimulate their growth.</p> <p>Community: Plant similar plants in a community garden to compare their growth, and therefore how they are able to make their own food in each location.</p>	<p>NGSS Science and Engineering Practice: Planning and Carrying Out Investigations.</p> <p>CCSS.ELA-LITERACY.SL.4.1.C Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Identifying Pests	Garden and Food Systems (GFS)	GFS.4.1 Identify pests in the garden.	Provide students with a field guide to common garden pests and the evidence they leave. (Make sure your guide includes examples of specific pest damage that are common in your garden.) Have teams explore the garden for as many examples of pest damage as they can find. For each example, have them use their field guide to try to identify the culprit. Then have them elaborate by sharing their findings with one another.	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.	In the garden, research insects eaten in various cultures and identify which food group insects fall into (protein).	Classroom: Use rhyming words to write limericks to connect visible pest damage in the garden to the name of the pest. Community: Create informational flyers to distribute throughout neighborhoods to home gardeners to present images and descriptions of pests and pest damage.	NGSS Science and Engineering Practice: Engaging in Argument from Evidence. CCSS.ELA-LITERACY.SL.4.4 Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>5. Garden Troubleshooting</p>	<p>Plants (P)</p>	<p>P.4.4 Understand signs of distress or poor health in plants and create solutions.</p>	<p>Have students go on a scavenger hunt in the garden, exploring for specific signs of distress or deficiency in plants such as wilting from lack of water, holes in leaves from snails, yellowing leaves from nutrient deficiency, etc. Once students have found evidence of distress in plants, assign each team a type of distress and challenge teams to research and come up with a solution (i.e. a barrier against snails or adding compost for a nutrient deficiency). Have students record their plans in their journals for Lesson #6: Preventing Pest Activity.</p>	<p>PLS.6 Students actively seek creative and resourceful solutions.</p>	<p>Discuss the role of nutrients and phytonutrients in keeping plants healthy, and also in keeping us healthy. In the garden, enjoy a fresh fruit or vegetable and then thank the plant for the nutrients it gives you.</p>	<p>Classroom: Create charts to show findings, modeled either as cause/effect or problem/solution.</p> <p>Community: Take photos to share with community of common signs of distress and tested solutions to them.</p>	<p>NGSS Science and Engineering Practice: Engaging in Argument from Evidence.</p> <p>NGSS Science and Engineering Practice: Asking Questions and Defining Problems.</p> <p>NGSS Science and Engineering Practice: Constructing Explanations and Designing Solutions.</p> <p>CCSS.ELA-LITERACY.SL.4.1.C Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.</p>	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Preventing Pest Activity	Garden and Food Systems (GFS)	GFS.4.2 Create a plan to mitigate pests in the garden. GTE.4.1-4 Garden Tools and Equipment	Have each team from Lesson #5: Garden Troubleshooting elaborate on their research, presenting a plan for mitigating damage. Once you've approved their plan, have teams implement their plans (for example, by placing floating row cover over a crop or planting a plant that attracts a predatory insect near a plant that has a lot of pest damage).	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In the garden, have students write letters to the pests explaining what crops are growing, what dishes they plan to cook in the kitchen using those crops, and why they want to protect them.	Community: Create a podcast describing ways that have been researched or tested to prevent pest damage in the garden.	NGSS Science and Engineering Practice: Constructing Explanations and Designing Solutions. CCSS.ELA-LITERACY.SL.4.4 Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.	


GRADE 4 | WINTER


Each activity described below should be designed to last approximately 45 minutes.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Photo-synthesis	Plants (P)	P.4.2 Explain photosynthesis.	Remind students that once a seed germinates, the sprout above the ground begins to make its own food. Use a role play to explain photosynthesis. Assign roles of a plant gathering sunlight, carbon dioxide (from a human or other animal exhaling), and water from the soil to create more plant material, including new food for us. Then harvest something you planted in the fall, such as lettuce and radishes, to make a salad. As you enjoy the salad, have students elaborate by sharing how the plant used the sun's energy to make food that now gives us energy. Collect food scraps for your worm bin to be created in Lesson #8: Building a Worm Bin. 	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.	Prepare a salad, such as prepared in Lesson #7: Green Salad with French Dressing. As you prepare and enjoy, discuss the function of the leaves in gathering sunlight for photosynthesis.	Community: Create a game for younger students that models photosynthesis and the process of collecting all plant needs.	NGSS Science and Engineering Practice: Constructing Explanations.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
8. Building a Worm Bin	Soil (S)	<p>S.4.1 Identify and describe structure and function of organisms living in soil.</p> <p>GTE.4.1-4 Garden Tools and Equipment</p>	<p>Explain to students why and how to build a worm bin. Have them elaborate by building one together. Have students work together to shred and moisten newspaper for bedding, collect food scraps to feed the worms, and then add some red wiggler worms. For more information on building a worm bin, visit Life Lab's Resource Page.</p> 	<p>PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.</p> <p>CLS.2 Students cooperate and communicate well with each other.</p>	Add food scraps from the kitchen into the worm bin.	<p>Classroom: Read <i>Wiggling Worms at Work</i> by Wendy Pfeffer.</p> <p>Community: Create a "How to" Guide about building a worm bin to share with your community.</p>	<p>NGSS Science and Engineering Practice: Planning and Carrying Out Investigations.</p> <p>CCSS.ELA-LITERACY.W.4.2.D Use precise language and domain-specific vocabulary to inform about or explain the topic.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. Geography and Food, Part 1	Weather and Seasons, Climate and Geography (WSCG)	WSCG.4.1 Understand and describe how geographic place and cultural significance might influence what and when foods grow in your location.	Assign each team of about 4 students a country and have them explore and research the most common fruits grown there and one of the most common dishes eaten there. Include in your list of countries 2 countries located at similar latitudes, such as, France and Japan; Iraq and Mexico; Senegal and Nicaragua; Kenya and Ecuador; Northern Australia and Mozambique; Southern Australia and Argentina; and New Zealand and Chile. Also include your location in the US and a country at a similar latitude, which you can find online, such as available at Wikipedia's List of Countries by Latitude . Have teams elaborate, sharing out their key crops and dishes. As they do, mark on a collective world map. 	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In the garden, prepare and enjoy a few of the common crops researched by the students. Discuss the cultural and nutritional significance of each crop.	Classroom: Read sections of <i>What the World Eats</i> by Faith D'Aluisio and Peter Menzel. Community: Interview members of the community who have roots in other countries on the common fruits and common dishes from the area.	Social Studies: Geography. Social Studies: Diversity and Community.	National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>10. Geography and Food, Part 2</p>	<p>Weather and Seasons, Climate and Geography (WSCG)</p>	<p>WSCG.4.2 Understand the effect of latitude on foods from various places around the world.</p>	<p>Look at the map from Lesson #9: Geography and Food, Part 1 together. Introduce and define the term “latitude.” Have students explore and identify countries with similar latitudes. Notice if their fruits or dishes are similar or different. Explain that having a similar latitude means they have a similar climate, meaning they can often grow similar crops. Then brainstorm with students reasons why they might still have different key crops and dishes. If they don’t mention the following factors, add geographical conditions such as elevation, oceans, etc. and also cultural traditions to the list. Read aloud <i>Bread Bread Bread</i> by Ann Morris and discuss how culture impacts food preparation and traditions.</p> 	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	<p>Hang a world map in the kitchen and stick on pictures of common foods grown in various regions.</p>	<p>Classroom: Research one crop and how it’s prepared differently in a variety of different world cultures.</p> <p>Community: Visit local restaurants that represent different world cultures, and compare and contrast the menu items for the crops that they feature.</p>	<p>NGSS Science and Engineering Practice: Analyzing and Interpreting Data.</p> <p>CCSS.ELA-LITERACY.W.4.7 Conduct short research projects that build knowledge through investigation of different aspects of a topic.</p>	<p>National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.</p>



Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
11. The World Travels of a Fruit	Garden and Food Systems (GFS)	GFS.4.3 Define a regional food system. WSCG.4.1 Understand and describe how geographic place and cultural significance might influence what and when foods grow in your location.	Bring in a fruit grown somewhere out of your state but within your region of the US (i.e. Pacific Northwest, the South, the Northeast, etc) for students to explore. Tell students where it was grown, and ask them to brainstorm all the steps to get it to where you are now (a farmer, a packer, a transporter). Then have students elaborate on this concept by using the produce to create a simple snack in 2 ways, following 2 different cultural traditions, such as orange slices with and without dried chile de arbol sprinkled on top (a Mexican tradition). Remind students that cultural traditions are influenced by what can grow in a region. 	PLS.6 Students actively seek creative and resourceful solutions. CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	Have students write thank you letters to farmers in their region for a particular food the farmer grew and that the students prepared in the kitchen recently.	Classroom: Read the book <i>Before We Eat</i> by Pat Brisson. Community: Interview community members that work along the food system (farmer, packer, transporter, etc).	CCSS.ELA-LITERACY.W.4.3.C Use a variety of transitional words and phrases to manage the sequence of events. NGSS Science and Engineering Practice: Obtaining, Evaluating and Communicating Information.	National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health. National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Exploring our Worm Habitat	Soil (S)	S.4.2 Describe the role of fungi, bacteria, and invertebrates in soil.	Give pairs of students a scoop of worm castings from the worm bin. Have them use magnifiers and tweezers to explore, looking for every type of item they can find in there. Then have them sort into living and nonliving objects. If they don't mention fungus, have them look for thin little hairs going through the castings and explain that these are parts of fungus. Explain that the fungus, the worms, and other insects (also known as invertebrates), and something so small we can't see it (called bacteria) are all doing the work of decomposing the food scraps in the bin. We call these "The Garden FBI." 	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.	Prior to exploring the worm bin, ask students to recall some of the foods they put in there from the kitchen and when they put them in. Then have them predict what they'll see before they open the bin.	Classroom: Further research fungus, bacteria, and invertebrates to build understanding of all of the decomposers at work that may be too small to see. Community: Visit other active worm bins in the community to compare and contrast what decomposers can be found.	NGSS Science and Engineering Practice: Engaging in Argument from Evidence CCSS.ELA-LITERACY.W.4.2.C Link ideas within categories of information using words and phrases (e.g., another, for example, also, because).	

GRADE 4 | SPRING

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Mapping a Bed	Garden Planning and Maintenance (GPM)	GPM.4.3 Calculate square footage of garden beds and paths. GTE.4.1-4 Garden Tools and Equipment	Assign a garden bed or section of garden path to each team of 3-4 students. Have them use rulers or measuring tape to measure the edges of the bed. Explain how to calculate the surface area in square feet. Then have students elaborate, calculating how many of a particular crop, such as tomatoes (approx 1 per 2 square feet) or corn (approx. 1 per 1 square foot), will fit in each bed. Have them record in their journals for Lesson #14: Garden and Kitchen Math.	CLS.1 Students demonstrate problem solving and resolve conflict as a team. CLS.2 Students cooperate and communicate well with each other.	When the students are using baking sheets in the kitchen (such as prepared in Kitchen Lesson #14: Ooey Goey Blueberry French Toast), have students use rulers to measure and calculate the volume of rectangular kitchen objects such as baking sheets, bread baking tins, and the like. Discuss how this information is used by chefs.	Community: Engage students in leading a workshop for lower grades around the effectiveness of square foot gardening and how to implement it in home gardens.	CCSS.MATH. CONTENT.4.MD.A.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. NGSS Science and Engineering Practice: Developing and Using Models	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Garden and Kitchen Math 	Garden Planning and Maintenance (GPM)	GPM.4.2 Calculate amounts of produce to grow in school garden.	Engage students by reading aloud <i>Minnie's Diner: A Multiplying Menu</i> by Dayle Ann Dodds. Then allow students to explore how to determine a multiplier for their salsa recipe to serve all of the students in their class. Explain to students how to use that multiplier to determine the amount of ingredients they will need for their multiplied menu. Then elaborate by determining exactly how much produce would need to be planted to make this recipe for the whole class. Student work can be evaluated with the worksheet students use to make their calculations. 	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In Lesson #16: Planting for a Feast , students will plant the produce planned for in this lesson. Then in Grade 5 Kitchen Lesson #5: Fiesta Quesadillas with Simple Salsa and Holy Moly Guacamole students will use the produce they planted together. At this time, they can reflect on how accurately they estimated the yields when they planted.	Classroom: Have students write word problems about farmers and chefs calculating produce amounts. Cafeteria: Use an item in the lunch line or salad bar to estimate how many plants were required to supply that amount of produce.	CCSS.MATH.CONTENT.4.OA.A.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. CCSS.ELA-LITERACY.W.4.2.D Use precise language and domain-specific vocabulary to inform about or explain the topic.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Planning for a Feast	Garden Planning and Maintenance (GPM)	GPM.4.1 Demonstrate ability to create a planting map for the garden.	Have students use their findings about how many of each type of plant they'll need from Lesson #14: Garden and Kitchen Math to plan what to plant in their garden and where. Have them explore the garden and create a blank map of it, featuring the cardinal directions, as well as empty beds where they can plant and any other key garden landmarks. Explain the importance of placing tall plants along the north end of the beds so that they don't shade the shorter plants. Have student teams use seed packets or a planting guide to find the spacing requirements for each plant, and then have them elaborate by mapping where each plant could go in the garden in their journals. 	PLS.6 Students actively seek creative and resourceful solutions. CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In Lesson #16: Planting for a Feast , students will plant the produce planned for in this lesson. Then in Grade 5 Kitchen Lesson #5: Fiesta Quesadillas with Simple Salsa and Holy Moly Guacamole students will use the produce they planted together.	Community: Offer garden planning services, requesting bed size and plant preferences and allowing students to develop a garden plan for community members.	Social Studies: Geography. NGSS Science and Engineering Practice: Developing and Using Models.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Planting for a Feast	Plants (P)	P.4.3 Know how and when to plant seeds. GTE.4.1-4 Garden Tools and Equipment	Using the life-sized maps they created (and you've evaluated and approved) in Lesson #15: Planning for a Feast , have students plant available beds to grow the produce for the dishes they will be preparing in the fall, such as Simple Salsa, There's a Chef in My Soup! . Review tool safety, and explain how to use a round point shovel to collect finished compost to add to a bed. Have students elaborate by preparing the beds for planting and then use hand trowels to mark in the bed where they will plant each plant. Finally, they may plant and water in their crops.	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	In Grade 5 Kitchen Lesson #5: Fiesta Quesadillas with Simple Salsa and Holy Moly Guacamole students will use the produce they planted together.	Community: Invite members of the community to join you for this planting day.	NGSS Science and Engineering Practice: Planning and Carrying Out Investigations. CCSS.ELA-LITERACY.SL.4.1.B Follow agreed-upon rules for discussions and carry out assigned roles.	
17. Planting Beans	Garden Tools and Equipment (GTE)	GTE.4.1-4 Garden Tools and Equipment	Review safe tool use. Have students elaborate on their garden skills learning by working as independently as possible to prepare beds and then plant a variety of beans into them for harvest in the fall, including green, red, black and cannellini beans.	PLS.1. Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	Have students harvest, store, and use the beans grown in this lesson in Grade 5 Kitchen Lesson #10: Cooking Beans , and Grade 5 Kitchen Lesson #11: Beans Galore Salad .	Community: Invite members of the community to join you for this planting day.	CCSS.ELA-LITERACY.SL.4.1.B Follow agreed-upon rules for discussions and carry out assigned roles.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Garden Caretaker Station Rotation	Garden Tools and Equipment (GTE)	<p>GTE.4.1-4 Garden Tools and Equipment</p> <p>P.4.4 Understand signs of distress or poor health in plants and create solutions.</p>	<p>Review safe tool use. Divide class into 3 groups. Have each group spend 10-15 minutes elaborating on their garden learning at each of the following stations: (1) Sign-Making: Have students paint signs for their garden beds, naming the crops and possible recipes, such as "Salad Bed: Lettuce, Carrots and Cucumbers." (2) Weeding: Select an area and clear it completely of weeds; and (3) Looking for damage: Check all around the garden for signs of damage or disease and implement solutions learned in Lesson #5: Garden Troubleshooting (such as removing snails, spraying a crop with a cayenne pepper spray, or covering a bed with floating row cover) to improve growing conditions.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>As you frame the student roles as garden caretakers, make the connection between the work they're doing in the garden, the food growing, and the dishes they're preparing in the kitchen.</p>	<p>Classroom: Have students write directions for a garden caretaking task, such as "How to Weed" or "How to Paint a Sign."</p>	<p>VA:Cr2.2.4a When making works of art, utilize and care for materials, tools, and equipment in a manner that prevents danger to oneself and others.</p>	

GRADE 5 | Garden



SCOPE & SEQUENCE



GRADE 5 STANDARDS


At the end of Grade 5, students will be able to:



- Demonstrate knowledge of genetic traits in plants.
- Demonstrate knowledge of geographic and geologic factors that shape soil.
- Demonstrate knowledge of how to make soil for seed germination and garden beds.
- Demonstrate knowledge of the cultural origin of food.
- Demonstrate knowledge of how plants have migrated around the world.
- Demonstrate knowledge of seed to plate process.
- Demonstrate understanding of how food systems are connected to social, economic, political, and environmental systems.

GRADE 5 | FALL


Each activity described below should be designed to last approximately 45 minutes.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
START THE YEAR <i>Schoolwide Garden Work Party with Families/Local Community</i>								
1. Welcome to the Garden!	Personal and Community Life Skills (PLS and CLS)		Engage students by having them share their names. Have them explore teamwork through an age-appropriate teambuilding exercise. Explain behavior expectations by reviewing garden agreements established in Grade 4 Lesson #1: Welcome to the Garden! Review Personal and Community Life Skills. Then put students into teams of 3. Have them elaborate on teamwork by giving each team a word, such as “shiny” or “fuzzy.” Have them collect objects that share that particular attribute, and then bring their collections back to the other groups. Have the other groups try to guess their word. Hand out journals that students will use to reflect at the end of each lesson.	PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.	Make connections between garden agreements and kitchen agreements.	Classroom: Make connections between garden agreements and classroom agreements.	CCSS.ELA-LITERACY.SL.4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others’ ideas and expressing their own clearly.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>2. Mapping Influences on What is Grown</p>	<p>Weather and Seasons, Climate and Geography (WSCG)</p>	<p>WSCG.5.2 Map the geographic, cultural, and historical influences that shape what is grown (maritime climate, altitude, soil composition, climate) in your bioregion.</p>	<p>Bring in a food that is truly unique to your region, such as steamed okra, fried green tomatoes, or the like. Explore with students through a group brainstorm. Then have them elaborate, recording independently in their journals the geographic, cultural, and historical influences represented in that food. Brainstorm together and have students independently map all of the influences that shape what is grown in your bioregion.</p> 	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	<p>In this lesson, call upon examples of crops grown in the garden that reflect the geography, culture, and history of your region.</p>	<p>Classroom: Research any historical relevance of the crop in other parts of the world using books such as <i>How Carrots Won the Trojan War</i> by Rebecca Rupp.</p> <p>Community: Interview members of your community on their memories and experiences of the dish.</p>	<p>Social Studies: Geography.</p> <p>Social Studies: Cultural Traditions.</p>	<p>National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>3. Saving Bean Seeds</p> 	<p>Plants (P)</p>	<p>P.5.1 Understand how to identify and cultivate genetic traits in plants.</p>	<p>Engage students by discussing the benefits of saving seeds. Have students explore dry beans planted last spring. Have each student look for about 4 of the very healthiest, best looking bean pods to save for next year. Explain how to harvest and shell beans together and place into a bowl. Use coin envelopes or have students make <u>origami seed envelopes</u>. Have them elaborate, labeling with bean type and relevant planting information. Have students present the seeds to the new Grade 4 class to plant in spring.</p> 	<p>CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.</p>	<p>Use the rest of the beans in Kitchen Lesson #10: Cooking Beans and Kitchen Lesson #11: Beans Galore Salad.</p>	<p>Classroom: Create a class card to give to the Grade 4 students along with the beans telling them what they have to look forward to in garden class this year.</p>	<p>CCSS.ELA-LITERACY.W.4.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</p> <p>Social Studies: Citizenship, Cultural Traditions</p>	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Seed Movers	Weather and Seasons, Climate and Geography (WSCG)	WSCG.5.1 Describe the effect of human migration on seeds and plants.	Engage students by reading <i>Miss Rumphius</i> by Barbara Cooney to students. Explore real seeds and the structures that help them travel on the wind, on water, on animal's fur, etc. Explain the ways seeds travel. Then focus on human migration, and discuss examples of seeds being transported by humans for agriculture.	PLS.4 Students are active and engaged learners who show up on time, prepared to learn and participate, and able to manage their time.	In the garden, enjoy okra or black eyed peas together, and discuss how these seeds and others were originally brought to the Americas by enslaved Africans.	Classroom: In contrast to the fictional text of <i>Miss Rumphius</i> , write an informational text about seeds traveling. Community: Research restrictions around traveling with seeds, fruits, or vegetables and develop understanding of positive and negative impacts.	Social Studies: Geography. Social Studies: Cultural Traditions. NGSS Science and Engineering Practice: Constructing Explanations.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>5. Contributing to the Community</p>	<p>Garden Planning and Maintenance (GPM)</p>	<p>GPM.5.4 Identify a need in the school or community and create a garden plan to address it.</p>	<p>Engage students in a discussion of how to contribute to the school community. Explore ideas by brainstorming people from the school (for example, the food service director, secretary, or custodian) you could invite to class to interview about how they could use the garden to address a school need (for example by growing something for the salad bar, or planting flowers for the classrooms). For each person students mention, brainstorm questions you could ask them. Have students elaborate on their learning, practicing asking their interview questions. Then help students invite those people in for Lesson #6: Contributing to the School Community.</p> 	<p>PLS.4 Students are active and engaged learners who show up on time, prepared to learn and participate, and able to manage their time.</p>	<p>In this lesson, consider with students how they also might use their cooking skills to address a need in the school or community.</p>	<p>Classroom: Create and conduct a written survey of members of the school community to gather ideas of how the garden could best meet their needs.</p>	<p>CCSS.ELA-LITERACY.SL.5.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.</p>	<p>National Health Education Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Contributing to the School Community	Garden Planning and Maintenance (GPM)	GPM.5.4 Identify a need in the school or community and create a garden plan to address it.	Have students interview members of the school community to get ideas about how they could use their garden to contribute to the school. Following the interviews, lead students in a discussion to choose a project they would like to pursue. 	PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.	Work with the food service director to identify a dish, such as Pasta Primavera, There's a Chef in My Family! , that students could make and contribute to a school lunch.	Classroom: Practice letter writing skills, writing thank you letters to the people you interviewed.	CCSS.ELA-LITERACY.SL.5.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.	National Health Education Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health. National Health Education Standard 8: Students will demonstrate the ability to advocate for personal, family, and community health.


GRADE 5 | WINTER


Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Rain Gauges	Garden and Food Systems (GFS)	GFS.5.2 Understand the relationship between weather patterns and watering in garden.	Explore the garden for wetter and drier areas. Explain <u>how to make rain gauges</u> . Have students make gauges, and place them in the garden. Check gauges with students regularly and record rainfall. Explain how to judge whether or not plants need water based on rainfall and soil moisture. Have students elaborate by checking gauges and soil, and making arguments based on evidence for the need to water. Demonstrate a proper watering technique to minimize soil erosion, and then have students water plants. Discuss the importance of water in the human diet, and compare our need for hydration to the hydration needs of plants. 	CLS.2 Students cooperate and communicate well with each other.	In the kitchen, when you use water (as an ingredient, or to cook something such as in Kitchen Lesson #8: Miso Soup), discuss where the water came from. Review the connection between our need for water and plant needs for water.	Classroom: Read <i>Water Dance</i> by Thomas Locker. Community: Collect rain gauge data at student homes, and compare accumulations at multiple sites.	NGSS Science and Engineering Practice: Developing and Using Models. CCSS.MATH.CONTENT.4.MD.A.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
8. Splash Boards	Soil (S)	GFS.3.3 Describe a food web.	Engage students by having them make splash boards to measure soil erosion patterns. Explain how to create <u>splash boards</u> . Have students elaborate, making splash boards and using them to measure soil erosion patterns from water in various locations around the garden. Have them continue to elaborate and share out their findings.	PLS.6 Students actively seek creative and resourceful solutions.	As you enjoy a dish featuring fresh produce such as in Kitchen Lesson #9: Layered Black Bean Chili Dip , acknowledge the part erosion played in creating the soil that grew the food you are eating.	Community: Compare patterns found in the garden to larger scale patterns for rain flow around the city or state.	NGSS Science and Engineering Practice: Engaging in Argument from Evidence. Social Studies: Geography	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. Impacts of Human Activity on Soil	Soil (S)	S.5.1 Describe the various activities that create soil.	Explore ways human activity (mulching, cover cropping, leaving ground bare, trampling plants, watering, etc.) impacts erosion. Have teams elaborate, choosing activities to test. Then, using <u>splash boards</u> they created in Lesson #8: Splash Boards , conduct experiments to test impacts of such activities.	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In this lesson, discuss the connection between healthy soil, healthy food, and healthy bodies.	Classroom: Write a narrative story with the “Magic Space” introduced in Grade 3 Lesson #9: Mapping Magic Spaces as the setting and the animal inhabitants as the characters. Community: Imagine a “Magic Space” in your community and what connections may exist there between the humans, the land, and the animals.	NGSS Science and Engineering Practice: Developing and Using Models. Social Studies: Geography.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
10. Garden Caretaker Station Rotation	Garden and Food Systems (GFS) Garden Tools and Equipment (GTE)	GFS.5.1 Describe the roles beneficial insects and pests play in the garden. GTE.5.1-4 Garden Tools and Equipment	Garden Caretakers Station Rotation: Explain relevant tool safety, and then divide students into teams to rotate through the following stations: <ul style="list-style-type: none"> • Removing snails or other pests by hand • Removing dead flowers from plants that attract beneficial insects in order to promote new growth • Mulching, terracing a slope, making a sign about where to walk, or doing something else to decrease erosion 	PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.	As you frame the student roles as garden caretakers, make the connection between the work they are doing in the garden, the food they are growing, and the dishes they are preparing in the kitchen.	Community: Offer to lead a workday for a community garden to help with similar tasks.		
11. Farm to Table Stories	Garden and Food Systems (GFS)	GFS.5.3 Demonstrate ability to identify and map a food system; include a historical or cultural perspective.	Have students map the food system by tracing a food item from the farm to the table. Divide the class into teams of about 6 students. Assign each team a different food item to explore the process from production to consumption (for example corn to tortillas and soy beans to miso soup). Then have each team sort themselves into an order to tell a story and elaborate by sharing out and discussing. 	CLS.2 Students cooperate and communicate well with each other.	When making a dish featuring produce grown by students, such as in Kitchen Lesson #11: Beans Galore Salad , have students tell and illustrate a similar story to the ones described in this suggested activity, showing the process from garden to bean salad.	Community: Interview community members who work in different steps of the journey for a particular dish local to your region.	CCSS.ELA-LITERACY.W.5.3.C Use a variety of transitional words, phrases, and clauses to manage the sequence of events. NGSS Science and Engineering Practice: Developing and Using Models.	National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Mapping a Dish	Garden and Food Systems (GFS)	GFS.5.3 Demonstrate ability to identify and map a food system; include a historical or cultural perspective.	Assign each student a dish, or have them select a dish that interests them. Have them explore, researching the history and culture represented by the dish and the plants that must be grown to prepare it. Then have them elaborate, creating a visual map in their journals representing the journey of that dish from farm to table. 	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In the kitchen, help students prepare some of the dishes they've researched.	Community: Interview community members on their personal history with a dish that represents their culture.	Social Studies: Cultural Traditions. NGSS Science and Engineering Practice: Developing and Using Models.	National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

GRADE 5 | SPRING

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Sharing a Dish	Garden and Food Systems (GFS)	GFS.5.3 Demonstrate ability to identify and map a food system; include a historical or cultural perspective.	Have students elaborate on their learning from Lesson #12: Mapping a Dish by hosting a poster presentation or share out in which students share about the dishes they researched. 	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In the kitchen, help students prepare some of the dishes they've researched.	Community: Invite experts from the community to be guest speakers for the poster presentation or share out.	Social Studies: Cultural Traditions.	National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.
14. Planting for Ka-Bam Kabobs	Garden Tools and Equipment (GTE)	GTE.5.1-4 Garden Tools and Equipment	Review tool safety. Explain how and why we read seed packets. Then have students elaborate, reading seed packets and planting onions, bell peppers, and any other produce you would like to include in Grade 6 Kitchen Lesson #4: Ka-Bam Kabobs .	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	In Grade 6 Kitchen Lesson #4: Ka-Bam Kabobs , students will prepare kabobs using the produce planted here.	Classroom: Write a narrative modeled after <i>The Carrot Seed</i> by Ruth Krauss, with the students as the main characters and using dialogue to move the story line. Community: Compare the varieties of onions and bell peppers available in the grocery store to the ones you planted in your garden.	NGSS Science and Engineering Practice: Planning and Carrying Out Investigations.	National Health Education Standard 6: Students will demonstrate the ability to use goal-setting skills to enhance health.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Garden Calculations	Garden Planning and Maintenance (GPM)	GPM.5.1 Calculate volumes of soil, compost, and/or amendments for garden beds.	Explore different sized garden beds with students, looking for which they think holds the most soil. Discuss why this is important. Explain to students how to calculate the area of a garden bed, and then the volume of soil and compost needed to fill them. Then have them elaborate, using these calculations to fill and prepare the bed.	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In Lesson #16: Planting Seeds for Saving , students will plant popcorn into this bed. Then, in Grade 6 Lesson #4: Saving Seeds with Popcorn , students will prepare popcorn to flavor and enjoy using Culinary Flavor concepts learned in their kitchen lessons.	Community: Offer calculation services to members of the community, requesting the length, width, and depth of their bed.	CCSS.MATH.CONTENT.5.MD.C.5 Relate volume to the operations of multiplication and addition and solve real world problems involving volume. NGSS Science and Engineering Practice: Using Mathematics and Computational Thinking.	
16. Planting Seeds for Saving	Garden Tools and Equipment (GTE) Weather, Seasons, Climate and Geography (WSCG)	GTE.5.1-4. Garden Tools and Equipment WSCG.5.1 Describe the effect of human migration on seeds and plants.	Review safe tool use, and demonstrate the new skill of using a wheelbarrow to move compost from the compost pile to a garden bed. Then have students work together to elaborate on their learning by preparing a bed for planting, using their calculations from Lesson #15: Garden Calculations . If all of your garden beds are full, have students clear and add compost to prepare. Then have students plant popcorn (or another crop that can be used to save seeds) for Grade 6 Lesson #4: Saving Seeds with Popcorn . Discuss the connection between human migration and seed migration.	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	In Grade 6 Lesson #4: Saving Seeds with Popcorn , students will prepare popcorn to flavor and enjoy using Culinary Flavor concepts learned in their kitchen lessons.	Cafeteria: Find out if there is something you can grow for the cafeteria.	CCSS.MATH.CONTENT.5.MD.C.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.	National Health Education Standard 8: Students will demonstrate the ability to advocate for personal, family, and community health.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Discovering Drip Irrigation	Garden Planning and Maintenance (GPM)	GPM.5.3 Demonstrate ability to create watering system for plants.	Engage students in a conversation about water conservation and why it is important. Give teams of 4 students different components from a drip system, such as an on/off valve, a piece of mainline tubing, a hole punch, a few fittings, a piece of emitter tubing, and an end cap. Have students explore each component and guess what its function is based on its structure. As students share out, explain the accurate function. Have students elaborate, working together to build a small sample system using the pieces they have. Then go out to the garden beds and have each team work together with a small set of predetermined materials to lay out a simple drip system (i.e. for one plant, or for one bed). Once you have approved their system, provide them with a hole punch for tubing and a tubing cutter, and let them work together to assemble and install the system.	PLS.6 Students actively seek creative and resourceful solutions. CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In this lesson, as you frame the student roles as irrigators, make the connection between the work they are doing in the garden, the food growing, and the dishes they are preparing in the kitchen. Also make the connection between plant needs for hydration and our own needs for hydration.	Community: Create a “How to” Guide for setting up a drip system including a list of tools and supplies (with specific measurements when necessary) and directions clearly written in sequence.	NGSS Science and Engineering Practice: Developing and Using Models. CCSS.MATH.CONTENT.5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Garden Caretaker Station Rotation	Garden Planning and Maintenance (GPM)	GPM.5.2 Demonstrate understanding of when to water by observing plants and soil for signs of no or low moisture.	Garden Care Station Rotation: Review safe tool use, and demonstrate how to use a hose with a nozzle to water. Then have students elaborate on their garden learning by rotating students through the following stations: <ul style="list-style-type: none"> • Watering: Check all drip irrigation to make sure it is working; use the hose and nozzle to water a designated area. • Compost: Flip the compost. • Weeding: Clear a designated area or bed of weeds. 	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.	In this lesson, as you frame the student roles as garden caretakers, make the connection between the work they are doing in the garden, the food growing, and the dishes they are preparing in the kitchen.	Community: Volunteer at a local community garden to weed, water, and tend to the compost.		

GRADE 6 | Garden

SCOPE & SEQUENCE



GRADE 6 STANDARDS

At the end of Grade 6, students will be able to:

- Demonstrate knowledge of garden design and installation.
- Demonstrate understanding of the relationship between weather and seasonality.
- Demonstrate understanding and proper use of soil amendments.
- Demonstrate knowledge of various propagation methods.
- Demonstrate knowledge of basic business skills to plan a garden project.

GRADE 6 | FALL


Each activity described below should be designed to last approximately 45 minutes.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
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START THE YEAR *Schoolwide Garden Work Party with Families/Local Community*

<p>1. Welcome to the Garden!</p> 	<p>Personal and Community Life Skills (PLS and CLS)</p>		<p>Engage students by leading them in an observation of the garden, recognizing how peaceful the space is without our interaction. Then consider how we can interact with the space in a way that enhances it. Explore these ideas as you establish garden agreements together, reviewing the Personal and Community Life Skills. Then elaborate on these understandings by practicing the agreements as students explore the garden and find a crop that is ripe and ready to harvest. Have students share what they remember about safe food handling techniques, and then choose a crop to harvest and enjoy together. Toward the end of class, introduce a poster-size calendar to record all planting, germination and first harvest dates for crops planted throughout the year. Have students record the foods that are ready to harvest on the calendar. Then, at the end of each garden class throughout the year, provide students time to add things they have planted or harvested to the classwide garden calendar.</p> 	<p>PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.</p>	<p>Compare agreements created in Kitchen Lesson #1: Welcome to the Kitchen! to those created in the garden.</p>	<p>Community: Compare planting and harvesting calendars with those of local farmers. Volunteer at a local farm to help harvest or glean their crops.</p>	<p>NGSS.6.LS.1.B Growth and Development of Organisms CCSS.ELA-LITERACY.SL.6.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p>	
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Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
2. Producers and Consumers	Garden and Food Systems (GFS)	GFS.6.4 Describe producer and consumer in the garden environment.	Engage each student in creating an index card with an illustration and name of a specific garden plant or animal. Gather together and shuffle the cards. Redistribute and have students explore the garden, looking for the plant or animal on their card. Once they find it, have students trade cards with one another and try to find the new plant or animal. Regroup and explain the terms “producer” (plant that produces food through photosynthesis) and “consumer” (animal that eats plants or other animals for food). Then have students elaborate, arranging themselves into 2 large groups based on the cards: producers and consumers. Hand out journals that students will use to reflect at the end of each lesson.	CLS.2 Students cooperate and communicate well with each other.	In the garden, make the connection between producers (i.e. farmers) and consumers in the food system with producers and consumers in an ecosystem.	Classroom: On the back of the index card, write researched facts about the plant or animal then combine all cards into a “field guide” to the school garden divided by producers and consumers.	NGSS Science and Engineering Practice: Developing and Using Models. CCSS.ELA-LITERACY.SL.6.1.C Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.	
3. How to Harvest	Plants (P)	P.6.3 Understand best harvest practices for food grown in garden. GTE.6.1-4 Garden Tools and Equipment	Review safe food handling techniques. Have students explore this skill by harvesting, washing and preparing something fresh from the garden together. Then have students elaborate, creating short skits or videos on safe and proper harvest techniques to share with a younger grade. Note your harvest on the class wide garden calendar.	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.	Ask the kitchen educator if there is anything your class can harvest for Kitchen Lesson #4: Ka-Bam Kabobs , or another recipe they are cooking this week.	Classroom: Have students write scripts for their skits, including text and stage directions for the actors.	CCSS.ELA-LITERACY.SL.6.5 Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.	National Health Education Standard 8: Students will demonstrate the ability to advocate for personal, family, and community health.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>4. Saving Seeds with Popcorn</p>	<p>Plants (P)</p>	<p>P.6.2 Describe seed germination.</p>	<p>Engage students by having them harvest seeds from the crop you planted in Grade 5 Lesson #16: Planting Seeds for Saving. Then gather around the harvest and explore, having the class work together to select seeds from the 5 healthiest plants to save for planting in the spring. Explain the seed-plant-seed cycle. Set aside the selected seeds for saving. Note: If you planted corn, have students harvest the healthiest ears of corn and show them how to use the remaining cobs to prepare popcorn. Pop the popcorn. Have students make <u>origami seed envelopes</u> and elaborate on their learning by referencing store-bought seed packets or a planting guide to write information on them about when and where to plant, spacing, days to germination and harvest, and the like. Then have students place seeds they selected to save into the origami seed envelopes, and present these seeds to the new Grade 5 students to plant in the spring and harvest in the fall. Ask them to explain the benefits of saving your own seeds. Note your harvest on the class wide garden calendar. Enjoy popcorn together.</p> 	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	<p>In the garden, provide student teams with salt, spices, and other possible toppings for popcorn. Have students season their popcorn, and as they do, reflect on the flavor combinations in each one (i.e. salty and sweet, or spicy and sweet, etc).</p>	<p>Classroom: As students study early humans—Mesopotamians, Egyptians, Kush, Hebrews, Greeks, Indians, and Romans, for example—research what seeds were in their diets. A good reference is <i>Food Civilization: How History has been Affected by Human Tastes</i> by Carson Ritchie and <i>A Handful of Seeds</i> by the Occidental Art and Ecology Center.</p>	<p>CCSS.ELA-LITERACY.W.6.2 Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>5. Why Do We Have the Foods We Do?</p>	<p>Garden and Food Systems (GFS)</p>	<p>GFS.6.2 Understand what foods grow best in your specific geographic location and why.</p> <p>GFS.6.5 Define local and seasonal eating.</p>	<p>Have students explore the <u>USDA's National Agricultural Statistics Service</u> to identify the top three crops grown in your state. Have students research the climate of your state such as:</p> <ul style="list-style-type: none"> • What is the average lowest temperature? • Average highest? • Average days of frost? • Average humidity? <p>Discuss the effect weather has on farming. Have students elaborate by researching and drawing conclusions about additional factors that could influence farming in the region (soil types, rainfall, etc). Have students record conclusions in journals.</p> 	<p>PLS.6 Students actively seek creative and resourceful solutions.</p>	<p>In the garden, discuss common meals in your state that include the top 3 crops. Contrast with common meals in a state with a very different climate.</p>	<p>Community: Take a look at local weather reports to discuss the weather and the climate (and the difference between the two). Invite local farmers in to discuss how the climate affects their decision making on the farm.</p>	<p>NGSS.6.ESS2.D Weather and Climate - Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next.</p> <p>CCSS.ELA-LITERACY.RI.6.7 Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.</p>	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Recruiting Farmers to Our Region	Weather and Seasons, Climate and Geography (WSCG)	WSCG.6.1 Describe the growing climate and seasons of your region.	In order to help students recognize what is unique about agriculture in their area, have them imagine that they are trying to recruit farmers to their region. Have them explore, using their research and images gathered in Lesson #5: Why Do We Have the Foods We Do? , to create pamphlets that they think would convince farmers to come to their regions. Pamphlets must include information on temperature highs and lows and what can be grown in each season. 	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.	In the garden or for homework, have students create similar recruiting materials for chefs to encourage them to come and cook with the produce available.	Community: Create a version of the pamphlet for home gardeners to distribute at your city's welcome center or to give to local real estate agents to share with new residents.	CCSS.ELA-LITERACY.W.6.2.A Introduce a topic; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension. VA:Cr3.1.6a Reflect on whether personal artwork conveys the intended meaning and revise accordingly.	


GRADE 6 | WINTER

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Garden Design Challenge, Part 1: Designing a Garden Bed	Garden Planning and Maintenance (GPM)	<p>GPM.6.1 Understand and apply basic garden math skills to the design of a garden.</p> <p>BP.6.1 Compare and contrast a home garden to a school garden.</p> <p>BP.6.2 Create a garden planting list.</p> <p>BP.6.3 Create project expense list.</p>	<p>Engage students by giving teams of 4-6 students a challenge: To create a garden plan using knowledge they have gained about seasonality, nutrition, and growing climates. Provide each team with a blank template for a garden bed with measurements included. Have them explore, designing a garden that fits specific requirements, such as: grows a favorite crop of every team member; includes enough of a particular crop for a specific dish selected by team; grows crops with specific nutritional benefits; etc. Have student teams use these designs to create planting and expense lists for their garden beds.</p> 	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In the garden, give students nutrition-related challenges for their beds, such as growing food from each food group or growing plants that provide a variety of vitamins and minerals.	Classroom: Use measurements from the garden design activity to have teams calculate the area and volume of their planting areas.	CCSS.ELA-LITERACY.SL.6.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
8. Garden Design Challenge, Part 2: Planting a Garden Bed	Garden Planning and Maintenance (GPM)	GPM.6.1 Understand and apply basic garden math skills to the design of a garden. P.6.1 Interpret directions on seed packets. GTE.6.1-4 Garden Tools and Equipment	Have student teams elaborate on the plans they made in Lesson #7: Garden Design Challenge, Part 1: Designing a Garden Bed , by following their plans to make measurements (of the area of the bed; of the space between seeds or plants; etc.). Have teams stake out planting areas, and then plant their garden beds. Have students label each crop planted and include a nutrition fact on each label, such as “Kale: High in Vitamins A and C.” Add fish emulsion as a natural fertilizer to beds.	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In the garden, have students add cooking suggestions or dishes to the labels on each crop, such as “Kale: Cut into strips, drizzle with olive oil, sprinkle with salt, bake until crispy, and enjoy!”	Community: Take students on field trips to visit other home or community gardens and have them compare and contrast the different types of gardens in their community.	CCSS.MATH.CONTENT.6.G.A.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. Garden Design Challenge, Part 3: Incorporating Beneficial Insectary Plants	Garden and Food Systems (GFS)	GFS.6.1 Identify and create attraction strategies for beneficial insects in the home or school garden. BP.6.2 Create a garden planting list.	Have student teams explore, researching local beneficial insects. Then explain how to create a plan and planting list for attracting beneficial insects to the garden. Have student teams elaborate on this, mapping where they can plant beneficial insectary plants, which are plants that attract beneficial insects; listing the insects they hope to attract; and explaining why those particular insects will be important in the garden. Students will use these plans in Lesson #10: Garden Design Challenge, Part 4: Planting Beneficial Insectary Plants. 	PLS.6 Students actively seek creative and resourceful solutions.	In the garden, discuss the seasonality of beneficial insectary plants and compare with the seasonality of local crops.	Community: Prepare a poster or other visual informational guide for a local community center or library about beneficial insects.	NGSS.6.LS2.A Interdependent Relationships in Ecosystems. CCSS.MATH.CONTENT.6.RP.A.3.C Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.	
10. Garden Design Challenge, Part 4: Planting Beneficial Insectary Plants	Garden and Food Systems (GFS)	GFS.6.1 Identify and create attraction strategies for beneficial insects in the home or school garden. P.6.1 Interpret directions on seed packets.	Have students elaborate on their learning in Lesson #9: Garden Design Challenge, Part 3: Incorporating Beneficial Insectary Plants by planting seeds for crops that attract beneficial insects and labeling each plant with its name and the reason it is beneficial to the edible crops.	CLS.2 Students cooperate and communicate well with each other.	If possible in your region, include a few beneficial insectary plants that are also edible in your garden, so that you can incorporate them into salads and the like.	Community: Ask local landscape or garden designers to share how they create planting lists for how much and what to plant for their clients.	NGSS.6.LS2.A Interdependent Relationships in Ecosystems. Social Studies: Economics.	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
11. Garden Design Challenge, Part 5: Presenting Garden Beds	Garden Planning and Maintenance (GPM)	<p>GPM.6.1 Understand and apply basic garden math skills to the design of a garden.</p> <p>BP.6.1 Compare and contrast a home garden to a school garden.</p> <p>GFS.6.1 Identify and create attraction strategies for beneficial insects in the home or school garden.</p>	<p>Have each student team present the garden design created and planted in Lessons #7 - #10 to the class, including information on why they chose various plants; the nutritional and culinary benefits of their planting choices; how they decided upon the spacing they used; how they are attracting beneficial insects; and the like. Have class discuss ideas from these gardens that could be relevant and useful in home gardens as well.</p> 	PLS.5 Students develop the ability to make informed and responsible decisions.	After each garden bed presentation, have entire class brainstorm dishes students could make, and discuss the nutritional benefits they could gain from the produce in that garden bed.	<p>Classroom: Create a table to compare prices of materials from different local retailers.</p>	<p>NGSS.6.LS2.A Interdependent Relationships in Ecosystems.</p> <p>Social Studies: Economics.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Garden Design Challenge, Part 6: Adding Compost	Garden Planning and Maintenance (GPM)	GPM.6.2 Demonstrate understanding of compost and/or vermi-culture system.	Explain all of the garden beds created by the various teams will need a regular supply of nutrients. Ask students to explain how they can get this from compost. Have students discuss and determine together what type of compost system to create for the garden beds they designed. Then have them elaborate, building the compost system together and making a plan for incorporating finished compost regularly into the new beds. If you already have active compost systems in your garden, students can add a new system or simply make improvements upon an existing system. You can find more information with references on composting in Getting Started— Garden Best Practices .	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.	In the garden, have students explain and/or make visual representations to post near the compost systems showing the cycle of nutrients from food into compost, from compost into soil, from soil into plants, and from plants into our bodies.	Cafeteria: Collect plant-based food scraps from the cafeteria to start the compost system.	CCSS.ELA-LITERACY.SL.6.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 6 Language standards 1 and 3 for specific expectations.) VA:Cr3.1.6a Reflect on whether personal artwork conveys the intended meaning and revise accordingly.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

GRADE 6 | SPRING


Each activity described below should be designed to last approximately 45 minutes.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Compost Caretakers	Garden Planning and Maintenance (GPM)	GPM.6.2 Demonstrate understanding of compost and/or vermi-culture system.	Explain to students how to work together to maintain compost systems. Depending on what you have in your garden this might include: flipping an existing compost pile (built in Grade 2 Lesson #3: Building Compost and/or Grade 6 Lesson #12: Garden Design Challenge Part 6: Adding Compost), adding and covering food scraps in a compost pile or worm bin (built in Grade 4 Lesson #8: Building a Worm Bin), or <u>building a new compost bin</u> . Have students elaborate, working together to take care of the compost systems.	PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.	Use food scraps from the kitchen in compost systems in the garden.	Classroom: Create a “how to compost” guide for the school community. This could be a pamphlet, a video, a sign, or something else, but it must include the fundamentals of why and how we compost.	NGSS.6.LS2.A Interdependent Relationships in Ecosystems. CCSS.ELA-LITERACY.SL.6.5 Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Soil Samples	Soil (S)	S.6.1 Identify soil compositions.	Have students bring soil samples from their homes or neighborhoods. Explain and demonstrate how to use <u>soil shake jars</u> and soil test kits to identify soil composition and soil health. Have students elaborate, using shake jars to learn about soil composition. NOTE: In areas where lead in soils may be an issue, bring in safe soil for students rather than having them collect it. 	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.	In Kitchen Lesson #14: Breakfast Business have students plan and then, in Kitchen Lesson #16: Breakfast Business Implementation , have them prepare seasonal breakfast dishes. As they sell and enjoy these dishes, have them acknowledge the connection between healthy soil, healthy crops and the food they are seeing/enjoying.	Community: Compare the variety of soil samples to soil samples from local organic farmers that have been building their soil composition and health for years.	NGSS.LS2.B: Cycle of Matter and Energy Transfer in Ecosystems. CCSS.MATH.CONTENT.6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Preparing a Bed for Planting	Soil (S)	<p>S.6.2 Understand how to assess and mitigate soil.</p> <p>S.6.3 Build a balanced soil medium.</p> <p>GTE.6.1-4 Garden Tools and Equipment</p>	<p>Explain strategies for improving soil quality for gardening, and have students review why this is important. Then demonstrate safe and proper use of a stirrup hoe for weeding, a four-tined cultivator and digging fork for turning soil and adding in amendments, and a rake for evening out the soil surface. Give each team of up to 8 students a plot of land not yet ready for gardening and have them use the new tools, in addition to their familiar tools, to amend and prepare the soil for planting seeds (in Lesson #16: Teaching Each Other How to Plant Seeds).</p>	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	<p>As you prepare the bed, focus students' attention on the crops they'll be planting there, and the dishes they'll be able to create with those crops.</p>	<p>Classroom: Research primitive tools and tools from around the world for weeding, cultivating, raking, etc. Describe them using knowledge of simple machines and natural resources.</p>	<p>NGSS.6.LS2.B Cycle of Matter and Energy Transfer in Ecosystems.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>16. Teaching Each Other How to Plant Seeds</p> 	Plants (P)	<p>P.6.1 Interpret directions on seed packets.</p>	<p>Engage students by providing each team of up to 8 (same teams as in Lesson #15: Preparing a Bed for Planting) seed packets for a seasonal plant. Make sure the plant can be sown directly from seed, such as beans, carrots, beets, or sunflowers. Have each team explore their packets preparing to explain to the other students in the class how to plant them into the bed they prepared in Lesson #15: Preparing a Bed for Planting. Then rotate through the planting areas. At each bed or area, have representatives from one team demonstrate how to plant the seeds, and then have students work together to plant them before moving on to the next bed. Have students note on the classwide calendar together what was planted on today's date.</p> 	<p>PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.</p>	<p>Plant crops that will be useful in the fall of Grade 7, such as herbs, to include in Grade 7 Kitchen Lesson #2: Making Preserves.</p>	<p>Community: Organize a garden workday at another community garden or at another school garden to teach a group of volunteers (or students) to plant in the same way.</p>	<p>NGSS.6.LS2.A Interdependent Relationships in Ecosystems.</p> <p>CCSS.ELA-LITERACY.SL.6.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Seasonal Patterns in the Garden	Weather and Seasons, Climate and Geography (WSCG)	<p>WSCG.6.2 Compare and contrast your climate and a climate in a different geographic location in terms of growing food.</p> <p>WSCG.6.3 Describe the impact of seasonal weather patterns on edible gardens.</p>	<p>Refer back to classwide garden calendar created in the fall. Engage students, having them match each crop to its edible plant part(s) (i.e. carrot=root). Have students explore, looking for patterns of what is planted and harvested in each season. Explain how these patterns influence farmers, chefs, and consumers. Then assign each student team a region of the world. Have them elaborate on this idea, researching the climate and seasonal growing options there and present to their classmates on how this region differs from their own region.</p> 	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	As part of this project, have student teams research traditional dishes from the region they are assigned.	Community: Interview local chefs on how the patterns of what is planted and harvested influence them throughout the year.	<p>Social Studies: Geography.</p> <p>CCSS.ELA-LITERACY.RI.6.7 Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Connect- ing Climate to Crops to Traditional Foods Around the World	Garden and Food Systems (GFS)	GFS.6.3 Compare and contrast your geographic location to various locations around the world and understand how seasonality influences foods in other cultures.	Have students share the regions of the world they researched in Lesson #17: Seasonal Patterns in the Garden . Then have students research and add traditional dishes from that region to the map and discuss the connection between traditional dishes, available crops, and geography and climate (for example, sushi being a traditional dish in Japan which is surrounded on all sides by oceans and has a good climate and geography for growing rice). 	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	Make sure students are researching regions that they will be representing with dishes in Kitchen Lesson #18: Cook for the Feast Around the World .	Community: Interview members of the community that have moved to the region from another place. Discuss the dishes and ideas they brought with them to their new geography, climate, and crops.	Social Studies: Geography. CCSS.ELA-LITERACY.RI.6.7 Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.	

GRADE 7 | *Garden*

SCOPE & SEQUENCE



GRADE 7 STANDARDS

At the end of Grade 7, students will be able to:

- Demonstrate knowledge of microclimates and seasonal planting.
- Demonstrate increased understanding of basic business skills to create a budget with income and expenses.
- Demonstrate knowledge of various soils types and soil composition.
- Demonstrate increased knowledge of photosynthesis.
- Demonstrate understanding of the relationship between producers and consumers in the garden food system.
- Evaluate the interdependence of organisms in the garden environment.

GRADE 7 | FALL


Each activity described below should be designed to last approximately 45 minutes.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<h3 style="margin: 0;">START THE YEAR <i>Schoolwide Garden Work Party with Families/Local Community</i></h3>								
1. Welcome to the Garden!	Personal and Community Life Skills (PLS and CLS)		Have students share their names. Explore Garden Agreements established in Grade 6 Lesson #1: Welcome to the Garden together and ask if anyone would like to suggest any updates. Review Personal and Community Life Skills. Then have students elaborate, practicing these agreements as they look around the garden using a leaf scavenger hunt (for example, find the largest leaf; the darkest green leaf; a fuzzy leaf; a leaf that is not green; etc).	PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.	Compare agreements from Kitchen Lesson #1: Welcome to the Kitchen with the garden agreements.	Classroom: Write a poem comparing the uniqueness of leaves on the school campus to the uniqueness of students in the school community.	NGSS.7.LS1.A Structure and Function. CCSS.ELA-LITERACY.SL.7.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
2. Discovering Microclimates and Testing Soils	Soil (S)	<p>S.7.1 Identify soil compositions in the school environment.</p> <p>S.7.2 Recognize and classify various soil types.</p> <p>WSCG.7.1 Understand and identify microclimates around your school, what foods grow best in each one, and why.</p> <p>GTE.7.1-5 Garden Tools and Equipment</p>	Review how to use shake jars, soil test kits, and air thermometers. Explain how to use a soil thermometer. Then have student teams explore soil, collecting soil samples and soil and air temperatures from various areas around the school. Help them use shake jars and soil test kits to identify soil composition, type, and health. Read soil and air thermometers to record temperatures. Hand out garden journals, and have students record comparisons between different locations on the grounds. Explain the concept of microclimates.	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.	In Kitchen Lesson #2: Making Preserves , discuss “microclimates” in the kitchen, including the refrigerator, freezer, oven, etc. Explain how canning is a process of making a microclimate that is inhospitable for bacteria and microbes.	Community: Visit a local farmer to discuss microclimates that exist on their farm land and how they make decisions based around them.	<p>NGSS.7.LS2.B Cycle of Matter and Energy Transfer in Ecosystems.</p> <p>CCSS.MATH.CONTENT.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
3. Micro-climates	Weather and Seasons, Climate and Geography (WSCG)	WSCG.7.1 Understand and identify microclimates around your school, what foods grow best in each one, and why. GTE.7.1-5 Garden Tools and Equipment	Have student teams elaborate on their understanding of microclimates from Lesson #2: Discovering Microclimates and Testing Soils by reading seed packets and planting guides, and then selecting a crop to plant in a particular microclimate in the school garden (for example, bush beans against a sunny, hot wall or lettuce in a more shaded area). Then have them prepare the area for planting, including amending the soil.	CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.	Work with the kitchen educator to identify crops you will be using this year that can be planted in various microclimates around the school.	Classroom: Create a sun map showing where the shadow hits the school grounds at multiple times during the day in that season to inform decision making.	NGSS.7.LS2.A Interdependent Relationships in Ecosystems CCSS.ELA-LITERACY.RI.7.1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Planting in Micro-climates	Garden and Food Systems (GFS)	<p>GFS.7.3 Describe the relationship between producers and consumers in the human world.</p> <p>WSCG.7.1 Understand and identify microclimates around your school, what foods grow best in each one, and why.</p> <p>GTE.7.1-5 Garden Tools and Equipment</p>	Have students explain why plants are essential to our survival (they can make food, we can't!). Then have student teams plant the crops they selected in Lesson #3: Microclimates , and make plans to care for them.	CLS.2 Students cooperate and communicate well with each other.	In the kitchen, harvest, cook, and enjoy the crops you planted throughout the year.	<p>Classroom: Create an interactive, rhythmic play or rhyme for elementary students that tracks all levels of the food chain back to plants using a song like "Green Grass Grows All Around" as a model.</p>	<p>NGSS.7.LS2.A Interdependent Relationships in Ecosystems.</p> <p>CCSS.ELA-LITERACY.W.7.2 Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.</p>	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
5. Photo-synthesis, Part 1	Plants (P)	P.7.2 Explain photosynthesis.	Have students explore plant material, such as a heavy log, and discuss their ideas about where plant matter comes from. Then, have them observe the chemical reaction described in Life Lab's "Photosynthesis Revealed" lesson to allow them to see evidence of carbon being released by our breath (the chemical will change colors). Hand out journals and have students draw the test tubes, and use arrows and labels to show what happened and why they think it happened. Then explain that you are going to put an aquatic plant in one of the tubes. Have students record predictions of what impact they think the plant will have on the chemical and why. 	PLS.6 Students actively seek creative and resourceful solutions.	In Kitchen Lesson #5: Seared Pork Chops with Hoisin BBQ Sauce and Pineapple Asian Slaw , highlight that when we eat cabbage we are eating leaves, or the parts of the plants that gather sunlight for photosynthesis to occur.	Classroom: Create a stop motion video with paper cutouts to show where plant matter comes from.	NGSS Science and Engineering Practice: Engaging in Argument from Evidence. CCSS.ELA-LITERACY.SL.7.1.C Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Photo-synthesis, Part 2	Plants (P)	P.7.2 Explain photosynthesis.	Have students revisit the chemical reaction from Lesson #5: Photosynthesis, Part 1 to observe changes since the plant has been added to the bottle. Give teams 6 cards that say "Carbon," 12 that say "Hydrogen," and 6 that say "Oxygen." Explain and demonstrate how to arrange them into carbon dioxide molecules (2 Carbons, 1 Oxygen) and water molecules (2 Hydrogen, 1 Oxygen). Explain that these represent the carbon dioxide in the air and water in the soil. Now have them rearrange them into C ₆ H ₁₂ O ₆ and explain that this represents a carbohydrate, or sugar. This is what plants do! They make food out of thin air! Have students revisit their original conceptions from Lesson #5: Photosynthesis, Part 1 to come up with a revised theory of where plant material comes from. 	CLS.2 Students cooperate and communicate well with each other.	In the garden, make a salad and highlight that the leaves of the plants gather sunlight for photosynthesis to occur.	Classroom: Create a video of the carbon, hydrogen, and oxygen rearranging in a choreography with a popular song, modeled after "The Electric Slide." Add lyrics or a repeated phrase.	NGSS Science and Engineering Practice: Developing and Using Models. CCSS.ELA-LITERACY.SL.7.1.C Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.	


GRADE 7 | WINTER


Each activity described below should be designed to last approximately 45 minutes.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Brain- storming Products	Weather and Seasons, Climate and Geography (WSCG)	WSCG.7.2 Demonstrate knowledge of seasonal gardening.	Engage students by walking through the garden together. Brainstorm possible products they might harvest from their garden, prepare in the kitchen, and sell to raise funds for a gift to the garden when they are in Grade 8. Explore possible products they could make for each season, and discuss benefits of each. A few possibilities include fruit preserves, pickles, baked goods, breakfast or lunch items, and the like. 	PLS.6 Students actively seek creative and resourceful solutions.	In this garden lesson, discuss the environmental, economic and nutritional benefits of seasonal foods, and discuss how their business contributes to the local food system.	Community: Visit a local farmers market to explore the different products that are available in your area.	Social Studies: Economics. CCSS.MATH. CONTENT.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.	National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
8. Considering Customers	Business Planning (BP)	BP.7.1 Demonstrate the ability to create a food business project.	As a class, explore possible customers for the student business, such as other students, school staff, families, or farmers market customers (if they can go sell at a local farmers market). Explain how to design a survey. Help students design a survey to conduct with potential customers to help them decide what to sell, where and when to sell it, and the like. For more guidance on running a garden business with students, read <i>Growing Ventures</i> by the National Gardening Association. 	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In this garden lesson, discuss nutrient loss when foods are stored, processed, and shipped. Discuss the health benefits of local foods.	Community: At a local farmers market, conduct a “dot survey” displaying multiple choice questions, each on a piece of poster board. Request that customers put a sticker dot on the choice that matches their opinion most. Ask strategic questions to inform business decisions.	Social Studies: Economics. CCSS.MATH. CONTENT.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. Planning Our Business, Part 1	Business Planning (BP)	BP.7.1 Demonstrate the ability to create a food business project.	Explore together the customer survey results from Lesson #8: Considering Customers . Review what you have in abundance in the garden, discuss what you could plant now for a fall harvest, and decide together via discussion and vote what product(s) to sell. Start with something you can plant this spring and harvest, prepare, and start selling in the fall of Grade 8. Then have students self-select a team to work on. Each team will explore one of the 4 P's for this product: Pricing (What do similar products cost?), Production (Make a prototype), Packaging (How can we make our product visually appealing to our customers?), and Placement (Where are we most likely to reach our customers?). 	CLS.2 Students cooperate and communicate well with each other.	In this garden lesson, review the health benefits of eating local foods, discussed in Lesson #8: Considering Customers . Have students discuss how they might convey these benefits to customers in the packaging and/or marketing of their product.	Community: Interview a food business in your community about how they make decisions based on the 4 P's.	Social Studies: Economics. CCSS.MATH.CONTENT.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
10. Planning Our Business, Part 2	Business Planning (BP)	BP.7.1 Demonstrate the ability to create a food business project.	Together with students, explain the benefits of running a business, including contributing to the local food system; making something healthy available to customers; raising funds to give back to the garden program; and learning business skills. Then have teams elaborate on their research, presenting their findings on the 4P's from Lesson #9: Planning Our Business, Part 1 , give and receive feedback from the rest of the class, and finalize plans for pricing, production, packaging and placement. 	PLS.6 Students actively seek creative and resourceful solutions.	Students will make the product for the business planned here in Grade 8 Kitchen Lesson #2: Preparing the Product for Our Business.	Community: Visit a local art critique at a university or museum noticing how constructive criticism can be given to improve a current work.	Social Studies: Economics. CCSS.ELA-LITERACY.SL.7.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
11. Planting Fruit Trees	Gardening Tools and Equipment (GTE)	GTE.7.1-5 Garden Tools and Equipment	<p>Have students explore local fruit, consulting with a local gardening guide, horticulturalist, or orchardist about when to plant fruit trees in your region, and which varieties will do the best. Explain and demonstrate how to plant a fruit tree and then work together with your students to plant a stone fruit (plum, peach, etc) or a pome fruit (apple, pear, etc) tree.</p> 	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.	Harvest fruit and incorporate it into dishes in the kitchen throughout the year.	Classroom: Research the work of Johnny Appleseed, using many different sources to compare facts and accounts.	<p>NGSS.7.LS2.A Interdependent Relationships in Ecosystems.</p> <p>CCSS.ELA-LITERACY.SL.7.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Grafting	Plants (P)	<p>P.7.1 Describe and perform grafting, slips, and cutting propagation methods.</p> <p>GTE.7.1-5 Garden Tools and Equipment</p>	<p>Demonstrate, or invite an orchardist to demonstrate, how to graft fruit stock onto root stock on a fruit tree. Demonstrate knife safety and discuss how this is both similar and different from using knives in the kitchen. Then have students do practice cuts on sticks (but not on the tree itself).</p> 	<p>PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.</p>	<p>Have students incorporate these fruits into dishes they plan in the dinner menus they make in Grade 8 Kitchen Lesson #1: Welcome to the Kitchen!</p>	<p>Community: Teach elementary school students how to graft fruit stock onto root stock on a fruit tree. Practice clear communication and appropriate vocabulary to clear up any misconceptions students may have.</p>	<p>NGSS.7.LS2.A Interdependent Relationships in Ecosystems.</p> <p>CCSS.ELA-LITERACY.SL.7.1.A Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.</p>	



GRADE 7 | SPRING

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Crop Planning for the Business	Business Planning (BP)	<p>BP.7.2 Create a garden planting list.</p> <p>GPM.7.1 Understand and apply basic garden math skills to the design and planning of school/ community gardens.</p>	<p>As a class, have students explore what type of crop, and the quantity they will need, to plant in the spring in order to have enough produce for their food business that begins in the fall of Grade 8 (for example, berries for berry jam). Then have students measure and map an area in the school garden where they can grow all of the produce needed for their business.</p> <p style="text-align: center;"></p>	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	<p>Students will make the product for the business planned here in Grade 8 Kitchen Lesson #2: Preparing the Product for Our Business.</p>	<p>Community: Interview local food businesses about how they make decisions on where they source produce or the experience of growing it themselves.</p>	<p>Social Studies: Economics.</p> <p>CCSS.MATH.CONTENT.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Planting for Our Business	Garden Planning and Maintenance (GPM)	<p>GPM.7.1 Understand and apply basic garden math skills to the design and planning of school/ community gardens.</p> <p>BP.7.1 Demonstrate the ability to create a food business project.</p> <p>GTE.7.1-5 Garden Tools and Equipment</p>	Review safe tool use and the importance of following best practices for harvesting and handling food from the garden. Have students elaborate on their garden skills to date by working together to prepare the bed(s) where they will plant produce for their business. Then have them use spacing information from a seed packet, transplant label, or planting guide to map out where in the bed they will plant each plant. Have them measure with rulers, and mark each planting area with a hand trowel, chopstick, or the like. Once spacing looks good, have students transplant plants into each spot and water them in.	CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.	Students will make the product for the business planned here in Grade 8 Kitchen Lesson #2: Preparing the Product for Our Business.	Community: Visit a local community garden or school garden to lead a planting. Use information from seed packets to guide decisions.	<p>CCSS.MATH.CONTENT.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.</p> <p>NGSS.7.LS2.A Interdependent Relationships in Ecosystems.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Managing Insects	Garden and Food Systems (GFS)	<p>GFS.7.1 Identify beneficial and non-beneficial insects in the soil and garden environments and create management strategies.</p> <p>P.7.1 Describe and perform grafting, slips, and cutting propagation methods.</p> <p>GTE.7.1-5 Garden Tools and Equipment</p>	<p>Have students recall the role of beneficial insects in a garden ecosystem and methods of attracting them. If no one mentions it, explain to students that planting perennials is an effective way to attract more beneficial insects who, in turn, will reduce the population of non-beneficial insects. <u>Demonstrate how to take a cutting from a perennial plant such as a Salvia and place it in water to propagate.</u> Have each student elaborate, taking two cuttings to propagate.</p>	<p>PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.</p>	<p>As you build a habitat for beneficial insects, have students make signs explaining how these insects help us grow produce for our kitchen.</p>	<p>Community: Create an infographic or chart showing photos or scientific drawings of insects categorizing them as beneficial or harmful. Distribute at a local library or community organization.</p>	<p>NGSS.7.LS4.D Biodiversity and Humans.</p> <p>CCSS.ELA-LITERACY.RI.7.2 Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Business Income and Expenses 	Business Planning (BP)	BP.7.3 Create basic income/expense model.	Engage students by revisiting the business plans they created in Lesson #9: Planning Our Business, Part 1 . Then, have students explore their planting list and other projected purchases (such as mason jars or art supplies) to tally expenses for their business. Explain to students how to use their suggested product price to determine how much they would have to sell to break even; to make a profit; etc. Elaborate by discussing feasibility of selling that number and adjust plans accordingly. 	PLS.5 Students develop the ability to make informed and responsible decisions.	Students will make the product for the business planned here in Grade 8 Kitchen Lesson #2: Preparing the Product for Our Business .	Community: Interview value-added product vendors about the decisions they have made to lower their expenses so their business can be more profitable.	Social Studies: Economics. CCSS.MATH.CONTENT.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Interdependence	Garden and Food Systems (GFS)	GFS.7.2 Evaluate the interdependence of organisms in the garden environment.	Explore interdependence by having students plant 3 crops that intercrop well together, such as the 3 Sisters: corn, beans and squash. Explain how each crop supports the others (i.e. beans fix nitrogen for corn and squash, corn provides climbing structure for beans, etc). Share the history of the <u>3 Sisters Garden</u> . Have students elaborate by representing intercrop visually, such as by creating a labeled diagram illustrating the interdependence between each crop. Note: For a crop that you can harvest in the fall after summer vacation, plant popcorn, winter squash, and dry beans.	PLS.6 Students actively seek creative and resourceful solutions.	In this lesson, have students add the kitchen to their diagrams and draw and label arrows connecting it with the garden ecosystem (i.e. produce into kitchen, compost from kitchen to garden, etc). If you planted the 3 Sisters, describe the unique nutritional benefits of the 3 Sisters: Carbohydrates in corn; Proteins in beans; and vitamins and minerals in squash. Then cook the beans in Grade 8 Kitchen Lesson #6: Cooking Beans .	Community: With the help of a local artist, turn this concept into a mural that can be painted in the community.	NGSS.7.LS2.A Interdependent Relationships in Ecosystems VA:Cr2.3.7a Apply visual organizational strategies to design and produce a work of art, design, or media that clearly communicates information or ideas. Social Studies: Native American Culture and History.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Cuttings and Slips	Plants (P)	<p>P.7.1 Describe and perform grafting, slips, and cutting propagation methods.</p> <p>GTE.7.1-5 Garden Tools and Equipment</p>	<p>Review safe tool use. Divide class into 2 groups. Have each group elaborate on their garden learning to date by spending about 20 minutes at each of the following stations:</p> <ul style="list-style-type: none"> Planting perennials propagated in Lesson #15: Managing Insects (once roots are about $\frac{3}{4}$" long, cuttings are ready to be planted. If perennials are not ready, make this station about bringing the cuttings home and writing directions for how to plant them at home.) Start sweet potato slips to take home and observe over time. 	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	<p>In the kitchen, have students discuss the propagation methods used for any of the ingredients they use in their dishes for the Feast Around the World.</p>	<p>BAM Box!: Have students prepare <u>sweet potato slips</u> to take home, grow out, and document over time in their journals. If you live where sweet potatoes grow, they can return these to the garden when they're ready to plant out.</p>	<p>NGSS.7.LS2.A Interdependent Relationships in Ecosystems.</p> <p>CCSS.ELA-LITERACY.SL.7.1.C Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.</p>	

GRADE 8 | Garden

SCOPE & SEQUENCE



GRADE 8 STANDARDS


At the end of Grade 8, students will be able to:


- Demonstrate mastery of garden planning and maintenance, seasonal planting, post-harvest techniques, basic business skills, and plant identification.
- Demonstrate ability to resolve watering, weeding, harvest, and distribution challenges that exist in a garden.
- Demonstrate knowledge of and explain the proportional relationship of soil components.
- Demonstrate understanding of weather, seasonality, and succession planting.
- Demonstrate ability to analyze differences between locally grown and imported food.
- Demonstrate knowledge of urban garden design.


GRADE 8 | FALL


Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<h3>START THE YEAR <i>Schoolwide Garden Work Party with Families/Local Community</i></h3>								
1. Welcome to the Garden!	Personal and Community Life Skills (PLS and CLS)	GFS.8.1 Understand physical changes in the garden environment.	Have students share their names. Explore Garden Agreements established in Grade 7 Lesson #1: Welcome to the Garden! together and ask if anyone would like to suggest any updates. Review Personal and Community Life Skills. Then have students elaborate, practicing these agreements as they walk through the garden reviewing the plans they made last year for a food business, and checking on the crops they planted in Grade 7 Lesson #14: Planting for Our Business.	PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.	Students will make the product for the business planned here in Kitchen Lesson #2: Preparing the Product for Our Business.	Classroom: Illustrate the life cycle of the plants that you have seen in the garden so far (include dates).	Social Studies: Economics. NGSS.7.LS1.B Growth and Development of Organisms.	
2. Harvesting for Our Business	Business Planning (BP)	BP.8.1 Demonstrate the ability to run a food business project. GTE.8.1-3 Garden Tools and Equipment	Review safe tool use and proper harvesting and handling techniques and why these are so important. Have students calculate the amount of produce they need in order to make their first batch of the product for their food business. Then harvest produce for the business project and bring to the kitchen to store for use in Kitchen Lesson #2: Preparing the Product for Our Business.	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	Students will make the product for the business planned here in Kitchen Lesson #2: Preparing the Product for Our Business.	Community: Interview local chefs on how they calculate how much produce they'll need for their menu each day.	Social Studies: Economics. CCSS.MATH. CONTENT.8.EE.C.8.C Solve real-world and mathematical problems leading to two linear equations in two variables.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
3. Community Support for Our Business	Garden Planning and Maintenance (GPM)	GPM.8.1 Identify and utilize community resources available to support business project.	Have students brainstorm, exploring all the possible ways the community could support their project, such as through donations of goods or services; promoting the business; and the like. Have students explore the pros and cons of each strategy, and then select a few strategies to pursue as a team. Hand out journals that students will use to reflect at the end of each lesson. Have students elaborate, recording 3 action steps for inviting community involvement in their business project. 	PLS.6 Students actively seek creative and resourceful solutions.	In their outreach to community members, have students highlight skills they have learned in the garden or the kitchen to explain the value of the program to potential supporters.	BAM! Box: Have students survey family or community members about their business plan to gather feedback on the concept, pricing, packaging, etc., before launching.	Social Studies: Economics. CCSS.ELA-LITERACY.W.8.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Promoting Our Business	Business Planning (BP)	<p>BP.8.1 Demonstrate the ability to run a food business project.</p> <p>BP.8.3 Create a marketing, outreach, communications plan for project.</p>	<p>Have student teams work together to promote their product. Have them explore through discussion how to attract customers attention; how to convince customers to purchase; how to convey the nutritional benefits of the product; how to distinguish the product from others; and the like. Have students elaborate by using these ideas to create an advertisement for their product, either on paper or online.</p> 	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>In their marketing materials, highlight both kitchen and garden connections, with phrases such as “Featuring tomatoes grown in the Middle School Garden and prepared in small batches by Grade 8 Students at Mesa Middle School.”</p>	<p>Community: Explore other advertisements for food products in your community. Discuss what elements make them effective or ineffective for your audience.</p>	<p>Social Studies: Economics.</p>	<p>National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.</p>


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
5. Launching Our Business	Business Planning (BP)	<p>BP.8.1 Demonstrate the ability to run a food business project.</p>	<p>Have each student choose a department for which they will share in the responsibilities, such as packaging, delivery, marketing, sales, etc. Then have them work together to elaborate on their learning by launching the project, for example by hosting a farm stand in the school garden or selling preserves at pick up time. Ensure they track records of expenses and profit each time they make and sell their product.</p> 	<p>CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.</p>	<p>As students launch their business, reflect together on how the kitchen and the garden are interdependent, and both were essential to make this business happen.</p>	<p>Community: Interview people in the community that work in these lines of production (packaging, delivery, marketing, sales) preferably in a food business. Ask them for their top three best practices that you should consider in your work.</p>	<p>Social Studies: Economics.</p> <p>NGSS Science and Engineering Practice: Developing and Using Models.</p>	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Life Cycle of a Plant	Plants (P)	<p>P.8.1 Identify and describe structure and function of edible plants.</p> <p>P.8.2 Identify and describe full cycle of a diversity of plants in the garden.</p>	<p>Have students elaborate on their learning about life cycles in plants by tracing the entire cycle of the life of a plant they featured in their product. Have them create posters depicting the life cycle from seed to plant to seed, with scientific illustrations of each phase. Have them label each plant part in their illustration, showing how it grows and changes over time. Alternatively, have students take photos of their plants throughout their life cycles and then use these photos to tell a story of the plant from seed to plant to seed again.</p> 	<p>PLS.6 Students actively seek creative and resourceful solutions.</p>	<p>In the garden, have students identify and enjoy edible seeds, sprouts, full grown plants, and flowers. Work with them to connect these edible foods to the life cycle of the plant itself.</p>	<p>Classroom: Write and illustrate a narrative story of your plant growing up with your plant as the main character, to read to students at the elementary school.</p>	<p>NGSS.7.LS1.B Growth and Development of Organisms.</p> <p>VA:Cr2.3.8a Select, organize and design images and words to make visually clear and compelling presentations.</p>	

GRADE 8 | WINTER



Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Making Six Plant Part Snacks	Plants (P)	P.8.1 Identify and describe structure and function of edible plants.	Engage students by having them review in pairs what they know about the 6 plant structures (roots, stems, leaves, flowers, fruits, and seeds). Have students review safe food harvesting and handling practices. Then elaborate by challenging them, in teams, to harvest, design, and prepare simple snacks including each of the plant parts. Explain that they might make a salad, a wrap (using a lettuce leaf), a kabob, or the like. You can provide a dressing or dip, although it's not necessary. Have students make enough for the class to taste. Then rotate through, having students present and then taste each snack item. This can be a competition, with each student voting for their favorite snack (not made by their team).	PLS.6 Students actively seek creative and resourceful solutions.	Ask students to describe the flavors and textures of their snacks using Culinary Flavor and Texture concepts and terms learned in their tasting activities in the kitchen lessons (sour, sweet, salty, bitter, crunchy, mealy, etc.)	Classroom: Have students compare the structures of plants to those of the human body. How are they similar? (Sample answer: We have bones to hold us upright, and plants have stems to hold them upright). How are they different? (Sample answer: Plants have leaves that photosynthesize to create food; we have mouths to eat food from plants and animals, because we can't photosynthesize to produce our own food).	NGSS Crosscutting Concept: Structure and Function.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
8. Improving the Business	Business Planning (BP)	<p>BP.8.1 Demonstrate the ability to run a food business project.</p> <p>BP.8.2 Understand Profit/Loss for project.</p>	<p>Look at records of expenses and sales for business project together, and discuss why record keeping and analysis is important to business. Compare with projections from Grade 7. Challenge students to make explanations for discrepancies. To elaborate, have them brainstorm how to improve the business and maximize profit, for example by expanding the customer base, securing more donations, tweaking the recipe for the product, etc.</p> 	<p>PLS.5 Students develop the ability to make informed and responsible decisions.</p>	<p>In this garden lesson, discuss expenses in both the garden and the kitchen for this project. Compare time spent growing the produce with preparing it. Discuss the role of farmers and chefs in preparing a product for market.</p>	<p>Community: Ask local farmers how they determine their expenses—how do they account for their time, energy, and natural resources. Further, ask what options they have for increasing their income (markets, restaurants, wholesale, etc).</p>	<p>Social Studies: Economics.</p> <p>CCSS.MATH. CONTENT.8.EE.C.8.C Solve real-world and mathematical problems leading to two linear equations in two variables.</p>	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. Garden Caretaker Station Rotation	Garden Planning and Maintenance (GPM)	GPM.8.2 Resolve watering, weeding, harvest and distribution challenges that exist in a garden. S.8.1 Describe soil components and explain the proportional relationships. GTE.8.1-3 Garden Tools and Equipment	Have students elaborate on their garden and business learning by dividing into teams to implement next steps to keep their garden growing and business going. For example they may choose to prune back berries, test and amend soil, order new seeds, or the like.	PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.	In this garden lesson, discuss how to modify the business from what they launched in the fall to reflect produce that is in season now, and/or will be in season in the spring.	Community: Recruit members of the community to assist with next steps.	Social Studies: Economics. NGSS.8.LS1.B Growth and Development of Organisms.	
10. Year Round Garden Planning	Weather and Seasons, Climate and Geography (WSCG)	WSCG.8.1 Utilize knowledge of weather and seasonal changes to create a 12 month planting calendar.	Provide student teams with blank calendars and guide them in elaborating on what they have learned over their years in the garden and kitchen to make a plan for what to plant and harvest in each month or season throughout the year. 	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In this garden lesson, make connections between the year round garden calendar they made and the seasonal menu they designed in Kitchen Lesson #10: My Food Cart, Part 3.	Cafeteria: Present calendar to the cafeteria staff and explore options to taste test harvested produce in the cafeteria each month.	NGSS.8.LS1.B Growth and Development of Organisms. VA:Cr2.3.8a Select, organize, and design images and words to make visually clear and compelling presentations.	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
11. Observing Plant Life Cycles	Plants (P)	P.8.2 Identify and describe full cycle of a diversity of plants in the garden.	Have pairs of students each select a plant. Have them explore its growth, tracking the development of that plant over time in their journals. For this first time, have them draw a scientific illustration of the plant, including the date. Have them label each structure present, and record 3 predictions about how it will look different in a month.	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.	In the garden, have students identify and prepare a snack that incorporates plants at different stages of their life cycles, such as a salad with seeds and sprouts.	Community: Have students look for and illustrate or photograph plants at different stages of their life cycles (seeds, sprouts, dead leaves, etc).	Social Studies: Economics. CCSS.MATH. CONTENT.8.EE.C.8.C Solve real-world and mathematical problems leading to two linear equations in two variables.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>12. Local versus Imported Foods</p> 	<p>Garden and Food Systems (GFS)</p>	<p>GFS.8.3 Describe and characterize the differences between foods grown locally and those imported from other parts of the United States and the world.</p>	<p>Engage students by introducing different journeys foods can take to get to the plate. Explore and explain the differences together by researching the differences in appearance, freshness, nutrition, and the environmental impact between foods grown locally and those imported from other parts of the United States and the world. Then elaborate on the ideas researched by conducting a comparative taste test between a food grown locally; another sample of the same crop imported from another part of the United States; and a third sample imported from another country.</p> 	<p>PLS.5 Students develop the ability to make informed and responsible decisions.</p>	<p>As students prepare foods in the kitchen, have them identify which ingredients are local and which are imported.</p>	<p>Community: Interview farmers market customers about why they choose to buy locally.</p>	<p>Social Studies: Economics.</p>	<p>National Health Education Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.</p>

GRADE 8 | SPRING

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Planning Our Gift to the Garden	Garden and Food Systems (GFS)	GFS.8.1 Understand physical changes in the garden environment.	Each class in Grade 8 will decide upon and install a parting gift to the garden. They will use profit generated from their student-run business to purchase materials for the gift. Have students explore options, such as a bean teepee, a shaded gathering area, or a worm bin. If necessary have students assess the soil in the areas they are considering. Explain how to assess the physical impact of their installation (shade it may cast; impacts on drainage, etc.) Then have students elaborate, assessing these elements for various potential gifts to the garden. 	PLS.6 Students actively seek creative and resourceful solutions.	For each proposed gift to the garden, discuss not only benefits in the garden, but also benefits in the kitchen (i.e. a bean teepee will provide a good source of beans for when the students study proteins).	Classroom: Practice engineering and design skills by drafting models of potential gifts and where they will exist in the garden space.	VA:Cr2.1.8a Demonstrate willingness to experiment, innovate, and take risks to pursue ideas, forms, and meanings that emerge in the process of artmaking or designing. CCSS.MATH.CONTENT.8.EE.C.8.C Solve real-world and mathematical problems leading to two linear equations in two variables.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Our Gift to the Garden	Garden and Food Systems (GFS)	<p>GFS.8.1 Understand physical changes in the garden environment.</p> <p>S.8.1 Describe soil components and explain the proportional relationships.</p>	<p>Have student teams share the ideas they generated in Lesson #13: Planning Our Gift to the Garden. Have them elaborate on their learning by discussing pros and cons of each one. Then have them vote to identify the best gift to the garden and a good location for it.</p> 	<p>PLS.6 Students actively seek creative and resourceful solutions.</p>	<p>The funds used to purchase this gift were generated by students by selling a product they made in Kitchen Lesson #2: Preparing the Product for Our Business.</p>	<p>Classroom: Collect data on votes from each Grade 8 class to combine into a bar graph to show the overall vote.</p>	<p>CCSS.ELA-LITERACY.SL.8.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p> <p>CCSS.MATH.CONTENT.8.EE.C.8.C Solve real-world and mathematical problems leading to two linear equations in two variables.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Garden Caretaker Station Rotation	Garden Planning and Maintenance (GPM)	GPM.8.2 Resolve watering, weeding, harvest and distribution challenges that exist in a garden.	Divide into 3 teams. Have each team elaborate on their garden learning to date by doing each of the following for 10-15 minutes and then rotate: <ul style="list-style-type: none"> • Put down mulch or another form of weed prevention. • Check the plants to determine what is ready for a succession planting and plant that. • Work together to identify other garden needs, such as crops that need to be covered to protect from pests, fences or irrigation that need mending, etc. 	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	As students complete garden tasks, reflect on how this caretaking supports the kitchen and their garden/ kitchen business.	Community: Offer to visit a local community garden to implement the same tasks for their garden.	NGSS.8.LS2.A Interdependent Relationships in Ecosystems. CCSS.ELA-LITERACY.SL.8.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Installing Our Gift to the Garden	Garden and Food Systems (GFS)	GFS.8.1 Understand physical changes in the garden environment. GTE.8.1-3 Garden Tools and Equipment	Review safe and proper use of any relevant tools and demonstrate use of any new tools. Then have them elaborate upon their learning by building and installing the garden gift together. You can convert measurements into metric units to reinforce metric conversions they did in Kitchen Lesson #16: Egg Drop Soup . If there's time, work with your students to prepare to present their garden gift to younger grades in Lesson #17: Presenting Our Gift to the Garden .	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	Have students discuss how their work in the kitchen (making the product to sell in their food business) allowed them to generate the funds for this garden gift. Using this as a jumping off point, brainstorm all the ways the garden and kitchen activities support one another.	Community: Invite community volunteers in to help build and install the garden gift, if relevant. Classroom: Take photos of the building process, and then have students create a book to accompany the gift with photos and a description of their garden gift, the intentions behind it, and the process of building and installing it.	CCSS.ELA-LITERACY.SL.8.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly. VA:Cr1.1.8a Document early stages of the creative process visually and/or verbally in traditional or new media.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Kitchen Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Presenting Our Gift to the Garden	Garden and Food Systems (GFS)	GFS.8.1 Understand physical changes in the garden environment.	Invite younger classes to the garden and have the Grade 8 class elaborate upon their learning by presenting their gift, explaining why they chose it, how it changes the garden landscape, and how they suggest it be cared for over time.	CLS.2 Students cooperate and communicate well with each other.	In presenting the garden gift to younger grades, make any relevant connections to the kitchen, such as “This is a teepee where you can grow beans to cook and use in burritos, hummus, bean salads and more!”	Community: Invite families and other community members in for a “ribbon-cutting” ceremony to celebrate this new addition to the garden.	CCSS.ELA-LITERACY.SL.8.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others’ ideas and expressing their own clearly.	
18. Garden Reflections	Community and Personal Life Skills (CLS and PLS)		Guide students in finding a Magic Space and reflecting on what they have learned in their garden and kitchen classes. Lead a closing circle in which each student can elaborate on their learning by sharing something they have learned that they hope to bring with them into their lives. Then ask them to share something about working together for which they are grateful.	CLS.2 Students cooperate and communicate well with each other.	At the end of Kitchen Lesson #18: Preparing Food for the Feast Around the World , have students conduct a similar reflection, guiding students to consider life lessons they have learned in the kitchen.	Classroom: Write a letter to the rising Grade 8 class presenting the gift and reflecting on what they can look forward to next year	NGSS.8.LS1.A Structure and Function. CCSS.ELA-LITERACY.SL.8.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others’ ideas and expressing their own clearly.	

SCOPE & SEQUENCE

Kitchen

GRADE K | *Kitchen*



SCOPE & SEQUENCE




GRADE K STANDARDS


At the end of Grade K, students will be able to:

- Locate the teaching kitchen and recognize that it is a learning environment.
- Demonstrate an understanding of the five senses.
- Demonstrate knowledge of flavor and texture.
- Name and identify basic kitchen tools.
- Perform basic food preparation tasks.
- Recognize what a healthy food option is.
- Perform basic safety and sanitary practices.
- Demonstrate understanding of the basic concepts of abundance (a lot/more) and scarcity (few/less) as it relates to the kitchen.

GRADE K | FALL

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
1. Welcome to the Kitchen! 	Personal and Community Life Skills (PLS and CLS)	FP.K.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables	Cooking Concept Lesson: Engage students by reading a book about fruits and vegetables and then playing a name game with each student choosing a fruit or vegetable that begins with the same letter as their name. Explore teamwork by establishing kitchen agreements together. Explain the Personal and Community Life Skills. Then explain how to wash hands well, and discuss the importance of this. Have students elaborate upon these agreements as you wash hands, and enjoy a simple snack together, such as pre-cut carrot sticks or apple slices. Demonstrate how to collect food scraps in the compost bucket, and have students compost their food scraps.	PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.	Compare group agreements for the kitchen with agreements students have in the garden. How are behavior expectations similar in both places? How are they different?	Classroom: Compare group agreements for the kitchen with agreements students have in the classroom. How are behavior expectations similar in both places? How are they different?	CCSS.ELA-LITERACY.SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>2. Eat a Rainbow </p>	<p>Health Concepts (HC)</p>	<p>HC.K.2 Explain what Eat a Rainbow means.</p>	<p>Cooking Concept Lesson: Engage students by sending them on a color scavenger hunt to find all the colors of the rainbow in the kitchen. Then have them explore by sorting fruits and vegetables (or pictures of fruits and vegetables) by colors, count them, and make a collage of fresh healthy foods in the shape of a rainbow to hang on the wall. Explain the value of eating a rainbow of fruits and vegetables to support overall health. Hand out journals that students will use to reflect at the end of each lesson for the rest of the year.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>In Garden Lesson #2: Rainbow Scavenger Hunt, students look through the garden for fruits and vegetables of every color.</p>	<p>Cafeteria: Go on a rainbow scavenger hunt in the lunchroom or at the salad bar, finding fruits and vegetables of every color.</p>	<p>CCSS.ELA-LITERACY.L.K.5.A Sort common objects into categories (e.g. shapes, foods) to gain a sense of the concepts the categories represent</p> <p>CCSS.MATH.CONTENT.K.MD.B.3 Classify objects into given categories; count the number of objects in each category and sort the categories by count.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
3. Yummy Wake-Up Smoothies	Health Concepts (HC)	<p>HC.K.2 Explain what Eat a Rainbow means.</p> <p>FP.K.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables.</p> <p>KTE.K.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review importance of eating a rainbow of fruits and vegetables. Demonstrate how to use a blender/Vitamix. Then help students prepare Yummy Wake-Up Smoothie, There's a Chef in My Soup! (with adult support using the blender). As students add ingredients, note the colors of each.</p>	<p>PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.</p>	<p>Add garden-fresh fruits to your smoothie. Garnish with mint or other garden-fresh herbs. As students enjoy, trace ingredients back to their source. Bring compost out to the garden.</p>	<p>Classroom: Read aloud <i>Rainbow Stew</i> by Cathryn Falwell or <i>Planting a Rainbow</i> by Lois Ehlert.</p> <p>BAM! Box: Together with your caregivers, make a rainbow smoothie or other dish that has at least 3 colors of the rainbow in fruits and vegetables.</p>	<p>CCSS.ELA-LITERACY.L.K.5 With guidance and support from adults, explore word relationships and nuances in word meanings.</p> <p>CCSS.ELA-LITERACY.L.K.5.C Identify real-life connections between words and their use (e.g., note places at school that are colorful).</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. 5 Senses Tasting	Culinary Flavors and Textures (CFT)	<p>CFT.K.1 Name the five senses.</p> <p>CFT.K.2 Identify a variety of tastes and textures.</p>	<p>Cooking Concept Lesson: Conduct a 5 Senses Tasting. Harvest something from abundance in the garden, such as apples, cherry tomatoes or herbs. Teach how to wash produce using a colander, and then have students wash produce. Cut the produce into bite-size pieces for students, if necessary. Guide students through a sensory exploration of the food. Starting with their eyes closed, have them feel the food and describe its texture; smell and describe its scent. Then have them open their eyes to look at the food and describe its appearance. Next, have them take a bite and listen to the sound it makes. Finally, have them taste the food and describe the taste. Record the adjectives as students share them out. Finally, have students write simple poems using the name of the food and 5 sensory words to describe it.</p>	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	Use produce from the garden. As students enjoy, trace ingredients back to their source. Bring compost out to the garden.	<p>Classroom: As a class, count the number of adjectives students used to describe the food.</p>	<p>CCSS.ELA-LITERACY.SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.</p> <p>CCSS.ELA-LITERACY.L.K.5.C Identify real-life connections between words and their use (e.g., note places at school that are colorful).</p>	


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
5. Edible "Compost Piles"	Food Preparation (FP)	<p>FP.K.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables.</p> <p>HC.K.5 Make healthy food choices.</p> <p>KTE.K.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review how to properly handle and wash produce. Have students harvest and wash any green vegetables needed for the lesson. Then guide students through making miniature edible "compost piles" by layering brown crackers, such as rice crackers, with dip, such as hummus, and green vegetables, such as sugar snap peas or alfalfa sprouts. Discuss how compost ties the kitchen to the garden: we can take food scraps from the kitchen and turn them into nutrient-rich fertilizer for growing new plants!</p>	<p>PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.</p>	<p>Visit the garden compost pile to compare your edible models to the life-size version. Compost your food scraps.</p>	<p>Cafeteria: Have students identify food items in the cafeteria that can be composted in the garden.</p>	<p>CCSS.ELA-LITERACY.L.K.5.A Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent.</p> <p>NGSS.K.LS1.C Organization for Matter and Energy Flow in Organisms (H3A) All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. My First Watermelon Granita	Recipe Concepts (RC)	<p>RC.K.1 Describe what a recipe is.</p> <p>FP.K.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables.</p> <p>CFT.K.1 Name the five senses.</p> <p>CFT.K.2 Identify a variety of tastes and textures.</p> <p>KTE.K.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Watermelon Math: Look with students at the recipe for My First Watermelon Granita, <i>There's a Chef in My Family!</i> Discuss the key elements of a recipe, including ingredient lists and preparation steps. Estimate and then measure watermelon weight. Then review how to use the blender, demonstrate how to stir using a mixing spoon in a mixing bowl, and have students prepare the granita. As you enjoy, discuss the 5 senses (how it feels, smells, tastes, etc).</p>	<p>CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.</p>	Use watermelon from the garden if you have it. Garnish with mint or other garden herbs. Enjoy Granita together out in the garden. Bring compost out to the garden.	<p>Classroom: More Watermelon Math: Estimate then count seeds inside a watermelon. Compare number of black and white seeds.</p>	<p>CCSS.MATH.CONTENT.K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.</p> <p>NGSS K.LS1.C <i>Organization for Matter and Energy Flow in Organisms</i> All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

GRADE K | WINTER

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Our Special Dishes	Recipe Concepts (RC)	RC.K.2 Recognize how families share and maintain food and cultural traditions.	Cooking Concept Lesson: Explain the connection between recipes, culture, and traditions. Have students elaborate by drawing a dish their family eats on special occasions. Then have them share, making it exciting by announcing it ahead of time, decorating a special presenter's chair, and/or providing a snack to enjoy at the end of the share outs.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	Bring students to the garden to look for crops they recognize from eating them at home.	Community, Classroom: Have students work with caregivers to write and bring to class a recipe for something they eat at home. Photocopy all recipes to create a class recipe book for each student.	Social Studies: Culture.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>8. Sugar-and-Spice Acorn Squash</p> 	<p>Recipe Concepts (RC)</p> <p>Food Preparation (FP)</p>	<p>RC.K.1 Describe what a recipe is.</p> <p>FP.K.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables.</p> <p>KTE.K.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Pre-cut acorn squash and pre-bake for 45 minutes. Look together at the recipe for Sugar-and-Spice Acorn Squash, <i>There's a Chef in My Family!</i>, and discuss what a recipe is and why chefs use them. Then review how to use a mixing bowl and mixing spoon. Follow the recipe, reading each step aloud and then guiding students through the process, one step at a time. While the squash is baking for the remaining 20 minutes, clean up. Remove the squash from the oven for students, serve and enjoy.</p>	<p>PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.</p>	<p>Harvest acorn squash from the garden, if you have it. Garnish with herbs from the garden. Bring compost out to the garden. Discuss the components of the soil that made it possible to grow the squash, such as the worms, the dead leaves, the rocks, etc.</p>	<p>Community: Prepare enough to share, and invite caregivers in to share in the acorn squash dish.</p>	<p>CCSS.ELA-LITERACY.L.K.5 With guidance and support from adults, explore word relationships and nuances in word meanings.</p> <p>CCSS.ELA-LITERACY.L.K.5.C Identify real-life connections between words and their use (e.g., note places at school that are colorful).</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. Discovering Food Groups	Health Concepts (HC)	<p>HC.K.3 Name a food group.</p> <p>HC.K.4 Identify a food group in the garden.</p>	<p>Cooking Concept Lesson: Introduce the major food groups: Grains, Proteins, Fruits, Vegetables, and Dairy. Have students explore by sorting example foods (or pictures of foods) into food group categories. Have them name examples from the garden. Have students elaborate by describing their favorite meals in terms of food groups represented.</p>	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	<p>In Garden Lesson #10: What Grows in Our Garden?, look for food groups growing in the garden.</p>	<p>Cafeteria: Identify the food groups in a school lunch.</p>	<p>CCSS.ELA-LITERACY.L.K.5.A Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent.</p> <p>CCSS.MATH.CONTENT.K.MD.B.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
10. Herbed Mediterranean Yogurt Cheese Spread	Health Concepts (HC) Food Preparation (FP)	HC.K.4 Identify a food group in the garden. FP.K.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables. KTE.K.1-4 Kitchen Tools and Equipment	Cooking Lesson: Explain why people prepare dips (to make fruits and vegetables even more delicious and to add another food group to a fruit or vegetable snack). Review how to use a mixing bowl and mixing spoon, and then help students prepare Herbed Mediterranean Yogurt Cheese Spread, <i>There's a Chef in My World!</i> Incorporate herbs from the garden or otherwise available. As you enjoy together, reflect on food groups represented by pita, vegetables, and dip, and which ones came from the garden.	CLS.2 Students cooperate and communicate well with each other.	Harvest vegetables from the garden and taste with the dip. Incorporate other garden herbs. Bring compost out to the garden.	BAM! Box: Prepare Yogurt Cheese Spread at home and enjoy with your favorite vegetable.	CCSS.ELA-LITERACY.L.K.5.A Sort common objects into categories (e.g. shapes, foods) to gain a sense of the concepts the categories represent. CCSS.MATH.CONTENT.K.MD.B.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
11. Who Grows and Prepares our Food?	Home Economics (HE)	HE.K.1 Understand and describe a variety of food related professions.	Cooking Concept Lesson: Engage students by reading aloud <i>Before We Eat: From Farm to Table</i> by Pat Brisson and Mary Azarian. Before you begin to read, tell students to put their hands on their head every time they hear about a new food profession. As you read, stop every time a new food profession is mentioned to have students discuss and explain what those people do to help us get our food. Next, ask students if they know anyone who does any of the things mentioned. When the book is finished, discuss our role in the food system, as consumers. Have students elaborate by drawing pictures or writing thank you letters to local farmers, bakers, or the like.	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.	As you harvest and/or prepare food together, discuss with your students: "How are we being farmers, bakers, chefs, etc., right now?"	Community: Send student drawings and letters to local farmers, chefs and the like.	CCSS.ELA LITERACY.SL.K.4 Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Straight from the Garden	Food Preparation (FP)	<p>FP.K.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables.</p> <p>KTE.K.1-4 Kitchen Tools and Equipment</p> <p>HC.K.5 Make healthy food choices.</p>	<p>Cooking Lesson: Discuss the benefits of eating local, seasonal foods (economic, flavor, environmental, etc). Select and prepare a recipe featuring ingredients grown in the school garden. In the winter, this may center around storage crops and preserved foods, such as roasted root vegetables with dried herbs. Before you eat, highlight which ingredients were grown or sourced from the school garden and/or locally; and which were grown locally in a different season and preserved or stored for later use.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>Visit the garden or pantry with students to count and then list produce that's in abundance (in the winter, this may center around storage crops and preserved foods). Then suggest a recipe that you've selected featuring produce you have. Look for options to garnish or substitute with abundant produce. After cooking, bring compost out to the garden.</p>	<p>Classroom: Count the types of produce you have growing in your garden in different seasons. Record each time, and then compare to find patterns of abundance and scarcity.</p>	<p>CCSS.MATH.CONTENT.K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

GRADE K | SPRING


Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Mystery Produce	Culinary Flavors and Textures (CFT)	<p>CFT.K.1 Name the five senses.</p> <p>CFT.K.2 Identify a variety of tastes and textures.</p>	<p>Cooking Concept Lesson: Engage students by hiding one fruit or vegetable at a time under a clean kitchen towel or in a bag. Have students feel the produce and guess what it is. Ask them to support their ideas with evidence before opening their eyes to see it. Then have them use all 5 senses to explore the food and then taste it.</p>	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	Use produce from the garden. Go on a sensory scavenger hunt of the garden (see Garden Lesson #2: Rainbow Scavenger Hunt for ideas). Bring compost out to the garden.	<p>Community: Conduct a 5 Senses Scavenger Hunt at home, giving students challenges to find things that smell sweet, look colorful, sound loud, etc.</p>	<p>CCSS.ELA-LITERACY.SL.K.4 Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.</p> <p>NGSS Science and Engineering Practice: Engaging in Argument from Evidence</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Fresh-and-Fruity Freeze Pops 		<p>FP.K.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables.</p> <p>HC.K.5 Make healthy food choices.</p> <p>CFT.K.1 Name the five senses.</p> <p>CFT.K.2 Identify a variety of tastes and textures.</p> <p>KTE.K.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review how to wash produce with colanders, and then help students prepare Fresh-and-Fruity Freeze Pops, <i>There's a Chef in My Soup!</i> using whatever fruits you have in season. Discuss the idea of dessert as a sweet treat for special occasions, and explain why this recipe is a healthy option for a dessert. Freeze and then enjoy during your next class, or deliver to students the next day. If you have enough time, play "What do you think has more sugar?" with students by showing a series of photos that contain 2 food items at a time. Ask students to point to the one they think has the most sugar, and then reveal the answers. While enjoying popsicles, develop together a word bank of adjectives for the flavors and textures.</p>	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	Use produce from the garden, if possible. Bring compost out to the garden.	<p>Community: Take a field trip to a local grocer or farmers market to choose local, seasonal fruits for these popsicles.</p>	<p>CCSS.ELA-LITERACY.L.K.5 With guidance and support from adults, explore word relationships and nuances in word meanings.</p> <p>CCSS.ELA-LITERACY.L.K.5.C Identify real-life connections between words and their use (e.g., note places at school that are colorful).</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Where Does Food Come From?	Health Concepts (HC)	HC.K.1. Explain where fresh foods come from.	Cooking Concept Lesson: Have students explore the source of food by matching pictures of common dishes (i.e. French fries) with their sources (i.e. potatoes). Then challenge them to elaborate with more complex dishes, for example by tracing a common dish (i.e. pizza) back to its sources: plants and animals.	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	In Grade 1 Garden Lesson #16: Plant a Pizza Bed, students will plant their own Pizza Bed in the garden. If you have a Pizza Bed growing in your garden, reference it as you help students connect common dishes with their sources.	Cafeteria: Trace some ingredients from a school lunch back to their sources.	NGSS.K.LS1.C <i>Organization for Matter and Energy Flow in Organisms</i> All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. CCSS.ELA-LITERACY.L.K.5.A Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Mmmm-Hmmm Hummus	Home Economics (HE) Food Preparation (FP)	HE.K.2 Understand abundance in terms of seasonality. FP.K.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables. KTE.K.1-4 Kitchen Tools and Equipment HC.K.5 Make healthy food choices.	Cooking Lesson: Introduce hummus and vegetables as a healthy, well-rounded snack. Review how to use colanders, and then have students wash and scrub carrots, or other vegetables you'll be dipping in hummus. Have students prepare Mmmm-Hmmm Hummus, There's a Chef in My Family! , and serve with carrot sticks (cut by an adult), or any other vegetable that you have in abundance in the garden. As you eat, trace each ingredient back to its source. Discuss what other vegetables would be good with hummus, and how you could vary this dish by season.	CLS.2 Students cooperate and communicate well with each other.	Use produce from the garden, if possible. Garnish hummus with fresh garden herbs. Try hummus with other produce growing in the garden. Bring compost out to the garden. Sprout garbanzo bean seeds in containers and observe their growth over time.	Classroom: As a class, draw a picture of each step in the journey to this dish: produce growing, being harvested, being prepared, and then being eaten.	NGSS.K.LS1.C <i>Organization for Matter and Energy Flow in Organisms</i> All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.
17. Researching Vietnam	Recipe Concepts (RC)	RC.K.2 Recognize how families share and maintain food and cultural traditions.	Cooking Concept Lesson: In preparation for the Feast Around the World, have students explore aspects of life in Vietnam. Have them locate Vietnam on a map, and use videos and/or leveled readers to research different aspects of life in Vietnam, including celebrations, customs, and the like. Have them elaborate by preparing to present on their country in the Feast Around the World.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In the garden, plant a bed with crops that can thrive in your region that are typical in an Asian diet, such as bok choy, yardlong beans, or shiso leaf.	Community: Ask students if they have family members from Asia. If so, invite them in to share a favorite recipe from their region.	Social Studies: Diversity and Culture. Social Studies: Geography.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Shrimp and Veggie Summer Rolls	Recipe Concepts (RC)	<p>RC.K.2 Recognize how families share and maintain food and cultural traditions.</p> <p>FP.K.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables.</p> <p>KTE.K.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Explain to students that the Feast Around the World is an opportunity to experience international foods and learn about different cultures. Check for food allergies before beginning this activity. Harvest any produce you can use from the garden. Pre-soak, cook, and chop all ingredients ahead of time. With students, demonstrate how to fill a summer roll. Then have students fill and help them wrap Shrimp and Veggie Summer Rolls, <i>There's a Chef in My World!</i>, and prepare them for presentation at the Feast Around the World.</p> <p> Caution NOTE: This recipe contains shellfish and should be modified for individuals with shellfish allergies. Because shellfish allergies are common, make a label to put in front of the rolls at the feast saying "Contains Shellfish".</p>	CLS.4. Students appreciate and are respectful of differences and diversity in their communities.	Use produce from the garden, if possible. Garnish with cilantro, lemongrass or other Asian herbs growing in your garden. Try with other produce growing in the garden. Bring compost out to the garden.	<p>Community: Invite families and community members in to enjoy this dish at the Festival Around the World.</p>	<p>Social Studies: Diversity and Culture.</p> <p>Social Studies: Geography.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Elementary School Feast Around the World!

GRADE 1 | *Kitchen*



SCOPE & SEQUENCE




GRADE 1 STANDARDS

At the end of Grade 1, students will be able to:

- Demonstrate understanding that one food item can have a variety of flavors and textures.
- Demonstrate knowledge of basic flavor sensations.
- Demonstrate understanding of basic food preparation.
- Demonstrate understanding of a recipe.
- Begin to understand abundance and seasonality.
- Demonstrate the ability to recognize and provide examples of whole foods, a balanced meal, and a healthy snack.
- Demonstrate understanding of food traditions in their community.
- Demonstrate knowledge of food related professions.

GRADE 1 | FALL

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
1. Welcome to the Kitchen!	Personal and Community Life Skills (PLS and CLS) Food Preparation (FP)	FP.1.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables.	Engage students in a name game and team building exercise. Explore teamwork by establishing kitchen agreements together. Review Personal and Community Life Skills. Explain and demonstrate how to wash produce and tear herb leaves. Then have students elaborate, practicing these agreements and skills as you wash hands, prepare, and enjoy a very simple snack together, such as pre-cut carrot sticks with an herbed cream cheese dip featuring herbs from the garden.	PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.	Compare group agreements for the kitchen with agreements students have in the garden. How are behavior expectations similar in both places? How are they different?	Classroom: Compare group agreements for the kitchen with agreements students have in the classroom. How are behavior expectations similar in both places? How are they different?	CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.	
2. Comparative Taste Tests 	Culinary Flavors and Textures (CFT)	CFT.1.1 Describe the differences between a number of same fruits or vegetables. CFT.1.2 Name and describe taste sensations.	Cooking Concept Lesson: Engage students by asking them to describe their favorite foods (including the look, taste, texture, and their opinion). Then, explore 4 of the 5 main taste adjectives (sweet, bitter, sour, salty) by tasting foods that represent them. Elaborate on this understanding by conducting a comparative taste test with different varieties of the same food (such as 2 varieties of apples). Use the Food Observation Tool handout provided with the lesson plan to record their observations.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	Use produce from the garden, if possible. Conduct the tasting in the garden, right where the crop is growing (for example, conduct a tomato tasting near a bed of tomatoes). Bring compost out to the garden.	Classroom: Use the descriptive language on the Food Observation Tool to create poems or sentences describing the foods together.	CCSS.ELA-LITERACY.L.1.5 With guidance and support from adults, demonstrate understanding of word relationships and nuances in word meanings. CCSS.ELA-LITERACY.L.1.5.C Identify real-life connections between words and their use (e.g., note places at home that are cozy).	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>3. Crispy-Crunchy Granola Munchies</p>	<p>Food Preparation (FP)</p>	<p>KTE.1.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Demonstrate how to measure with measuring cups and spoons. Then prepare Crispy-Crunchy Granola Munchies, <i>There's a Chef in My Soup!</i> Emphasize that the oats, nuts, and many other ingredients are seeds. As you prepare, have students count ingredients aloud, adding whole numbers as you go. Discuss seeds as a part of a plant, and also a great source of natural energy and nutrition for us.</p>	<p>CLS.1. Students demonstrate problem solving and resolve conflict as a team.</p>	<p>Highlight which granola ingredients are seeds, and have students compare to the seeds they found in Garden Lesson #2: Edible Seeds. Discuss the seed-to-plant-to-table connection.</p>	<p>Cafeteria: Look for as many seeds as you can find in the school lunch line (remember to include bread, pasta, and other things made from flour, which comes from seeds).</p> <p>BAM! Box: Find and list 10 items in your home that contain seeds (i.e. tortillas, pasta, bread, etc).</p>	<p>CCSS.MATH.CONTENT.1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p> <p>NGSS.1.LS1.A Structure and Function All organisms have external parts... Plants have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Your Favorite Fruit Salad	Health Concepts (HC)	<p>HC.1.1 Create a healthy snack from the garden.</p> <p>HC.1.2 Harvest foods from the garden for taste and nutrition with guidance.</p> <p>FP.1.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables using tools and equipment</p> <p>KTE.1.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Demonstrate how and when to identify and harvest ripe fruit. Discuss why this is important (if we pick it when it's green, it'll be sour and then we won't get sweet fruit later!). Then, harvest fruit together and guide students to modify the fruit salad recipe by incorporating fruits from the garden or otherwise available. Cut the harvested fruit into smaller pieces for students to cook with. Demonstrate safe food handling skills and point out to students that you are using a cutting board appropriate for fruits and vegetables. Review how to use measuring cups and spoons. Then help students prepare Your Favorite Fruit Salad, There's a Chef in My Soup!, together. Have students count, measure, and add ingredients one at a time. Demonstrate how to serve using small tongs, and then have students serve themselves and enjoy.</p>	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	Visit the garden with students to harvest fruits that they have growing. Look for mint or other herbs you might use as a garnish. After preparing fruit salad, bring compost out to the garden.	Classroom: Read aloud <i>End of the Rainbow Fruit Salad</i> by Marianne Welsh, Eluka Moore, and Larry Puzniak.	CCSS.MATH.CONTENT.1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
5. Taste Sensations	Culinary Flavors and Textures (CFT)	CFT.1.2 Name and describe taste sensations.	Cooking Concept Lesson: Engage students in a discussion around how chefs work with flavors to create delicious meals. Have students explore flavors. Give each student a glass of water and then a pinch of sea salt to taste. After they taste, discuss the flavor. In addition to the words they share, explain that one term for this flavor is “salty” and discuss other salty foods they eat. Invite them to use the water to cleanse their palates. Then follow the same procedure with a small slice of lemon (sour); cacao nibs (bitter); and brown sugar (sweet). Use brown sugar to distinguish visually sugar from salt.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	If available in the garden, taste arugula or kale or other raw leafy greens as examples of bitter vegetables. Contrast with carrots or corn or other sweet vegetables.	Cafeteria Discuss flavor sensations of the school lunch.	CCSS.ELA-LITERACY.SL.1.4 Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Salsas	Health Concepts (HC) Food Preparation (FP)	HC.1.1 Create a healthy snack from the garden. KTE.1.1-4. Kitchen Tools and Equipment	Cooking Lesson: Explain to students that they'll be creating and comparing different variations of a recipe today, which is something chefs do all the time. One benefit is that this allows them to modify recipes to use local, seasonal produce. Harvest all available produce for recipe with students, and chop for them. Review how to use a food processor, blender, or Vitamix. Have student teams prepare different variations of Salsa, There's a Chef in My Family! . Explain to students that salsa can be made with other fruits instead of tomatoes, such as mango, peach, or apple. Divide into teams and give each team a different fruit to use as the base for their salsa. Have them combine the pre-chopped ingredients in food processors, blenders, or Vitamixes to prepare their salsas. Once all salsas are ready, conduct a comparative tasting together. As students taste each salsa, have them describe the unique flavors. Record the answers on chart paper. Then, have teams write a few sentences about the salsa they made, using some of the adjectives that others used to describe their salsa.	CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.	Use produce from the garden, if possible. Modify salsa recipe to incorporate other produce growing in the garden. Bring compost out to the garden. If space allows, in the spring, you can have students plant a salsa bed full of produce to be used for salsa.	Community: Ask if students have any family members who make salsa. If so, invite them in to share their recipes. Classroom: Make a classwide bar graph to show student salsa preferences.	CCSS.ELA-LITERACY.SL.1.4 Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly. CCSS.ELA-LITERACY.W.1.2 Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

GRADE 1 | WINTER

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Balanced Meals	Health Concepts (HC)	<p>HC.1.3 Describe the food groups.</p> <p>HC.1.4 Describe what a balanced meal is.</p>	<p>Cooking Concept Lesson: Engage students by showing them MyPlate or a similar food grouping resource in a large format, such as a poster, and asking them what they notice or wonder about the plate. Define each food group and discuss how it supports overall health. Give examples of each food group. Then, give students pictures of simple foods and have them explore, sorting the food items onto the big MyPlate. Explain that balanced meals help us maintain overall health. Finally, have students elaborate by picking one food and walking around to find friends they could combine with to make a balanced meal. Once in groups, have students discuss and then share out a meal that would contain all of the food groups.</p>	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	Identify food groups present in the garden.	<p>Cafeteria: Identify food groups for each cafeteria offering. Have students create signs to label food groups of each item in the lunch line.</p>	<p>CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.</p>	<p>National Health Education Standard 6: Students will demonstrate the ability to use goal-setting skills to enhance health</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
8. Eat-a-Pita Pizzas	Health Concepts (HC) Food Preparation (FP)	HC.1.1 Create a healthy snack from the garden. HC.1. Harvest foods from the garden for taste and nutrition with guidance. KTE.1.1-4 Kitchen Tools and Equipment	Cooking Lesson: Review how to find and harvest ripe vegetables in the garden. These can be vegetables from the pizza bed that last year's Grade 1 class planted in Garden Lesson #16: Plant a Pizza Bed . Slice vegetables for pizza toppings while students assemble pita, sauce, and cheese to build Eat-a-Pita Pizzas, There's a Chef in My Soup! Then, have students add veggie and mushroom toppings to their pizzas. While pizzas are cooking, discuss the role of mushrooms as decomposers in the garden ecosystem. Cut pizzas for students into halves and quarters, naming these pieces. Help them count and figure out a fair way to cut and distribute pizzas so everyone starts with the same amount. As they enjoy, have students identify the food groups represented in their pizza and review how each food group supports overall health.	CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.	Use produce from the garden, if possible. Bring compost out to the garden. In Garden Lesson #16: Plant a Pizza Bed , students will plant a bed in the shape of a pizza with wheat around the crust; tomatoes, basil and other vegetables in the "slices;" and a statue of a cow for the cheese.	Community: Make extra pizza to share with school staff, caregivers at pick up, or a class from a younger grade. Host a pizza party featuring homemade pizzas to celebrate a special event at school.	CCSS.MATH.CONTENT.1.G.A.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. Snacking on What's in Abundance	Health Concepts (HC)	<p>HC.1.1 Create a healthy snack from the garden.</p> <p>HC.1.2 Harvest foods from the garden for taste and nutrition with guidance.</p>	<p>Cooking Lesson: Visit the garden or pantry with students to identify what produce is available from the garden. Together with students, look through recipes and/or discuss snacks they have made in the past, and identify a healthy snack to prepare together using the available produce. Use this as an opportunity for students to apply learning about seasonal foods, balancing food groups, and simple cooking techniques.</p>	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	<p>Select your recipe based on the produce that's in abundance in the garden. Harvest together from the garden. Bring compost out to the garden.</p>	<p>Cafeteria: Ask the food service director if you can prepare something to serve as part of the school lunch, either now or later in the year.</p>	<p>CCSS.ELA-LITERACY.SL.1.1 Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.</p> <p>CCSS.MATH.CONTENT.1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.</p> <p>CCSS.MATH.CONTENT.1.G.A.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
10. What do Chefs Do?	Home Economics (HE)	HE.1.1 Understand what chefs and food producers do.	Cooking Concept Lesson: Engage students by having them brainstorm all of the things they have done in cooking class that they think chefs do. Record their ideas. Then, guide students in writing and illustrating a sentence that says “I am a chef because I...” and then fill in the blank with accomplishments students have made in the kitchen this year, such as “because I have made homemade popsicles, or because I use measuring cups, etc.” Post together on the wall (possibly in a shared hallway of the school) to create a class-wide mural of Grade 1 Chefs.	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.	In the garden, complete a similar activity, saying, “I am a gardener because I...”	Classroom: Read aloud <i>On the Farm, At the Market</i> by G. Brian Karas.		
11. Sharing Recipes	Recipe Concepts (RC)	RC1.1 Demonstrate an understanding of recipes and how they reflect the people and cultures of their community	Cooking Concept Lesson: Ahead of class, have students bring in a simple recipe from their family or community. Then, in class, have students explore these recipes by interviewing one another about the recipes, finding out for example when it is eaten; what the key ingredients are; and how it is prepared. Close with a sharing circle where each student elaborates by sharing a fact they learned about another student.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	Have students identify and plant crops common in their family diets in the garden.	Community: Invite caregivers and other community members in to share the recipes themselves, or to send in the food items with their students.		

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Eating from the Garden in the Winter	Health Concepts (HC) Food Preparation (FP)	HC.1.1 Create a healthy snack from the garden. HC.1.2 Harvest foods from the garden for taste and nutrition with guidance. KTE.1.1-4 Kitchen Tools and Equipment	Cooking Lesson: Prepare a dish that features foods that have been preserved or stored, such as making muffins using frozen fruit from the fall harvest. As the dish is cooking, highlight where and when the foods were grown. Discuss how they have been stored for use when the days are shorter and colder, and fresh foods are more scarce.	CLS.2 Students cooperate and communicate well with each other.	Select and prepare a recipe featuring ingredients grown in the school garden. In the winter, this may center around storage crops and preserved foods, such as fruit you've frozen. Before eating, highlight ingredients grown or sourced from the school garden.	Classroom: Have students write and illustrate a couple of sentences describing what they made.	NGSS.ESS1.B <i>Earth and the Solar System</i> Seasonal patterns of sunrise and sunset can be observed, described, and predicted.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.


GRADE 1 | SPRING

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Three Bean Salad	Health Concepts (HC) Food Preparation (FP)	HC.1.1 Create a healthy snack from the garden. FP.1.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables using tools and equipment. KTE.1.1-4 Kitchen Tools and Equipment	Cooking Lesson: Explain how beans are seeds. Discuss the function of seeds in plants (to make new baby plants) and how they are a source of nutritious, natural energy. Sort various dry beans and discuss how they are similar and different. Explain diversity and how it makes salad delicious. Provide students with pre-chopped ingredients, demonstrate how to use a juicer, and review how to use measuring spoons and cups. Assign different teams each 2 ingredients to measure and add. Then, help teams work together to contribute to one class-wide Three Bean Salad, Emerils.com . Have students count aloud together as they add ingredients. Once combined, demonstrate how to use tasting spoons. Have students taste and then help them adjust seasonings. Serve and enjoy.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	Use beans from the garden, if possible. Garnish with fresh herbs from the garden. Bring compost out to the garden.	Classroom: Read aloud <i>A Seed is Sleepy</i> by Dianna Hutts Aston.	NGSS.1.LS1.A Structure and Function All organisms have external parts. Plants have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. CCSS.MATH.CONTENT.1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. You-Pick-the-Greens Salad	Health Concepts (HC)	<p>HC.1.1 Create a healthy snack from the garden.</p> <p>HC.1.2 Harvest foods from the garden for taste and nutrition with guidance.</p> <p>HE.1.2 Understand scarcity in terms of seasonality.</p> <p>KTE.1.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Walk through the garden and identify and harvest leafy greens that are in abundance. Explain the nutritional benefits of leafy greens, many of which are considered “superfoods” because they are packed with nutrients to keep us healthy. Then have students prepare You-Pick-the-Greens Salad with Three Simple Dressings, <i>There’s a Chef in My Soup!</i> Have different teams each prepare a different dressing, and then conduct a comparative taste test between 3 different salads. Use descriptive words to identify how each is unique.</p>	CLS.2 Students cooperate and communicate well with each other.	Use greens from the garden. Add in other produce growing in the garden. Bring compost out to the garden.	<p>Classroom: Vote on favorite salads. Tally results and create a bar graph representing the class preferences.</p> <p>Cafeteria: Share favorite salad dressing recipes with the food service directors and encourage incorporation into salad bars.</p> <p>BAM! Box: Send students home with bags of fresh greens and challenge them to make salad for their families.</p>	<p>CCSS.ELA-LITERACY.L.1.5 With guidance and support from adults, demonstrate understanding of word relationships and nuances in word meanings.</p> <p>CCSS.ELA-LITERACY.L.1.5.C Identify real-life connections between words and their use (e.g., note places at home that are cozy).</p>	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Minty Green Peas	Home Economics (HE) Food Preparation (FP)	HE.1.2 Understand scarcity in terms of seasonality. KTE.1.1-4 Kitchen Tools and Equipment	Cooking Lesson: Introduce the recipe for Minty Green Peas, <i>There's a Chef in My Family!</i> , using fresh mint and peas from the garden if possible. Discuss seasonality of peas and why this is a seasonal dish. Identify peas as seeds. Then prepare the dish with students. While you are at the stove sautéing the onion, have students shell the peas and add them to a bowl. Once you've added the peas, have the students tear up the mint leaves. Stir everything together and enjoy. While eating, have students develop a word bank of adjectives for the flavors and textures.	CLS.2 Students cooperate and communicate well with each other.	Use mint and peas from the garden, if possible. Bring compost out to the garden.	Classroom: Use descriptive words recorded while eating to write poems or sentences describing the Minty Green Peas.	CCSS.ELA-LITERACY.L.1.5 With guidance and support from adults, demonstrate understanding of word relationships and nuances in word meanings. CCSS.ELA-LITERACY.L.1.5.C Identify real-life connections between words and their use (e.g., note places at home that are cozy).	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Mixed Berry Crumble 	Kitchen Tools and Equipment (KTE)	<p>HC.1.2 Harvest foods from the garden for taste and nutrition with guidance.</p> <p>HE.1.1 Understand what chefs and food producers do.</p> <p>KTE.1.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Discuss the role of dessert in the diet as a sweet treat for a special occasion. Discuss why a fruit crumble is a healthy alternative to more processed desserts (in addition to the sugar, it has plenty of vitamins, minerals, and other important nutrients). Review how to use measuring cups and spoons, and then help students measure and mix the pre-chopped ingredients to prepare and enjoy Strawberry-Rhubarb Irish Crumble, <i>Theres a Chef In My World</i>. When it's time to enjoy, cut crumble in half and then in quarters, naming each fraction. Then continue cutting into equal parts for the students. As students enjoy the crumble together, write a list titled "What Chefs Do" and under it have students brainstorm a list of verbs describing the steps they took to make the meal (i.e. mixed, measured, etc).</p>	CLS.2 Students cooperate and communicate well with each other.	Use straw-berries and rhubarb stems from the garden, if possible. Bring compost out to the garden.	Classroom: Help students write and illustrate a simple recipe for the crumble, using very general instructions like "Mix fruit and sugar together."	CCSS.MATH.CONTENT.1.G.A.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Researching Mexico	Recipe Concepts (RC)	RC.1.1 Demonstrate an understanding of recipes and how they reflect the people and cultures of their community.	Cooking Concept Lesson: In preparation for the Feast Around the World, have students explore various aspects of life in Mexico. Have them locate Mexico on a map, and use videos and/or leveled readers to research different aspects of life in Mexico, including celebrations, customs, and the like. Have them elaborate by preparing to present on their country in the Feast Around the World.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In the garden, plant and label a bed of vegetables and herbs that are typical in Latin American cuisine and that grow in your region, such as chayote, cilantro, or limes.	Community: Ask students if they have family members from Mexico or other parts of Latin America. If so, invite them in to share a favorite recipe of tradition from the region.	Social Studies: Diversity and Culture. Social Studies: Geography.	
18. Super-Stuffed Burritos	Recipe Concepts (RC) Food Preparation (FP)	RC.1.1 Demonstrate an understanding of recipes and how they reflect the people and cultures of their community. CFT.1.3 Demonstrate an understanding of the flavors of various world cultures.	Cooking Lesson: Remind students that the Feast Around the World gives us a chance to experience international foods and learn about different cultures. Harvest relevant produce from the garden with students. Pre-cook and chop all ingredients. Demonstrate how to stuff and roll a burrito, and then have students fill and wrap Super-Stuffed Burritos, <i>There's a Chef in My World!</i> , and prepare to present at the Feast Around the World.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	Use beans and vegetables from the garden. Add in other produce growing in the garden. Garnish with cilantro or other herbs growing in the garden. Bring compost out to the garden.	Community: Ask students if they have family members from Latin America. If so, invite them in to share a favorite recipe from the region.	Social Studies: Diversity and Culture. Social Studies: Geography.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Elementary School Feast Around the World!

GRADE 2 | *Kitchen*



SCOPE & SEQUENCE



GRADE 2 STANDARDS

At the end of Grade 2, students will be able to:


- Demonstrate knowledge of taste sensations and describe a variety of familiar and unfamiliar foods.
- Identify and further articulate basic textures and palate experiences.
- Demonstrate understanding of local and seasonal foods.
- Begin managing scarcity and abundance in the kitchen environment.
- Describe and/or perform preservation processes to manage abundance in the garden.

GRADE 2 | FALL

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
1. Welcome to the Kitchen!	Personal and Community Life Skills (CLS and PLS) Food Preparation (FP)	FP.2.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables	Engage students in a name game and team building exercise. Explore teamwork by establishing kitchen agreements together. Review Personal and Community Life Skills. Explain and demonstrate how to prepare food for others without contaminating it (wash hands, use utensils instead of hands when possible, avoid touching hair and face while cooking, etc). Then have students elaborate and practice these agreements as they wash hands, and create an assembly line to prepare a very simple snack together, such as Ants on a Log , Emerils.com . Enjoy together.	PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.	Compare group agreements for the kitchen with those students have in the garden. How are behavior expectations similar in both places? How are they different?	Classroom: Compare group agreements for the kitchen with agreements students have in the classroom. How are behavior expectations similar in both places? How are they different?	CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about <i>grade 2 topics and texts</i> with peers and adults in small and larger groups.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
2. Food Texture	Culinary Flavors and Textures (CFT)	<p>CFT.2.1 Identify and describe basic textures.</p> <p>CFT.2.2 Categorize familiar and unfamiliar foods by flavor and texture.</p>	<p>Cooking Concept Lesson: Define “texture.” Then provide students with a range of bite-sized foods to taste, such as: smooth applesauce, chunky applesauce, a piece of bread, a crispy cracker, a banana slice, and a carrot slice. Give them a set of texture cards, each with one word on it: smooth, lumpy, soft, hard, mushy, and crunchy. Have them explore by tasting each food and matching it to the word they think best describes the texture. Have them share out and explain the definition of each word. Then have them elaborate by sorting those words based on which they think are similar (smooth, soft, and mush, for example) and which are opposites (hard and soft, for example).</p>	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	<p>During activity, use foods from the garden. Bring compost out to the garden. In Garden Lesson #2: Comparing Food Textures, students will explore textures of edible stems and leaves.</p>	<p>Community: Send students home with a texture scavenger hunt they can do in their home or neighborhood.</p>	<p>CCSS.ELA-LITERACY.L.2.5 Demonstrate understanding of word relationships and nuances in word meanings.</p> <p>CCSS.ELA-LITERACY.L.2.5.A Identify real-life connections between words and their use (e.g., describe foods that are spicy or juicy).</p> <p>CCSS.ELA-LITERACY.L.2.5.B Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny).</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
3. Make-Yourself-Some-Apple-sauce 	Culinary Flavors and Textures (CFT)	<p>CFT.2.1 Identify and describe basic textures.</p> <p>CFT.2.2 Categorize familiar and unfamiliar foods by flavor and texture.</p> <p>HC.2.4 Create a healthy snack using whole fresh foods.</p> <p>FP.2.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables using tools and equipment.</p> <p>KTE.2.1-5 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Pre-chop all apples for Make-Yourself-Some Applesauce, There's a Chef in My Soup! Demonstrate how to use a digital scale to weigh food. Have students weigh ingredients and record. Ask students to discuss why chefs might weigh foods before and after cooking (to make predictions about yield). Then have students combine ingredients in a saucepan. As you let the applesauce cook, lead them in a comparative taste test using 3 or 4 different varieties of apples. Have them describe the apple flavors and textures, referring to the adjectives explored in Lesson #2: Food Texture. Then have them vote on their preferences and create a bar graph to show which varieties students preferred. Finally, finish the apple sauce, weigh the final product to compare to the original weight, discuss, and enjoy the applesauce together.</p>	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	If possible, use apples from the garden. Bring compost out to the garden.	<p>BAM! Box: Take home the applesauce recipe and ingredients to make applesauce at home. Modify by adding berries or other fruit.</p>	<p>CCSS.ELA-LITERACY.L.2.5 Demonstrate understanding of word relationships and nuances in word meanings.</p> <p>CCSS.ELA-LITERACY.L.2.5.A Identify real-life connections between words and their use (e.g., describe foods that are spicy or juicy).</p> <p>CCSS.ELA-LITERACY.L.2.5.B Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny).</p> <p>CCSS.MATH.CONTENT.2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Modify-a-Pita Pizza	Health Concepts (HC)	<p>HC.2.3 Define whole fresh foods in each food group.</p> <p>HC.2.4 Create a healthy snack using whole fresh foods.</p> <p>KTE.2.1-5 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Explain that students will now begin modifying recipes, which is the one way chefs discover great new flavor combinations. Have each team of students prepare Eat-a-Pita Pizzas, There's a Chef in My Soup! They prepared these in Grade 1, but this time the focus will be on modifying the recipe. Each team will create their own special pizza with toppings they choose and harvest from the pizza bed they planted in Grade 1 Garden Lesson #16: Plant a Pizza Bed. This time, they must follow the ratios recommended by MyPlate or another food grouping resource (meaning they need to include a lot of vegetables!). Review the food groups represented by each part of the pizza (crust=grain, cheese=dairy, etc). Then give them time to create their pizzas. Wrap up with every team presenting its special creation and describing its process. Then every student gets to try a small slice of every pizza.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	Use as much produce as possible from the garden, and particularly from the pizza bed the students planted in Grade 1 Garden Lesson #16: Plant a Pizza Bed . Garnish with herbs growing in the garden. Bring compost out to the garden.	<p>Community: Prior to this cooking activity, have students interview 5 people to find out what they most like on pizzas. They can use this information in their planning process.</p>	<p>CCSS.ELA-LITERACY.SL.2.4 Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p> <p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
5. Mexican Broiled Corn	Food Preparation (FP) Culinary Flavors and Textures (CFT)	FP.2.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables using tools and equipment. CFT.2.2 Categorize familiar and unfamiliar foods by flavor and texture. HC.2.4 Create a healthy snack using whole fresh foods. KTE.2.1-5 Kitchen Tools and Equipment	Cooking Lesson: Ask students to recall what they learned about Mexican culture and cuisine in Grade 1 Lesson #17: Researching Mexico . Explain that today's dish often sold by street vendors in Mexico and in some parts of the US with large Mexican populations. Harvest or purchase, then boil and broil corn. Have students measure and combine sour cream and milk. Demonstrate how to use a pastry brush to brush corn with sour cream mixture. Add cheese and spices (to their liking) to prepare Mexican Broiled Corn, There's a Chef in My World! . Discuss which ingredients are whole, local and/or seasonal and which are not. Enjoy together. As you do, have students describe the flavors and textures.	CLS.2 Students cooperate and communicate well with each other.	Use corn from the garden, if available. Garnish with herbs growing in the garden. Bring compost out to the garden.	Community: Have students ask their caregivers about popular snacks from when they were children and share out in class.	CCSS.ELA-LITERACY.L.2.5 Demonstrate understanding of word relationships and nuances in word meanings. CCSS.ELA-LITERACY.L.2.5.A Identify real-life connections between words and their use (e.g., describe foods that are spicy or juicy). CCSS.ELA-LITERACY.L.2.5.B Distinguish shades of meaning among closely related verbs (e.g., toss, throw, hurl) and closely related adjectives (e.g., thin, slender, skinny, scrawny).	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Cooking with What's in Abundance	Health Concepts (HC)	<p>HC.2.4 Create a healthy snack using whole fresh foods.</p> <p>CFT.2.2 Categorize familiar and unfamiliar foods by flavor and texture.</p> <p>KTE.2.1-5 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Discuss the economic, environmental, and culinary benefits of eating produce you grow yourself. Visit the garden with students to list produce that's available and in season. Note the edible plant parts of each produce item (roots, stems, leaves, flowers, fruits, and seeds). Compare to records or memories from past seasons to look for patterns. Note the food group of each crop you are going to harvest. Then harvest and prepare a recipe featuring ingredients grown in your school garden. Before you eat, highlight which ingredients were sourced in the school garden.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>Pre-select a recipe featuring produce you have in abundance in the garden. Look for options to garnish garden herbs. After cooking, bring compost out to the garden.</p>	<p>Cafeteria: Invite your food service director into the garden. Have students tour him/her around to show him/her available produce and discuss what, if anything, they might like to incorporate into the school lunch program.</p>	<p>NGSS Crosscutting Concept: Patterns Patterns in the natural world can be observed.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

GRADE 2 | WINTER

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Designing Balanced Meals Featuring Whole Foods	Health Concepts (HC)	HC.2.3 Define whole fresh foods in each food group.	Cooking Concept Lesson: Use an image of MyPlate or another food grouping resource to engage students in recalling the food groups and the nutritional value of a balanced diet. Give teams a stack of <u>food cards</u> and have them sort cards into food groups. Then within each group, have them explore to find whole foods. Discuss the nutritional benefits of eating whole and minimally processed foods (nutrients can be lost when food is processed; sugars, salts, and other unhealthy additives can be added). Have teams share out their whole foods onto a larger MyPlate, so collectively, the class will have created a big MyPlate filled with whole foods representing each food group. Then challenge each team to elaborate by coming up with a balanced meal that features a whole or minimally processed food from each food group.	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	Bring students to the garden to look for, harvest, and taste foods from as many food groups as you can find growing.	Cafeteria: Look for whole foods from each food group in the lunch line.	CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.	National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
8. Whole vs. Processed	Health Concepts (HC)	<p>HC.2.2 Recognize local and seasonal foods.</p> <p>HC.2.3 Define whole fresh foods in each food group.</p> <p>RC.2.1 Describe how traditional foods and recipes function in social contexts of families and communities, and cultural traditions and celebrations.</p>	<p>Cooking Concept Lesson: Give student teams different food products (or pictures of these food products), such as a strawberry, strawberry jam, and a strawberry pop tart. Challenge them to explore by sorting them from least processed (whole food) to most processed. Have teams share out the spectra they created and the reasoning behind it. Discuss the nutritional benefits of eating whole foods. Conduct a similar sort with pictures of foods grown in different places, with labels that say where they were grown. Have them use a map to sort from those grown closest to home to those grown farthest away. Have students discuss some reasons why we sometimes eat food that was grown far away. Explain seasonality as one reason: Something that's out of season here might be in season on the other side of the world. Discuss and explain the environmental benefits of eating local and seasonal foods.</p>	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	Bring students to the garden to search for whole, local, seasonal foods. Point out that any food growing in their garden is all 3, and review the health and environmental benefits of growing and eating garden-fresh produce.	<p>Community: Challenge students to look in the grocery store for an example of each of the following: A local food; a food grown on another continent; a seasonal food; a food that is not in season locally; and a whole food and a highly processed food. Have them share their findings with the class.</p>	<p>CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.</p> <p>Social Studies: Geography.</p> <p>NGSS.2.LS4.D <i>Biodiversity in Humans</i> There are many different kinds of things living in any area, and they exist in different places on land and in water.</p>	<p>National Health Education Standard 3: Students will demonstrate the ability to access valid information, products, and services to enhance health.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. Warm Greens with Emeril's Herb Vinaigrette	Food Preparation (FP) Home Economics (HE)	<p>FP.2.2 Demonstrate ability to prepare fruits and vegetables using the tools and equipment identified Tools and Equipment.</p> <p>HE.2.1 Manage garden scarcity and abundance with cooking techniques.</p> <p>CFT.2.2 Categorize familiar and unfamiliar foods by flavor and texture.</p> <p>KTE.2.1-5 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Have students recall the nutritional benefits of eating leafy greens. Walk through the garden with your students to identify and harvest abundant greens and herbs for preparing warm greens with Emeril's Herb Vinaigrette, Emerils.com. Allow teams to choose which greens and herbs they use based on what's abundant in the garden or locally at this time of year. Harvest, wash, and dry. Demonstrate how to use a whisk to prepare the dressing. While you or another adult cooks the greens, have students tear herbs and add to pre-chopped ingredients to prepare Emeril's Herb Vinaigrette, Emerils.com. If you have enough variety in types of greens or herbs from your garden, each team can prepare a salad with a different green or a dressing featuring a different herb and then they can conduct a comparative taste test and <u>add sticky dots to a chart paper in columns</u> to graph their preferences.</p>	CLS.2 Students cooperate and communicate well with each other.	Use greens and herbs from the garden. Review the plant parts as you harvest (likely all leaves). Add in other produce growing in the garden. Bring compost out to the garden.	Classroom: Read <i>A Simple Brown Leaf</i> by L. J. Davis.	CCSS.MATH.CONTENT.2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
10. Herbs of the World	Health Concepts (HC)	HC.2.1. Demonstrate the ability to design a garden that incorporates various world cultures.	Cooking Concept Lesson: Divide class into 6 teams. Assign each team a continent (skip Antarctica). Give each team the tools they need to explore and research common culinary herbs from that continent, and a local garden guide to discover which of those herbs can be grown in your region. Have them share out their findings, and then elaborate upon their ideas to collectively plan an Herbs of the World Bed or container that you can plant together in spring, ideally right outside your kitchen door.	CLS.2 Students cooperate and communicate well with each other.	Ask students to review planting techniques they've learned in the garden (adding compost to soil, for example) and to apply them to plant the Herbs of the World Bed in Lesson #13: Planting Herbs of the World.	Community: Send students home with a handout of the Spices and Herbs of the World, and have them ask their caregivers which are important in their culture or their diets, if any.	Social Studies: Geography. Social Studies: Cultural Traditions. CCSS.ELA-LITERACY.RI.2.5 Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
11. Maple-Buttery Corn Muffins	Culinary Flavors and Textures (CFT)	<p>CFT.2.2 Categorize familiar and unfamiliar foods by flavor and texture.</p> <p>KTE.2.1-5 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review how to use measuring cups and spoons. Have teams prepare Maple-Buttery Corn Muffins, <i>There's a Chef in My Soup</i>. Work with students to calculate how many muffin tins you'll need to fill based on how many students are in class and how many muffins each tin holds. While the muffins are baking, discuss which food groups went into their muffins; whether these muffins are whole foods, minimally processed, or highly processed, and why. Bring in a package of highly processed corn bread mix and compare the ingredients lists. Discuss the health benefits of making your own minimally-processed snacks. Finally, enjoy muffins together.</p>	<p>CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.</p>	<p>Before you eat, talk about where all of the ingredients came from (corn plants, cows, chickens, etc). Have students "toast" with their muffins to the farms and gardens where all of plants and animals were raised. Bring compost out to the garden.</p>	<p>Community, Cafeteria, or Classroom: Make enough muffins to share with teachers, families, food service staff, office staff, or others.</p>	<p>CCSS.MATH.CONTENT.2.OA.C.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>



Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Eating Local in the Winter	Home Economics (HE)	<p>HE.2.1 Manage garden scarcity and abundance with cooking techniques.</p> <p>CFT.2.2 Categorize familiar and unfamiliar foods by flavor and texture.</p> <p>HC.2.4 Create a healthy snack using whole fresh foods.</p> <p>KTE.2.1-5 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Visit the garden or pantry with students to list produce that's in season. In the winter, this may center around storage crops and preserved foods, such as roasted winter squash with toasted nuts or seeds. Note the edible plant parts of each crop (roots, stems, leaves, flowers, fruits or seeds). Compare to records from past seasons to look for patterns of abundance and scarcity. Then harvest and prepare a recipe featuring ingredients grown in your school garden. Before you eat, highlight which ingredients were grown or sourced in the school garden and have students discuss the economic, environmental, culinary and health benefits of eating food from the garden.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>Pre-select a recipe featuring produce you have in abundance in the garden. Look for options to garnish or substitute with abundant produce. After cooking, bring compost out to the garden.</p>	<p>Cafeteria Have students write a simple recipe for the dish they prepared.</p>	<p>NGSS Crosscutting Concept: Patterns Patterns in the natural world can be observed.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

GRADE 2 | SPRING



Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Planting Herbs of the World	Health Concepts (HC)	HC.2.1. Demonstrate the ability to design a garden that incorporates various world cultures.	Cooking Concept Lesson: Explain to students how to plant an Herbs of the World Bed (researched and planned by students in Lesson #10: Herbs of the World) in your garden or in a container close to the kitchen. Have them plant it together. Once planted, have teams that did the research on each herb elaborate by making signs for each herb explaining what it is, where it is used, how it is used, and anything else they think important.	CLS.2 Students cooperate and communicate well with each other.	Before planting, ask the students to teach you how to prepare the soil, plant the bed, and care for it, based on their garden learning.	BAM! Box: Plant container herb gardens with students that they can take home for their home kitchens.	Social Studies: Geography.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Power-Packed Spinach Salad	Health Concepts (HC)	<p>HC.2.4 Create a healthy snack using whole fresh foods.</p> <p>CFT.2.2 Categorize familiar and unfamiliar foods by flavor and texture.</p> <p>HE.2.1 Manage garden scarcity and abundance with cooking techniques.</p> <p>KTE.2.1-5 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review how to use a salad spinner and whisk. Explain to students that spinach, like other leafy greens they've cooked, is packed with vitamins and minerals to keep them healthy. Then prepare a Power-Packed Spinach Salad, <i>There's a Chef in My Family!</i>, with students. If relevant, help students modify the recipe to incorporate any other fruits and vegetables available in your garden at the time, like strawberry slices. Have students divide salad up evenly and enjoy. While eating, discuss which food groups are represented in the salad.</p>	<p>CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.</p>	Use spinach from the garden. Add in any other garden fruits or vegetables you think might work. Bring compost out to the garden.	<p>Classroom: Read <i>Sylvia's Spinach</i> by Katherine Pryor.</p>	<p>CCSS.ELA-LITERACY.SL.2.1 Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>15. Go Nuts for Banana Bread </p>	<p>Culinary Flavors and Textures (CFT)</p>	<p>CFT.2.2. Categorize familiar and unfamiliar foods by flavor and texture.</p> <p>FP.2.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables using tools and equipment identified in Tools and Equipment.</p> <p>KTE.2.1-5 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Introduce recipe for Go Nuts for Banana Bread, Emerils.com. Discuss the nutritional benefits of bananas, and locate where they are grown on a world map. Then guide students in preparing the recipe. As they enjoy, discuss the flavor and texture and how it compares to other breads they commonly eat.</p> <p> Caution Note: This recipe includes tree nuts and should be modified for individuals with tree nut allergies.</p>	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	<p>Trace ingredients back to their source. Bring compost out to the garden.</p>	<p>Classroom: Make a Venn diagram comparing banana bread with other kinds of bread students eat. How are the similar? How are they different? Extend into a writing project.</p>	<p>Social Studies: Geography.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Cooking with What's in Abundance	Home Economics (HE)	<p>HE.2.1 Manage garden scarcity and abundance with cooking techniques.</p> <p>CFT.2.2 Categorize familiar and unfamiliar foods by flavor and texture.</p> <p>HC.2.4 Create a healthy snack using whole fresh foods.</p> <p>KTE.2.1-5 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Visit the garden with students to list produce that's in season. Note the edible plant parts of each crop (roots, stems, leaves, flowers, fruits, and seeds). Compare to records or memories from past seasons to look for patterns of abundance and scarcity. Then harvest and prepare a recipe featuring ingredients grown in your garden. Before you eat, highlight which ingredients were grown or sourced in the garden and have students recall the nutritional, economic, environmental, and culinary benefits of eating fresh from the garden.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	Pre-select a recipe featuring produce you have in abundance. Look for options to garnish or substitute with abundant produce. After cooking, bring compost out to the garden.	<p>Cafeteria: Have students graph and analyze patterns of what is in abundance in the garden in each season.</p>	<p>NGSS Crosscutting Concept: Patterns Patterns in the natural world can be observed.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>
17. Researching India	Recipe Concepts (RC)	<p>RC.2.1 Describe how traditional foods and recipes function in social contexts of families and communities, and cultural traditions and celebration.</p>	<p>Cooking Concept Lesson: In preparation for the Feast Around the World, have students explore India. Have them locate India on a map, and use age-appropriate readings and/or videos to research different aspects of life in India, including celebrations, customs, and the like. Have them elaborate by preparing to present on their country at the Feast Around the World.</p>	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	If relevant, visit the herbs of the world bed planted in Lesson #13: Planting Herbs of the World to review any common herbs from India.	<p>Community: Ask students if they have family members from India. If so, invite them in to share a favorite recipe from the region.</p>	<p>Social Studies: Diversity and Culture.</p> <p>Social Studies: Geography.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Indian Naan Bread  	Recipe Concepts (RC)	RC.2.1 Describe how traditional foods and recipes function in social contexts of families and communities, and cultural traditions and celebrations. KTE.2.1-5 Kitchen Tools and Equipment	Cooking Lesson: Pre-make one batch of naan dough. Remind students that the Feast Around the World provides them with a chance to learn about many cultures and taste foods from around the globe. Then, with your students, demonstrate how to prepare yeast and how to sift flour. Have students mix, knead, coat, and cover dough for Indian Naan Bread, <i>There's a Chef in My World!</i> While their dough is rising, have them roll and shape your pre-made dough into circles. Bake and serve with the Vegetable Curry, <i>There's a Chef in My World!</i> , being prepared by the Grade 5 class at the Feast Around the World!	CLS.2 Students cooperate and communicate well with each other. CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.	Offer fresh herbs from the garden as an optional garnish on the side, particularly if you grew any herbs common in India in your herbs of the world bed. Bring compost out to the garden. Serve the final feast out in the garden.	Community: Ask students if they have family members from India. If so, invite them in to share a favorite recipe from the region.	Social Studies: Diversity and Culture. Social Studies: Geography. CCSS.MATH.CONTENT.2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Elementary School Feast Around the World!

GRADE 3 | *Kitchen*



SCOPE & SEQUENCE



GRADE 3 STANDARDS

At the end of Grade 3, students will be able to:


- Use descriptive language to explain foods and their flavor attributes and textures.
- Demonstrate understanding of and articulate the relationship between flavor and culture.
- Demonstrate increased understanding of the seed to plate cycle.
- Demonstrate understanding of recipe sequencing and basic recipe techniques.
- Demonstrate knowledge of eating on a budget and begin to understand that health is connected to food choices.
- Demonstrate understanding of whole and processed foods.
- Demonstrate understanding of abundance.
- Identify and interpret information from a food label.

GRADE 3 | FALL


Each activity described below should be designed to last approximately 45 minutes.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
1. Welcome to the Kitchen!	Personal and Community Life Skills (PLS and CLS)	RC.3.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment. KTE.3.1-4 Kitchen Tools and Equipment	Cooking Lesson: Engage students by having them share their names and a food they enjoyed over the summer. Explore behavior expectations by establishing kitchen agreements together. Review Personal and Community Life Skills. Explain and demonstrate safe and proper use of melon ballers, apple corers, and strawberry hullers, and discuss when and why these tools are used. Demonstrate how to pit stone fruits. Then have students elaborate, practicing their agreements and skills as they prepare and enjoy some fruit kabobs similar to the Fresh Melon Kebobs, Emerils.com , but incorporating apples, stone fruit, melons, and anything else you have growing in the garden.	PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.	Use fruit from the garden. Garnish with edible herbs or flowers from the garden. As you enjoy, trace ingredients back to their source. Collect and deliver compost to the garden.	Classroom: Read <i>Fruit in Suits</i> by Jared Chapman. Discuss how fruits are all unique characters just like the students in the class.	CCSS.ELA-LITERACY.SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
2. Flavors	Culinary Flavors and Textures (CFT)	<p>CFT.3.1 Demonstrate an understanding of taste sensations.</p> <p>CFT.3.2 Describe foods and their flavor attributes.</p>	<p>Cooking Concept Lesson: Hand out journals that students will use for reflection at the end of each lesson. Review the taste sensations: sweet, salty, sour, bitter, and umami. Let students know that they will be tasting foods to identify the first 4 flavor sensations. Have students explore these by conducting a blind taste test in which students close their eyes, taste a pinch of something (i.e. sugar, lemon juice, arugula, and sea salt) and try to match the taste to one of the words.</p>	<p>PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.</p>	Use arugula and/or other produce from the garden. Bring compost out to the garden.	<p>BAM! Box: Work with your caregivers to find and record something in your regular diet that fits each of the taste sensations. Share in class.</p>	<p>CCSS.ELA-LITERACY.W.3.2.C Use linking words and phrases (e.g., also, another, and, more, but) to connect ideas within categories of information.</p>	<p>National Health Education Standard 4: Students will demonstrate the ability to use interpersonal communication skills to CFT.3.2. Describe foods and their flavor attributes enhance health and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>3. Getting Started with Paring Knives</p> 	<p>Recipe Concepts (RC)</p>	<p>RC.3.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.</p> <p>KTE.3.1-4 Kitchen Tools and Equipment.</p>	<p>Cooking Lesson: Make sure knives are out of reach of students while you introduce and discuss them. Engage students in a discussion of tools. Explain the importance of being safe and responsible with knives because they are sharp and can be dangerous. Then demonstrate how to safely use a paring knife to cut a peeled banana, or something else soft. Then hand out bananas and knives and give them time to elaborate by cutting their own bananas or other soft foods.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>During this lesson, compare guidelines for safe knife use with guidelines for safe garden tool use.</p>	<p>Cafeteria: Invite in your food service director to discuss and demonstrate knife safety.</p> <p>Community: Invite in a local chef to demonstrate knife safety.</p> <p>Classroom: Make the connection between structures and functions of the knife parts (i.e. an edge to cut, a handle to hold) with other examples of structure and function, such as structures of a seed or insect.</p>	<p>NGSS Crosscutting Concept: Structure and Function</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks</p>


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Swedish Cucumber Salad	Culinary Flavors and Textures (CFT)	<p>CFT.3.2 Describe foods and their flavor attributes.</p> <p>HC.3.2 Demonstrate an understanding of local and seasonal foods.</p> <p>KTE.3.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review safe use of paring knives and other relevant tools. Then help students prepare Swedish Cucumber Salad, <i>There's a Chef in My World!</i> As students enjoy, discuss the nutritional value of cucumbers and ask students to identify the local and seasonal ingredients in the recipe. Then reflect on the taste sensations that are combined in this recipe.</p>	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	Use cucumbers and dill from the garden. Try adding in other produce growing in the garden. Bring compost out to the garden.	<p>Community: Interview community members for other cucumber salad recipes and compare.</p>	<p>CCSS.MATH.CONTENT.3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).1 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
5. Texture	Culinary Flavors and Textures (CFT)	<p>CFT.3.3 Describe what texture means.</p> <p>RC.3.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.</p> <p>HC.3.2 Demonstrate an understanding of local and seasonal foods.</p> <p>KTE.3.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Check for tree nut allergies before this lesson and modify the recipe accordingly, for example by replacing walnuts with sunflower seeds. Introduce the term “texture” and share adjectives that might be used to describe it. Have students taste a basil leaf, a walnut and a dab of cream cheese, and discuss the texture of each. Then demonstrate how to use a mortar and pestle; have students mash basil and walnuts and describe the changes in texture. Demonstrate how to use a garlic press and how to puree using a food processor. Have students work together to prepare Jillie’s Pesto-Cheese Dip, There’s a Chef in My Soup!. Reserve a bit of the pesto to taste alongside the pesto-cheese dip. Demonstrate how to use a microplane before having them use one to add Parmesan cheese on the dips. Then have students taste both dips with crackers or carrot sticks and discuss the differences in texture.</p> <p> Caution</p>	CLS.2 Students cooperate and communicate well with each other.	Use basil from the garden. Use pesto as a dip for something ready to harvest from the garden, such as carrot sticks. Bring compost out to the garden.	Cafeteria: Explore the foods offered in the cafeteria for a variety of textures.	CCSS.ELA-LITERACY.L.3.1.G Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified.	National Health Education Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Cooking with What's in Abundance 	Home Economics (HE)	HC.3.2 Demonstrate an understanding of local and seasonal foods. HE.3.3 Describe abundance and the causes of abundance in the garden KTE.3.1-4 Kitchen Tools and Equipment	Cooking Lesson: Identify something in abundance in the garden. Have students define local and seasonal and discuss why this crop is in abundance (season, planting choices, etc.). Search for that crop on Emerils.com to find a recipe that uses it. Then work with students to harvest and prepare the recipe. If you have time to split this lesson across 2 sessions, have your students research and select the recipe themselves.	PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.	Start this lesson in the garden so that abundant produce drives recipe selection.	BAM! Box: Bring home a bag of produce that was in abundance in the school garden together with a recipe you found to use that produce. Prepare it together with your caregivers.	NGSS Science and Engineering Practice: Asking Questions and Defining Problems	National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.


GRADE 3 | WINTER

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Discovering Grains 	Health Concepts (HC)	<p>HC.3.3 Define and describe grain based carbohydrates.</p> <p>RC.3.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.</p> <p>KTE.3.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Introduce grain-based carbohydrates, including what they do for the body and what foods provide good sources of them. Demonstrate safe and proper use of a box-grater. Then have students grate carrots and parsnips and make It's-a-Good-Morning Muffins, There's a Chef in My Family.</p>	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	Use carrots, parsnips, and eggs from the garden. If you don't have carrots or parsnips, replace with grated zucchini or summer squash growing in the garden. Bring compost out to the garden.	<p>Community: Collect favorite muffin recipes from a variety of sources (community members, local restaurants) and compare ingredients and ratios.</p>	<p>CCSS.MATH.CONTENT.3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).1 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
8. Budgeting	Healthy Eating (HE)	<p>HE.3.1 Apply critical thinking skills to budgeting in a home kitchen.</p> <p>HE.3.2 Compare and contrast cost of store bought processed foods, home processed foods, and foods grown in the garden.</p>	<p>Cooking Concept Lesson: Provide students with a box of store-bought muffins labeled with both the total price and the price per muffin. Provide them with a list of the ingredients for the It's-a-Good-Morning Muffins from Lesson #7: Discovering Grains, along with the cost of each ingredient. Have students calculate the cost of a batch of homemade muffins. Compare with the cost of the store-bought muffins. Discuss the pros and cons of making your own food, including economic impacts.</p>	<p>PLS.5 Students develop the ability to make informed and responsible decisions.</p>	<p>If you have time during this lesson, go out to the garden and harvest a bunch of carrots, for example. Discuss the cost of these carrots in the store and/or in a restaurant before enjoying them.</p>	<p>Community: Set up a farm stand to sell your garden produce. Label each with the market price and your school price. Use the money earned to invest in garden or kitchen equipment for the class.</p>	<p>CCSS.MATH.CONTENT.3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</p> <p>CCSS.MATH.CONTENT.3.NBT.A.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80, 5×60) using strategies based on place value and properties of operations.</p>	<p>National Health Education Standard 3: Students will demonstrate the ability to access valid information, products, and services to enhance health.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. Threshing, Winnowing, and Grinding Wheat	Health Concepts (HC)	HC.3.4. Compare and contrast processed and whole grains.	Cooking Concept Lesson: Show students a labeled diagram of a wheat seed and explain that white flour has the germ (embryo) and bran (seed coat) removed. Engage in a discussion of the nutritional benefits of whole wheat. Explain how to thresh, winnow, and grind wheat into flour (this process is described by Common Ground Garden here). Then have students elaborate, making whole wheat flour. Have them elaborate by diagramming or discussing the process, showing how to create arrows to connect different elements of the process, showing how “Wheat goes into bread which goes into us; wheat stalks go into compost which goes out to the garden,” etc.	CLS.2 Students cooperate and communicate well with each other.	Use wheat grown in the garden. Compost all unused parts of wheat plants. Save some wheat seeds to replant.	Community: Interview a local baker on his/her ratios of different types of flour and how he/she chooses to balance taste and nutrition.	CCSS.ELA-LITERACY.W.3.3.A Organize an event sequence that unfolds naturally. NGSS Science and Engineering Practice: Constructing Explanations	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>10. Old-Fashioned Pretzels</p> 	<p>Food Preparation (FP)</p>	<p>FP.3.2 Demonstrate an understanding of whole grain preparations.</p>	<p>Cooking Lesson: Review the nutritional benefits of eating whole wheat. Then have students prepare the dough for Old-Fashioned Pretzels, Emerils.com. Highlight that this recipe calls for about half whole wheat flour and half white, and explain that this is often a good ratio to use if you want to increase whole wheat in a baked good, like zucchini bread or pancakes. Have each student shape his/her own pretzel and boil. While they are baking, show students examples of other whole grains, such as ground, cracked, rolled, or sprouted wheat, barley, or corn.</p>	<p>PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.</p>	<p>Garnish pretzels with rosemary, oregano, or other herbs growing in the garden. Bring compost out to the garden.</p>	<p>Cafeteria: Identify grains available in the cafeteria and create promotional materials to display to encourage students to choose and eat the whole grains that are available.</p>	<p>CCSS.MATH.CONTENT.3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
11. Label Reading	Health Concepts (HC)	HC.3.6 Read and interpret a food label	Cooking Concept Lesson: Ask students to bring 2 nutrition labels into class with them. Demonstrate how to identify the components of a nutrition food label. Have students explore, comparing and contrasting the labels from highly processed food items to those of minimally processed food items. Make sure you have extra nutrition food labels to use as examples in case students forget or there aren't enough minimally processed / whole food items represented. Have students elaborate, journaling about the difference between the labels, providing prompts.	PLS.5 Students develop the ability to make informed and responsible decisions.	During this lesson, search the garden for growing sources of carbohydrates, such as grains, fruits and vegetables.	Community: Video a student-led tour of the bakery section of the grocery store, describing the different options available and the health benefits.	CCSS.ELA-LITERACY.RI.3.9 Compare and contrast the most important points and key details presented in two texts on the same topic.	National Health Education Standard 3: Students will demonstrate the ability to access valid information, products, and services to enhance health. National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Healthy Snack Plan	Health Concepts (HC)	<p>HC.3.1 Create a healthy snack plan to grow in the school garden.</p> <p>HC.3.2 Demonstrate an understanding of local and seasonal foods.</p>	<p>Cooking Concept Lesson: Engage students, having each student share a favorite food they have had in the garden. Tally the results and record on a bar graph. Then have students choose a healthy snack that they could plant in the garden. Explain how to use planting guides to determine when each crop for their snack should be planted in your region. Have them elaborate by making a healthy snack plan.</p>	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	<p>In Garden Lesson #13: Garden Caretakers have students plant the healthy snack plans they created in this lesson.</p>	<p>Cafeteria: Choose a favorite food from the cafeteria. Research where it was grown and determine when it is seasonal.</p>	<p>CCSS.MATH.CONTENT.3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs.</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p>

GRADE 3 | SPRING

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Grain Farmer	Health Concepts (HC)	HC.3.5 Identify where grains are sourced locally.	Cooking Concept Lesson: Take a field trip to a local grain farm and/or invite in a local grain farmer for a guest presentation with Q and A.	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely	In Garden Lesson #2: Bread is for Eating students will explore wheat growing in the garden and in Garden Lesson #18: Planting Wheat for Next Year's Grade 3 Class , they will plant wheat.	Community: Share photos and information from your field trip with the local newspaper to advocate for local grains.	CCSS.ELA-LITERACY.SL.3.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.	National Health Education Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.
14. Biscuits with Berries	Food Preparation (FP)	FP.3.3 Create a healthy snack using seasonal food from the garden or farmers market. KTE.3.1-4 Kitchen Tools and Equipment	Cooking Lesson: Review safe and proper use of measuring cups and spoons, mixing bowls, sifters, and the like. Then have students prepare Biscuits with Berries, Emerils.com . While the biscuits are baking, discuss the seasonality of berries and how this recipe could be modified in different seasons.	CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.	Use berries from the garden. Garnish with edible flowers growing in the garden. Bring compost out to the garden.	Community: Collect biscuit recipes from across the United States and compare desirable traits in recipes.	CCSS.MATH.CONTENT.3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Inter-viewing Recipes	Recipe Concepts (RC)	RC.3.1 Describe the structure and function of a recipe.	Cooking Concept Lesson: Hand out recipes for everything students have cooked together this year. Have each team explore a recipe to answer questions like “What tools will you need?”; “What is the first thing you’ll do?”; “How many people will this serve?”; etc. Explain the key elements of a recipe, and the optional elements that are also sometimes included. Then assign the following homework assignment for students to elaborate: Record a healthy snack recipe from your family or community.	CLS.2 Students cooperate and communicate well with each other.	Discuss ways to modify recipes to incorporate as much garden produce as possible, such as increasing vegetables, substitutions, and garnishing with garden herbs.	Community: Record a healthy snack recipe from your family or community.	CCSS.ELA-LITERACY.SL.3.1.C Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.
16. Cooking with What’s in Abundance 	Health Concepts (HC) Food Preparation (FP)	HC.3.2 Demonstrate an understanding of local and seasonal foods. FP.3.3 Create a healthy snack using food from the garden or farmers market KTE.3.1-4 Kitchen Tools and Equipment	Cooking Lesson: Select 2 or 3 recipes from the homework in Lesson 15: Interviewing Recipes that you could prepare with the students incorporating garden produce. Then guide students in harvesting and preparing the recipes selected. If time allows, split this into 2 sessions and work with the students to select the recipes that would work best.	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	Use abundant garden produce to drive recipe selection. If possible, involve students in identifying abundant produce and selecting recipes.	Community: Share photos and captions of student recipe harvesting and preparation to share on school social media pages.	CCSS.ELA-LITERACY.SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others’ ideas and expressing their own clearly.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Researching China	Culinary Flavors and Textures (CFT)	CFT.3.4 Identify flavors, foods, and dishes from other cultures	Cooking Concept Lesson: In preparation for the Feast Around the World, have students explore China, locating it on a map, and researching different aspects of life in China, including celebrations, customs, and the like. Have them elaborate by preparing to present on their country at the Feast Around the World.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	If relevant, visit the Herbs of the World Bed planted in Grade 2 Lesson #13: Planting Herbs of the World to harvest and add any common herbs from China.	Community: Ask students if they have family members from China or other countries in Asia. If so, invite them in to share a favorite recipe from the region.	Social Studies: Diversity and Culture. Social Studies: Geography.	
18. Sesame Peanut Noodle Salad	Culinary Flavors and Textures (CFT)	CFT.3.4 Identify flavors, foods, and dishes from other cultures FP.3.1 Describe how and when to harvest food from the garden. KTE.3.1-4 Kitchen Tools and Equipment	Cooking Lesson: Check for peanut allergies and adjust recipe as needed. With students, explain that the Feast Around the World is an opportunity to discover food traditions from diverse cultures. Harvest a wide variety of vegetables that are good raw, such as sugar snap peas or carrots. Have students prepare Sesame Peanut Noodle Salad, <i>There's a Chef in My World!</i> , and chop and add vegetables they grew for the Feast Around the World. Put a label in front of this dish that says "Contains peanuts."  Caution	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	This recipe works with a wide variety of vegetables, so start with what you have in abundance in the garden.	Community: Ask students if they have family members from China or other parts of Asia. If so, invite them in to share a favorite recipe from the region.	Social Studies: Geography. Social Studies: Diversity and Culture.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Elementary School Feast Around the World!

GRADE 4 | *Kitchen*



SCOPE & SEQUENCE




GRADE 4 STANDARDS

At the end of Grade 4, students will be able to:


- Demonstrate increased understanding of culinary flavors and textures and begin to make simple combinations.
- Demonstrate understanding of how to preserve abundance from the garden.
- Demonstrate knowledge of recipe parts, processes, and yields.
- Demonstrate understanding of purchasing and preparing nutrient rich food on a budget.
- Demonstrate ability to apply grade level math skills to food preparation techniques.
- Begin to understand the versatility of ingredients and how they are used in various cultural dishes.
- Demonstrate safe and proper use of various tool with increasing independence.


GRADE 4 | FALL


Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
1. Welcome to the Kitchen! 	Personal and Community Life Skills (PLS and CLS)	KTE.4.1-4 Kitchen Tools and Equipment	Cooking Lesson: Engage students by having them share names and a summer highlight. Review kitchen agreements established in Grade 3 Lesson #1: Welcome to the Kitchen! Review Personal and Community Life Skills. Review safe and proper use of paring knives, vegetable peelers, apple corers, and other relevant tools. Then have students elaborate by practicing these agreements and skills as they prepare and enjoy a German Apple Pancake, <i>There's a Chef in My World!</i>	PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.	Make a Venn Diagram comparing appropriate behaviors in the kitchen and in the garden.	Classroom: Make a Venn Diagram comparing appropriate behaviors in the kitchen and in the classroom.	CCSS.ELA-LITERACY.SL.4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
2. Flavors and Textures from Around the World	Culinary Flavors and Textures (CFT)	CFT.4.3 Assess main ingredients, seasonings and dishes of other cultures.	Cooking Concept Lesson: Have students survey their caregivers and then share out to discover the cultures and food traditions represented in your class. Bring in harvested or purchased interesting fruits or vegetables that are common to those cultures but may not be familiar to all of your students, such as jackfruit or jicama. Label each with the name and region where it is common. Have students explore, taste, and describe the flavors of each fruit or vegetable.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In Garden Lesson #3: Planting Seeds have students plant some crops that grow in your region and reflect the cultures represented in your student population. Label each with the country or continent where it is prevalent.	BAM! Box: Interview a family member about his/her heritage and anything he/she knows about plants or crops grown in their ancestral homes.	Social Studies: Cultural Traditions.	National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
3. Vietnamese Pickled Carrots (Carot Chua) 	Culinary Flavors and Textures (CFT) Food Preparation (FP)	<p>CFT.4.1 Review basic sensory attributes of flavors</p> <p>CFT.4.2 Create basic flavor combinations using international cuisines.</p> <p>FP.4.1 Demonstrate knowledge of how to wash and store fruits and vegetables.</p> <p>RC.4.2 Demonstrate the ability to follow recipe instructions with increased independence.</p> <p>KTE.4.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review safe and proper use of peelers and paring knives. Discuss why chefs preserve foods, and include the idea that preserving foods can alter their taste. Then have students peel and chop carrots for Vietnamese Pickled Carrots (Carot Chua), Emerils.com. Save and freeze scraps for stock. Then, call volunteers to measure and mix the vinegar, salt, and sugar. As each ingredient is added, match each to a taste sensation (sour, salty, sweet). When students eat carrots (at least 1 hour and up to 2 weeks after making), have them close their eyes and see if they can taste each flavor: salty, sweet, bitter, and sour. Then have them reflect and share about this particular sour, sweet, and salty combination.</p>	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	Use carrots from the garden. Add in other produce growing in the garden. Garnish with herbs growing in the garden. Bring compost out to the garden.	<p>Community: Research other pickles made in your community and do a comparative taste test.</p>	<p>CCSS.MATH.CONTENT.4.MD.A.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Sweet and Spicy Pickles  	Culinary Flavors and Textures (CFT) Food Preparation (FP)	<p>CFT.4.2 Create basic flavor combinations using international cuisines.</p> <p>FP.4.2 Describe and perform food preservation processes such as drying, freezing, pickling.</p> <p>RC.4.2 Demonstrate the ability to follow recipe instructions with increased independence.</p> <p>KTE.4.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Discuss the value of preserving seasonal foods that are in abundance in order to enjoy them year-round. Have students prepare Emeril's Homemade Sweet and Spicy Pickles, Emerils.com. As students work, have them save and freeze onion and garlic peels for making vegetable stock in the winter. Demonstrate how to process the jars, focusing on food safety, and then demonstrate how to fill and process a jar of pickles before having them do the same in small groups. Follow the USDA's Complete Guide to Home Canning to preserve jam safely. Let pickles age at least 2 weeks before enjoying.</p>	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	Use cucumbers, onions, and garlic from your garden. Bring compost out to the garden.	<p>Community: Make jars of pickles as gifts for loved ones.</p> <p>BAM! Box: Bring home a jar of pickles and come up with a fun way to enjoy them, such as on crackers or sandwiches. Take photos and share your pickle ideas with the class.</p>	<p>CCSS.ELA-LITERACY.RI.4.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>5. Freezing and Dehydrating</p> 	<p>Food Preparation (FP)</p>	<p>FP.4.2 Describe and perform food preservation processes such as drying, freezing, pickling.</p> <p>FP.4.1 Demonstrate knowledge of how to wash and store fruits and vegetables.</p> <p>HE.4.1 Calculate expansion and contraction of volumes of foods.</p> <p>KTE.4.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review the value of preserving seasonal foods when they are in abundance in order to enjoy them year-round. Harvest ripe tomatoes and fruit from the garden. Weigh them and record the weight. Have students coat the tomatoes in oil and place on baking sheets to <u>roast</u>. Once roasted (which will be many hours later), pack the tomatoes in bags or jars, label, and freeze for use in the winter. While tomatoes are beginning to roast, demonstrate how to use food dehydrator. Review safe use of paring knives and then have students slice, weigh, and dehydrate a seasonal fruit. Once dehydrated (which could be during their next class), weigh the fruit again to compare. Have students make explanations for the change in weight. Then store dried fruit in an airtight container and label for use in the winter.</p>	<p>PLS.6 Students actively seek creative and resourceful solutions.</p>	<p>Use tomatoes and other fruit from the garden. Garnish with herbs growing in the garden. Bring compost out to the garden.</p>	<p>Community: Interview a local expert in the community about techniques for preserving foods such as freezing, dehydrating, canning, etc.</p>	<p>CCSS.MATH.CONTENT.4.MD.A.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Nutty Buttery Green Beans	Recipe Concepts (RC) Kitchen Tools and Equipment (KTE)	RC.4.2 Demonstrate the ability to follow recipe instructions with increased independence. FP.4.1 Demonstrate knowledge of how to wash and store fruits and vegetables. KTE.4.1-4 Kitchen Tools and Equipment	Cooking Lesson: Demonstrate how to turn on the stove and set it to the desired setting. While you bring water to a boil, have students trim green beans for Nutty Buttery Green Beans, There's a Chef in My Soup! Save and freeze scraps for vegetable stock. Then demonstrate how to add the green beans into boiling water carefully, without splashing hot water up. As the beans cook, have students practice safe use of the stove by preparing the butter sauce with an adult. Once beans are ready, demonstrate how to use a potholder to strain safely. Mix in sauce and enjoy.	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	Use green beans from the garden. Garnish with herbs growing in the garden. Bring compost out to the garden.	Cafeteria: Interview cafeteria staff for other ideas of vegetables that can be boiled like green beans. Community: Interview local restaurant chefs for other ideas of simple sauces for seasonal vegetables.	NGSS.4.PS3.B Conservation of Energy and Energy Transfer.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.


GRADE 4 | WINTER


Each activity described below should be designed to last approximately 45 minutes.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Green Salad with French Dressing	Health Concepts (HC) Food Preparation (FP)	<p>HC.4.2 Understand that nutrients in soil and plants are assimilated into the body.</p> <p>FP.4.1 Demonstrate knowledge of how to wash and store fruits and vegetables.</p> <p>RC.4.1 Relate the parts of recipe.</p> <p>RC.4.2 Demonstrate the ability to follow recipe instructions with increased independence.</p> <p>KTE.4.1 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Discuss how nutrients in the soil go into plants, and when we eat the plants, they are assimilated into our bodies. Then have students explore the recipe for Green Salad with French Dressing, Emerils.com to determine which tools and ingredients they will need. Have them gather their equipment and prepare the salad, adding in some dried fruit from the fall. Enjoy the salad together. Either in class or as homework, have them write instructions for someone else explaining how to make the salad, including some of the following terms or concepts: ingredients, process, portion size, and yield.</p>	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	Use lettuce from the garden. Add in other produce growing in the garden. Garnish with herbs and/or edible flowers growing in the garden. Bring compost out to the garden.	<p>Community: Share bags of extra greens from the garden with a recipe cards for French Dressing with bus drivers and school staff.</p>	<p>CCSS.ELA-LITERACY.W.4.4 Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>8. Best Basic Red Sauce</p> 	Food Preparation (FP)	<p>FP.4.1 Demonstrate knowledge of how to wash and store fruits and vegetables.</p> <p>FP.4.3 Demonstrate ability to make simple recipes inspired by world cultures</p> <p>HC.4.3 Describe fruits and vegetables in relation to the food groups.</p> <p>HE.4.1 Calculate expansion and contraction of volumes of foods.</p> <p>RC.4.2 Demonstrate the ability to follow recipe instructions with increased independence.</p> <p>KTE.4.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Have students research the history of red sauce and pasta in Italian food. Take out tomatoes the class roasted and froze in the fall. Discuss what food group tomatoes are in (fruits and vegetables) and review the health benefits of this food group. Have students weigh the tomatoes and compare to the original weight of the raw tomatoes. Review safe use of the stove, and then have students prepare Best Basic Red Sauce, There's a Chef in My Soup!, using the tomatoes. Save and freeze onion and garlic scraps for vegetable stock. Once sauce is made, freeze for later use.</p>	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	<p>During this lesson, recall with students the journey from growing the tomatoes to using them today.</p>	<p>Community: Work with a local market to sell extra prepared Red Sauce, allowing students to set price and develop marketing.</p>	<p>NGSS.4.PS3.B Conservation of Energy and Energy Transfer.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. Home-made Pasta	Recipe Concepts (RC) Kitchen Tools and Equipment (KTE)	<p>RC.4.2. Demonstrate the ability to follow recipe instructions with increased independence.</p> <p>HC.4.1 Create a calendar of seasonal menus that reflect local and seasonal foods.</p> <p>HE.4.1 Calculate expansion and contraction of volumes of foods.</p> <p>KTE.4.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Demonstrate proper and safe use of a manual pasta machine. Then have students prepare Homemade Semolina Pasta, Emerils.com, while you heat the Best Basic Red Sauce (made in Lesson #8: Basic Red Sauce). Have students measure volume of pasta before and after cooking, and discuss why it expanded. As students enjoy pasta with Basic Red Sauce, discuss how this dish could be varied in different seasons to reflect local, seasonal produce.</p>	<p>PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.</p>	As you enjoy pasta and red sauce, trace each ingredient back to its source in the school garden or on a farm.	<p>Classroom: Read <i>Strega Nona</i> by Tomie dePaola.</p>	<p>CCSS.MATH.CONTENT.4.MD.A.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
10. Latkes 	Food Preparation (FP) Recipe Concepts (RC)	FP.4.3 Demonstrate ability to make simple recipes inspired by world cultures. RC.4.1 Relate the parts of recipe. RC.4.2 Demonstrate the ability to follow recipe instructions with increased independence. KTE.4.1-4 Kitchen Tools and Equipment	Cooking Lesson: Introduce the significance of Latkes in Jewish culture. Review proper use of a peeler, box grater, and other relevant tools. Have students peel and coarsely grate potatoes for Latkes, There's a Chef in My World! . Save and freeze scraps for stock. Have students grate onion and prepare egg mixture. Add potatoes and then cook for students. While latkes are cooking, have students put out sour cream and applesauce with serving spoons and plates. Then serve and enjoy together.	CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.	Use potatoes and onions from the garden.	Classroom: Read <i>Latkes, Latkes Good to Eat</i> by Naomi Howland to understand the relevance of latkes in Chanukah traditions.	CCSS.ELA-LITERACY.SL.4.1.B Follow agreed-upon rules for discussions and carry out assigned roles.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
11. Making Vegetable Stock 	Home Economics (HE)	HE.4.2 Understand multiple uses of vegetable scraps and strategies to reduce waste. GF.4.2 Understand that nutrients in soil and plants are assimilated into the body. KTE.4.1-4 Kitchen Tools and Equipment	Cooking Lesson: Introduce the idea of making stock from food scraps and discuss the benefits (reducing food waste; nutrient-rich; etc). Then have students make Vegetable Stock, Emerils.com using vegetable scraps collected and frozen in earlier lessons. Trace nutrients in stock back to plants and soil. Freeze stock for later use.	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	As stock is cooking, have students compare putting vegetable scraps in compost to putting them in stock and discuss where the nutrients go in each scenario.	Community: Use local resources to research the benefits of bone broth.	NGSS.4.PS3.B Conservation of Energy and Energy Transfer.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Pasta and Swiss Chard in Broth with Meatballs 	Food Preparation (FP) Recipe Concepts (RC) Health Concepts (HC)	<p>FP.4.1. Demonstrate knowledge of how to wash and store fruits and vegetables.</p> <p>FP.4.3 Demonstrate ability to make simple recipes inspired by world cultures.</p> <p>RC.4.2 Demonstrate the ability to follow recipe instructions with increased independence.</p> <p>HC.4.3 Describe fruits and vegetables in relation to the food groups.</p> <p>KTE.4.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Demonstrate safe handling of raw meats, including which cutting boards to use for meat. Discuss why this is so important. Have students make meatballs for Pasta and Swiss Chard in Broth with Meatballs, Emerils.com, while you bring the vegetable broth they made in Lesson #11: Making Vegetable Stock to a simmer. Add in meatballs and cook while students chop Swiss chard, grate cheese, and break noodles into pieces. Have students discuss what food groups are represented in the soup and how each supports their overall health. Ladle and enjoy.</p>	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	Use Swiss chard or other leafy greens from the garden. Add in other produce growing in the garden. Garnish with herbs growing in the garden. Bring compost out to the garden.	<p>Community: Interview local chefs about their favorite meat preparation techniques.</p>	<p>NGSS.4.PS3.B Conservation of Energy and Energy Transfer.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

GRADE 4 | SPRING


Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Strawberry Jam 	Health Concepts (HC)	<p>HC.4.1 Create a calendar of seasonal menus that reflect local and seasonal foods.</p> <p>FP.4.1 Demonstrate knowledge of how to wash and store fruits and vegetables.</p> <p>RC.4.2 Demonstrate the ability to follow recipe instructions with increased independence.</p> <p>KTE.4.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review paring knife safety. Have students prepare Strawberry Jam, Emerils.com. While jam is cooking, assign each team a season and a meal (i.e. spring lunch) and challenge them to create a menu that reflects local and seasonal foods for that time. Collect these together to create a year-round local eating guide. Have students write an introduction explaining the benefits of incorporating local, seasonal foods into their diets. Follow the USDA's Complete Guide to Home Canning to preserve jam safely.</p>	<p>PLS.6 Students actively seek creative and resourceful solutions.</p>	Use strawberries from the garden. Bring compost out to the garden.	<p>Classroom: Read <i>From Strawberry to Jam</i> by Lisa Owings. Then create your own version of a "How to" Guide based on your own recipe.</p> <p>Community: Interview local restaurants on how their menu changes through the seasons.</p>	<p>CCSS.MATH.CONTENT.4.MD.A.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p> <p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Blueberry French Toast 	Food Preparation (FP) Health Concepts (HC)	<p>FP.4.1 Demonstrate knowledge of how to wash and store fruits and vegetables.</p> <p>HC.4.2 Understand that nutrients in soil and plants are assimilated into the body.</p> <p>RC.4.2. Demonstrate the ability to follow recipe instructions with increased independence.</p> <p>KTE.4.1 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Provide students with recipe and have them identify and gather necessary tools and ingredients to prepare Ooey Goey Blueberry “French Toast”, <i>There’s a Chef in My Family!</i>. Place the French toast in the oven for them, review stove safety, and then help students prepare the blueberry sauce while the French toast is cooking. Discuss where the blueberries were grown, what nutrients they contain, and what those particular nutrients do for our body.</p>	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	Use blueberries from the garden. Garnish with edible flowers growing in the garden. Bring compost out to the garden. If time allows, have students measure the baking sheets and calculate area and volume to reinforce measurement work they are doing in the garden.	<p>Classroom: Read <i>Blueberries for Sal</i> by Robert McCloskey, a story written in 1948 about picking blueberries in Maine.</p>	<p>NGSS.4.PS3.B Conservation of Energy and Energy Transfer.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Berries Three Ways	Health Concepts (HC)	<p>HC.4.3 Describe fruits and vegetables in relation to the food groups.</p> <p>HC.4.4 Identify where fruits and vegetables are sourced locally.</p> <p>HC.4.5 Compare and contrast fresh, canned, and frozen fruits and vegetables.</p>	<p>Cooking Concept Lesson: Engage students by harvesting berries together. Explore what food group they belong in. Conduct a comparative tasting between fresh berries, homemade jam made in Lesson #13: Strawberry Jam, and highly-processed store-bought jam. Explain how to look at the nutrition label and compare ingredients to those you used in your jam. Have students elaborate by comparing labels in their journals.</p>	PLS.5 Students develop the ability to make informed and responsible decisions.	Harvest and use berries from the garden. Bring compost to the garden.	<p>BAM! Box: In preparation for Lesson #16: Food Groups in Food Purchases, work with a caregiver to list all of the family's food purchases for a week.</p>	<p>CCSS.ELA-LITERACY.RI.4.9 Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p>
16. Food Groups in Food Purchases	Health Concepts (HC)	<p>HC.4.6 Collect and display data from weekly food purchases for family or community.</p>	<p>Cooking Concept Lesson: Have each student track his/her family's food purchases for a week. Then explore the results together, categorizing what was bought into the different food groups: Grains, Protein, Fruits, Vegetables, and Dairy.</p>	PLS.5 Students develop the ability to make informed and responsible decisions.	In the garden, look to see if there is anything families buy that they could be growing in this region. Dedicate a space in the garden where students and/or families can grow produce to take home.	<p>Classroom: Read selections from <i>What the World Eats</i> by Faith D'Aluisio and Peter Menzel. Compare and contrast what a week's worth of groceries looks like around the world.</p>	<p>CCSS.MATH.CONTENT.4.MD.A.2 Use the four operations to solve word problems.</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Researching Morocco	Food Preparation (FP)	FP.4.4 Explain cultural and historical significance of preservation methods.	Cooking Concept Lesson: In preparation for the Feast Around the World, have students explore Morocco, locating it on a map, and researching different aspects of life in Morocco, including celebrations, customs, and the like. Explain that every culture around the world has preserved foods. In cold climates, they froze foods; in warmer climates, such as that in Morocco, they dehydrated food. Have them elaborate by preparing to present on their country in the Feast Around the World.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	If relevant, visit the Herbs of the World bed planted in Grade 2 Lesson #13: Planting Herbs of the World to harvest and add any common herbs from Morocco or other parts of Africa.	Community: Ask students if they have family members from Morocco or other countries in Africa. If so, invite them in to share a favorite recipe from the region.	Social Studies: Geography. Social Studies: Cultural Traditions. CCSS.ELA-LITERACY.RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Moroccan Couscous 	Food Preparation (FP) Health Concepts (HC)	<p>FP.4.1 Demonstrate knowledge of how to wash and store fruits and vegetables.</p> <p>HC.4.2 Understand that nutrients in soil and plants are assimilated into the body.</p> <p>RC.4.2 Demonstrate the ability to follow recipe instructions with increased independence.</p> <p>KTE.4.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Harvest vegetables that are good raw, such as carrots and radishes, with students. As students harvest, thank the plants and soil for the nutrients they provide us. Then have students prepare Moroccan Couscous, <i>There's a Chef in My World!</i>, and incorporate fruit this class dehydrated earlier in the year for the Feast Around the World.</p>	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	Use vegetables that are good raw, such as carrots and radishes from the garden. Bring compost out to the garden.	<p>Community: Ask students if they have family members from Morocco or other countries in Africa. If so, invite them in to share a favorite recipe from the region.</p>	<p>Social Studies: Geography.</p> <p>Social Studies: Diversity and Culture.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Elementary School Feast Around the World!

GRADE 5 | *Kitchen*



SCOPE & SEQUENCE



GRADE 5 STANDARDS



At the end of Grade 5, students will be able to:


- Assign flavors, textures, and techniques to various cultural traditions.
- Understand basic principles of keeping foods at correct hot, holding, and cold temperatures.
- Demonstrate knowledge of proper tool use with supervision.
- Use more advanced kitchen tools and equipment.
- Demonstrate knowledge of food preservation techniques.
- Demonstrate knowledge of and perform simple recipes.
- Demonstrate understanding of the relationship between gardening, healthy food choices, and wellness.
- Interpret and utilize nutrition fact labels and food labels.
- Demonstrate knowledge of basic home economic principles for sourcing food items.
- Demonstrate understanding of food cost and food waste in the kitchen.


GRADE 5 | FALL




Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
1. Welcome to the Kitchen!	Personal and Community Life Skills (PLS and CLS)		Cooking Concept Lesson: Engage students by having them share their names and something they like to cook. Review kitchen agreements established in Grade 4 Lesson #1: Welcome to the Kitchen! together. Review Personal and Community Life Skills. Then have students elaborate, practicing these agreements as they create and decorate a kitchen journal that they will use throughout the year to document cooking projects and activities. Journaling is a great activity for students to do at home, in the classroom, or while a dish is cooking.	PLS.1-6 CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.	Look for similarities and differences between garden and kitchen agreements.	Classroom: Create and decorate a poster representing kitchen agreements.	CCSS.ELA-LITERACY.SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>2. Summer Pudding</p> 	<p>Recipe Concepts (RC)</p> <p>Health Concepts (HC)</p> <p>Kitchen Tools and Equipment (KTE)</p>	<p>RC.5.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.</p> <p>HC.5.1 Summarize seed to plate process</p> <p>KTE.5.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Demonstrate how to use a bread knife safely and properly. Then have students prepare bread and berries for Summer Pudding, <i>There's a Chef in My World!</i> While pudding is setting in refrigerator, demonstrate how to use the electric mixer and then have students prepare whipped cream. Enjoy together the next day. When they finish, or for homework, have students trace the journey of the berries from farm to kitchen. Also have them record "Cook's Notes" on this recipe in their kitchen journals.</p> 	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	<p>Use berries and lemon from the garden. Garnish with edible flowers growing in the garden. Bring compost out to the garden.</p>	<p>Community: Work with community members to develop variations of the Summer Pudding recipe.</p>	<p>Social Studies: Cultural Traditions.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>3. Knife Cuts</p>	<p>Recipe Concepts (RC)</p> <p>Kitchen Tools and Equipment (KTE)</p>	<p>RC.5.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.</p> <p>KTE.5.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Demonstrate how to cut a zucchini in half long-ways using a small chef’s knife. Hand out knives and have students practice on a zucchini of their own. Then have them put the flat surface of the zucchini down, and demonstrate each of the following knife cuts, giving students time to practice on a fraction of zucchini afterwards: cube, rough chop, fine chop, dice, and slice. Discuss when each cut might be important.</p> <p> Caution</p>	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	<p>Use zucchini from the garden. Bring compost out to the garden.</p>	<p>Cafeteria: Invite your food service director to discuss and demonstrate knife safety.</p>	<p>NGSS Crosscutting Concept: Structure and Function</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Oven-Roasted Veggies	Recipe Concepts (RC)	<p>RC.5.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.</p> <p>KTE.5.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review how to slice and chop safely and properly with a small chef's knife. Review the nutritional benefits of the vegetable food group. Then have students work together to prepare Oven-Roasted Veggies, <i>There's a Chef in My Family!</i> While the veggies are roasting, or for homework, have students record some "Cook's Notes" on this recipe in their kitchen journals.</p> 	CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.	Use potatoes, carrots, onion, squash, or zucchini and red bell pepper from the garden. Add in other produce growing in the garden. Garnish with herbs growing in the garden. Bring compost out to the garden.	Cafeteria: Interview cafeteria staff on how the technique of roasting can be applied in other ways.	CCSS.ELA-LITERACY.W.5.2.D Use precise language and domain-specific vocabulary to inform about or explain the topic.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>5. Fiesta Quesadillas with Simple Salsa and Holy Moly Guacamole</p>  	<p>Recipe Concepts (RC)</p> <p>Health Concepts (HC)</p>	<p>RC.5.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.</p> <p>HC.5.3. Describe the benefits of a nutrient rich diet.</p> <p>KTE.5.1-4. Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review safe use of knives then have students chop fresh garden vegetables such as onion, chard, or zucchini to add to quesadillas. Sauté the veggies and cook quesadillas for students. While you or another adult is cooking the quesadillas, have 1 group of students prepare salsa and the other group prepare guacamole. Then enjoy Fiesta Quesadillas with Simple Salsa and Holy Moly Guacamole, <i>There's a Chef in My Soup!</i> together. When they finish, or for homework, have students record "Cook's Notes" on this recipe in their kitchen journals.</p> 	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	<p>Incorporate fresh vegetables such as onion, chard, and zucchini from the garden. If available, add additional vegetables to the quesadillas. Add avocados, tomatoes, garlic, onions, bell peppers, and limes for the salsa and guacamole. Garnish with cilantro on the side if you have it growing. Bring your food scraps out to the compost.</p>	<p>BAM! Box: Challenge students to make quesadillas for their family at home and share the recipe they created or any photos they take with the class.</p>	<p>CCSS.ELA-LITERACY.W.5.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>



Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Apple-of-My-Eye Crisp	Recipe Concepts (RC) Health Concepts (HC)	RC.5.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment. HC.5.1 Summarize seed to plate process KTE.5.1-4 Kitchen Tools and Equipment	Cooking Lesson: Demonstrate how to use a pastry blender (or 2 forks) safely and properly. Then have students prepare crust for Apple-of-My-Eye Crisp, There's a Chef in My Soup! Review tool safety, and then have students prepare filling. Enjoy together. When they finish or for homework, have students describe the journey of an apple from seed to crisp.	CLS.2 Students cooperate and communicate well with each other.	Use apples from the garden. Add in other fruit growing in the garden. Bring compost out to the garden.	Community: Create videos of community members demonstrating their recipes and techniques for pie making.	CCSS.MATH.CONTENT.4.MD.A.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

GRADE 5 | WINTER



Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Discovering Proteins	Health Concepts (HC)	HC.5.4 Identify where proteins are sourced locally.	Cooking Concept Lesson: Engage students in a brainstorm of activities they like to do that require strong muscles (like sports). Explain that muscles and other parts of the body need protein to grow. Have students read <u>Proteins Lesson for Kids: Definitions and Facts</u> . Trace a student volunteer on butcher paper, and work with students to color in the parts of the body that are made of proteins. Around the body, have students write the names of activities they like to do that require muscles and, therefore, require protein. Title the poster "Why We Need Protein."	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.	In Grade 4 Garden Lesson #17: Planting Beans these students planted beans that should now be fully grown, dried, and ready to explore.	Community: Take a field trip to a local plant-based protein farm and/or invite in a local plant-based protein farmer for a guest presentation with Q and A.	CCSS.ELA-LITERACY.SL.5.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.	National Health Education Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>8. Miso Soup</p>	<p>Health Concepts (HC)</p>	<p>HC.5.2 Define and describe what a protein is.</p> <p>HC.5.3 Describe the benefits of a nutrient rich diet.</p>	<p>Cooking Concept Lesson: Review which foods have protein based on the reading students did in Lesson #7: Discovering Proteins. Engage students by having them talk about dishes they have prepared and/or eaten that contain proteins. Write the various protein sources on the board or a piece of chart paper. Add key proteins students do not mention, making sure to include beans. Explain beans are a plant-based protein, in the same food group as meats. Discuss how proteins help our bodies, and describe the benefits of proteins. Then prepare and enjoy Miso Soup with Vegetable Stock, Emerils.com, together and explain that tofu and miso both come from soy beans. When they finish, or for homework, have students record “Cook’s Notes” on this recipe in their kitchen journals.</p> 	<p>PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.</p>	<p>Discuss where the water in the soup came from, and draw a connection between our need for water and plant needs for water.</p>	<p>Cafeteria: Look at the upcoming cafeteria menu to identify when beans will be served. Create promotional materials for those dates to inform students of the health, environmental, and economic benefits of eating plant-based proteins.</p>	<p>NGSS.5.LS2.B Cycles of Matter and Energy Transfer in Ecosystems</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>9. Layered Black Bean Chili Dip</p> 	<p>Food Preparation (FP)</p> <p>Health Concepts (HC)</p>	<p>FP.5.1 Demonstrate understanding of how to handle, prepare, and process proteins using a variety of cultural traditions.</p> <p>HC.5.2 Define and describe what a protein is.</p> <p>RC.5.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.</p> <p>KTE.5.2-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review concept of beans being a plant-based protein source. Have students make Layered Black Bean Chili Dip, Emerils.com. As you enjoy, discuss food groups represented in the dip, defining and describing plant-based proteins. When they finish, or for homework, have students record “Cook’s Notes” on this recipe in their journals.</p> 	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>Use beans, tomatoes and cilantro from the garden. As you enjoy, trace ingredients back to their source, the soil. As you enjoy, give thanks to the rocks, and acknowledge the elements that broke them down into soil over time. Bring out compost to the garden.</p>	<p>Community: Look at menus from local restaurants to explore different uses of beans.</p>	<p>NGSS.5.LS2.B Cycles of Matter and Energy Transfer in Ecosystems.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
10. Cooking Beans	Food Preparation (FP) Health Concepts (HC)	<p>FP.5.1 Demonstrate understanding of how to handle, prepare, and process proteins using a variety of cultural traditions.</p> <p>HC.5.3 Describe the benefits of a nutrient rich diet.</p> <p>RC.5.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.</p> <p>KTE.5.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Demonstrate how to cook red, black and cannellini beans for Beans Galore Salad, <i>There's a Chef in My Family!</i> While beans are cooking, have different groups research and then share out on different cultural uses of beans, such as miso (Japanese); refried beans (Mexican); and/or hummus (Mediterranean), and the health, economic and/or environmental benefits of plant-based diets. Once cooked, refrigerate or freeze beans for use in Lesson #11: Beans Galore Salad.</p>	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	Use beans planted by students in Grade 4 Garden Lesson #17: Planting Beans.	<p>Classroom: Research the history of beans throughout the world using books like <i>How Carrots Won the Trojan War</i> by Rebecca Rupp.</p>	<p>Social Studies: Geography.</p> <p>Social Studies: Cultural Traditions.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>11. Beans Galore Salad</p> 	<p>Food Preparation (FP)</p> <p>Health Concepts (HC)</p>	<p>FP.5.1 Demonstrate an understanding of how to handle, prepare, and process plant-based proteins using a variety of cultural traditions.</p> <p>HC.5.4. Identify where proteins are sourced locally.</p> <p>RC.5.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.</p> <p>KTE.5.2-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review tool safety. Then use beans students cooked to prepare Beans Galore Salad, <i>There's a Chef in My Family!</i> Use a map to identify where beans are sourced locally. When they finish, or for homework, have students record "Cook's Notes" on this recipe in their kitchen journals.</p> 	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	<p>Use beans, onions, and garlic and from the garden. Garnish with herbs growing in the garden. Bring compost out to the garden.</p>	<p>Community: Create a cooking show style video showing the steps to make the Beans Galore Salad.</p>	<p>CCSS.ELA-LITERACY.W.5.2.D Use precise language and domain-specific vocabulary to inform about or explain the topic.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Student Plays	Health Concepts (HC)	HC.5.1 Summarize seed to plate process.	Cooking Concept Lesson: Have students elaborate on kitchen and garden learning to date by having them write short plays summarizing the process from growing to preparing to eating something this year. Evaluate their understanding of this process as they perform plays for a live audience (such as a younger class).	CLS.2 Students cooperate and communicate well with each other. PLS.6 Students actively seek creative and resourceful solutions.	Perform the plays in the garden. Use real props from the garden, such as plants and tools.	Community: Invite community partners to come see the performances and learn more about the garden and kitchen program.	CCSS.ELA-LITERACY.SL.5.4 Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.	National Health Education Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.


GRADE 5 | SPRING


Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Designing Vegetarian and Vegan Meals	Food Preparation (FP) Health Concepts (HC)	FP.5.2 Design and/or create complete protein meals using a variety of cultural traditions. HC.5.3. Describe the benefits of a nutrient rich diet.	Cooking Concept Lesson: Have students explore MyPlate or another food grouping resource. Explain or review the food groups and the desired ratio for a balanced meal. Define “complete protein.” Divide students into teams. Then have students elaborate, challenging teams to create cost-conscious, complete protein meals, each reflecting a different cultural tradition. Have them draw their meal on a paper plate and then share out. As each group shares, discuss what food groups are included in each of the group’s dishes.	CLS.1 Students demonstrate problem solving and resolve conflict as a team. CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	As time allows or for homework, challenge students to design a theme garden bed for a nutritionally complete vegan meal.	BAM! Box: Plan and prepare a vegetarian meal or snack for your family.	CCSS.MATH.CONTENT.4.MD.A.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Shopping on a Budget	Home Economics (HE)	<p>HE.5.1 Demonstrate knowledge of shopping for groceries on a budget.</p> <p>HE.5.2 Understand the economic impact of growing your own food and using it in the kitchen.</p>	<p>Cooking Concept Lesson: Set up a pretend grocery store with each food product (or picture of a product) labeled with a price. Have students explore, giving them a budget and a challenge to plan a day's worth of meals that will include all of the food groups (grains, protein, fruit, vegetables, and dairy) and work within their budget.</p>	<p>PLS.5 Students develop the ability to make informed and responsible decisions.</p> <p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	Once students finish the activity, suggest that they can harvest anything from the school garden and add it to their shopping carts for free. Then discuss how having a garden impacted their purchasing power.	BAM! Box: Discuss with caregivers what produce they could use at home. Then grow one thing in the garden for your family. Bring it home to prepare together, and then share out on what your family made with it.	CCSS.MATH.CONTENT.4.MD.A.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>15. Pasta Primavera</p>	<p>Recipe Concepts (RC)</p> <p>Culinary Flavors and Textures (CFT)</p>	<p>RC.5.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.</p> <p>CFT.5.1 Describe how other cultures use flavors in their cuisines.</p> <p>KTE.5.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review tool safety. Give students the recipe for Pasta Primavera, <i>There's a Chef in My Family!</i> Have them work together to identify, locate, and gather the equipment and ingredients required, and then prepare the recipe. As they enjoy, explain that "primavera" means spring in Italian. Discuss how this recipe could be modified in different seasons to incorporate seasonal produce. When they finish, or for homework, have students record "Cook's Notes" on this recipe in their kitchen journals.</p> 	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p> <p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>Use carrots, asparagus, onion, garlic, zucchini, squash, tomatoes, and peas from the garden. Add in other produce growing in the garden. Bring compost out to the garden.</p>	<p>Community: Explore local restaurants for pasta dishes, noting the variety of ingredients and sauces.</p>	<p>CCSS.ELA-LITERACY.W.5.3.C Use a variety of transitional words, phrases, and clauses to manage the sequence of events.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Researching India	Culinary Flavors and Textures (CFT)	CFT.5.2 Explain food traditions of other cultures using sensory language to describe flavor and ingredients. CFT.5.1 Describe how other cultures use flavors in their cuisines.	Cooking Concept Lesson: In preparation for the Feast Around the World, have students explore India by locating it on a map, and researching different aspects of life in India, such as celebrations, customs, and the like. Have them elaborate, preparing to present on their country in the Feast Around the World.	CLS.2 Students cooperate and communicate well with each other.	If relevant, visit the Herbs of the World Bed planted in Grade 2 Lesson #13: Planting Herbs of the World to harvest and add any common herbs or spices from India.	Community: Ask students if they have family members from India or other countries in the Indian subcontinent. If so, invite them in to share a favorite recipe from the region.	Social Studies: Geography. Social Studies: Diversity and Culture. CCSS.ELA-LITERACY.RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.	
17. Garam Masala	Recipe Concepts (RC) Culinary Flavors and Textures (CFT)	RC.5.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment. CFT.5.1 Describe how other cultures use flavors in their cuisines. KTE.5.1-4 Kitchen Tools and Equipment	Cooking Lesson: Demonstrate safe and proper use of a spice grinder. Then have students prepare Garam Masala, Emerils.com . Store for use in Lesson #18: Vegetable Curry . When they finish, or for homework, have students record "Cook's Notes" on this recipe in their kitchen journals. 	PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.	Discuss which part of the plant coriander, cumin, cardamom, and nutmeg are (seeds); what peppercorns are (fruits); what cloves are (flower buds); and what cinnamon is (stem).	Classroom: Read <i>Foods of India</i> by Christine VeLure Roholt.	Social Studies: Diversity and Culture.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Vegetable Curry	Culinary Flavors and Textures (CFT)	<p>CFT.5.2 Explain food traditions of other cultures using sensory language to describe flavor and ingredients.</p> <p>CFT.5.1 Describe how other cultures use flavors in their cuisines.</p>	<p>Cooking Lesson: Harvest assorted vegetables together with students (see recipe for ideas). Review tool safety. Then divide tasks amongst teams and have each team contribute something to a collective Vegetable Curry, <i>There's a Chef in My World!</i>, for the Feast Around the World. When they finish, or for homework, have students record "Cook's Notes" on this recipe in their kitchen journals.</p> 	<p>CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.</p> <p>CLS.4. Students appreciate and are respectful of differences and diversity in their communities.</p>	Use onion, ginger, garlic, jalapeño pepper, potatoes, and other assorted vegetables from the garden. Bring compost out to the garden.	Community: Ask students if they have family members from India or the Indian subcontinent and, if so, invite them in to share a favorite recipe from the region.	<p>Social Studies: Geography.</p> <p>Social Studies: Diversity and Culture.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Elementary School Feast Around the World!

GRADE 6 | *Kitchen*



SCOPE & SEQUENCE




GRADE 6 STANDARDS


At the end of Grade 6, students will be able to:

- Demonstrate knowledge of culinary flavors and textures to identify ingredients.
- Demonstrate mastery of basic cooking methods and recipe preparations.
- Demonstrate ability to increase and decrease recipe portions.
- Demonstrate understanding of nutrition facts on food labels to make informed choices about healthy eating.
- Demonstrate understanding of food traditions and culture.
- Demonstrate knowledge of whole food versus processed food.
- Demonstrate the ability to plan and stage a thematic classroom event.

GRADE 6 | FALL


Each activity described below should be designed to last approximately 45 minutes.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
1. Welcome to the Kitchen! 	Culinary Flavors and Textures (CFT)	<p>CFT.6.2 Understand the relationship between smell and taste in culinary practices.</p> <p>FP.6.1 Demonstrate knowledge of safe food handling practices.</p>	<p>Cooking Concept Lesson: Explore with students ideas about how each individual can contribute to the kitchen space and the learning of every student. Then, explain that you will work together to develop kitchen agreements. Review Personal and Community Life Skills and safe food handling practices. Then elaborate, practicing these skills and agreements together as you play a <u>blind taste test game</u> in pairs. Gather as a class to discuss the important role of smell in helping taste food. Then, review the Personal and Community Life Skills that students demonstrated throughout the activity.</p>	<p>PLS.1-6</p> <p>CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.</p>	For the smelling and tasting activity, use aromatic herbs or produce from the garden. Bring compost out to the garden.	<p>Classroom: Write a poem about a dish, describing it using all of your senses; then reveal the name and origin of the dish in the end.</p>	<p>NGSS.MS.LS.D. Information Processing.</p> <p>CCSS.ELA-LITERACY.SL.6.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>2. Squash and Zucchini Casserole</p> 	<p>Recipe Concepts (RC)</p>	<p>RC.6.1 Understand the importance of and how to measure various food, storage and cooking temperatures</p> <p>CFT.6.1 Utilize taste sensations: sweet sour, bitter, and salty in a series of breakfast items for the class.</p> <p>FP.6.1 Demonstrate knowledge of safe food handling practices</p> <p>FP.6.2 Name and describe basic cooking techniques and use them as instructed to prepare recipes.</p> <p>KTE.6.1-4 Kitchen Tools and Equipment.</p>	<p>Cooking Lesson: Introduce the Summer Squash and Zucchini Casserole, Emerils.com, recipe. Review knife cuts students learned in Grade 5 Lesson #3: Knife Cuts. Have students practice by cutting squash and zucchini. Demonstrate how to sauté; then have students sauté vegetables. Have students prepare the casserole. Place in the oven, and explain the role of thermometers in the kitchen: to test temperatures of both ovens and dishes to cook things well. Demonstrate how to use a thermometer to check the temperature of the oven. While casserole bakes, have students practice using thermometers. They can measure temperatures in the freezer and refrigerator and compare to room temperature. Remove casserole from the oven, and demonstrate how to check the internal temperature before and after letting it rest. Explain that eggs have to be cooked to 160 degrees F in order to ensure that they are free of bacteria and safe to eat. When the casserole is ready, enjoy together and discuss the taste sensations experienced (salty egg mixture, sweet onions, possibly bitter if you added bitter greens, etc.).</p>	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	<p>Use squash, zucchini, and onion from the garden. Add in other summer squash, sun-dried tomatoes, or herbs from the garden. Bring compost out to the garden.</p>	<p>Community: Research organizations in your community that collect frozen meals to distribute to community members in need and donate a casserole.</p>	<p>NGSS Science and Engineering Practice: Analyzing and Interpreting Data.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
3. Proteins	Health Concepts (HC)	<p>HC.6.3 Describe how the body uses nutrients from food to function.</p> <p>HC.6.4 Identify where products from different food groups are sourced locally.</p>	<p>Cooking Concept Lesson: Have students prepare questions in advance to interview a local farmer/rancher. If possible, take a field trip to explore a local meat, egg or dairy farm and/or invite a local rancher to your class. Explain the various sources of protein and how and why to eat protein.</p>	<p>PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.</p>	<p>During this lesson, look around the garden for sources of protein. These might be eggs (if you have chickens), beans, or nuts. If you don't have any, discuss how you might add protein to your garden.</p>	<p>Classroom: Write a letter to the farmer thanking them for their time and expressing all that was learned.</p>	<p>CCSS.ELA-LITERACY.SL.6.1.A Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.</p>	<p>National Health Education Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Ka-Bam Kabobs	Food Preparation (FP)	<p>FP.6.1 Demonstrate knowledge of safe food handling practices.</p> <p>FP.6.2 Name and describe basic cooking techniques and use them as instructed to prepare recipes.</p> <p>RC.6.1 Understand the importance of and how to measure various food, storage and cooking temperatures.</p> <p>RC.6.3 Read and follow a recipe inferring whether it can be modified.</p> <p>KTE.6.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Pre-marinate the meat for Ka-Bam Kabobs, <i>There's a Chef in My Soup!</i> If possible, incorporate meat raised by the rancher in Lesson #3: Proteins. Review safe use of the oven and have students preheat their ovens. Have them line a baking sheet with aluminum foil. Explain that raw meat can contain pathogens and therefore it is critical to follow safe protocols such as using a separate cutting board for meat; washing hands thoroughly before and after handling raw meat; and cooking meat to the correct temperature before eating. Demonstrate how to handle raw meat safely, review knife safety, and demonstrate skewer safety. Then have students chop vegetables and prepare kabobs. Have students scale up the recipe by adding more vegetables. Demonstrate how to place something in an oven safely, and then have students place kabobs in the oven. While the kabobs are cooking, have students wash hands well, and then demonstrate safe and proper use of hot pads to remove items from the oven. Have students remove kabobs. Review how to use a thermometer to check the internal temperature of meat. Have students check and remove their kabobs when the thickest part of the meat is at least <u>145 degrees F</u>. Enjoy together.</p>	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	<p>Use vegetables from the garden. Add in other produce growing in the garden. Bring compost out to the garden.</p>	<p>Community: Create a recipe for kabobs that you would like to create for your family at home.</p>	<p>NGSS.MS.PS3.B Conservation of Energy and Energy Transfer.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
5. One Stop Breakfast Casserole 	Food Preparation (FP)	<p>FP.6.1 Demonstrate knowledge of safe food handling practices.</p> <p>FP.6.2. Name and describe basic cooking techniques and use them as instructed to prepare recipes.</p> <p>HC.6.5 Understand how to create complete protein dishes with vegan, vegetarian, and/or animal proteins.</p> <p>KTE.6.1-4 Kitchen Tools and Equipment.</p>	<p>Cooking Lesson: Pre-make a, One Stop Breakfast Casserole, Emerils.com. Begin baking 1 hour and 20 minutes before you plan to serve. With students, review bread knife safety, and then have students slice bread and prepare egg mixture while you cook sausage and shallots. Add in available garden vegetables. Discuss the importance of adding vegetables to make this a balanced meal, and then discuss the key nutrients found in each vegetable they added. Then have students layer the bread and sausage, pour over egg mixture, and cover. Reserve the casserole for the next class, and remove the pre-prepared, cooking casserole from the oven to serve. As students enjoy, have them share out which food groups are in this meal and why each is important to their health.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	Add chard, spinach, or other leafy greens growing in the garden. Garnish with herbs growing in the garden. Bring compost out to the garden.	<p>Community: Interview community members about their favorite breakfast dishes.</p>	<p>CCSS.ELA-LITERACY.W.6.3.C Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>6. Grilled Fish Tacos with a Roasted Chile and Avocado Salsa</p> 	<p>Food Preparation (FP)</p>	<p>FP.6.1 Demonstrate knowledge of safe food handling practices.</p> <p>FP.6.2 Name and describe basic cooking techniques and use them as instructed to prepare recipes.</p> <p>KTE.6.1-4 Kitchen Tools and Equipment..</p>	<p>Cooking Lesson: Introduce the Grilled Fish Tacos with a Roasted Chile and Avocado Salsa, <i>Emerils.com</i>, recipe. Have students wrap stacks of 5 tortillas and warm in oven. Have them prepare the salsa. Next demonstrate safe use of the grill or grill pan, prepare the fish for the grill, and then add to the grill. While it's cooking, demonstrate how to set a timer, assess flakiness, and flip when ready. Once fish is cooked, have students remove tortillas and assemble tacos to enjoy immediately. While eating, discuss where this dish falls on the whole food to highly processed food continuum and why (it is minimally processed). Then discuss the food groups represented in the tacos (tortilla: grains, fish: protein, salsa: vegetables), and discuss how to make this a more balanced meal (i.e. adding a salad for more vegetables, adding cheese for dairy, etc).</p>	<p>PLS.4 Students are active and engaged learners who show up on time, prepared to learn and participate, and able to manage their time.</p>	<p>Add sliced cabbage, tomatoes, or other produce growing in the garden. Garnish with cilantro growing in the garden. Bring compost out to the garden.</p> <p>In Garden Lesson #8: Garden Design Challenge, Part 2: Planting a Garden Bed, show students fish emulsion, explain its function, and demonstrate how to apply it as an organic fertilizer in the garden.</p>	<p>Classroom: Have students research the history, cultural, and traditional significance of tacos.</p>		<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>



GRADE 6 | WINTER

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Breakfast Party Planning, Part 1	Menu Development (MD)	<p>MD.6.1 Research and plan a menu suing world culture theme.</p> <p>HC.6.1 Describe the health benefits of eating seasonal foods.</p> <p>HC.6.2 Identify ingredients by name.</p>	<p>Cooking Concept Lesson: Explain the health benefits of eating seasonal foods. Then go out to the garden and have students look for foods that are ready to harvest. Have students list them. If there is nothing in the winter, go to the pantry and look for preserved foods and/or storage crops that were recently grown in the school garden. Use these as a jumping off point to have students elaborate, researching breakfast recipes at <i>Emerils.com</i> that might be suitable for an international Breakfast Party in the Afternoon that occurs in Lesson #11: Breakfast Party Preparation.</p>	<p>PLS.5 Students develop the ability to make informed and responsible decisions.</p>	<p>Start this lesson in the garden to encourage the produce that's in abundance to drive recipe selection. If nothing is in season in the winter, do the same in the pantry to identify preserved foods and storage crops from the fall harvest.</p>	<p>Classroom: Use a flashlight and a globe in a dark room to model the cause of the seasons.</p>	<p>NGSS.MS.ESS2.D Weather and Climate.</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
8. Breakfast Party Planning, Part 2	Menu Development (MD)	MD.6.1 Research and plan a menu using world culture theme.	Cooking Concept Lesson: Assign student teams different regions to represent for their breakfast items. Have them continue exploring, researching possible recipes for the Breakfast Party. Gather and have each team suggest a few breakfast recipe options that represent their assigned region or culture. Explain and discuss how family and culture influence eating and other health-related behaviors.	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	As students research breakfast options from other regions, have them note produce we have in common, and produce that grows elsewhere but not locally.	BAM! Box: Have students plan with their families or community members a breakfast item that they will bring from home to add to the Breakfast Party in the Afternoon.	Social Studies: Geography, Cultural Traditions, Diversity and Community.	National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. Breakfast Party Planning, Part 3	Menu Development (MD)	<p>MD.6.2 Create recipes to scale.</p> <p>HE.6.2 Demonstrate knowledge of planning and cooking healthy meals on a budget.</p> <p>RC.6.2 Demonstrate ability to decrease and increase portions using US customary standards.</p> <p>RC.6.3 Read and follow a recipe inferring whether it can be modified.</p>	<p>Cooking Concept Lesson: Provide student teams with a grocery budget. Explain that they can use anything in the garden (i.e. produce that's ready to harvest) or kitchen (i.e. preserved foods, oils, spices, etc),and that they have a specified budget to purchase groceries. Have the teams work together to elaborate, selecting a recipe from their research they can scale up to serve the entire class plus their families. Then have them visit a local grocery store or use an online grocery tool to price out the ingredients to determine if they can prepare it within their budget. Continue until everyone has a recipe that will work.</p>	<p>PLS.6 Students actively seek creative and resourceful solutions.</p>	<p>Have students start with a walk through the garden to remind themselves of what's available to harvest. If nothing is in season in the winter, do the same through the pantry to find storage crops and preserved foods from the fall harvest.</p>	<p>Community: With your family, assess what is available in the kitchen, set a grocery store budget, and go shopping to complete meals under budget.</p>	<p>CCSS.MATH.CONTENT.6.NS.B.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p>


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
10. Home-made Yogurt  	Health Concepts (HC) Food Preparation (FP)	<p>HC.6.4 Identify where products from different food groups are sourced locally.</p> <p>HC.6.6 Demonstrate knowledge of whole foods, minimally processed foods and processed foods.</p> <p>FP.6.1 Demonstrate knowledge of safe food handling practices.</p> <p>FP.6.2 Name and describe basic cooking techniques and use them as instructed to prepare recipes.</p> <p>KTE.6.1-4 Kitchen Tools and Equipment.</p>	<p>Cooking Lesson: Discuss the role of dairy in a healthy diet and identify where dairy is sourced locally. Discuss the unique role of yogurt in promoting healthy digestion by increasing beneficial bacteria. Review stove safety. Demonstrate how to use a candy thermometer. Guide students in making Homemade Yogurt, Emerils.com. As it's heating, recall with students other dairy products they have had in various dishes from diverse cultures. When it's time to enjoy the yogurt (1-4 days later, ideally at your Breakfast Party), have students sweeten to taste and mix with berries. Look together at food labels for a variety of store-bought yogurts (including sweetened flavors) to compare.</p>	<p>PLS.5 Students develop the ability to make informed and responsible decisions.</p>	Use berries (possibly some frozen in fall) from the garden. As you enjoy, trace ingredients back to their source.	<p>Classroom: Have students read about and discuss the chemical processes involved in making yogurt, using a resource such as Semisolid Science: Growing Yogurt from Scientific American.</p>	<p>NGSS.MS.PS1.B. Chemical Reactions Substances react chemically in characteristic ways. In a chemical process, the atoms that make up the original substances are regrouped into different molecules, and these new substances have different properties from those of the reactants. (MS-PS1-2), (MS-PS1-3), (MS-PS1-5).</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
11. Breakfast Party Preparation	Business Planning (BP)	<p>BP.6.1 Demonstrate ability to plan and stage a classroom event that promotes healthy eating, reflects a world culture, and includes family and community.</p> <p>CFT.6.1 Utilize taste sensations: sweet sour, bitter, and salty in a series of breakfast items for the class.</p> <p>HC.6.2 Identify ingredients by name.</p> <p>MD.6.3 Harvest, cook and serve food.</p> <p>KTE.6.1-4 Kitchen Tools and Equipment.</p>	<p>Cooking Lesson: It's Breakfast Party Day! Have students cook the recipe they selected and properly set a table from which they'll serve and enjoy their meal. If necessary, store items appropriately to be served later in the day.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	Use produce from the garden. Decorate with flowers from the garden. Bring compost out to the garden.	<p>Community: Interview community members about how food is a part of different celebrations in their culture.</p>	<p>CCSS.ELA-LITERACY.SL.6.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Nutrients	Health Concepts (HC)	HC.6.3 Describe how the body uses nutrients from food to function.	Cooking Concept Lesson: Engage students in a discussion of how exactly they think our bodies get nutrients from food. Then have them read <u>a description of that process</u> . Ask them to elaborate on their learning by creating comic strips depicting this process from the perspective of a particular food they have prepared in the kitchen this year.	PLS.5 Students develop the ability to make informed and responsible decisions.	During this kitchen lesson, compare the process of food being digested and releasing nutrients into our bloodstream with the process of food being decomposed and releasing nutrients into the soil in a compost system.	Cafeteria: Have students create labels for various cafeteria offerings (such as at a salad bar) indicating the nutrient content of each food. Have them include how that nutrient supports overall health (i.e. High in Vitamin A, Good for Eyesight).	NGSS MS.LS1.C: Organization for Matter and Energy Flow in Organisms Within individual organisms, food moves through a series of chemical reactions in which it is broken down and rearranged to form new molecules, to support growth, or to release energy.	National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.

GRADE 6 | SPRING

Each activity described below should be designed to last approximately 45 minutes.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Lemon Poppy Seed Muffins with Raspberry Butter 	Health Concepts (HC)	HC.6.3 Describe how the body uses nutrients from food to function. HC.6.6 Demonstrate knowledge of whole foods versus minimally processed foods.	Cooking Lesson: Provide each team with the recipe for Lemon Poppy Seed Muffins with Raspberry Butter, Emerils.com . Have them work together to locate the ingredients and equipment necessary and to prepare their muffins. As you enjoy together, discuss the ingredients used. Compare with ingredients from a highly processed, store-bought muffin. Show students how to research nutrients in a particular ingredient. Have them research ingredients used in both types of muffins and discuss the nutrients present in each, along with what provides more healthy nutrients to the body. NOTE: If you type the name of any fruit or vegetable into Google, you get a Nutrition Facts label indicating levels of nutrients such as Vitamin A or Protein in a serving.	CLS.1 Students demonstrate problem solving and resolve conflict as a team.	Use lemons and raspberries from the garden. Bring compost out to the garden.	Community: Visit a local bakery to explore the variety of muffins available.	CCSS.MATH.CONTENT.6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Breakfast Business	Home Economics (HE)	HE.6.1 Compare and contrast economics of cooking from single ingredients at home, foods grown in the garden, and purchasing ready-made foods.	Cooking Concept Lesson: Explain to students how to make a plan for a muffin or other breakfast item-based business. Ideally, this can be a real business run by the Grade 6 class, such as selling muffins weekly to interested school staff. Have student teams discuss, exploring the pros and cons of various possible business options to pursue.	PLS.6 Students actively seek creative and resourceful solutions.	Incorporate fresh garden produce into the product. If you make a stand, decorate with flowers from the garden. Bring compost out to the garden.	Classroom: Have students use real-world experiences with their breakfast business to write and solve word problems related to business income and expenses.	Social Studies: Economics. CCSS.MATH.CONTENT.6.RP.A.3.B Solve unit rate problems including those involving unit pricing and constant speed.	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Breakfast Business Planning	Recipe Concepts (RC)	<p>RC.6.2 Demonstrate ability to decrease and increase portions using US customary standards.</p> <p>RC.6.3 Read and follow a recipe inferring whether it can be modified.</p> <p>BP.6.2. Create simple financial plan.</p> <p>BP.6.3. Balance the income and expenses. Plan for shortfall or excess.</p>	<p>Cooking Concept Lesson: Explain to students how to create a simple financial plan for their breakfast business, elaborating upon the skills they developed in planning their Breakfast Party in the Afternoon to project expenses. Have them use this information, together with market price for muffins (or whatever they're making), to determine the price they want to charge for their product. Make signs and flyers announcing the business.</p>	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	When budgeting for the breakfast business, have students consider how they can incorporate garden produce to maximize fresh, local produce in their recipes and also bring their costs down.	<p>Community: Present financial plan to a local baker to receive feedback on ideas.</p>	<p>Social Studies: Economics.</p> <p>CCSS.MATH. CONTENT.6.RP.A.3.B Solve unit rate problems including those involving unit pricing and constant speed.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Breakfast Business Implementation	Business Planning (BP)	<p>BP.6.2 Create simple financial plan.</p> <p>BP.6.3 Balance the income and expenses. Plan for shortfall or excess.</p>	<p>Cooking Lesson: Have students prepare their muffins or other breakfast products together and sell them. Then compare projected budget to actuals and make adjustments for next time.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	Incorporate produce from the garden into the breakfast business.	<p>Classroom: Use data and tracking methods throughout business operation for later analysis.</p>	<p>Social Studies: Economics.</p> <p>CCSS.ELA-LITERACY.SL.6.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p>	

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Researching for the Feast Around the World	Business Planning (BP)	BP.6.1 Demonstrate ability to plan and stage a classroom event that promotes healthy eating, reflects a world culture, and includes family and community.	Cooking Concept Lesson: In preparation for the Feast Around the World, the Grade 7 class takes the lead on planning the event and assigns the Grade 6 and Grade 8 classes a country or region. Once students have their country, have them explore the country, locating it on a world map and researching different aspects of life in the country, including celebrations, customs, and the like. Have them elaborate, preparing to present on the country in the Feast Around the World. Explain that the Grade 7 class will help them select a realistic and healthy dish to prepare from that country.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In Garden Lesson #17: Seasonal Patterns in the Garden and Garden Lesson #18: Connecting Climate to Crops to Traditional Foods Around the World, students will be researching the connection between climate and seasonal growing options. In their research for the Feast Around the World, have them focus specifically on climate and seasonal growing options for the region they've been assigned.	Community: Ask students if they have family members from the countries or regions represented in the Feast Around the World. If so, invite them in to share a favorite recipe from the region.	Social Studies: Geography and Culture.	National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Cook for the Feast Around the World 	Business Planning (BP)	BP.6.1 Demonstrate ability to plan and stage a classroom event that promotes healthy eating, reflects a world culture, and includes family and community. KTE.6.1-4 Kitchen Tools and Equipment	Cooking Lesson: Have students prepare their dish for the Feast Around the World.	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.	In Garden Lesson #17: Seasonal Patterns in the Garden and Garden Lesson #18: Connecting Climate to Crops to Traditional Foods Around the World, students will be researching the connection between climate and seasonal growing options. For the dish they prepare, have them focus specifically on climate and seasonality of the ingredients used.	Community: Ask students if they have family members from the countries or regions represented in the Feast Around the World. If so, invite them in to share a favorite recipe from the region. Classroom: Have students journal about their favorite recipe from the Feast Around the World including support of why they chose the dish as their favorite.	Social Studies: Geography and Culture.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Middle School Feast Around the World!

GRADE 7 | *Kitchen*



SCOPE & SEQUENCE



GRADE 7 STANDARDS


At the end of Grade 7, students will be able to:


- Understand and articulate the relationship between the culinary arts and senses.
- Demonstrate increased skill of kitchen tools and equipment.
- Demonstrate the ability to prepare a variety of dishes following more complex recipes.
- Demonstrate knowledge of ingredients and relate seasonality to the availability of ingredients.
- Demonstrate knowledge of various ways other cultures incorporate food groups into their diets.
- Describe the health benefits of seasonal eating.
- Demonstrate understanding of and define a local food system.
- Demonstrate knowledge of all food groups and explain how cooking methods can alter the nutritive value of food.
- Demonstrate knowledge of basic business planning skills for a food related product or concept.

GRADE 7 | FALL

Each activity described below should be designed to last approximately 45 minutes.



Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
1. Welcome to the Kitchen!	Personal and Community Life Skills (PLS and CLS)	<p>HC.7.2 Identify and harvest foods from the garden when they are at their peak for preserving.</p> <p>HC.7.3 Relate seasonality to availability of ingredients.</p> <p>FP.7.1 Demonstrate knowledge of safe food handling practices with increased skill.</p>	<p>Cooking Concept Lesson: Have students share names and explore kitchen agreements together created in Grade 6 Lesson #1: Welcome to the Kitchen. Ask for any suggestions before approving the agreements. Review Personal and Community Life Skills. Then have students elaborate, practicing these skills and agreements together as they walk through the garden to identify what is in abundance. Have them decide together on something they can harvest and preserve. Review safe and proper harvesting and food handling, review why this is important, and then harvest together. Enjoy and then bring the remaining produce into the kitchen together to store for making preserves in Lesson #2: Making Preserves. Have students create a kitchen journal to document cooking projects and activities throughout the year.</p>	<p>PLS.1-6</p> <p>CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.</p>	As students harvest produce in this kitchen lesson, have them recall the process of growing and caring for it.	Classroom: Work with students to develop a method of measuring the garden's abundance.		National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>2. Making Preserves</p> 	<p>Health Concepts (HC)</p>	<p>HC.7.2 Identify and harvest foods from the garden when they are at their peak for preserving.</p> <p>HC.7.3 Relate seasonality to availability of ingredients.</p> <p>HC.7.4 Demonstrate understanding of how cooking techniques can alter nutrients in food.</p> <p>HC.7.6 Read and interpret food labels and terms.</p>	<p>Cooking Lesson: Provide students with a recipe for preserving the produce they harvested in Lesson #1: Welcome to the Kitchen. Review safe and proper use of the stove. Help students prepare the recipe. As the jam or other product is cooking down, have students research nutrients prevalent in this food, how those nutrients support overall health, and how cooking techniques can alter the nutrients in foods. Note: It is ideal to process the jars as described in Lesson #3: Canning Preserves directly after making them.</p>	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	<p>Use produce from the garden. Deliver compost to the garden. Trace ingredients back to the garden in marketing materials for the preserved product.</p>	<p>Classroom: Research animals that hibernate and how they take advantage of the abundant seasons to last through the winter.</p>	<p>Social Studies: Economics.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>3. Canning Preserves</p> 	<p>Home Economics (HE)</p>	<p>HE.7.1 Explore the economic impact of preserving foods (freezing, canning, and drying foods at the peak of their ripeness for winter use).</p> <p>HC.7.4 Demonstrate understanding of how cooking techniques can alter nutrients in food.</p> <p>KTE.7.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review safe and proper use of the stove and safe canning procedures as outlined in the USDA Complete Guide to Home Canning. Help students preserve their jam or other product in jars. As the jars are warming, have students research and make nutrition labels for the preserves, listing the ingredients in order, the nutrients present, and noting how each of those nutrients supports overall health. Also have students discuss and research the economic impact of preserving your own food.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>Use produce from the garden. Deliver compost to the garden. Trace ingredients back to the garden in marketing materials for the preserved product.</p>	<p>BAM! Box: Have students bring home a jar of preserves to enjoy with family and/or community in a creative way. Document and share how they enjoyed the preserve (on toast or with cheese, for example). Have them write recipes that use the preserve to be shared with customers.</p>	<p>VA:Cr2.3.6a Design or redesign objects, places, or systems that meet the identified needs of diverse users.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
4. Researching Nutrients	Health Concepts (HC)	HC.7.6 Read and interpret food labels and terms.	Cooking Concept Lesson: Define nutrients as substances that provide nourishment essential for growth and maintenance of life. Assign a nutrient to each pair of students, including all macronutrients (i.e. proteins, carbohydrates, etc.), and some common micro-nutrients, like vitamin A or calcium. Have pairs explore, researching how their nutrient helps the body. Trace a student on butcher paper and then have each pair of students elaborate, sharing out the findings on their nutrient. As they do, have them write the name of that nutrient in a color (say red for calcium) and then draw something on the body to represent how calcium supports the body in overall health (i.e. draw in strong bones in red). Then give pairs food labels, demonstrate how to find information on labels, and have them elaborate on their learning, reading their labels to determine how that food would contribute to overall health.	CLS.2 Students cooperate and communicate well with each other.	In the kitchen, research produce items growing in the garden to determine which nutrients they have.	Cafeteria: Make informational posters on the nutrients to hang in the cafeteria, particularly highlighting any nutrient-dense foods in the lunch line.	NGSS.MS.LS1.C. Organization for Matter and Energy Flow in Organisms.	National Health Education Standard 3: Students will demonstrate the ability to access valid information, products, and services to enhance health. National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.



Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
5. Seared Pork Chops with Hoisin BBQ Sauce and Pineapple Asian Slaw 	Culinary Flavors and Textures (CFT)	<p>CFT.7.1 Utilize taste sensations: sweet, sour, bitter, and salty in a series of lunch items for the class.</p> <p>CFT.7.2 Describe the relationship between culinary arts and sight, smell, and taste. Use traditional world cuisines as examples.</p> <p>FP.7.2 Use a variety of cooking techniques.</p> <p>KTE.7.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Have students follow recipe to prepare Hoisin BBQ Sauce and Slaw for Seared Pork Chops with Hoisin BBQ Sauce and Pineapple Asian Slaw, Emerils.com. Demonstrate how to season pork, heat the skillet, and then cook the pork. Explain that it is important to preheat the skillet when cooking meat in order to minimize sticking and also to precipitate a series of chemical reactions that will help the meat brown and develop flavors. Have students cook pork and assemble the dish. While enjoying, have students describe the food's appearance, smell, texture, and taste. Discuss the flavors of each ingredient, and reflect on the combination. Also have them research the nutrients prevalent in the ingredients they used and discuss how this dish contributes to overall health.</p>	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.	Use cabbage from the garden. Garnish with herbs and/or edible flowers from the garden. Deliver compost to the garden. Trace ingredients back to the garden.	Community: Interview local chefs about their favorite marinades.	NGSS.MS.PS3.B Conservation of Energy and Energy Transfer.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Fall Quinoa Tabbouleh  	Health Concepts (HC)	<p>HC.7.1 Demonstrate an understanding of how seasonality influences traditional cultural dishes.</p> <p>HC.7.3 Relate seasonality to availability of ingredients.</p> <p>RC.7.1 Compare and contrast recipes from various world cultures.</p> <p>RC.7.3 Follow a recipe with increased independence and make modifications with the ingredients.</p> <p>CFT.7.1 Utilize taste sensations: sweet, sour, bitter, and salty in a series of lunch items for the class.</p> <p>CFT.7.2 Describe the relationship between culinary arts and sight, smell, and taste. Use traditional world cuisines as examples.</p> <p>KTE.7.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Pre-cook quinoa. Show quinoa to students and share its origin (Andean, South America). Discuss the health benefits of quinoa (high in protein). Have students prepare quinoa for recipe. While it's cooking, have students look over the recipe for Fall Quinoa Tabbouleh, Emerils.com, and brainstorm how to modify it to incorporate available, seasonal produce. Review tool safety, and then have students use the pre-cooked quinoa to follow the recipe. Reserve the quinoa they cooked for the next class. As you enjoy, discuss how this recipe combines a South American crop with a Mediterranean recipe. Have students share ideas for how it could be modified to incorporate seasonal produce in the winter or spring. Also have students describe the dish's appearance, smell and taste.</p>	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	Use apples and onions from the garden. Add in other produce from the garden, such as sugar snap peas, corn, or cherry tomatoes. Deliver compost to the garden. As you enjoy, trace ingredients back to the garden.	Community: Create recipe cards for the dish and share with school administration and staff.	Social Studies: Geography, Cultural Traditions, Diversity and Community.	National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

GRADE 7 | WINTER



Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Posole 	Food Preparation (FP) Recipe Concepts (RC)	<p>FP.7.2 Use a variety of cooking techniques.</p> <p>FP.7.3 Identify the right cooking technique to complete a task and articulate why it is the correct technique.</p> <p>RC.7.1 Compare and contrast recipes from various world cultures.</p> <p>RC.7.3 Follow a recipe with increased independence and make modifications with the ingredients.</p> <p>CFT.7.1 Utilize taste sensations: sweet sour, bitter, and salty in a series of lunch items for the class.</p> <p>CFT.7.2 Describe the relationship between culinary arts and sight, smell, and taste. Use traditional world cuisines as examples.</p> <p>KTE.7.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review tool and stove safety. Guide students through making Posole, Emerils.com. Demonstrate searing and other new stovetop techniques as you go, discussing when each is appropriate to use. While soup thickens, have students compare and contrast the preparation of hominy with that of quinoa, highlighting that both are grains. As they enjoy, have them compare hominy with other corn products they eat. Explain that Posole is a traditional Mexican dish that is frequently served on celebratory occasions such as Cinco de Mayo and New Year's Day. As they eat, have students describe the dish's appearance, smell and taste and compare to other recent dishes they've prepared.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	Use onions, tomatoes, garlic, cilantro, lettuce, and radish from the garden. Deliver compost to the garden. As you enjoy, trace ingredients back to their source.	<p>Classroom: Video a cooking show style presentation with information about different grains and the demonstration of at least one recipe.</p>	<p>Social Studies: Geography, Cultural Traditions, Diversity and Community.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
8. Five Grain Salad 	Health Concepts (HC) Food Preparation (FP)	<p>HC.7.1 Demonstrate an understanding of how seasonality influences traditional cultural dishes.</p> <p>HC.7.3 Relate seasonality to availability of ingredients.</p> <p>FP.7.3 Identify the right cooking technique to complete a task and articulate why it is the correct technique.</p> <p>CFT.7.1 Utilize taste sensations: sweet sour, bitter, and salty in a series of lunch items for the class.</p> <p>CFT.7.2 Describe the relationship between culinary arts and sight, smell, and taste. Use traditional world cuisines as examples.</p> <p>KTE.7.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Review tool and stove safety. Divide class into 5 teams and give each team one of the following grains to cook and a recipe to prepare: wild rice, amaranth, quinoa, millet, and brown rice. Once all grains are cooked, guide class through preparing Five Grain Salad, Emeril's.com. As you enjoy, have students share ideas for how they could modify these dishes to incorporate seasonal produce in the fall or spring. Also have students describe the dish's appearance, smell and taste and compare to other recent dishes they've prepared.</p> 	<p>CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments</p>	Use produce from the garden, if available. Challenge teams to modify recipes to incorporate abundant garden produce or preserved foods, if available. Deliver compost to the garden. As you enjoy, trace ingredients back to their source.	<p>Classroom: Research how grains are grown around the world.</p>	<p>NGSS.MS.LS4.D Biodiversity and Humans.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. Creole Rice Salad 	Health Concepts (HC) Recipe Concepts (RC)	<p>HC.7.1 Demonstrate an understanding of how seasonality influences traditional cultural dishes.</p> <p>HC.7.3 Relate seasonality to availability of ingredients.</p> <p>RC.7.1 Compare and contrast recipes from various world cultures.</p> <p>RC.7.3 Follow a recipe with increased independence and make modifications with the ingredients.</p> <p>CFT.7.1 Utilize taste sensations: sweet sour, bitter, and salty in a series of lunch items for the class.</p> <p>CFT.7.2 Describe the relationship between culinary arts and sight, smell, and taste. Use traditional world cuisines as examples.</p> <p>KTE.7.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Pre-cook rice. Review tool and stove safety. Give students recipe and help them prepare Creole Rice Salad, Emerils.com, modifying as they see fit to incorporate available, seasonal produce. As you enjoy, discuss the origin of this dish (Creole), and have students share ideas for how they could modify this dish to incorporate seasonal produce in the fall or spring. Also have students describe the dish's appearance, smell, and taste, and compare to other recent dishes they have prepared.</p>	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	Use produce from the garden, if available. Challenge teams to modify recipes to incorporate abundant garden produce or preserved foods, if available. Deliver compost to the garden. As you enjoy, trace ingredients back to their source.	<p>Classroom: Research other Creole recipes and traditions.</p>	<p>Social Studies: Geography, Cultural Traditions, Diversity and Community.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
10. Fried Wild Mushroom Salad with Wild Mushroom Dressing	Health Concepts (HC)	<p>HC.7.1 Demonstrate an understanding of how seasonality influences traditional cultural dishes.</p> <p>HC.7.3 Relate seasonality to availability of ingredients.</p> <p>CFT.7.1 Utilize taste sensations: sweet, sour, bitter, and salty in a series of lunch items for the class.</p> <p>CFT.7.2 Describe the relationship between culinary arts and sight, smell, and taste. Use traditional world cuisines as examples.</p> <p>KTE.7.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Have students look at wild mushrooms and discuss the role of foragers in the food system. Make clear the risk of foraging your own mushrooms and explain how you know where you can get safe mushrooms (from grocery stores or professional, certified foragers). Demonstrate how to fry mushrooms and explain that frying brings out the flavor. Guide students in preparing Fried Wild Mushroom Salad with Wild Mushroom Dressing, Emerils.com.</p>	<p>PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	<p>Discuss the role of fungi as decomposers in the garden. Review the important role decomposers play in returning nutrients to the soil and thus into the plants we eat.</p>	<p>Classroom: Have students use field guides to identify various mushrooms that grow locally in the wild. NOTE: Do not allow students to eat mushrooms they or you have collected.</p>	<p>NGSS.MS.LS2.A Interdependent Relationships in Ecosystems.</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>11. Vegetable Frittata</p> 	<p>Health Concepts (HC)</p>	<p>HC.7.1 Demonstrate an understanding of how seasonality influences traditional cultural dishes.</p> <p>HC.7.3 Relate seasonality to availability of ingredients.</p> <p>CFT.7.1 Utilize taste sensations: sweet sour, bitter, and salty in a series of lunch items for the class.</p> <p>CFT.7.2 Describe the relationship between culinary arts and sight, smell, and taste. Use traditional world cuisines as examples.</p> <p>KTE.7.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Guide students in preparing the recipe Vegetable Frittata, Emerils.com. Highlight that they can use any vegetables they choose. Then challenge each cooking station team to develop its own version featuring local, seasonal produce. When all frittatas are cooked, slice so that each student gets a small slice of each frittata. Have teams present their frittatas, explaining their rationale for the culinary decisions they made. As students taste each one, have them describe the appearance, smell, and taste of each one. Have students record notes in their journals.</p> 	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>Use any abundant garden produce, if available. Deliver compost to the garden. As you enjoy, trace ingredients back to their source.</p>	<p>Classroom: Create vegetable frittata recipes for each season and submit to the local newspaper for publication in the appropriate seasons.</p>	<p>CCSS.ELA-LITERACY.W.7.2.C Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Steamed Baby Cauliflower	Food Preparation (FP) Recipe Concepts (RC)	<p>FP.7.3 Perform basic recipe actions using vegetables and moist (steam, water) heat.</p> <p>RC.7.2 Perform entry-level culinary measurements using metric system measurements of volume, weight, and whole, decimal, and fractional numbers.</p> <p>RC.7.3. Follow a recipe with increased independence and make modifications with the ingredients.</p> <p>KTE.7.1-4 Kitchen Tools and Equipment</p>	<p>Cooking Lesson: Have students measure volume and weight of all ingredients for Steamed Baby Cauliflower, <i>Emerils.com</i>, using the metric system. Review stove safety, and demonstrate how to use a steamer insert. Then provide cooking station teams the recipe to prepare the dish. Before enjoying, have students measure and weigh all ingredients again and compare to the weight and volume before cooking. Discuss why chefs need to anticipate such changes in food weight and volume.</p>	<p>CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.</p>	Use celery, lemon, garlic and/or cauliflower from the garden. Deliver compost to the garden. As you enjoy, trace ingredients back to their source.	<p>Classroom: First, make a prediction and then research what the cauliflower plant looks like throughout its life cycle.</p>	<p>CCSS.MATH.CONTENT.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

GRADE 7 | SPRING

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Brain- storming Recipes for the Feast Around the World	Recipe Concepts (RC)	<p>RC.7.1 Compare and contrast recipes from various world cultures.</p> <p>BP.7.1 Demonstrate ability to plan and stage a school event that promotes healthy eating, reflects a world culture, and includes family and community.</p>	<p>Cooking Concept Lesson: Explain that Grade 7 students become the event planners for the Middle School Feast Around the World. Have students apply what they learned from the Elementary School Feast to plan and prepare their own. Explain that after researching, they will assign countries and recipes to Grades 6 and 8. Assign each team a region of the world and show that region on the world map. Put out various cookbooks, such as Emeril's <i>There's a Chef in My World!</i> or online recipe resources such as <i>Emerils.com</i> and have student teams begin to explore, brainstorming recipes from countries representing their region of the world.</p>	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	<p>During this kitchen lesson, have students walk around the garden and brainstorm how to incorporate abundant produce into their recipes.</p>	<p>Classroom: Read selections from <i>What the World Eats</i> by Faith D'Aluisio and Peter Menzel.</p>	<p>Social Studies: Geography, Cultural Traditions, Diversity and Community.</p>	<p>National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
14. Selecting Recipes for the Feast Around the World	Menu Development (MD)	MD.7.1 Demonstrate ability to develop and plan large event using world culture theme. HC.7.3 Relate seasonality to availability of ingredients.	Cooking Concept Lesson: In teams, have students select dishes from the region of the world they are researching that can feature local produce in abundance, and that can be scaled up to provide a small taste to all of the middle school students and their families. Explain how, and then have them work together to scale the recipe appropriately. Create a required list of ingredients. Have them reference the Kitchen Tools and Behaviors list to determine what dishes can be prepared by which classes (Grade 6, 7, or 8). Note that they can choose more than one dish to be prepared by the same grade, particularly if there is more than one class at that grade level. For example, one Grade 6 class might make Tabbouleh, and another might make Kabobs. Have students elect dishes for Grade 7 that can be prepared a week in advance, such as refrigerated pickles, popsicles, dehydrated fruit, or the like.	CLS.2 Students cooperate and communicate well with each other.	Work with students to modify recipes to incorporate as much produce as possible from the garden.	Classroom: Collect data on the taste tests implemented with the students in Lesson #11: Vegetable Frittata.	CCSS.MATH.CONTENT.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.	National Health Education Standard 6: Students will demonstrate the ability to use goal-setting skills to enhance health.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
15. Community Support for the Feast Around the World	Menu Development (MD)	MD.7.1 Demonstrate ability to develop and plan large event using world culture theme. HC.7.3 Relate seasonality to availability of ingredients.	Cooking Concept Lesson: Engage teams in brainstorming ingredients and other supplies (i.e. decorations, beverages, etc) for their Feast that they might be able to get donated. Have each student explore community engagement and support by writing a letter to a business requesting support and explaining the social and nutritional benefits of the Feast Around the World.	PLS.6 Students actively seek creative and resourceful solutions.	Have students include photos or illustrations of their garden in their donation request and thank you letters.	Community: Work with school staff and parents to identify resources within the extended school community that may want to be involved.	CCSS.ELA-LITERACY.W.7.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	National Health Education Standard 8: Students will demonstrate the ability to advocate for personal, family, and community health.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Planning for the Feast Around the World	Menu Development (MD)	<p>MD.7.1 Demonstrate ability to develop and plan large event using world culture theme.</p> <p>BP.7.2 Understand simple profit and loss balance sheet for event.</p> <p>RC.7.1 Compare and contrast recipes from various world cultures.</p> <p>RC.7.2 Perform entry-level culinary measurements using metric system measurements of volume, weight, and whole, decimal, and fractional numbers.</p>	Cooking Concept Lesson: Explain how and then have student teams turn their required lists of ingredients into a food order and attach prices to each item to determine the cost of their dish.	PLS.5 Students develop the ability to make informed and responsible decisions.	During this kitchen lesson, have students visit the garden to determine which ingredients they can harvest and what they will need to purchase.	Community: Ask students if they have family members from the countries or regions represented in the Feast Around the World. If so, invite them in to share a favorite recipe from the region.	Social Studies: Geography and Culture.	National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Cooking for the Feast Around the World	Recipe Concepts (RC)	<p>RC.7.2 Perform entry-level culinary measurements using metric system measurements of volume, weight, and whole, decimal, and fractional numbers.</p> <p>RC.7.3 Follow a recipe with increased independence and make modifications with the ingredients.</p> <p>HC.7.3 Relate seasonality to availability of ingredients.</p> <p>HC.7.4 Demonstrate understanding of how cooking techniques can alter nutrients in food.</p>	<p>Cooking Lesson: Have student teams work together to prepare their dish for the Feast Around the World. This should be something that they can store for a week, such as a dehydrated fruit, popsicles, refrigerator pickles, or the like. Discuss how processing affects nutrients in food.</p>	<p>PLS.6 Students actively seek creative and resourceful solutions.</p>	Use produce from the garden. Deliver compost to the garden. As you prepare the food, trace ingredients back to their source.	<p>Community: Ask students if they have family members from the countries or regions represented in the Feast Around the World. If so, invite them in to help students prepare a favorite recipe from the region.</p>	<p>Social Studies: Geography and Culture.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Preparing for the Feast Around the World	Business Planning (BP)	BP.7.1 Demonstrate ability to plan and stage a school event that promotes healthy eating, reflects a world culture, and includes family and community.	Cooking Concept Lesson: While students in Grades 6 and 8 cook for the Feast Around the World, have students in Grade 7 work on the remaining event details, including: welcoming in community partners, decorating, making informational signs, and the like.	PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.	Use flowers from the garden for bouquets. If hosting the event in the garden, prepare the site for the Feast.	Community: Ask students if they have family members from the countries or regions represented in the Feast Around the World. If so, invite them in to share a favorite recipe from the region.	Social Studies: Geography and Culture.	National Health Education Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

Middle School Feast Around the World!

GRADE 8 | *Kitchen*



SCOPE & SEQUENCE



GRADE 8 STANDARDS


At the end of Grade 8, students will be able to:

- Demonstrate mastery of culinary flavors and textures, recipe concepts, food preparation, menu development, and health concepts.
- Demonstrate the ability to modify recipes independently and incorporate seasonal ingredients and spices when available.
- Demonstrate understanding and articulate the relationship between soil, food, and health.
- Demonstrate knowledge of basic business planning to market and sell a food related product.
- Demonstrate knowledge and identify appropriate cooking methods to meet dietary and health needs.
- Demonstrate ability to create a dish using flavors and textures from other cultures.
- Demonstrate knowledge of complex menu development using several cooking methods and ingredient substitutions.



GRADE 8 | FALL

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
1. Welcome to the Kitchen!	Culinary Flavors and Textures (CFT)	<p>CFT.8.3 Create a menu that includes combinations of basic textures and taste sensations from a variety of cultures.</p> <p>HC.8.3 Describe seasonality and name ingredients that are grown in different seasons.</p>	<p>Cooking Concept Lesson: Have students share names and explore kitchen agreements together created in Grade 7 Lesson #1: Welcome to the Kitchen, asking for any suggested updates. Review Personal and Community Life Skills. Then have students elaborate, practicing these skills and agreements together as they look through cookbooks or online recipes at <i>Emerils.com</i> to brainstorm possible dishes that would fit into a dinner menu that incorporates a variety of taste sensations and cultural traditions. For homework, have students create their Grade 8 cooking journals to record every dish they prepare this year using Cook's Notes. Then instruct students to record every dinner they eat for the next few weeks.</p>	<p>PLS.1-6</p> <p>CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.</p>	Challenge students to find dinner recipes that feature produce that's in abundance in the garden.	<p>Community: Visit a local bookstore and explore the variety of cookbooks available.</p>	<p>Social Studies: Geography, Cultural Traditions, Diversity and Community.</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>2. Preparing the Product for Our Business</p> 	<p>Recipe Concepts (RC)</p>	<p>RC.8.1 Convert recipes from US customary into metric standards and vice versa.</p> <p>RC.8.2 Follow and modify a recipe independently to include seasonal ingredients.</p> <p>HC.8.3 Describe seasonality and name ingredients that are grown in different seasons.</p> <p>FP.8.1 Demonstrate mastery of skill and knowledge of safe food handling practices.</p> <p>FP.8.2 Demonstrate mastery of a variety of cooking techniques.</p> <p>KTE.8.1-3 Kitchen Tools and Equipment.</p>	<p>Cooking Lesson: Find a recipe for the product this class decided to make and sell in Grade 7 Garden Lesson #9: Planning Our Business, Part 1. Have teams work together to scale up the recipe to make the desired quantity based on their business plan. Review any relevant food safety and handling methods, and then have them prepare their product.</p>	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	<p>In this kitchen lesson, students are preparing a product they planned throughout Grade 7 garden lessons and planted for in Grade 7 Garden Lesson #14: Planting for Our Business.</p>	<p>Classroom: Use a variety of mathematical methods to determine desired quantity and to scale recipes. Then use equations to check work.</p>	<p>CCSS.MATH.CONTENT.8.EE.C.8.C Solve real-world and mathematical problems leading to two linear equations in two variables.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
3. Planning a Dinner Menu	Culinary Flavors and Textures (CFT)	<p>CFT.8.1 Utilize taste sensations: sweet, sour, bitter, and salty in a dinner menu.</p> <p>CFT.8.2 Identify three foods for each taste sensation—include cultural connections.</p> <p>CFT.8.3 Create a menu that includes combinations of basic textures and taste sensations from a variety of cultures.</p> <p>HC.8.3 Describe seasonality and name ingredients that are grown in different seasons.</p> <p>RC.8.2 Follow and modify a recipe independently to include seasonal ingredients.</p>	<p>Cooking Concept Lesson: Have student teams explore recipes brainstormed in Lesson #1: Welcome to the Kitchen! and explain how to plan a dinner menu, including an appetizer, an entrée, and a side, that incorporates a variety of taste sensations and cultural traditions in a palatable combination. Have teams work on this together, making ingredient lists, highlighting opportunities to select and modify recipes to maximize produce from the garden.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>During this kitchen lesson, walk the garden together and list abundant produce. Have students look for recipes that feature produce they have in abundance in the garden.</p>	<p>Community: Ask a local chef what is on their ingredient list for his/her restaurant this week.</p>	<p>CCSS.ELA-LITERACY.SL.7.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p>


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>4. Preparing Dinners</p> 	<p>Food Preparation (FP)</p>	<p>FP.8.1 Demonstrate mastery of skill and knowledge of safe food handling practices.</p> <p>FP.8.2 Demonstrate mastery of a variety of cooking techniques.</p> <p>CFT.8.1 Utilize taste sensations: sweet sour, bitter, and salty in a dinner menu.</p> <p>CFT.8.2 Identify three foods for each taste sensation—include cultural connections.</p> <p>CFT.8.3 Create a menu that includes combinations of basic textures and taste sensations from a variety of cultures.</p> <p>HC.8.3 Describe seasonality and name ingredients that are grown in different seasons.</p> <p>RC.8.2 Follow and modify a recipe independently to include seasonal ingredients.</p> <p>KTE.8.1-3 Kitchen Tools and Equipment.</p>	<p>Cooking Lesson: Provide student teams time and guidance to prepare the dinners they selected in Lesson #3: Planning a Dinner Menu that incorporate a variety of taste sensations and cultural traditions. Then have each student taste a small sample of each dinner and provide specific feedback including positive elements and suggestions for improvements. Have students record Cook’s Notes in their journals.</p> 	<p>PLS.6 Students actively seek creative and resourceful solutions.</p>	<p>Help students incorporate produce from the garden. Deliver compost to the garden. As they enjoy, trace ingredients back to their source.</p>	<p>Community: Read a variety of professional restaurant reviews and explore descriptive language used.</p>	<p>Social Studies: Geography, Cultural Traditions, Diversity and Community.</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
5. Fats and Simple Carbohydrates	Health Concepts (HC)	<p>HC.8.4 Demonstrate understanding of how the body uses fats and carbohydrates.</p> <p>HC.8.5 Analyze a recipe for nutritional values.</p>	<p>Cooking Concept Lesson: Have students record and look at their records of dinners eaten from this week and categorize all of the food groups represented. Then discuss the role of fats and simple carbohydrates in the diet; how the body uses these foods; the risks of eating too much of these foods; and how to know how much of these food groups is okay to eat.</p>	<p>PLS.5 Students develop the ability to make informed and responsible decisions.</p>	<p>During this lesson, discuss the use of minimal fats and/or simple carbohydrates (sugars) as one way to enhance the flavors of fresh garden produce (for example, cooking greens in oil or bacon drippings; adding sugar to winter squash; etc).</p>	<p>Community: Create materials explaining the role of fats and simple carbohydrates in an easy to understand, factual way.</p>	<p>NGSS Science and Engineering Practice: Analyzing and Interpreting Data.</p>	<p>National Health Education Standard 6: Students will demonstrate the ability to use goal-setting skills to enhance health.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
6. Cooking Beans	Food Preparation (FP)	<p>FP.8.1 Demonstrate mastery of skill and knowledge of safe food handling practices.</p> <p>FP.8.2 Demonstrate mastery of a variety of cooking techniques.</p> <p>FP.8.3 Summarize benefits of different cooking techniques for retaining nutrients.</p> <p>KTE.8.1-3 Kitchen Tools and Equipment.</p>	<p>Cooking Lesson: Divide into teams and have teams cook: Black Eyed Peas, Cannellini Beans, and Black Beans. While beans are cooking, have students look at recipes for for Black-Eyed Pea Salad, Cannellini Bean Salad with Parsley Pesto, and Gallo Pinto, all at Emerils.com. Challenge them to find and record similarities and differences between each recipe. Discuss the benefits of certain cooking techniques for preserving nutrients. Freeze cooked beans for future use in recipes.</p>	<p>CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.</p>	Harvest and use beans and peas planted by students in Grade 7 Garden Lesson #17: Interdependence. Deliver compost to the garden.	<p>Community: Look at local restaurant menus for different uses of beans.</p>	<p>CCSS.ELA-LITERACY.RI.8.2 Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>


GRADE 8 | WINTER

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
7. Bean Dishes 	Food Preparation (FP)	<p>FP.8.1 Demonstrate mastery of skill and knowledge of safe food handling practices.</p> <p>FP.8.2 Demonstrate mastery of a variety of cooking techniques.</p> <p>HC.8.3 Describe seasonality and name ingredients that are grown in different seasons.</p> <p>HC.8.5 Analyze a recipe for nutritional values.</p> <p>KTE.8.1-3 Kitchen Tools and Equipment.</p>	<p>Cooking Lesson: Have student teams each prepare one of the following recipes: Black Eyed Pea Salad, Cannellini Bean Salad with Parsley Pesto, and Gallo Pinto, all at Emerils.com. As students enjoy all three salads, share the regional and cultural traditions represented in the dishes, and have students recall the nutritional benefits of beans and other produce in the dishes.</p>	<p>CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.</p>	Use beans, peas, and produce from the garden. Deliver compost to the garden. Trace ingredients to their source.	<p>Classroom: Explore the history and use of idioms that use the word beans like “spill the beans.”</p>	<p>Social Studies: Geography, Cultural Traditions, Diversity and Community.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
8. My Food Cart, Part 1	Business Planning (BP)	<p>BP.8.1 Create a business plan to bring a food related product to market.</p> <p>HC.8.3 Describe seasonality and name ingredients that are grown in different seasons.</p>	<p>Cooking Concept Lesson: Individually or in pairs, have students begin to explore ideas for a hypothetical food cart with a world culture theme. Their plans should include healthy menu options for each season.</p>	<p>PLS.6 Students actively seek creative and resourceful solutions.</p>	<p>During this lesson, have students work together to recall what is in abundance in their garden each season. Have them use this list to guide their menu ideas for each season.</p>	<p>BAM! Box: Have students work with family or community to build 3D models of their food businesses, including a food prep area, a seating area, physical design, signage, and the like.</p>	<p>Social Studies: Economics.</p>	<p>National Health Education Standard 6: Students will demonstrate the ability to use goal-setting skills to enhance health.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
9. My Food Cart, Part 2	Menu Development (MD) Health Concepts (HC)	MD.8.2 Create a planting list for a farm or garden to grow. HC.8.1 Design a seasonal menu plan that reflects the foods grown in your bio-region/state. HC.8.3 Describe seasonality and name ingredients that are grown in different seasons.	Cooking Concept Lesson: Have students elaborate on their learning from previous business planning and gardening lessons to create a planting list for a farm or garden to support their hypothetical food cart.	PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.	Start this lesson by having students recall times in the garden when they ended up with more of or less than a crop than they expected. Discuss ways to best estimate yield.	Community: Ask a local landscaper or farmer for advice on creating a planting list.	Social Studies: Economics.	National Health Education Standard 6: Students will demonstrate the ability to use goal-setting skills to enhance health.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>10. My Food Cart, Part 3</p> 	<p>Menu Development (MD)</p>	<p>MD.8.1 Create a menu using world culture theme.</p> <p>CFT.8.3 Create a menu that includes combinations of basic textures and taste sensations from a variety of cultures.</p> <p>HC.8.1 Design a seasonal menu plan that reflects the foods grown in your bio-region/state.</p> <p>HE.8.1 Design and produce a week of healthy and seasonal recipes and meals on a budget using a world culture.</p>	<p>Cooking Concept Lesson: Engage students by looking at a variety of menus from local restaurants and food businesses. Then explore what qualities make a cohesive, diverse, high quality menu. Explain elements such as a central theme connecting to a world culture, dishes that feature local, seasonal ingredients, and a variety of dishes to accommodate many diets, appetites, price ranges, and ages. Have students elaborate on their understanding by designing their own fall and spring menus, using the Menu Planning Worksheet, for their hypothetical food cart.</p>	<p>CLS.4 Students appreciate and are respectful of differences and diversity in their communities.</p>	<p>Have students work together to recall what's in abundance in their garden each season. Have them use this list to guide their menu ideas for each season.</p>	<p>Community: Explore a variety of menus from your local restaurants.</p>	<p>Social Studies: Economics, Geography, Cultural Traditions, Diversity and Community.</p>	<p>National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
11. Profit and Loss for My Food Cart	Business Planning (BP)	BP.8.2 Create basic Profit/Loss for business. HE.8.2 Explain cost and health benefit of farm to table.	Cooking Concept Lesson: Have students elaborate upon their business skills from previous lessons to develop a basic profit/loss sheet for their hypothetical food carts, projecting expenses, sales, and thus projected profits or losses.	PLS.5 Students develop the ability to make informed and responsible decisions.	During this kitchen lesson discuss expenses in a garden setting including soil, water, seeds/plants and time/work.	Community: Ask volunteers from a local bank to review basic profit/loss sheets and give advice.	Social Studies: Economics. CCSS.MATH. CONTENT.8.EE.C.8.C Solve real-world and mathematical problems leading to two linear equations in two variables.	National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.


Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
12. Food Business Plan Presentations	Health Concepts (HC) Business Planning (BP)	<p>HC.8.1 Design a seasonal menu plan that reflects the foods grown in your bio-region/state.</p> <p>HC.8.3 Describe seasonality and name ingredients that are grown in different seasons.</p> <p>BP.8.1 Create a business plan to bring a food related product to market.</p>	<p>Cooking Concept Lesson: Have students elaborate on their learning by presenting their hypothetical food cart seasonal menus to a panel of judges or to one another. This can be formatted like a science fair, in which each student has a poster, and judges walk through to talk with the students and then judge their designs based on specific criteria. Have judges or classmates vote on one or more dishes from one business for class to produce together in Lesson #13: Preparing a Dish from Our Food Cart.</p>	<p>PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.</p>	<p>During this lesson, have students explain with reason the connection between what is growing in the garden in abundance and the seasonal menu items.</p>	<p>Community: Invite community members and local experts to help judge.</p>	<p>CCSS.ELA-LITERACY.SL.8.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.</p>	<p>National Health Education Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.</p>

GRADE 8 | SPRING

Each activity described below should be designed to last approximately 45 minutes.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
13. Preparing a Dish from Our Food Cart 	Food Preparation (FP)	<p>FP.8.1 Demonstrate mastery of skill and knowledge of safe food handling practices.</p> <p>FP.8.2 Demonstrate mastery of a variety of cooking techniques.</p> <p>FP.8.3 Summarize benefits of different cooking techniques for retaining nutrients.</p> <p>HC.8.5 Analyze a recipe for nutritional values.</p> <p>RC.8.2. Follow and modify a recipe independently to include seasonal ingredients.</p>	<p>Cooking Lesson: Have students prepare dishes selected in Lesson #12: Food Business Plan Presentations. Have them research the nutritional value of their dishes before and after cooking, and present each dish to the class before enjoying.</p>	<p>PLS.6 Students actively seek creative and resourceful solutions.</p>	Have students modify recipes to maximize use of produce from the garden. Deliver compost to the garden. Trace ingredients to their source.	<p>Community: Invite in a food business leader from your community to enjoy the dishes and give feedback on the business plans and dishes.</p>	<p>CCSS.ELA-LITERACY.SL.8.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>14. Healthy Soil = Healthy Food = Healthy People</p>	<p>Health Concepts (HC)</p>	<p>HC.8.2. Understand and articulate the relationship between healthy soil, healthy foods, and healthy bodies.</p> <p>HC.8.5 Analyze a recipe for nutritional values.</p> <p>FP.8.1 Demonstrate mastery of skill and knowledge of safe food handling practices.</p> <p>FP.8.2 Demonstrate mastery of a variety of cooking techniques.</p> <p>FP.8.3 Summarize benefits of different cooking techniques for retaining nutrients.</p> <p>RC.8.2 Follow and modify a recipe independently to include seasonal ingredients.</p>	<p>Cooking Lesson: Explain to students that plants produce vitamins and absorb minerals from the soil. Harvest something in abundance in the garden and prepare it together. As you enjoy together, research and discuss the vitamins and minerals in the dish and how each supports overall health. Put food waste in the compost, and discuss how this returns minerals to the soil for new plants.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>Follow this activity with a visit to the garden to “thank” the soil by building compost, adding it into a bed, and/or writing it a thank you letter.</p>	<p>Classroom: Have students create skits or videos to share with younger grades helping make the connection between healthy soil, healthy plants, and healthy people.</p>	<p>CCSS.ELA-LITERACY.SL.8.5 Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.</p>	<p>National Health Education Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
<p>15. Pita Bread</p> 	<p>Health Concepts (HC)</p> <p>Food Preparation (FP)</p>	<p>HC.8.5 Analyze a recipe for nutritional values.</p> <p>HC.6.6 Demonstrate knowledge of whole foods, minimally processed foods and processed foods.</p> <p>FP.8.1 Demonstrate mastery of skill and knowledge of safe food handling practices.</p> <p>FP.8.2 Demonstrate mastery of a variety of cooking techniques.</p> <p>FP.8.3 Summarize benefits of different cooking techniques for retaining nutrients.</p> <p>KTE.8.1-3 Kitchen Tools and Equipment.</p>	<p>Cooking Lesson: Demonstrate how to use a hand-held and standing mixer. Provide students with recipe and have them prepare Pita Bread, Emerils.com. As bread is baking, review the role of grains in the diet and the health benefits of whole grains. Discuss how to modify grain-based recipes to use more whole grains, for example by replacing half of white flour with whole wheat flour.</p>	<p>PLS.1. Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.</p>	<p>If you have extra wheat growing in the garden (planted in Grade 3 Garden Lesson #18: Planting Wheat for Next Year's Grade 3 Class), thresh, winnow, grind, and incorporate it with students. As you enjoy the bread, trace each ingredient back to its source.</p>	<p>Classroom: Research other flatbreads from around the world.</p>	<p>NGSS Science and Engineering Practice: Engaging in Argument from Evidence.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
16. Egg Drop Soup	Recipe Concepts (RC)	<p>RC.8.1 Convert recipes from US customary into metric standards and vice versa.</p> <p>FP.8.1 Demonstrate mastery of skill and knowledge of safe food handling practices.</p> <p>FP.8.2 Demonstrate mastery of a variety of cooking techniques</p> <p>HC.8.5 Analyze a recipe for nutritional values.</p> <p>KTE.8.1-3 Kitchen Tools and Equipment.</p>	<p>Cooking Lesson: Give students the recipe for Egg Drop Soup, <i>There's a Chef in My World!</i>. Explain that this is a household staple in China. Explain the difference between US customary and metric measurement systems, including where each is used. Have students brainstorm the pros and cons of each system. Have students convert the recipe into metric units and then follow the recipe using metric measurements to prepare the recipe. As students enjoy, have them share out the nutritional value of the ingredients they added.</p>	<p>CLS.2 Students cooperate and communicate well with each other.</p>	<p>In Garden Lesson #16: Installing Our Gift to the Garden, have students convert garden measurements (such as length or area of beds) into metric units.</p>	<p>Classroom: Have students share different mathematical strategies used to convert recipes from customary US and metric systems.</p>	<p>CCSS.MATH.CONTENT.8.EE.C.8.C Solve real-world and mathematical problems leading to two linear equations in two variables.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
17. Researching for the Feast Around the World	Health Concepts (HC)	HC.8.6 Reflect on personal and communal eating in terms of daily habits and celebrations.	Cooking Concept Lesson: In preparation for the Feast Around the World, have students explore the country of origin for the dish(es) the Grade 7 class has assigned them. Have students research different aspects of life in this country, including celebrations, customs, and the like. Have them learn about traditional dishes for daily life and special celebrations in that region. Then have them elaborate on their learning by preparing to present on their country in the Feast Around the World.	CLS.4 Students appreciate and are respectful of differences and diversity in their communities.	In this kitchen lesson, have students identify crops in your school garden that reflect the region students are studying.	Community: Ask students if they have family members from the countries or regions represented in the Feast Around the World. If so, invite them in to share a favorite recipe from the region.	Social Studies: Geography and Culture.	National Health Education Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

Lesson # & Title	Topic	Content Learning Objective(s)	Suggested Lesson Activity	Life Skills Learning Objective(s)	Connections to Garden Lessons	Possible Extensions	Academic Standard Connections	Health Standard Connections
18. Preparing Food for the Feast Around the World	Food Preparation (FP)	<p>FP.8.1 Demonstrate mastery of skill and knowledge of safe food handling practices.</p> <p>FP.8.2 Demonstrate mastery of a variety of cooking techniques.</p> <p>HC.8.5 Analyze a recipe for nutritional values.</p> <p>RC.8.2 Follow and modify a recipe independently to include seasonal ingredients.</p> <p>KTE.8.1-3. Kitchen Tools and Equipment.</p>	<p>Cooking Lesson: Have students prepare their dishes for the Feast Around the World, modifying as appropriate to maximize the use of local, seasonal produce that is in abundance. Work together to analyze the recipes for nutritional values. If time allows, conduct a brief kitchen reflection, allowing students to share life lessons learned in the kitchen.</p>	<p>CLS.1 Students demonstrate problem solving and resolve conflict as a team.</p>	<p>Incorporate produce from the garden. Deliver compost to the garden. Trace ingredients back to their source.</p>	<p>Community: Ask students if they have family members from the countries or regions represented in the Feast Around the World. If so, invite them in to share a favorite recipe from the region.</p>	<p>Social Studies: Geography and Culture.</p>	<p>National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.</p>

Middle School Feast Around the World!

LESSON PLANS

Garden



WELCOME TO THE GARDEN

Garden

EST. TIME 45 minutes SEASON fall 

GRADE K | LESSON #1

? ESSENTIAL QUESTION(S)

- How can I be my best self in the garden?
- How can I be my best for my community?
- How can I be my best for my environment?

MATERIALS

- Chart paper (at least 2 sheets)
- Easel
- Markers
- 1 clipboard for each student
- 1 sharpened pencil for each student
- Handout: 1 copy of the *Garden Scavenger Hunt* for each student

Abc VOCABULARY

- Community
- Environment

ASSESSMENT

- Observational checklist



Use the lesson template to create your own and share with us!

PREPARATION (15 MINUTES)

To prepare for this lesson, gather materials.

TEACHER BACKGROUND

The development of expectations for the garden space happens collaboratively with students in this lesson. This is a process that encourages students to reflect on how they impact their own learning, their community, and the environment along with what behaviors they can agree to as a class to ensure that their shared goals are met.

LESSON DESCRIPTION

In this lesson, students will explore what makes up the garden space—everything living, nonliving, and themselves! They will then discuss how to be the best for themselves, their community, and their environment in this garden space. The teacher will guide them to cohesive language around these understandings before modeling behaviors that align with these understandings. Finally, students will explore and enjoy the garden while practicing these behaviors.

LEARNING OBJECTIVES

Life Skills Learning Objectives

PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.

PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.

PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.

PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.

PLS.5 Students develop the ability to make informed and responsible decisions.

PLS.6 Students actively seek creative and resourceful solutions.

CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.

ACADEMIC STANDARD CONNECTIONS

CCSS.ELA.K.SL.1. Students will be able to participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.

CCSS.ELA.K.SL.6. Students will be able to speak audibly and express thoughts, feelings, and ideas clearly.

Social Studies: Citizenship.

CULTIVATE CURIOSITY (10 MINUTES) *engage*

1. Lead students to a comfortable sitting position in a central gathering area in the outdoor classroom space (in a circle, if possible).
2. Welcome students to the garden and provide them with a few minutes to silently observe what makes up the space from their seated position, using only their eyes and ears. Allow each student's voice to be heard by asking them to say aloud their name and a thing they see that makes up the garden space. As students share, write their individual names and the things they observed in the garden area on a sheet of chart paper.
3. When every student has had the chance to share, take a moment to review the chart paper as a group. Remind students that each of them individually make up the garden space, as well as all of the other living and nonliving things they shared.



See “Teaching Strategies” in Appendix section for information on how to lead Think-Pair-Share.

ROOT AROUND (15 MINUTES) *explore*

1. Explain to students that each of the living and nonliving things that make up the garden are unique and special independently, work together in their **community**, and exist peacefully in their **environment**. Provide an example of something growing in the garden, explaining its value independently, in its community, and in the garden environment.
2. Introduce the first chorus of the song “With People I Like” by the Banana Slug String Band. Sing the first chorus with students as they find someone to partner with and sit down with linked arms in the central gathering area.
3. For the following Essential Questions, provide 1 minute for students to think about their answer independently, 2 minutes to tell their ideas to their partner (pair), before selecting a few students to share their ideas with the whole group, a process referred to as “think-pair-share.”
4. As the Enduring Understandings emerge from the group discussions, write them on a new sheet of chart paper for students to view.


ESSENTIAL QUESTIONS	ENDURING UNDERSTANDINGS TO REITERATE DURING GROUP DISCUSSION
How can we be our best for ourselves?	Make choices that keep you safe. (for example: move slowly, stay within the garden boundaries)
How can we be our best for our community?	Show respect for each other. (for example: join the group for the callback, listen, and share)
How can we be our best for our environment?	Show respect for the plants, animals, and environment. (for example: stay on garden pathways, be gentle with plants)

GROW UNDERSTANDING (10 MINUTES) *explain*

1. Explain to students that they are going to practice exploring the garden space in a way that keeps them safe, shows respects for each other, and shows respect for the plants, animals, and environment.
2. Model for students behaviors that are examples and counterexamples of these 3 enduring understandings, asking students to show thumbs up / thumbs down if the model behaviors align with the enduring understandings.

ENDURING UNDERSTANDINGS	EXAMPLES	COUNTEREXAMPLES
Make choices that keep you safe.	<ul style="list-style-type: none"> • moving slowly through the garden area • staying within the garden boundaries 	<ul style="list-style-type: none"> • running carelessly through the garden area • stepping outside of garden boundaries
Show respect for each other.	<ul style="list-style-type: none"> • interacting with classmates in a gentle way with our bodies and language • joining the group at the callback signal • listening with a still body and attentive eyes • sharing ideas 	<ul style="list-style-type: none"> • interacting with classmates in an aggressive way with our bodies and language • continuing to wander after the callback signal • showing active or distracted behaviors when others are sharing
Show respect for the plants, animals, and environment.	<ul style="list-style-type: none"> • interacting with plants and animals in a gentle way • moving along garden pathways 	<ul style="list-style-type: none"> • interacting with plants and animals in a careless or aggressive way • carelessly stepping into garden beds

OBSERVE THE FRUITS (5 MINUTES) *elaborate*

1. Explain to students that they will have time to explore and enjoy the garden with their classmates to look closer at the living and nonliving things they observed earlier and to model the behaviors that they just learned.
2. Distribute to each student, 1 clipboard, 1 sharpened pencil, and 1 Garden Scavenger Hunt handout.
3. Explain to students that on your cue, their challenge is to explore the garden to find the six items pictured on the scavenger hunt. When they find objects that match the descriptors on the Garden Scavenger Hunt, they do not need to pick or collect them. They can mark an "X" in the appropriate box with the picture. In the last box, students can draw something else interesting they saw in the garden.
4.  Remind students of their boundaries and their callback signal to let them know to return to the whole group gathering space. As students explore and enjoy the garden area, acknowledge observed behaviors that align with the enduring understandings, such as being active and engaged learners or showing care for the environment. Also, use the observational checklist to assess students' current development of the life skills.

5. After a few minutes, provide the call back signal and as each student returns to the whole group gathering space, acknowledge them by name for showing respect for each other and working together as a group.
6. If time permits, go around the circle and have each student share something interesting that they found.

REFLECT (5 MINUTES) *evaluate*

1. Acknowledge students individually and as a group for the behaviors that they exhibited that aligned with the enduring understandings that they developed together with the goal of being the best for themselves, their communities, and their environment.
2. Ask students to reflect silently on what it means to be the best for themselves, their communities, and their environment beyond the garden—perhaps in the environment they are preparing to return to in school or in their home environment.
3. Share appreciation for each of their individual contributions to the kitchen and to the community, and for their respect for the kitchen. Express excitement for your next time together.
4. Sing the first chorus of the song “With People I Like” by the Banana Slug String Band as students’ line-up to be dismissed.

*Keep the chart paper of students’ observations to revisit in **Garden Lesson #5: Living or Non-Living.**



ADAPTING FOR INDOORS

In the case of inclement weather, the Cultivate Curiosity, Root Around, and Grow Understanding sections of this lesson can occur inside the classroom. The Observe the Fruits section should take place in the garden area on the next garden day that the weather allows.

CONNECTIONS TO KITCHEN LESSONS

Compare group agreements for the garden with agreements students have in the kitchen. How are behavior expectations similar in both places? How are they different?

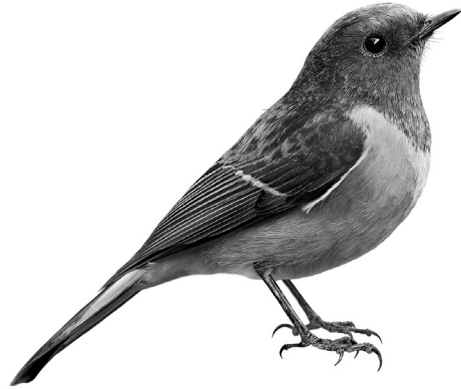
ADDITIONAL RESOURCES

For more information on group management and group development of procedures and parameters, see:

- *Tools for Teaching* by Fred Jones
- *Rethinking Classroom Management* by Patricia Belvel

NAME: _____ DATE: _____

GARDEN SCAVENGER HUNT



Something neat!



LIVING OR NONLIVING?

Garden

EST. TIME 45 minutes SEASON fall

GRADE K | LESSON #5

? ESSENTIAL QUESTION(S)

- How can we tell the difference between living things and nonliving things in the garden?
- How can we tell the difference between plants and animals in the garden?
- How can we safely use trowels to plant transplants?
- How can we provide plants with everything they need?

MATERIALS

- Handouts / Visual Aids
- Equipment
- Materials for Planting

Abc VOCABULARY

- Living
- Nonliving
- Plants
- Animals
- Trowel
- Roots
- Stems
- Leaves
- Soil

ASSESSMENT

- Observational checklist

PREPARATION (15 MINUTES)

To prepare for this lesson, gather materials and ensure that there is space in the garden cleared for seedlings to be transplanted (1 per every 3 students).

TEACHER BACKGROUND

While many students may be able to classify objects as living or non-living, categorizing items that were once-living as well as articulating the reasoning behind an object's classification can be challenging. In this lesson, students discover that living things eat food (or make their own food), breathe, move (or react to surroundings), grow, and produce young (seeds, eggs, babies). In contrast, non-living things do not eat, breathe, move (without being moved), grow, or make babies.

LESSON DESCRIPTION

In this lesson, students will work on sorting and classifying the things they observe in the garden area, first by living and nonliving, and then sorting living things into animals and plants, each time developing qualifiers for each category. Students will then learn how to safely use hand trowels and practice by transplanting seedlings. Finally, students will discuss how they can provide their plants with everything they need (soil, water, sun, air).



Use the lesson template to create your own and share with us!

LEARNING OBJECTIVES

Content Learning Objectives

GPM.K.1 Describe what lives in a garden and name what they need to live (sunlight, water, air, nutrients).

GTE.K.1 Name, identify, and safely use new tools.

GTE.K.2 Match new tools to tasks.

GTE.K.3 State how to properly care for new tools.

GTE.K.4 Describe the purpose of a new tool.

Life Skills Learning Objectives

PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.

ACADEMIC STANDARD CONNECTIONS

CCSS.ELA-Literacy.SLK.1 Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.

NGSS.K.LS1.C Organization for Matter and Energy Flow in Organisms

All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.



LESSON MATERIALS

Materials for Lesson Introduction

Visual Aids

- Chart from **Lesson #1: Welcome to the Garden** (if available)

Equipment

- Chart Paper, Easel, Markers
- Hand Trowels (1 per every 3 students)
- Journals (1 per student)
- Clipboards (1 per student)
- Pencils, Colored Pencils, Handheld Sharpeners (enough for all students)

Materials for Planting

- Seedlings (1 per every 3 students)



See “Teaching Strategies” in Appendix section for information on how to lead Think-Pair-Share.

CULTIVATE CURIOSITY (5 MINUTES) *engage*

1. Lead students to a comfortable sitting position in a central gathering area in the outdoor classroom space (in a circle, if possible).
2. Welcome students to the garden and provide them with a few minutes to silently observe from their seated position (using only their eyes and ears), what has stayed the same and what has changed since their last visit. After a few moments, discuss together.
3. Present the chart poster that was created in the first **Garden Lesson #1: Welcome to the Garden** lesson (if available). Ask students to think-pair-share and identify things from the list that are living and nonliving and request that they explain their reasoning for each. Through the discussion, guide student understanding of qualifications of **living** and **nonliving** things.

LIVING (OR ONCE-LIVING)	NON-LIVING
<ul style="list-style-type: none"> • Eats or makes its own food • Breathes • Moves (or has moving parts) • Reacts to surroundings • Grows and develops • Produces young, seeds, or eggs 	<ul style="list-style-type: none"> • Doesn't need to eat • Doesn't breathe • Doesn't move without being moved • Doesn't react to surroundings • Doesn't grow • Doesn't make babies



See “Teaching Strategies” in Appendix section for information on transitioning between whole and small groups effectively.

ROOT AROUND (10 MINUTES) *explore*


1. Explain to students that they will have time to explore the garden with their classmates to find 5 new living things and 5 new nonliving things using the qualifications they came up with as a class. Remind students of their boundaries and their callback signal to let them know to return to the whole group gathering space. Use a phrase such as “when I say go, and not before I say go” to cue students to transition from whole group listening to small group work.
2. As students explore the garden area, acknowledge observed behaviors and reinforce understandings of qualifications of living and nonliving things through discussion with small groups.
3. Provide the call back signal for each student to return to the whole group gathering space.

GROW UNDERSTANDING (5 MINUTES) *explain*

1. In the whole group, discuss some of the living and nonliving things students found in the garden. Ask students to explain their reasoning and reinforce the language around the qualities of living and nonliving things through the discussion.
2. Look more closely at the list of living things with students and work together to further divide that list into **plants** and **animals**. Guide students into a similar conversation about what qualities differentiate plants from animals.
3. Explain to students that throughout the year we are going to do our best to create an environment where both plants and animals can live and grow.

OBSERVE THE FRUITS (15 MINUTES) *elaborate*

1. Explain to students that they are going to learn how to carefully plant new baby plants in their garden and then work together to determine how to provide them with everything they need to live and grow.
2. With all students' attention, identify a handle **trowel** by name and ask students to repeat the name aloud. Then, state the purpose of the tool and describe a situation when it would be used, such as the task for today.
3. Demonstrate how students will retrieve their hand trowel from their storage place and how they will carefully travel through the garden space to their work area with the handle trowel.
4. Divide students into teams of 3, instructing a student in each group to choose from a selection of places for their team to plant their baby plant, a student to retrieve the hand trowel as demonstrated, and a student to meet the teacher to receive their baby plant and carefully carry it to their group's work area. When all students are at their work area with all of their tools, request that they put their eyes on the teacher for their next instructions. Use a phrase such as "when I say go, and not before I say go" to cue students to transition from whole group listening to small group work.
5. When all students are in the work area with their tools and plants, demonstrate how they will use the hand trowel to dig a hole the approximate size of the **roots** of the plant, how to carefully place the baby plant in the hole and loosely pack the **soil** around the roots so the **stem** stands up tall with its **leaves** reaching up into the air to the sun. Instruct students to show you they are finished with this task by placing their hand trowel on the ground outside of the bed and putting their eyes on you. Cue students to transition from whole group listening to small group work.

6.  As students work together to plant their seedling, acknowledge observed behaviors that align with the Life Skills Learning Objectives, such as showing care for the environment. Also, use the observational checklist to assess students current development of the life skills.
7. When all groups have finished planting their baby plant, acknowledge their careful use of tools and their gentle care of their plant before demonstrating how to clean their tool and return it to the storage area. Select a student in each group (perhaps the student who was the “site selector” previously) to complete this task and request the other members return to the whole group gathering area to collect their journals and coloring supplies. Cue students to transition from whole group listening to complete their tasks.

REFLECT (5 MINUTES) *evaluate*

1. Read to students the following prompt to complete in their journal:

Prompt:

Draw a picture of your plant and where you planted it in the garden. Include yourself in your picture, with the tool you used today and any other tools you think you may need to take care of your plant.

2. Recognize students’ behaviors that aligned with being the best for themselves, their communities, and their environment. Specifically, ask students to reflect on how they showed care for the environment.



ADAPTING FOR INDOORS

In the case of inclement weather, the Cultivate Curiosity, Root Around, and Grow Understanding sections of this lesson can occur inside the classroom—perhaps with images of the garden or a view of the garden out of a window. The Observe the Fruits section should take place in the garden area on the next garden day that the weather allows.

CONNECTIONS TO KITCHEN LESSONS

In the kitchen, before you eat a dish featuring fruits or vegetables, celebrate the sun, soil, water, air, and nutrients that made those fruits and vegetables grow.

POSSIBLE EXTENSIONS

Community: Draw a picture of your home or neighborhood and circle 5 living and 5 nonliving things.

Cafeteria: Look at a school lunch and identify which foods came from plants and which came from animals.

ADDITIONAL RESOURCES

- *Is It Living or Non-Living* by Rebecca Rissman
- *What's Alive?* By Kathleen Weidner Zoehfeld
- *Is it Alive?* By Marcia Freeman
- *Living and Non-Living* by Angela Royston Living
- *Living and Non-Living* by Carol K. Linden



SOIL WEB

Garden

EST. TIME 45 minutes SEASON fall 

GRADE 1 | LESSON #5

? ESSENTIAL QUESTION(S)

- What lives in the soil and how do they work together (like a web) to help our garden?

MATERIALS

- Fungus and Invertebrates from the garden
- Chart paper, Easel, Markers
- Magnifying tools (1 per every 2 students)
- A Log's Life* by Wendy Pfeffer
- Journals (1 per student)
- Clipboards (1 per student)
- Pencils, Colored Pencils, Handheld Sharpeners (enough for all students)

Abc VOCABULARY

- Decomposing, decomposers, decomposition
- Fungus
- Bacteria
- Invertebrates

ASSESSMENT

- Observational checklist

PREPARATION (15 MINUTES)

To prepare for this lesson, gather all materials and check for rotting things in the compost pile or around the garden to point students to during their exploration. Also, read *A Log's Life* by Wendy Pfeffer to develop comprehension questions for read aloud.

TEACHER BACKGROUND

The process of decomposition can be hard for students to see in a single observation, but with a close look, evidence can be found; particularly when students are introduced to specific types of decomposers and know exactly what they are looking for. This lesson introduces 3 types of decomposers: fungus (mold, mildew, mushrooms), bacteria (microscopic), invertebrates (beetles, slugs, ants, worms, spiders). These decomposers work together to form a soil web.

LESSON DESCRIPTION

In this lesson, students will explore the idea that not everything in the garden is growing, some things are breaking down to let others grow. They will sing a song introducing the lesson vocabulary before searching for evidence of decomposition or decomposers in the garden. The idea of decomposers is extended to the "Garden FBI: Fungus Invertebrates Bacteria" through a song and book. Then students will look for evidence of these organisms breaking things down so others can grow.



Use the lesson template to create your own and share with us!

LEARNING OBJECTIVES

Content Learning Objectives

GFS.1.2 Describe a soil web. Identify fungi, bacteria, and invertebrates.

Life Skills Learning Objectives

PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.

CLS.2 Students cooperate and communicate well with each other.

ACADEMIC STANDARD CONNECTIONS

NGSS Science and Engineering Practice: Engaging in Argument from Evidence

CCSS.ELA-Literacy.SL.1.1 Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.

CULTIVATE CURIOSITY (5 MINUTES) *engage*

1. Lead students to a comfortable sitting position in a central gathering area in the outdoor classroom space (in a circle, if possible).
2. Welcome students to the garden and provide them with a few minutes to silently observe from their seated position (using only their eyes and ears), what has stayed the same and what has changed since their last visit. Challenge students to consider what they believe is growing and what they believe maybe breaking down. After a few moments, discuss together.
3. Introduce the words **decomposing**, **decomposers** and **decomposition** through an activity such as singing the song "Decomposition" by the Banana Slug String Band.



See “Teaching Strategies” in Appendix section for information on how to manage transitions between whole and small groups effectively.

ROOT AROUND (10 MINUTES) *explore*

1. Explain to students that they will have time to explore the garden with a partner and they will use magnifying tools to look for evidence of things that are “dying to let another grow” (decomposing) and for evidence of the animals or other living things that are doing the “munch munch munch” (decomposers). Ask them for ideas of where they might have success, such as on rotting things and/or in the compost pile. Remind students of their boundaries and their callback signal to let them know to return to the whole group gathering space.
2. Pair up students and distribute magnifying tools then release students from the whole group gathering space.
3. As students explore the garden area, verbally acknowledge behaviors that reflect the life skills learning objectives, such as sharing fairly or treating creatures gently. Also, reinforce understandings of decomposers and decomposition through discussion with small groups.
4. Provide the call back signal for each student to return to the whole group gathering space.

GROW UNDERSTANDING (15 MINUTES) *explain*

1. In the whole group, discuss some of the evidence students found of decomposers and decomposition.
2. Explain to students that the main decomposers are called the “Garden FBI: **Fungus, Bacteria, and Invertebrates.**” Discuss how they all work together, interacting in a soil food web.
3. Read the book *A Log’s Life* to learn even more about the garden FBI. Ask students to raise their hand when they see any of the garden FBI during the read aloud, and add them to a chart.

F - FUNGUS	B - BACTERIA	I - INVERTEBRATES
<ul style="list-style-type: none"> • Toadstools • Mildew • Molds • Mushrooms 	<p>(Explain to students that bacteria is microscopic and can not be seen and was not mentioned in the text, but an important worker in the process of decomposition)</p>	<ul style="list-style-type: none"> • Beetles • Slugs • Snails • Ants • Spiders • Millipedes • Termites • Pill Bugs • Earthworms

OBSERVE THE FRUITS (10 MINUTES) *elaborate*

1. Explain to students that they will have time to explore the garden with their partner again to look more closely for the garden FBI. Remind students of their boundaries and their callback signal to let them know to return to the whole group gathering space.
2. As students explore the garden, acknowledge observed behaviors that align with the life skills learning objectives, such as caring for the environment. Also, use the observational checklist to assess students' current development of the life skills.
3. Provide the call back signal for each student to return to the whole group gathering space to collect their journals and coloring supplies. Cue students to transition from whole group listening to completing their tasks.
4. Read to students the following prompt to complete in their journal:

Prompt:

Draw a picture of at least 3 members of the garden FBI. Show what they look like, what they are doing, and where they are doing it.

REFLECT (5 MINUTES) *evaluate*

1. Recognize specific students' behaviors that aligned with being the best for themselves, their communities, and their environment. Specifically, ask students to reflect on how they showed care for the environment.
2. Review with students:
 - What lives in the soil?
 - How do they work together like a web to help our garden?
3. Sing the same song from the beginning of class as students line up to be dismissed.



ADAPTING FOR INDOORS

In the case of inclement weather, the Cultivate Curiosity and Grow Understanding sections of this lesson can occur inside the classroom. The observations in the Root Around and Observe the Fruits sections should take place in the garden area on the next garden day that the weather allows.

CONNECTIONS TO KITCHEN LESSONS

In **Kitchen Lesson #8: Eat-a-Pita Pizzas**, add mushrooms to the pizzas and highlight that mushrooms are fungi, and serve as decomposers.

POSSIBLE EXTENSIONS

Classroom: Read aloud *Diary of a Worm* by Doreen Cronin

ADDITIONAL RESOURCES

- *Life in a Rotten Log* by Malcolm Penny
- *Who Eats What?* By Patricia Lauber
- *Log Hotel* by Anne Schreiber
- Cornell Guide to Composting in Schools:
<http://compost.css.cornell.edu/schools.html>
- Soil Food Web poster:
<http://jessicagarden.net/wp-content/uploads//2011/02/soil-ffod-web.jpg>
- Compost Critters Field Guide (p. 15–17):
<https://www.cvsmd.org/programming--resources.html>
- Soil Invertebrates:
http://ei.cornell.edu/teacher/pdf/D%26R/D%26R_Soil_Invert_ID.pdf
- Dirt, Secret in the Soil:
<https://utah.agclassroom.org/workshops/01dirt/>



INSECT STRUCTURES

Garden

EST. TIME 45 minutes SEASON spring 

GRADE 2 | LESSON #17

? ESSENTIAL QUESTION(S)

- What body parts do insects have to help them live, thrive, and contribute to the garden?

MATERIALS

- Handout: *Tracking Garden Changes - Insect Count Data Sheet*
- Chart Paper, Easel, Markers
- Magnifying bug boxes (1 per 2 students)
- Journals (1 per student)
- Clipboards (1 per student)
- Pencils, Colored Pencils, Handheld Sharpeners (enough for all students)

Abc VOCABULARY

- Insects
- Magnifying glass
- Head, thorax, abdomen

ASSESSMENT

- Observational checklist
- Tracking Garden Changes Data Sheet

PREPARATION (15 MINUTES)

To prepare for this lesson, gather materials and check garden for insects to point students to during their exploration.

TEACHER BACKGROUND

The word “bug” is commonly used in the garden to describe any invertebrate. In this lesson, however, we are specifically focusing on insects. In the animal kingdom, insects are found in the phylum arthropoda (a separate phylum from earthworms in phylum annelida). Within that phylum there are 3 subphylum: subphylum chelicerata (2 body parts, no antenna; including spiders), subphylum cructacea (3 body parts, thorax in eight sections; including shrimp, crab, lobsters), subphylum uniramia (3 body parts, thorax in 3 sections; including insects, centipedes, millipedes). Insects are then a class of subphylum uniramia that specifically is defined as an air breathing animal with a hard jointed exoskeleton, and, in the adult, a body divided into 3 parts; the head with a pair of antennae, the thorax which carries 3 pairs of legs and usually 2 pairs of wings, and the abdomen which contains the guts and reproductive organs.

LESSON DESCRIPTION

In this lesson, students will recall what they learned about plant parts and functions. They will compare that to insect parts and what functions they serve. Students will collect insects from the garden in magnifying bug boxes to observe and create a scientific drawing that labels all of the parts that they learn. Students will record the number of insects they found before returning the insects to the garden.

LEARNING OBJECTIVES

Content Learning Objectives

GFS.2.2 Describe structure and function of insect parts.

Life Skills Learning Objectives

PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.

CLS.4 Students appreciate and are respectful of differences and diversity in their communities.



Use the lesson template to create your own and share with us!

ACADEMIC STANDARD CONNECTIONS

NGSS Crosscutting Concept: Structure and Function The shape and stability of natural and designed objects are related to their function(s).

VA.Cr2.1.2a. Experiment with various materials and tools to explore personal interests.

CULTIVATE CURIOSITY (5 MINUTES) *engage*

1. Lead students to a comfortable sitting position in a central gathering area in the outdoor classroom space (in a circle, if possible).
2. Welcome students to the garden and provide them with a few minutes to silently observe from their seated position (using only their eyes and ears), what has stayed the same from their last visit and has changed since their last visit. After a few moments, share observations.
3. Challenge students to consider what plants they see growing, and review with students what parts those plants have to help them live, thrive, and contribute to the garden.
4. Explain to students that today we are going to build on what we have learned about what **insects** do, to understand what parts they have to help them live, thrive, and contribute to the garden.

ROOT AROUND (5 MINUTES) *explore*

1. Introduce the magnifying bug box to students, explaining that it works as a **magnifying glass** on top but contains the insect for us to view.
2. Demonstrate how students will retrieve their bug box from their storage place, how to move through the garden with it, and how to carefully and gently lift an insect into the bug box. Discuss how to do this without harming the insects. Review with students where the best places are to look for insects in the garden.

**Caution:**

If there are any insects you would rather students not collect, such as spiders or bees, let students know that before they go.

3. Divide students into teams of 2, instructing a student in each group to retrieve the bug box as demonstrated and a student to choose a place for their group to search for insects. Instruct students to find their insects and then return to the whole group gathering area so you know they are ready for their next steps. Transition students from the whole group gathering space.



See “Teaching Strategies” in Appendix section for information on transitioning between whole and small groups effectively.

GROW UNDERSTANDING (10 MINUTES) *explain*


1. Provide students with a few minutes to observe their insects with their partners and to view other groups’ insects.
2. When students return to their comfortable seated positions, ask students to share what body parts they see and how they think they help the insect live, thrive, and contribute to the garden (for example: eyes help them see). Write their observations on a piece of chart paper. Challenge students to consider what other body parts they think may not be able to be seen that help the insect live and thrive as well (perhaps comparing to the human body).
3. When many parts have been observed and described, explain to students that something special about insects is that they have a segmented body with 3 parts—**head**, **thorax**, and **abdomen**. Then assist students with categorizing the parts of the insect that they listed into these 3 parts.

HEAD	THORAX	ABDOMEN
<ul style="list-style-type: none"> • eyes (compound, made of several smaller eyes working together) • mouth parts (to guide food into mouth and to bite) • antennae (to smell, taste, touch, and hear) 	<ul style="list-style-type: none"> • wings (if it can fly, usually 2 pairs) • legs (3 sets) • muscles (to operate wings and legs) • feet (with sticky pads, hooks, suckers) 	<ul style="list-style-type: none"> • stores digestive system and reproductive organs • may hold sting organs

OBSERVE THE FRUITS (20 MINUTES) *elaborate*

1. Model for students on chart paper how to create a scientific drawing of an insect. Using the ABCDE’s of drawing model:
 - A - accurate
 - B - big (and to scale)
 - C - colorful
 - D - detailed
 - E - explained (labeled)
2. Instruct students on how to retrieve their materials (clipboards, paper, handouts, or science journals, pencils and colored pencils) and then how to create their own scientific drawing of their insect. Transition students from the whole group gathering space to gather their materials and get started.

Note: Similar to the reflection prompts at the end of most lessons, this scientific illustration can be used to assess student understanding of content learning objectives.

-  3. As students work, acknowledge observed behaviors that align with the life skills learning objectives, such as appreciating the diversity in the insects. Also, use the observational checklist to assess students' current development of the life skills.
4. Provide the call back signal for each student to return attention to the whole group gathering space.
5. Instruct students on how to return their coloring materials, how to carefully return their insects to the garden, and how to return their bug boxes to the storage place. If time allows, have students record how many insects they found using the Tracking Garden Changes - Insect Count Data Sheet. In their teams of 2, one student can return the coloring materials and the other can return the insect to the garden and the bug box to the storage place. Instruct students to return to the whole group gathering space when these tasks are complete.

REFLECT (5 MINUTES) *evaluate*

1. Review the different insect structures and functions with students by allowing volunteers to present their scientific drawings of the bugs they collected, ensuring that the appropriate vocabulary is used to describe the drawings.
2. Discuss how these structures help insects fulfill important roles in the garden (eating plants, decomposing dead plants, pollinating flowers, eating other insects/pests, etc).
3. Explain that there is a lot of diversity in our insect population, meaning we have a lot of different insects. Ask students: Do we have a lot of diversity in our community? (Yes). Share examples. (Students' cultural backgrounds, interests, hobbies, languages, etc). Discuss how diversity makes communities stronger.

ADAPTING FOR INDOORS

In the case of inclement weather, the Cultivate Curiosity, Grow Understanding, Observe the Fruits sections of this lesson can occur inside the classroom. The insect collection in the Root Around section should take place in the garden area on the next garden day that the weather allows.

CONNECTIONS TO KITCHEN LESSONS

In the kitchen, research insects eaten around the world.

POSSIBLE EXTENSIONS

Classroom: Create imaginary insects in teams of 3. Give each team a blank piece of paper folded in thirds. Have each student draw an insect head on the top third, with the neck just passing the top fold. Fold to hide the head, then pass the papers.

ADDITIONAL RESOURCES

- *Are You a Butterfly?* by Allen, Judy and Tudor Humphries
- *Are You a Ladybug?* by Allen, Judy and Tudor Humphries
- *The Grouchy Ladybug* by Carle, Eric
- *The Very Lonely Firefly* by Carle, Eric
- *Backyard ABCs* by Green, Janice
- *Bugs!* by Greenberg, David T.
- *Insect Soup: Bug Poems* by Polisar, Barry Louis
- *Honey in a Hive* by Rockwell, Anne
- *Backyard Pets: Activities for Exploring Wildlife Close to Home* by Amato, Carol A.
- *Insects* by Ansary, Mir Tamim
- *Insects: DK Eyewitness Books* by DK Publishing
- *Spiders* by Gibbons, Gail
- *Simon & Schuster Children's Guide to Insects and Spiders* by Johnson, Jinny
- *Field Guide to North American Insects and Spiders* by National Audubon Society



BIOREGIONS AND LOCAL FOOD SYSTEMS

Garden

EST. TIME 45 minutes SEASON winter 

GRADE 3 | LESSON #12

? ESSENTIAL QUESTION(S)

- What is a local food system?
- What occurs between the farm and the market?
- How do the bioregions of our state determine the location of the farms?



MATERIALS

- Handouts / Visual Aids
- Equipment
- Materials for Cleaning Up

Abc VOCABULARY

- Pollinating, pollinator, pollinated
- Juice (noun), juice (verb), juicer
- Funnel, mold
- Farmers market

✓ ASSESSMENT

- Observational checklist

PREPARATION (15 MINUTES)

To prepare for this lesson, gather materials and read *Before We Eat* by Pat Brisson to develop comprehension questions for read aloud. Also, research the bioregions of your individual state and your local farms and farmers markets to bring a real-world context to the modeling of the local food system.

TEACHER BACKGROUND

While there is no consensus on the definition of a local food system, in this context we are discussing all of the natural features of the bioregions of your state along with all of the workers along the way that make it possible to produce, process, and distribute local food goods for consumption to enhance the environmental, economic, social, and nutritional health of your state.

LESSON DESCRIPTION

In this lesson, students will review the plant life cycle from seed to fruit, and discuss the bioregions of their state. Then students will walk through processing that same food (oranges are used as an example in this lesson), throughout its travels across the state to be juiced and frozen into popsicles before traveling to the farmers market to be sold to the community. Students will read the book *Before We Eat* to explore other local food systems and write a letter to a local farmer that vends at the farmers market showing gratitude for the work and care they contributed every step along the way.



Use the lesson template to create your own and share with us!

LEARNING OBJECTIVES

Content Learning Objectives

GFS.3.4 Define local food system.

WSCG.3.1 Define and map the bioregions of your state (cross map with food system).

Life Skills Learning Objectives

CLS.4 Students appreciate and are respectful of differences and diversity in their communities.

ACADEMIC STANDARD CONNECTIONS

Social Studies: Economics.

HEALTH STANDARD CONNECTIONS

National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.



LESSON MATERIALS

Materials for Lesson Introduction

Handouts

- Seed to Tree Yoga Pose Cards
- Before We Eat* by Pat Brisson

Equipment

- Laminated map of your state, dry erase markers
- Small hula hoop or toy steering wheel
- Hand juicer (1 per every 5 students)
- Cutting Board (1 per every 5 students)
- Paring Knife (1 per every 5 students)
- Pitcher (3, 1 shared between each 2 groups)
- Funnel
- Popsicle molds, or Dixie cups with plastic wrap and popsicle sticks (enough for 1 popsicle per student)

Materials for Cleaning Up

- 3 wash bins, garden-safe soap, sponge, dish towel

CULTIVATE CURIOSITY (5 MINUTES) *engage*

1. Show students orange popsicles and explain that today they are going to work together to show the full adventure an orange went on to end up as a popsicle.

Note:

The focus of this lesson is on local foods. If oranges are not grown in your state, use a different fruit that is grown in your state. For fruits that do not juice as easily as oranges, you can blend them with juice before freezing into popsicles.

2. First, draw a star on a map at a place where oranges grow (this could be a farm that vends at the local farmers market) and discuss what features the place has that makes it a good place to grow, such as plenty of sunlight, clean air, the right temperature, rainfall, the right soil, etc.
3. Then, as a whole group review the beginning of the life cycle of the orange from seed to tree using seed to tree yoga pose cards. As all students stand as tall trees, mimic the bees **pollinating** the flowers (for example, by buzzing around and tapping students' hands). Once students have been "pollinated," have them turn their hands into a fist to represent the fruit.

ROOT AROUND (25 MINUTES) *explore*

1. Ask students to explore what will happen next. Likely, someone has to pick the oranges. As the students continue to stand as tall as trees with their hands in fists as fruits, travel throughout them pretending to pick the fruits to put into a basket.
2. Tell students that the work at the farm is done and they can sit down. Then present to them baskets full of real oranges (that were picked on the farm).
3. Work with students to determine what happens next. Likely, the oranges travel to a place where they can be juiced. While a student models driving the truck full of oranges with a small hula hoop or toy steering wheel, draw on the map a line to where they may have traveled for this step.
4. Model for students in small groups of 5 how they will halve and **juice** their oranges and then use manual juicers to juice them and pour the juice into a measuring cup.

5. Provide small groups each with a cutting board, a paring knife, a juicer, and 5 oranges, and observe and assist their work (collecting the knives as soon as this step is complete). Distribute 3 pitchers (one for every 2 groups) so the groups can pour their juice in when their measuring cup gets full.
6. Remind students that there are also workers that are in charge of the very important clean-up steps. Choose 2 students from each group to deliver the organic waste to the compost bin and 3 students from each group to clean the cutting boards and juicers using garden-safe soap.
7. Work with students to determine what happens next. Likely, the oranges travel again to a place where they can be frozen into popsicles. While a student models driving the truck full of juice with a small hula hoop or a real steering wheel, draw on the map a line to where they may have traveled for this step.
8. Demonstrate how to use a **funnel**. Choose a few students that have not participated in individual jobs (like “driving”) to use a funnel to pour the juice carefully into the **molds** and pretend to put them in a freezer (this step will happen after class). If you do not have popsicle molds, you can use Dixie cups. Simply cover with plastic wrap and poke a popsicle stick in the center of each.
9. Work with students to determine what happens after the popsicles are frozen. Likely, the popsicles will travel again to the market to be sold. While a student models driving the truck full of popsicles with a small hula hoop or a toy steering wheel, draw on the map a line to where they may have traveled for this step (this could be a local **farmers market** or grocery store).
10. Lastly, choose students to model a transaction at the farmers market that brings the popsicle from the farm all the way to the plate.
11. Explain to students that the popsicles they have created will be frozen and they can taste them the following week.

GROW UNDERSTANDING (5 MINUTES) *explain*

Read the book *Before We Eat* to review all of the people that play a part in bringing local food from the farm to the table for not only crops but fish, honey, dairy, and many others.

 OBSERVE THE FRUITS (5 MINUTES) *elaborate*

Begin a letter to a farmer that vends at a local farmers market, thanking them for all of the steps they carefully complete from seed to plant and from farm to market. Students can finish this for homework or in their classrooms.

Note:

Similar to the reflection prompts at the end of most lessons, this letter can be used to assess student understanding of content learning objectives.

REFLECT (5 MINUTES) *evaluate*

1. Recognize specific students' behaviors that aligned with being the best for themselves, their communities, and their environment. Specifically, ask students to reflect on how they appreciate and respect the diversity throughout their state.
2. Review the steps of the local food system with students by allowing volunteers to present their letters to local farmers.

 ADAPTING FOR INDOORS

In the case of inclement weather, this lesson in its entirety can occur inside the classroom.

CONNECTIONS TO KITCHEN LESSONS

Prepare a dish in the kitchen featuring key crops from your state. For each crop, highlight the region it was grown and discuss all of the people that got it to where it is now.

POSSIBLE EXTENSIONS

Community: Create a market stand and sell (or give away!) your food products, for example in front of the school at the end of the school day.

ADDITIONAL RESOURCES

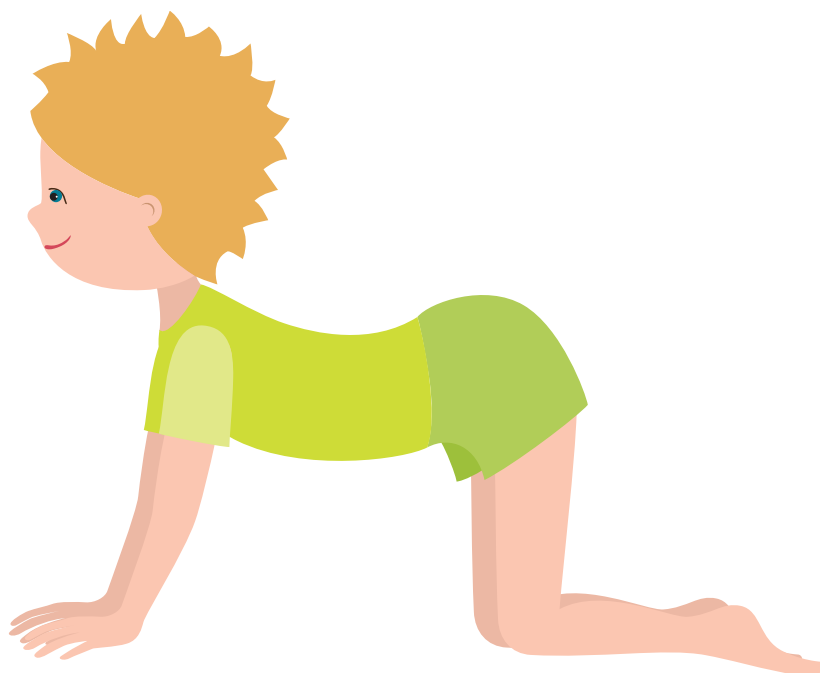
- *Sustainable Table, What is a Food System?*
<http://www.sustainabletable.org/254/local-regional-food-systems>
- *USDA Local Food Systems Resources*
<https://www.nal.usda.gov/afsic/local-food-systems>
- *EPA Ecoregions of North America*
<https://www.epa.gov/eco-research/ecoregions-north-america>

SEED TO TREE



YOU ARE A LITTLE SEED,
JUST PLANTED IN THE GROUND.

SEED TO TREE



WITH WARMTH AND WATER,
YOU GROW...

SEED TO TREE



...AND GROW.

SEED TO TREE



THEN YOUR STEM COMES UP OUT OF THE GROUND.

SEED TO TREE



YOUR ROOTS DIG DOWN INTO THE EARTH
AS YOUR LEAVES STRETCH UP TOWARDS THE SUN.

SEED TO TREE



WITH THE SOIL HOLDING YOU TIGHT AND PROVIDING YOU WITH NUTRIENTS,
YOU STAND STRONG.



GARDEN AND KITCHEN MATH

Garden

EST. TIME 45 minutes SEASON spring

GRADE 4 | LESSON #14

? ESSENTIAL QUESTION(S)

- How can we multiply a recipe to serve many?
- How can we calculate how much produce to grow to accommodate a recipe?

MATERIALS

- Minnie's Diner: A Multiplying Menu* by Dayle Ann Dodds
- Clipboards (1 per every student)
- Pencils (1 per every student)
- Simple Salsa, There's a Chef in My Soup!*
- Handout: *Garden and Kitchen Math Worksheet*

Abc VOCABULARY

- Multiply, multiplier

ASSESSMENT

- Observational checklist



Use the lesson template to create your own and share with us!

PREPARATION (15 MINUTES)

To prepare for this lesson, gather materials and read *Minnie's Diner: A Multiplying Menu* by Dayle Ann Dodds to develop comprehension questions for read aloud.

TEACHER BACKGROUND

Farmers, gardeners, and chefs use math every day as they make crop plans, measure ingredients, scale orders up and down, and the like. Therefore, growing and cooking food provides students with meaningful opportunities to apply the mathematical practices they're learning in school, and to enjoy the results! To make more or less of a recipe (to adjust the yield), you need to know what the recipe conversion factor is. To do this, divide the original recipe yield by the desired yield. The desired yield and the original yield must be expressed the same unit of measurement.

LESSON DESCRIPTION

In this lesson, students will read *Minnie's Diner: A Multiplying Menu* to introduce the scenario of multiplying recipes. Then, students will use the recipe for Simple Salsa from *There's a Chef in My Soup!* and walk step-by-step through determining how much they will need to multiply the recipe by to serve all of the students in the class and how much of each ingredient they will need. Finally, students will estimate how many of each plant they will need to grow in order to make the recipe to serve all of the students in the class.

LEARNING OBJECTIVES

Content Learning Objectives

GPM.4.2 Calculate amounts of produce to grow in school garden.

Life Skills Learning Objectives

CLS.1 Students demonstrate problem solving and resolve conflict as a team.

ACADEMIC STANDARD CONNECTIONS

CCSS.MATH.CONTENT.4.OA.A.3

Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

CCSS.ELA-LITERACY.W.4.2.D. Use precise language and domain-specific vocabulary to inform about or explain the topic.

CULTIVATE CURIOSITY (10 MINUTES) *engage*

1. Read aloud *Minnie's Diner: A Multiplying Menu* to introduce the scenario of doubling the amount of food to prepare.
2. Explain to students that they are going to use a recipe for Simple Salsa and work together to **multiply** the quantities of the ingredients to accommodate the full class.


ROOT AROUND (10 MINUTES) *explore*

1. First, demonstrate for students how to determine what the **multiplier** should be for the recipe in order to provide a serving for each student.
2. Direct students to the first section of the Garden and Kitchen Math Worksheet handout to guide their thinking.

GROW UNDERSTANDING (10 MINUTES) *explain*

1. Next, challenge students to work in small groups at their tables to multiply each ingredient amount by the multiplier.
2. Direct students to the second section of the handout to guide their thinking.

OBSERVE THE FRUITS (10 MINUTES) *elaborate*

1. Lastly, challenge students to work independently to determine how much produce will be needed to create the recipe to serve all of the students.
2. Direct students to third section of the handout to guide their thinking.
3. When they have finished their calculations independently, provide time for students to share as a group and compare responses. Encourage a group dialogue to come to a final conclusion as a group.
4.  As students work together, acknowledge observed behaviors that align with the life skills learning objectives, such as demonstrating problem solving as a team. Also, use the observational checklist to assess students' current development of the life skills.

REFLECT (5 MINUTES) *evaluate*

1. Recognize specific students' behaviors that aligned with the community and personal life skills. Specifically, ask students to reflect on how they solved problems as a team.
2. Review with students:
 - What strategies did you use to figure out how many tomatoes we would need? Did anyone else use a different strategy?
 - What strategies did you use to figure out how many tomato plants we would need to plant? Did anyone else use a different strategy?



ADAPTING FOR INDOORS

In the case of inclement weather, this lesson in its entirety can occur inside the classroom.

CONNECTIONS TO KITCHEN LESSONS

In **Lesson #16: Planting for a Feast**, students will plant the produce planned for in this lesson. Then in **Grade 5 Kitchen Lesson #5: Fiesta Quesadillas with Simple Salsa and Holy Moly Guacamole** students use the produce they planted together. At this time, they can reflect on how accurately they estimated the yields when they planted.

POSSIBLE EXTENSIONS

Classroom: Have students write word problems about farmers and chefs calculating produce amounts.

GARDEN AND KITCHEN MATH WORKSHEET STUDENT NAME: _____ DATE: _____

Use this handout with the recipe *Simple Salsa* from *There's a Chef in My Soup!*

How much should we multiply the recipe by to serve all of the students in the class?

1. Look at your recipe. What is the approximate yield? _____ cup(s)
2. If one serving is 2 tablespoons and there are 16 tablespoons in a cup, how many servings are there in one cup? _____ servings

Show your work here:

3. How many servings does the recipe yield? _____ servings

Show your work here:

4. How many students are in the class? _____ students
5. What would you have to multiply the recipe by to ensure that there are at least enough servings for each student in the class? Round up to the nearest whole number _____

Show your work here:

How much of each ingredient will we need to create this recipe to serve all of the students? Simplify any measurements to larger units if possible. For example, 9 teaspoons can be simplified to 3 Tablespoons.

ORIGINAL RECIPE: MAKES ____ CUP(S). SERVES ____	X ____	MULTIPLIED RECIPE: MAKES ____ CUP(S). SERVES ____	SIMPLIFIED MEASUREMENT
• 2 medium tomatoes	X ____	____ medium tomatoes	_____
• ½ teaspoon of salt	X ____	____ teaspoons of salt	_____
• ½ teaspoon of minced garlic	X ____	____ teaspoons of minced garlic	_____
• 1 tablespoon minced yellow onion	X ____	____ tablespoons of minced yellow onion	_____
• 1 tablespoon minced green bell pepper	X ____	____ tablespoons of minced green bell pepper	_____
• 1 tablespoon lime juice	X ____	____ tablespoons of lime juice	_____
• ½ teaspoon of hot-pepper sauce	X ____	____ teaspoons of hot-pepper sauce	_____

GARDEN AND KITCHEN MATH WORKSHEET CONTINUED

How much produce will we need to grow to create this recipe to serve all of the students?

1. If we assume that 1 garlic clove yields approximately $\frac{1}{2}$ teaspoon of minced garlic,
how many garlic cloves will we need? _____

Show your work here:

2. If we assume that 1 onion yields approximately 16 tablespoons of minced onion,
how many onions will we need? _____

Show your work here:

3. If we assume that 1 bell pepper yield approximately 8 tablespoons of minced bell pepper,
how many bell peppers will we need? _____

Show your work here:

4. Collect all of your answers on the list below.

Produce List:

_____ tomatoes

_____ garlic cloves (assuming 1 teaspoon minced = 1 fresh garlic clove)

_____ onions (assuming 1 tablespoon minced = $\frac{1}{16}$ of an onion)

_____ green bell peppers (assuming 1 tablespoon minced = $\frac{1}{8}$ bell pepper)

How many of each plant do you think we would need to plant to yield enough produce to create this recipe for all of the students in the class?

_____ tomato plants

_____ garlic plants

_____ onion plants

_____ green bell pepper plants



SAVING BEAN SEEDS

Garden

EST. TIME 45 minutes SEASON fall 

GRADE 5 | LESSON #3

? ESSENTIAL QUESTION(S)

- What are the benefits of seed saving?

MATERIALS

- Beans
- Gregor Mendel: The Friar Who Grew Peas* by Cheryl Bardoe
- Coin envelopes or paper to make origami seed envelopes (1 per student)
- Blank paper and clipboard (1 per student)
- Writing and coloring supplies (enough for each student)

Abc VOCABULARY

- Inherit
- Traits
- Seed saving

ASSESSMENT

- Observational checklist
- Create a Guide



Use the lesson template to create your own and share with us!

PREPARATION (15 MINUTES)

To prepare for this lesson, gather materials and read *Gregor Mendel: The Friar Who Grew Peas* by Cheryl Bardoe to develop comprehension questions for read aloud. Also, ensure there are bean plants in the garden for harvesting.

TEACHER BACKGROUND

Seed saving is an ancient method for cultivating desired genetic traits and preserving biodiversity. This practice can save gardeners money from buying seeds each year, and the sharing of special seeds can build community with neighbors.

LESSON DESCRIPTION

In this lesson, students will read *Gregor Mendel: The Friar Who Grew Peas* by Cheryl Bardoe to explore in what way Mendel discovered how genetic traits are passed down. The students will use that knowledge to select and harvest the healthiest bean plants from the garden, and they will save those seeds for the Grade 4 students to plant in the spring. Students will also provide a growing guide to accompany the seeds.

LEARNING OBJECTIVES

Content Learning Objectives

P.5.1 Understand how to identify and cultivate genetic traits in plants.

Life Skills Learning Objectives

CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.

ACADEMIC STANDARD CONNECTIONS

CCSS.ELA-LITERACY.W.5.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

Social Studies: Citizenship, Cultural Traditions.



See “Teaching Strategies” in Appendix section for information on how to lead Think-Pair-Share.

CULTIVATE CURIOSITY (10 MINUTES) *engage*

1. Read aloud selections from *Gregor Mendel: The Friar Who Grew Peas* aloud and discuss what Mendel learned through being curious and experimenting with pea plants—that plants **inherit** and pass down **traits**.
2. Ask students to think-pair-share and consider how that knowledge may affect the way they choose what to plant in the garden.

ROOT AROUND (10 MINUTES) *explore*

1. Position the class so they surround a garden bed full of dry beans. Have students look closely at the beans and share their ideas for how to identify the healthiest looking bean pods. Once consensus is reached, model how to harvest and have each student harvest four healthy looking beans.

GROW UNDERSTANDING (10 MINUTES) *explain*

1. Explain to students that we are going to save the beans (seeds) from the four healthy beans they chose in a process commonly called **seed saving** in an attempt to save the desirable traits for the garden the following year.
2. Model for students how to shell beans and place them in a coin envelope or an origami seed envelope. If students are making origami envelopes, demonstrate that process here.

OBSERVE THE FRUITS (10 MINUTES) *elaborate*

1. Explain to students that these seeds will be passed down to the Grade 4 class to plant in the spring, so we need to provide them with information about how, when, and where to plant the beans.
2. Provide students with store-bought seed packets for the same variety of bean or hand-held devices to conduct research. Have them combine their research with their knowledge of growing these beans to create a guide for the Grade 4 students on a separate sheet of paper. Encourage them to provide information on how, when, and where to plant and care for the beans (ensuring the plants’ needs of water, nutrients, sunlight, temperature, and space are met). Guides can be decorated with scientific drawings of the bean plants at maturity or describe the positive traits that the seeds are being saved for.
3. As students work on their guides, acknowledge observed behaviors that align with the life skills learning objectives, such as applying principles of fairness while sharing resources. Also, use the observational checklist to assess students’ current development of the life skills.



This activity can be used to assess student understanding of content learning objectives.

REFLECT (5 MINUTES) *evaluate*

1. Recognize individual student behaviors that aligned with being the best for themselves, their communities, and their environment. Ask students to reflect on how they were able to share the space and the materials with equity and fairness.
2. Review the value of seed saving with students by allowing volunteers to present their planting guides and rationale for saving their seeds to the Grade 4 students.



ADAPTING FOR INDOORS

In the case of inclement weather, the Cultivate Curiosity, Grow Understanding, and Observe the Fruits sections of this lesson can occur inside the classroom. The bean collection in the Root Around section should take place in the garden on the next garden day that the weather allows.

CONNECTIONS TO KITCHEN LESSONS

Use the rest of the beans in **Kitchen Lesson #10: Cooking Beans** and **Kitchen Lesson #11: Beans Galore Salad**.

POSSIBLE EXTENSIONS

Classroom: Create a class card to give to Grade 4 students along with the beans telling them what they have to look forward to in garden class this year.

ADDITIONAL RESOURCES

- *Seed to Seed: Seed Saving and Growing Techniques for Vegetable Gardeners* by Suzanne Ashworth
- *Seed Saving: A Beginner's Guide to Heirloom Gardening* by Caleb Warnock
- *The Seed Garden: The Art and Practice of Seed Saving* by Lee Buttala
- Seed Savers Exchange
<http://www.seedsavers.org/>
- Farmers Almanac, Seed Saving Guide
<https://www.almanac.com/content/how-save-vegetable-seeds-seed-saving-guide>

ORIGAMI SEED ENVELOPES

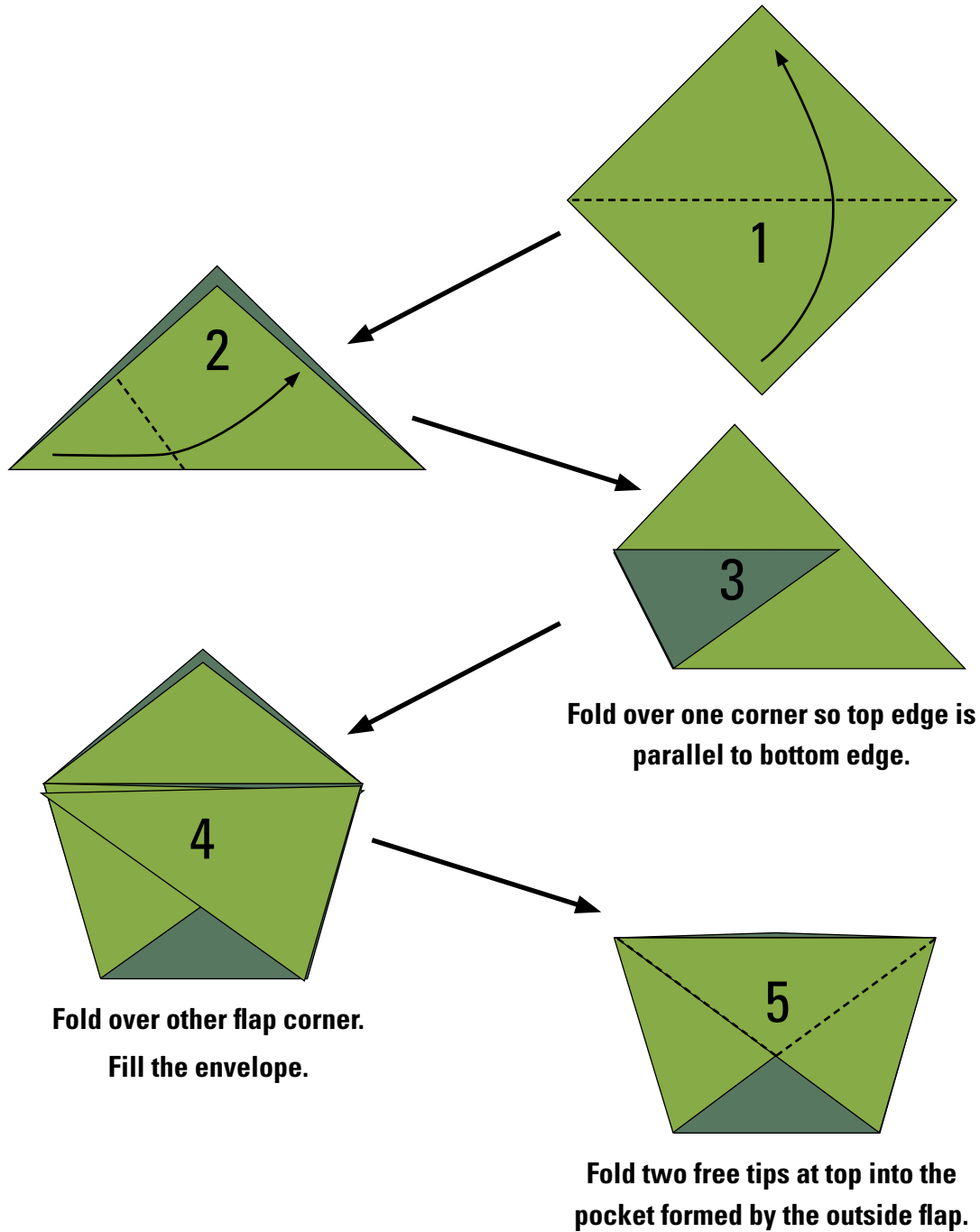


Diagram adapted from ourpermaculturelife.com.



WELCOME TO THE GARDEN

Garden

EST. TIME 45 minutes SEASON fall



GRADE 6 | LESSON #1

? ESSENTIAL QUESTION(S)

- How can I be my best self in the garden?
- How can I be my best for my community?
- How can I be my best for my environment?



MATERIALS

- Any crop from the garden ready to harvest
- Chart paper, easel
- Post-it notes (3 per student)
- Pencils (1 per student)
- Colanders
- Poster-size school year calendar
- Markers
- Handout: *Welcome to the Garden Scavenger Hunt*

Abc VOCABULARY

- Present, Attentive, Aware, Engaged
- Responsibility
- Empathy
- Respect



ASSESSMENT

- Observational checklist

PREPARATION (10 MINUTES)

Write one of the following sentences along the top of 3 pieces of chart paper:

- “How can we be our best for ourselves?”
- “How can we be our best for our community?”
- “How can we be our best for our garden?”

Post chart paper in 3 different places around the garden or classroom.

TEACHER BACKGROUND

The development of expectations for the garden space happens collaboratively with students in this lesson. This is a process that encourages students to reflect on how they impact their own learning, their community, and the environment along with what behaviors they can agree to as a class to ensure their shared goals are met.

LESSON DESCRIPTION

In this lesson, students will observe the peaceful garden area and consider how they will be a part of it. Students will discuss and then share ideas on how they can be the best for themselves, their community, and their environment in this garden space. Then they will have the opportunity to explore and enjoy the space on their own while modeling those behaviors. Introduce the poster-size school year calendar as a tool that students will use throughout the year to track planting, amending soil, harvesting, and the like. At the end of the lesson, students will consider what it looks like to take care of themselves, their community, and their environment in different settings at home and school. These conclusions will serve as enduring understandings throughout the year.

LEARNING OBJECTIVES

Life Skills Learning Objectives

PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.

PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.



Use the lesson template to create your own and share with us!

PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.

PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.

PLS.5 Students develop the ability to make informed and responsible decisions.

PLS.6 Students actively seek creative and resourceful solutions.

CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.

CULTIVATE CURIOSITY (10 MINUTES) *engage*

1. Lead students to a comfortable sitting position in a central gathering area in the outdoor classroom space (in a circle, if possible).
2. Welcome students to the garden and provide them with a few minutes to breathe, look, listen, and take in the space. Allow each student's voice to be heard by having them say aloud their names and one thing they see, hear, or feel that they believe makes the space special.
3. Lead students to recognizing how peaceful the space is without our interaction. Encourage students to consider how we can interact with the space in a way that enhances it.

ROOT AROUND (10 MINUTES) *explore*


1. Explain to students that as we consider how we interact with this environment, we are also going to consider how we interact with each other and with ourselves.
2. Introduce the following questions about time spent in the garden, each written on a separate piece of chart paper:
 - How can we be our best for ourselves?
 - How can we be our best for our community?
 - How can we be our best for the environment?
3. Provide students with the chance to talk about their ideas for each question as pairs or in small groups. Walk around the groups, listening, guiding, and challenging the discussions while distributing one pencil and 3 post-it notes for each student.
4. Instruct each student to write one idea per post-it note for each of the questions and then stick them to the appropriate piece of chart paper.

GROW UNDERSTANDING (10 MINUTES) *explain*

1. Review responses as a class, adding any additional ideas and defining key terms that were not considered by students, to result in a comprehensive list of answers to the essential questions.

ESSENTIAL QUESTIONS	EXAMPLES
<p>How can I be my best self in the garden?</p> <ul style="list-style-type: none"> • How can we be our best for ourselves? - What does it mean to be self-aware? How can we show respect and caring for our own needs? • How can we make informed, responsible decisions and keep ourselves safe in the garden? • What does it look like to be an active and engaged listener? • Why is it important to show up on time prepared to learn? 	<ul style="list-style-type: none"> • being active and engaged • being aware of our thoughts, feelings, and needs • being in control of our bodies • sharing our thoughts, feelings, and needs, with others • considering the impact of our choices • taking responsibility for our choices • making choices that keep us safe • using tools safely
<p>How can we be our best for our community?</p> <ul style="list-style-type: none"> • How can we show respect, empathy, and caring for others? • How can we keep others safe in the garden? • How can we contribute to the learning of the community? • Why is it important to participate? • How can we work together to seek creative, resourceful solutions and make informed, responsible decisions? 	<ul style="list-style-type: none"> • being present and attentive • being aware of others' thoughts, feelings, and needs • showing empathy for others' feelings • showing respect for others' thoughts • interacting with our classmates in a gentle way with our bodies and language • considering the impact of your choices on others • being honest with others • including all team members in small group work • joining the group for whole group discussions • listening with a still body and attentive eyes
<p>How can we be our best for our environment?</p> <ul style="list-style-type: none"> • How can we show respect and caring for the environment? 	<ul style="list-style-type: none"> • showing caring and respect for all of the living and nonliving parts of the environment • considering the impact of your choices on the environment • making responsible decisions

OBSERVE THE FRUITS (10 MINUTES) *elaborate*

1. Explain to students that they will have time to practice these behaviors as they conduct a scavenger hunt in pairs. Assign pairs. Remind students of the garden boundaries and the callback signal to let them know to return to the group gathering space. Distribute the handout Garden Scavenger Hunt.
2.  As students explore and enjoy the garden area, acknowledge observed behaviors that align with the enduring understandings, such as being active and engaged learners or showing care for the environment. Also, use the observational checklist to assess students' current development of the life skills.

3. Provide the call back signal, and as each student returns to the group gathering space, welcome them by name back into the group.
4. Introduce a poster-size calendar where they'll be recording their planting and harvest dates throughout the year.
5. Have each student share one crop they found that looked ready to harvest.
6. Have students recall what they know about safe food handling practices and add anything important that they may have missed.
7. Choose one item that is abundant and good raw, such as cherry tomatoes, to harvest, wash and enjoy together.
8. Record "Harvested cherry tomatoes" on today's date on the calendar together.
9. At the end of each class hereafter, provide a few minutes for students to record planting, germination, and first harvest dates on the class-wide garden calendar.

REFLECT (5 MINUTES) *evaluate*

1. Review with students the behaviors that they exhibited that aligned with the enduring understandings that they developed together with the goal of being the best for themselves, their communities, and their environment.
2. Together, discuss why these behaviors are so important to a productive, safe, and positive experience in the garden.
3. Share appreciation for each of their individual contributions to the kitchen and to the community, and for their respect for the kitchen. Express excitement for your next time together.



ADAPTING FOR INDOORS

The Cultivate Curiosity, Root Around, and Grow Understanding sections of this lesson can occur inside the classroom in the case of inclement weather. The Observe the Fruits section should take place in the garden area on the next garden day that the weather allows.

CONNECTIONS TO KITCHEN LESSONS

Compare agreements created in **Kitchen Lesson #1: Welcome to the Kitchen** to those created in the garden.

POSSIBLE EXTENSIONS

Community: Compare planting and harvesting calendars with those of local farmers. Volunteer at a local farm to help harvest or glean their crops.

ADDITIONAL RESOURCES

For more information on group management and group development of procedures and parameters, see:

- *Tools for Teaching* by Fred Jones
- *Rethinking Classroom Management* by Patricia Belvel

NAME: _____ DATE: _____

GARDEN SCAVENGER HUNT	
<p>Find a tool you don't yet know the name of. Draw it here. Based on its structure, what do you think it might be for?</p>	<p>Find an organism living in the compost pile. Draw and label it here.</p>
<p>Find the plant with the largest diameter. Measure the diameter and record the plant name and diameter here.</p>	<p>List 5 crops that look ready for harvest here.</p>
<p>Note one thing that has changed in the garden since the last time you were here.</p>	<p>Find a pest in the garden. Identify it if you can. Describe what it's doing here this year.</p>



TEACHING EACH OTHER

HOW TO PLANT SEEDS

Garden

EST. TIME 45 minutes SEASON spring 

GRADE 6 | LESSON #16

? ESSENTIAL QUESTION(S)

- How can information about growing a garden be found?
- How can information about growing a garden be shared?

MATERIALS

- A Seed is Sleepy* by Dianna Aston
- Seed packets for 4 different seasonal crops that can be direct sowed
- Trowels (1 for every student)

Abc VOCABULARY

- Seasonal
- Direct seed

ASSESSMENT

- Observational checklist



Use the lesson template to create your own and share with us!

PREPARATION (15 MINUTES)

To prepare for this lesson, gather materials and read *A Seed is Sleepy* by Dianna Aston to develop comprehension questions for read aloud. Also, ensure there are 4 garden beds prepared for planting.

TEACHER BACKGROUND

Seed packets often include a picture, a written description (including common and scientific names, plant height, days to harvest, etc.), and planting directions (with recommendations on when to plant along with planting depth, spacing, sun requirements, and basic directions for care of the plant).

LESSON DESCRIPTION

In this lesson, students will work in 4 teams to gain information from a seed packet about planting a specific seasonal crop. Then students will be divided into new groups and rotate around the 4 garden beds to plant the 4 seasonal crops. Each student will have the opportunity to be the teacher and the student.

LEARNING OBJECTIVES

Content Learning Objectives

P.6.1 Interpret directions on seed packets.

Life Skills Learning Objectives

PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.

ACADEMIC STANDARD CONNECTIONS

NGSS.6.LS.2.A Interdependent Relationships in Ecosystems

CCSS.ELA-LITERACY.SL.6.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.


CULTIVATE CURIOSITY (10 MINUTES) *engage*

1. Read *A Seed is Sleepy*. As the story is read, have students access their prior knowledge and describe why seeds fit each of the adjectives the book presents.

ROOT AROUND (5 MINUTES) *explore*

1. Divide students into 4 teams of up to 8 students (same teams as **Lesson #15: Preparing a Bed for Planting**).
2. Provide each team with seed packets for something **seasonal to direct seed** in the garden (such as beans, carrots, beets, sunflowers, or greens). Explain that “direct seeding” means planting seeds directly into the ground, as opposed to planting them in containers. The seed packet will indicate if the seeds inside are for direct seeding or sowing in containers.
3. Instruct each team to work together to read their seed packet, focusing on planting depth and spacing. Have them prepare to lead other students in the class on how to plant their seeds in the beds that were prepared in the prior lesson.

GROW UNDERSTANDING (30 MINUTES) *explain*

1. Divide students into a new configuration of 4 groups, with 2 students from each original team. This can be done by having students in each team count off 1-2-3-4, then grouping students by their numbers.
2. Rotate the new groups through the 4 planting areas. At each bed, the team members who learned about that seed will explain (team-teach) to the rest of the group how to plant their seeds.
3.  Students will work together to plant each bed, then move to the next bed, until they have rotated through all 4 beds, planted 4 sets of seeds, and all students have helped lead their group. Use the observational checklist while students are working to assess development of Personal and Community Life Skills.
4. Have students note on the class-wide calendar together what was planted on today’s date.

OBSERVE THE FRUITS (EMBEDDED ABOVE) *elaborate*

Throughout each group’s rotations to each bed described above, 2 students will be “explaining” how to plant that specific seed according to the seed packet, while the rest of the students will be “elaborating” on their understanding of how to plant seeds using information from a seed packet.



See “Teaching Strategies” in the Appendix section for information on how to lead Think-Pair-Share

REFLECT (5 MINUTES) *evaluate*

1. Recognize specific students’ behaviors that aligned with being the best for themselves, their communities, and their environment. Specifically, ask students to reflect on how they were able to show empathy for each other and the environment.
2. Invite students to think-pair-share about their experience today—not only about what they learned about growing seeds, but also, how they gained the information they needed to grow seeds and what strategies they used to share that information. Encourage students to consider what they observed in the roles of both the teacher and the student of 3 other groups of teachers.
3. Review the value of finding information and being equipped with methods to share information with the intention of advocacy for small-scale gardens. Discuss with students the benefits of having small-scale gardens in the community. Brainstorm opportunities to practice these skills in the community.

ADAPTING FOR INDOORS

In the case of inclement weather, the Cultivate Curiosity, Root Around, and Reflect sections of this lesson could occur inside the classroom. The Grow Understanding and Observe the Fruits sections should take place in the garden area on the next garden day that the weather allows.

CONNECTIONS TO KITCHEN LESSONS

Plant crops in this lesson that will be useful in the fall of Grade 7, such as herbs to include in **Grade 7 Kitchen Lesson #2: Making Preserves.**

POSSIBLE EXTENSIONS

Community: Organize a garden workday at another community garden or at another school garden to teach a group of volunteers (or students) to plant in the same way.

ADDITIONAL RESOURCES

- Sowing Seeds in the Ground
<http://www.sunset.com/garden/garden-basics/sowing-seeds>
- *The Magic School Bus Plants Seeds* by Joanna Cole and Bruce Degen
- *Plants* by DK Publishing
- *Seeds* by Susan H Gray



BUSINESS INCOME AND EXPENSES

Garden

EST. TIME 45 minutes SEASON spring 

GRADE 7 | LESSON #16

? ESSENTIAL QUESTION(S)

- How is a basic income and expense model created?

MATERIALS

- Resources for students to research local market price (technology, grocery store advertisements, etc.)
- Chart Paper, Easel, Markers
- Student Journals
- Clipboards (1 per student)
- Pencils, Colored Pencils, Handheld Sharpeners

Abc VOCABULARY

- Local market price
- Income
- Expenses
- Profit
- Yield
- Unit price

ASSESSMENT

- Observational checklist

PREPARATION (APPROXIMATELY 15 MINUTES)

To prepare for this lesson, gather materials listed on the left.

TEACHER BACKGROUND

An income and expense model shows projected revenues along with projected expenses during a particular period of time or for a specific project. Combined, those result in expected net income or net profit.

LESSON DESCRIPTION

In this lesson, students will work together to create a basic income and expense model for their business plans developed in the winter. After listing all expenses, they will determine an appropriate unit price based on their goal for profit and the market price in their local community.

LEARNING OBJECTIVES

Content Learning Objectives

BP.7.3 Create basic income/expense model.

Life Skills Learning Objectives

PLS.5 Students develop the ability to make informed and responsible decisions.

ACADEMIC STANDARD CONNECTIONS

Social Studies: Economics.

CCSS.MATH.CONTENT.7.NS.A.3. Solve real-world and mathematical problems involving the four operations with rational numbers.



Use the lesson template to create your own and share with us!

CULTIVATE CURIOSITY (5 MINUTES) *engage*

1. Revisit student business plans created in **Lesson #9: Planning Our Business, Part 1**, for creating a food business project to generate profit for the school garden gift in Grade 8.

ROOT AROUND (10 MINUTES) *explore*


1. Guide students in exploring what some **local market prices** are for the product they intend to sell. Ensure that information on the size and unique features of each company's product is collected as well in order to determine the different factors that may have led to pricing.

GROW UNDERSTANDING (2 MINUTES) *explain*

1. Explain to students that they are going to build a basic **income** and **expense** model to collect information that will guide them in pricing their product and help ensure they will make a profit to go toward their garden gift in Grade 8.

OBSERVE THE FRUITS (25 MINUTES) *elaborate*

1. First, students will start to calculate their **yield** (how much of the product will be possible to make) by reviewing their planting list, anticipated harvest, and recipe yields. This will guide their understanding of the quantity of each additional product they will need.
2. Then, students will begin to explore their **expenses** (or how much it will cost to make their product). Their only known expenses so far should be the cost of the plants. Challenge students to consider other inputs that have gone into growing the plants beyond just the such as time, energy, resources (tools, beds, soil), etc. Inform students that they will not be putting a dollar value on those inputs today but it's important to consider when planning a business.
3. Then, have students consider all of the other materials they will need (i.e., jars, labels, etc.), each listed with a price and priced around the quantity that they determined in Step 2 (above).
4. Now, with a full list of expenses of both plants and materials, divide the amount that must be spent by how many units of the product will be produced with these plants and materials. That will give you a minimum **unit price** (or what each unit should cost). Consider that at this price, no **profit** will be made (or no money above the expenses will be made).

5. With students, consider how much they would like their **income** (or the money they make) to be to ensure that it is high enough above the expenses to make a profit. Students should also consider the market price from earlier in the lesson, to determine a price that is feasible for their product.
6.  When students have agreed on how much to sell their product for, have them subtract their total expenses from their total income to determine their total profit that will go toward their Grade 8 garden gift. Throughout this work session, use the observational checklist while they are working to assess development of Personal and Community Life Skills.

REFLECT (5 MINUTES) *evaluate*

1. Recognize students behaviors that aligned with being the best for themselves, their communities, and their environment. Ask students to reflect on how this process will help them make informed, responsible decisions.
2. Challenge students to consider creative ideas on how to increase income and/or decrease expenses to increase profit.

ADAPTING FOR INDOORS

In the case of inclement weather, this lesson in its entirety can occur indoors.

CONNECTIONS TO KITCHEN LESSONS

Students will make the product for the business planned here in **Grade 8 Kitchen Lesson #2: Preparing the Product for Our Business.**

POSSIBLE EXTENSIONS

Community: Interview value-added product vendors about the decisions they have made to lower their expenses so their business can be more profitable.

ADDITIONAL RESOURCES

- Biz Kids, Young Entrepreneurs
<http://bizkids.com/episode/understanding-income-and-expenses>
- Investopedia, Income and Expenses
<http://www.investopedia.com/university/teaching-financial-literacy-tweens/teaching-financial-literacy-tweens-income-and-expenses.asp>



LOCAL VERSUS IMPORTED FOODS

Garden

EST. TIME 45 minutes SEASON winter 

GRADE 8 | LESSON #12

? ESSENTIAL QUESTION(S)

- What are the impacts of importing food versus eating locally?

PREPARATION (15 MINUTES)

To prepare for this lesson, research and print an article listing the benefits of eating local foods. Gather materials. Label the local, regional, and imported vegetables with the name of the region or country where they were grown.

TEACHER BACKGROUND

Food systems comprise all aspects of food production and food distribution from planting to harvest to post-harvest production (packaging, transporting, etc.). This lesson explores the differences between local, regional, and imported foods. It should be noted that there is no agreed upon definition or mileage radius for the terms “local” or “regional.” The impacts of a more local food system include environmental sustainability, improved health and nutrition, and support for local economies.

LESSON DESCRIPTION

In this lesson, students will research the impact of buying locally, regionally, and importing foods from across the world. They will then investigate a local, regional, and imported example of a specific vegetable, making inferences and learning as much as they can about the vegetable only from its place of origin. Finally, students will taste test the vegetables to determine the difference in taste, texture, and freshness.

LEARNING OBJECTIVES

Content Learning Objectives

GFS.8.3 Describe and characterize the differences between foods grown locally and those imported from other parts of the United States and the world.

Life Skills Learning Objectives

PLS.5 Students develop the ability to make informed and responsible decisions.

ACADEMIC STANDARD CONNECTIONS

Social Studies: Economics.

HEALTH STANDARD CONNECTIONS

National Health Education Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.

MATERIALS

- Any local, seasonal vegetable growing in the garden
- A local, regional, and imported example of a specific vegetable
- Post-it notes
- Sharing and tasting supplies for the vegetables
- Handouts: *article about benefits of eating local food*

VOCABULARY

- Local
- Regional
- Imported
- Seasonal
- Post-harvest

ASSESSMENT

- Observational checklist



Use the lesson template to create your own and share with us!

CULTIVATE CURIOSITY (5 MINUTES) *engage*

1. Display for students an example of a **local**, **regional**, and **imported** vegetable that is **seasonal** at the time for your area. Have labels that say “local,” “regional,” and “imported.” Work with students to define each word. Then have students try to match the correct label with each vegetable and justify their ideas.

ROOT AROUND (10 MINUTES) *explore*

1. Reveal which vegetable is local, which is regional, and which is imported. Add labels to each that say where they were grown.
2. Provide students time to look at the different vegetable samples and read the article you selected for the lesson that lists the benefits of eating local food.


GROW UNDERSTANDING (5 MINUTES) *explain*

1. Have students share their findings with the group. Discuss the potential differences between local, regional, and imported vegetables. The differences can range from the quality of the food (freshness, nutrients, taste) to the environmental impacts to the economic impacts.
2. Guide students to understand that imported food travels further to get to our plates. Imported food is not as fresh and has used more fossil fuels on its journey.

OBSERVE THE FRUITS (15 MINUTES) *elaborate*

1. Lead students in closely investigating each of the local, regional, and imported vegetables. Have them research about how many miles each traveled, and have them infer about how long it would have taken them to travel that far. Remind students to take into account **post-harvest** steps, such as packing, weighing, delivery, and the like. Student work may look like:
 - Locally grown vegetable / harvested 1 day ago / 50 miles (worth of emissions)
 - Regionally grown vegetable / harvested 3 days ago / 500 miles (worth of emissions)
 - Imported vegetable / harvested 7 days ago / 5000 miles (worth of emissions)

While we likely will not have concrete numbers, their educated guesses will suffice.

2. Then lead students in a careful scientific drawing of the appearance of each vegetable, noting similarities and differences.
3. Guide students to wash, prepare, and taste each vegetable, comparing and describing the taste, texture, and freshness of each. Use Culinary Flavor and Texture concepts and adjectives learned in the kitchen.
4.  As students work, use the observational checklist while they are working to assess students development of Personal and Community Life Skills.

REFLECT (5 MINUTES) *evaluate*

1. Recognize student behaviors aligned with being the best for themselves, their communities, and their environment. ask students to reflect on how they were able to gain knowledge that will help them make informed decisions.
2. Challenge students to consider why each of the options of local, regional, and imported may be preferable at different times (if a food cannot grow within a region or at a specific time).
3. Challenge students to consider what strategies they could use in their food business to ensure they are serving the highest quality ingredients.



ADAPTING FOR INDOORS

In the case of inclement weather, this lesson in its entirety can occur indoors.

CONNECTIONS TO KITCHEN LESSONS

As students prepare foods in the kitchen, have them identify which ingredients are local and which are imported.

POSSIBLE EXTENSIONS

Community: Interview farmers market customers about why they choose to buy locally.

ADDITIONAL RESOURCES

- Farmer's Almanac, Planting Dates
<https://www.almanac.com/gardening/planting-dates>
- Greenopedia, Why is Local Healthier?
<http://greenopedia.com/local-food-is-healthier/>

LESSON PLANS

Kitchen



WELCOME TO THE KITCHEN

Kitchen

EST. TIME 45 minutes SEASON fall TYPE cooking concept

GRADE K | LESSON #1

? ESSENTIAL QUESTION(S)

- How can I be my best self in the kitchen?
- How can I be my best for my community?
- How can I be my best for my environment?



MATERIALS

- Eating the Alphabet* by Lois Elhert
- Chart paper, easel, and markers
- Seasonal finger-food snack divided onto plates, such as carrot sticks or apple slices (1 plate per table)

Abc VOCABULARY

- Community
- Environment
- Fruit
- Vegetable

✓ ASSESSMENT

- Observational checklist



Use the lesson template to create your own and share with us!

PREPARATION (20 MINUTES)

Prepare a seasonal finger-food snack with enough for 1 per student, divided onto plates (1 per table). Store as necessary for the snack.

TEACHER BACKGROUND

The development of expectations for the kitchen space happens collaboratively with students in this lesson. This is a process that encourages students to reflect on how they impact their own learning, their community, and the environment along with what behaviors they can agree to as a class to ensure that their shared goals are met.

LESSON DESCRIPTION

In this lesson, students will play a name game while exploring a variety of fruits and vegetables and showing whether or not they have tasted them before. As a whole group, students will discuss how to be the best for themselves, their community, and their environment in this kitchen space as they experience new things together. The teacher will guide them to cohesive language around these understandings before modeling behaviors that align with these understandings. Finally, students will enjoy a snack together while practicing these behaviors.

LEARNING OBJECTIVES

Content Learning Objectives

FP.K.1 Demonstrate ability to properly handle, wash and prepare fruits and vegetables

Life Skills Learning Objectives

PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.

PLS.2 Students are able to express empathy and caring for themselves, others, and the environment.

PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.

PLS.4 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.

PLS.5 Students develop the ability to make informed and responsible decisions.

PLS.6 Students actively seek creative and resourceful solutions.

CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.

ACADEMIC STANDARD CONNECTIONS

CCSS.ELA-LITERACY.SL.K.6 Speak audibly and express thoughts, feelings, and ideas clearly.

IGNITE INTEREST (10 MINUTES) *engage*

1. Welcome students to the kitchen and explain that we are first going to explore the wide variety of fruits and vegetables that we may have tasted before and some that we may taste together this year.
2. Read aloud *Eating the Alphabet* by Lois Elhert. As fruits and vegetables for each lesson are listed, request that students show a silent thumbs up or thumbs down to show whether they have tasted that fruit or vegetable before. Record how many students have tried each fruit or vegetable and how many have not to use as a pre-assessment for comparison at the end of the year.
3. At the conclusion of the book, explain that we are going to play a name game. Instruct students to say their name and a fruit or vegetable that begins with the same letter as their name. During the game, if they need help, they can gesture a telephone for “phone a friend” then choose one of the other students that is silently raising their hand to get ideas. If the class is stuck, they can refer back to *Eating the Alphabet*.
4. At the conclusion of the name game, express interest in students’ previous unique experiences with foods and excitement for what they will experience together in the class that year.



See “Teaching Strategies” in Appendix section for information on how to lead Think-Pair-Share.

STIR DISCOVERIES (10 MINUTES) *explore*

1. Explain to students that throughout these new experiences this year, it will be essential that each student is their best for themselves, their community, and their environment. Each student is unique and has something special to contribute and we will welcome the best in each individual to our community.
2. For each of the Essential Questions, provide 1 minute for students to think about their answers independently, 2 minutes to discuss their ideas with a partner sitting next to them (pair), before selecting a few students to share their ideas with the whole group—a process referred to as “think-pair-share”.
3. As the enduring understandings emerge from the group discussions, write them on a new sheet of chart paper for students to view. Add in anything important from the chart below that they don’t mention.

ESSENTIAL QUESTIONS	ENDURING UNDERSTANDINGS TO REITERATE DURING GROUP DISCUSSION
How can we be our best for ourselves?	Make choices that keep you safe. (for example: work with tools carefully)
How can we be our best for our community?	Show respect for each other. (for example: join the group for the callback, listen and share)
How can we be our best for our environment?	Show respect for the kitchen we share. (for example: keep areas clean and tidy)

CLARIFY NEW IDEAS (10 MINUTES) *explain*

1. Explain to students that they are going to practice learning in the kitchen in a way that keeps them safe, shows respect for each other, and shows respect for the kitchen.
2. Model for students behaviors that are examples and counterexamples of the 3 enduring understandings, asking students to show thumbs up / thumbs down if the model behaviors align with the enduring understandings.
3. Then, allow students to volunteer modeling examples and counterexamples for classmates to observe and decide if they align with the enduring understandings.

ENDURING UNDERSTANDINGS	EXAMPLES	COUNTEREXAMPLES
Make choices that keep you safe.	<ul style="list-style-type: none"> • work with tools carefully • be in control of your body 	<ul style="list-style-type: none"> • carelessly work with tools • carelessly move around the kitchen
Show respect for each other.	<ul style="list-style-type: none"> • interacting with classmates in a gentle way with our bodies and language • joining the group at the callback signal • listening with a still body and attentive eyes • sharing ideas 	<ul style="list-style-type: none"> • interacting with classmates in an aggressive way with our bodies and language • continuing to wander after the callback signal • showing active or distracted behaviors when others are sharing
Show respect for the kitchen and dining room we share.	<ul style="list-style-type: none"> • keep areas clean and tidy • discarding compost, recycling, and trash appropriately 	<ul style="list-style-type: none"> • carelessly leaving food or tools around the kitchen • carelessly discarding trash

WATCH IT RISE (10 MINUTES) *elaborate*

1. Explain to students that they will have time to practice these behaviors in their small groups through sharing a snack.
2. Explain that first they will focus on practicing the behavior of keeping themselves safe by washing their hands. Model how students will line up and each wash their hands, and then allow students to practice.
3. When students have returned to their seats, model how to move carefully through the room, pick-up a plate with the selected snack from a specific area, and carry it with 2 hands back to the table. Then, select a student from each table to follow the instructions.
4. Instruct each student to select gently and carefully a snack (reminding students to “touch one, take one”) but not to taste it yet.
5. Explain to students that once they taste their snack, they are encouraged to share their thoughts with the others at their table, showing respect for others’ thoughts (reminding students “don’t yuck someone’s yum”). Allow students to taste their snack together and practice talking about their experience.
6. As students taste and talk, acknowledge observed behaviors that align with the life skills learning objectives, such as being engaged learners and being respectful of others. Also, use the observational checklist to assess students’ current development of the life skills.
7. Model the appropriate clean-up instructions (including collecting food scraps for the compost bucket), and select a student from each table to follow the instructions.

REFLECT (5 MINUTES) *evaluate*

1. Recognize students’ behaviors that aligned with the enduring understandings that they developed together with the goal of being the best for themselves, their communities, and their environment.
2. Ask students to reflect silently on what it means to be the best for themselves, their communities, and their environment beyond the garden, perhaps in the environment they are preparing to return to in school or in their home environment.
3. Share appreciation for each of their individual contributions to the kitchen and to the community, and for their respect for the kitchen. Express excitement for your next time together.

CONNECTIONS TO GARDEN LESSONS

The essential questions explored in this lesson align directly with the essential questions explored in the **Grade K Garden Lesson #1: Welcome to the Garden**. This way of thinking can be practiced in the context of both the garden and the kitchen to make the understanding of each stronger.

POSSIBLE EXTENSIONS

Classroom: Compare group agreements for the kitchen with those students have in the classroom. How are behavior expectations similar in both places? How are they different?

ADDITIONAL RESOURCES

For more information on group management and group development of procedures and parameters, see:

- *Tools for Teaching* by Fred Jones
- *Rethinking Classroom Management* by Patricia Belvel



EAT A RAINBOW

Kitchen

EST. TIME 45 minutes SEASON fall TYPE cooking concept

GRADE K | LESSON #2

? ESSENTIAL QUESTION(S)

- What does it mean to “Eat a Rainbow”?
- Why is it important to eat a variety of colors of fruits and vegetables?



MATERIALS

- 1 piece of poster board
- Chart paper, easel, and colored markers
- Neutral-colored post-it notes (at least 2 per each student)
- Colored pencils or crayons (at least 2 boxes per each table of 10 students)
- Handout: *Color Poems* (1 copy to display as posters)

Abc VOCABULARY

- Vitamins, nutrients
- Nourish

✓ ASSESSMENT

- Observational checklist



Use the lesson template to create your own and share with us!

PREPARATION (5 MINUTES)

Gather materials and cut the poster board into 6 equal rectangles. On each rectangle, write the name of a color (red, orange, yellow, green, blue, and purple). Use a marker of that color to write the word (i.e., write “red” in red ink).

TEACHER BACKGROUND

Health guidelines recommend half of each meal be made up of fruits and vegetables. In addition, eating a variety of fruits and vegetables ensures consumption of a variety of vitamins and minerals. One strategy is to eat a rainbow of fruits and vegetables. This is particularly effective because phytonutrients, the compounds that give fruits and vegetables their unique colors, play a wide range of roles in keeping our body healthy. By eating a rainbow, we ensure that we are consuming a variety of phytonutrients to support overall health. If at your school another first or second language is commonly spoken or taught, add the names of the colors in that language to the color poems.

LESSON DESCRIPTION

Students will review the variety of fruits and vegetables they explored in **Lesson #1: Welcome to the Kitchen** and will draw them and then sort them by color to begin a collaborative art project. Students will kinesthetically model what part of the body is nourished by many fruits and vegetables of each color. Then, students will echo read a poem about colors, go on a kitchen scavenger hunt, and explore books and magazines about food to find more foods of each color to add to their collaborative art project depicting a rainbow of different fruits and vegetables.

LEARNING OBJECTIVES

Content Learning Objectives

HC.K.2 Explain what Eat a Rainbow means.

Life Skills Learning Objectives

CLS.2 Students cooperate and communicate well with each other.

ACADEMIC STANDARD CONNECTIONS

CCSS.ELA-LITERACY.L.K.5.A Sort common objects into categories (e.g. shapes, foods) to gain a sense of the concepts the categories represent.

CCSS.MATH.CONTENT.K.MD.B.3 Classify objects into given categories; count the number of objects in each category and sort the categories by count.

HEALTH STANDARD CONNECTIONS

National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

IGNITE INTEREST (5 MINUTES) *engage*

1. Remind students that, as discussed in **Lesson #1: Welcome to the Kitchen**, they each have something special to contribute to the class, and we welcome those unique qualities to our community. In the same way, each fruit and vegetable has special or unique qualities, to contribute to our experience of food or to the **nourishing** of our bodies. State that just as we need every student and their unique qualities to be our best community, we need a variety of fruits and vegetables and their unique qualities—**vitamins** and **nutrients**—to be our best selves.
2. Review student names and the fruits and vegetables they chose in **Lesson #1: Welcome to the Kitchen** (that begin with the same letter as their name). Go around the class in a circle, working together as a group to remember the students' names and the fruits or vegetables they chose. If the class is stumped on the fruit or vegetable, the student can provide clues such as color, shape, size, taste, etc.

STIR DISCOVERIES (15 MINUTES) *explore*

1. Provide each student with a neutral-colored post-it note and each table of 10 students with at least 2 boxes of colored pencils or crayons. Instruct students to first select the colored pencil or crayon that matches the color of the fruit or vegetable they chose. Then, instruct students to think about the shape of that fruit or vegetable. When they have had a chance to select their color and consider the shape, instruct students to draw their fruit or vegetable on the post-it note.



See “Teaching Strategies” in Appendix section for information on transitioning between whole and small groups effectively.

2. Distribute each of the small posters labeled with each color, placing 2 on each of the 3 tables of 10 students. Instruct students to stand from their seats, move around the classroom, and stick their post-it note drawing to the poster labeled with the matching color before returning to their seats.
3. When all students have returned to their seats, invite them to explore the color poster that’s in front of them at their table with their small group of 5. Have them name the fruits and vegetables they recognize and count the total number on their poster.

CLARIFY NEW IDEAS (5 MINUTES) *explain*

1. Explain to students that each group of fruits and vegetables are similar in color and may also have similar unique qualities that **nourish** our bodies.

Group by group, explain how each color group may nourish our bodies and model a hand motion for students to remember it by:

- **Red fruits and veggies:** help keep your heart strong.
(hands over heart)
- **Orange fruits and veggies:** help keep your eyes healthy.
(point to eyes)
- **Yellow fruits and veggies:** help keep you from getting sick.
(point to everything!)
- **Green fruits and veggies:** help make your bones and teeth strong. (point to teeth)
- **Blue and purple fruits and veggies:** help your memory.
(point to brain)

2. In conclusion, explain that if students eat a variety of fruits and vegetables (“Eat a Rainbow”), they’ll eat a variety of colors, and a variety of their body parts will be nourished from their heart, to eyes, to muscles, to teeth, to brain, and everything in between.



See “Teaching Strategies” in Appendix section for information on how to lead an echo read.

WATCH IT RISE (15 MINUTES) *elaborate*

1. Echo read the color poems (below) with students and challenge students to point to the body part that is likely nourished by that color food.
2. Provide each group with more post-it notes and challenge them to draw more fruits or vegetables that match their color (including those they heard in the poem). For inspiration, they can explore the kitchen or look through a selection of books or magazines about food. As students work together to draw their fruits and vegetables, acknowledge observed behaviors that align with the life skills learning objectives, such as cooperating and communicating well with each other. Also, use the observational checklist to assess students’ current development of the life skills.
3. When each of the individual posters are filled with post-it notes of different fruits and vegetables of that color, hang them together in rainbow order on a wall in the classroom for students to view. New fruits and vegetables can be added throughout the year as they are introduced.
4. Read to students the following prompt to complete in their journal:

Note:

Draw a square to represent a shopping bag and draw a fruit or vegetable of each color that you would want to buy from your farmers market to “eat a rainbow.”

REFLECT (5 MINUTES) *evaluate*

1. Recognize specific students’ behaviors that aligned with being the best for themselves, their communities, and their environment. Specifically, ask students to reflect on how they cooperated and communicated with each other during the activity today.
2. Review with students:
 - What does it mean to Eat a Rainbow?
 - Why is it important to eat a variety of colors of fruits and vegetables?
3. Share appreciation for each of their individual contributions to the kitchen and to the community, and for their respect for the kitchen. Express excitement for your next time together.

CONNECTIONS TO GARDEN LESSONS

Go on a rainbow scavenger hunt in the garden, looking for fruits and vegetables of every color.

POSSIBLE EXTENSIONS

Cafeteria: Go on a rainbow scavenger hunt in the cafeteria or at the salad bar, finding fruits and vegetables of every color.

ADDITIONAL RESOURCES

- Whole Kids Foundation, Eat a Rainbow
<https://www.wholekidsfoundation.org/kids-club/eat-a-rainbow/>
- American Heart Association, Eating the Rainbow
https://www.heart.org/-/media/healthy-living-files/healthy-for-life/eat-a-rainbow_english.pdf
- *I Eat a Rainbow* by Bobbie Kalman
- *Eat a Rainbow: Healthy Foods* by Susan Temple Kesselring and Tatevik Avakyan

COLOR POEMS



RED

Red is an apple.
Red is a cherry.
Red is a rose.
And a ripe strawberry.

COLOR POEMS



ORANGE

Orange is an orange,
Orange is a carrot,
Orange is the color
Of the beak of a parrot.

COLOR POEMS



YELLOW

Yellow are lemons,
pineapples and squash,
Bananas and corn,
All healthy, by gosh!

COLOR POEMS



GREEN

Bright green tomatoes
Are bitter to the tongue
But spinach and broccoli-
I eat them up, yum!

COLOR POEMS



BLUE

Blue is the ocean.
Blue is the sky.
Blue are the blueberries
I put into the pie.

COLOR POEMS



PURPLE

Purple are grapes.
Purple are flowers.
Purple is lavender
That smells good for hours.



COMPARATIVE TASTE TESTS

Kitchen

EST. TIME 45 minutes SEASON fall TYPE cooking concept

GRADE 1 | LESSON #2

? ESSENTIAL QUESTION(S)

- What words can we use to describe taste?
- What are some examples of foods that have the following tastes: sweet, bitter, sour, or salty?



MATERIALS

- Handouts / Visual Aids
- Equipment
- Ingredients

Abc VOCABULARY

- Adjectives
- Taste, texture, opinion
- Sweet, sour, salty, bitter

✓ ASSESSMENT

- Observational checklist

PREPARATION (30 MINUTES)

To prepare for this lesson, gather materials listed above and distribute foods onto plates (with student help if possible).

TEACHER BACKGROUND

While there are many words to describe food, this lesson focuses on the experience of four of the five main tastes: sweet (the presence of sugars), sour (acidity), salty (the presence of salt), bitter (sharp or pungent). The fifth taste sensation, which is not explored in this lesson, is umami (savory or meaty).

LESSON DESCRIPTION

In this lesson, students will describe fruits and vegetables they are familiar with using adjectives that describe the food's look, taste, texture, and their opinion of it. Then as a class, four of the five main tastes (sweet, bitter, sour, salty) are explored by tasting certain foods that represent each and brainstorming others that would fit. After developing a deeper understanding of these four main tasting adjectives, students will do a comparative tasting of 2 different apple varieties, describing the apple's look, taste, texture, and their opinion of each variety.



Use the lesson template to create your own and share with us!

LEARNING OBJECTIVES

Content Learning Objectives

CFT.1.1 Describe the differences between a number of same fruits or vegetables.

CFT.1.2 Name and describe taste sensations.

Life Skills Learning Objectives

CLS.4 Students appreciate and are respectful of differences and diversity in their communities.

ACADEMIC STANDARD CONNECTIONS

CCSS.ELA-LITERACY.L.1.5 With guidance and support from adults, demonstrate understanding of word relationships and nuances in word meanings.

CCSS.ELA-LITERACY.L.1.5.C Identify real-life connections between words and their use (e.g., note places at home that are cozy).



LESSON MATERIALS

Materials for Lesson Introduction

Handout

- Food Observation Tool (1 per student)

Equipment

- Index cards (1 per student)
- Colored pencils or crayons (at least 2 boxes per each table of 10 students)
- Chart paper, easel, and colored markers
- 4 sets of plates per table (10 samples on each)
- 2 sets of plates (10 slices on each)

Ingredients

- Sweet foods (i.e., banana, fig, grape)
- Bitter foods (i.e., arugula, dandelion greens)
- Sour foods (i.e., lemon, lime, grapefruit)
- Salty foods (i.e., salted beet greens, seaweed)
- Red apple (i.e., Red Delicious, Gala)
- Green apple (i.e., Granny Smith)

IGNITE INTEREST (5 MINUTES) *engage*

1. Provide each student with an index card and each table of 10 students with at least 2 boxes of colored pencils and crayons. Instruct students to draw and write their favorite fruit or vegetable.
2. Allow as many students as possible to share their favorite fruit or vegetable, along with why it is their favorite and how they would describe it to someone who has never tasted it before. Encourage students to describe its look (green), **taste** (sour), and **texture** (crispy), along with their **opinion** of it (delicious). Explain to students that all of the words they used to describe their favorite foods are called **adjectives**.


STIR DISCOVERIES (20 MINUTES) *explore*

1. Explain to students that there are five main taste sensations, and that we will explore four of them closely today.
2. Have students bring a plate of sweet foods to each table without providing any information. Ask students to taste the samples silently and to pay close attention to their tongues. After a few moments, have students share words to describe the taste. Add any new adjectives to the chart paper.

CLARIFY NEW IDEAS (20 MINUTES, TOTAL WITH THE PRIOR SECTION) *explain*

1. When the word **sweet** is mentioned, circle it on the chart paper. Repeat those steps for **bitter**, **sour**, and **salty** foods until the chart paper is full of varied adjectives and the main four tastes are circled.
2. Brainstorm with students other foods that fit the four main taste categories and write or draw them around their circle on the chart paper to be a reference for students.

WATCH IT RISE (15 MINUTES) *elaborate*

1. Explain to students that sometimes even the same food can have varieties that have a very different look, taste, or texture and therefore our opinions may be different too. This is a good reminder to be open to trying new things since you may like a variety of a certain fruit or vegetable but not another.
2. Model for students how they will taste 2 different varieties of apples (one red, one green) and guide students in completing the Food Observation Tool comparing the two.
3.  As students taste and reflect together, acknowledge observed behaviors that align with the life skills learning objectives, such as respecting the diversity in each other's opinions. Also, use the observational checklist to assess students' current development of the life skills.

Note:

Similar to the reflection prompts at the end of most lessons, this Food Observation Tool can be used to assess student understanding of content learning objectives.

REFLECT (5 MINUTES) *evaluate*

1. Recognize specific students' behaviors that aligned with being the best for themselves, their communities, and their environment. Specifically, ask students to reflect on how they appreciated and respected each other's differences of opinions in the foods the tasted.
2. Review with students:
 - What words can we use to describe taste?
 - What are some examples of foods that taste sweet, bitter, sour, and salty?
3. Share appreciation for each of their individual contributions to the kitchen and to the community, and for their respect for the kitchen. Express excitement for your next time together.

CONNECTIONS TO GARDEN LESSONS

- Use produce from the garden, if possible. Conduct the tasting in the garden, right where the crop is growing (for example, conduct an apple tasting under the apple trees).
- Bring compost out to the garden.

POSSIBLE EXTENSIONS

Classroom: Use the descriptive language on the Food Observation Tool to create poems or sentences describing the foods together.

ADDITIONAL RESOURCES







- *Yum! A Book about Taste* by Dana Meachen Rau
- *What's That Taste? All About My Senses* by Adam Bellamy
- *What is Taste?* By Jennifer Boothroyd
- *The Sense of Taste* by Mari Schuh
- Flavor 101: The Five Basic Tastes
<https://parade.com/396983/johnmcquaid/flavor-101-the-five-basic-tastes/>
- The 5 Tastes and How to Cook with Them
<https://food52.com/blog/12326-the-5-tastes-how-to-cook-with-them>
- Are There More Than Five Basic Tastes?
<http://www.npr.org/2017/01/20/510621715/are-there-more-than-five-basic-tastes>

FOOD OBSERVATION TOOL

COMPARATIVE TASTE TEST

Name of Student: _____

Name of Food: _____

LOOK	CIRCLE THE COLOR	red orange yellow green blue purple brown tan white	red orange yellow green blue purple brown tan white
	DRAW THE SHAPE		
TASTE	CIRCLE THE TASTE ADJECTIVE	sweet sour bitter salty	sweet sour bitter salty
	CIRCLE THE TEXTURE ADJECTIVE	soft chewy crispy crunchy	soft chewy crispy crunchy
	CIRCLE YOUR OPINION	  	  
ANYTHING ELSE?			



INDIAN NAAN BREAD

Kitchen

EST. TIME 45 minutes SEASON spring TYPE cooking 

GRADE 2 | LESSON #18

? ESSENTIAL QUESTION(S)

- What are some common flatbreads around the world?
- How do grains nourish our bodies?
- How is bread made?



MATERIALS

- Recipe
- Handouts/ Visual Aids
- Equipment
- Ingredients
- Tableware
- Cleaning Tools

Abc VOCABULARY

- Grains
- Flatbread
- Leavened, unleavened
- Yeast
- Naan
- Sifter

✓ ASSESSMENT

- Observational checklist

PREPARATION (30 MINUTES)

- Gather materials, equipment, and ingredients listed above.
- Pre-make six batches of dough to be used with the first class so that it can rise for about an hour before being rolled out and baked. Then the dough that the first class mixes will rise for about an hour and be used by the second class, and so forth.
- Heat water on the stovetop to 100–110 degrees F (at least ½ cup for each small group).
- Prepare and warm clarified butter (at least ½ cup for each small group).

Note:

See Recipe for **Indian Naan Bread** in Recipe Section for instructions on how to make clarified butter.

TEACHER BACKGROUND

Naan is a flatbread from India, similar to pita bread. Flatbreads are made around the world and often do not use yeast (they are “unleavened”) but in this lesson students will use yeast for a puffy naan bread.

LESSON DESCRIPTION

In this lesson, students will share what they know about bread and learn about flatbreads from around the world. Students will learn about yeast and how to properly use a sifter while making naan together in their small groups. The naan will be served as part of the school-wide Feast Around the World.



Use the lesson template to create your own and share with us!

LEARNING OBJECTIVES

Content Learning Objectives

RC.2.1 Describe how traditional foods and recipes function in social contexts of families and communities, and cultural traditions and celebrations.

KTE.2.1 Use tools introduced in previous grades independently.

KTE.2.2 Name, identify, locate, and safely use new tools (sifters).

KTE.2.3 List tools in recipes.

KTE.2.4 Select the correct tool to perform and complete a task with minimal instructor input.

KTE.2.5 Explain the reason for selecting a tool for a task.

Life Skills Learning Objectives

CLS.2 Students cooperate and communicate well with each other.

CLS.3 Students understand and apply principles of fairness, equity, and democracy in the garden and kitchen environments.

ACADEMIC CONTENT STANDARD CONNECTIONS

CCSS.MATH.CONTENT.2.MD.A.1

Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

Social Studies: Diversity and Culture.

Social Studies: Geography.

HEALTH STANDARD CONNECTIONS

National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.



LESSON MATERIALS

Materials for Lesson Introduction**Handouts**

- Indian Naan Bread, There's a Chef in My World!** (recipe, 1 copy per small group)
- Flatbread Image Flashcards
- Tool Card (1 per small group)

Equipment

For Each Small Group (of about 5 students):

- 1 set of measuring cups
- 1 set of measuring spoons
- 1 glass measuring cup
- 1 spoon
- 1 sifter
- 5 small bowls for ingredients
- 1 large mixing bowl
- 1 small mixing bowl
- 1 roll of plastic wrap
- 1 large baking sheet
- 1 paper towel (for greasing baking sheet)
- 1 rolling pin
- 2 oven mitts

For Whole Class:

- 1 instant-read thermometer
- Kettle or saucepan (to warm water)
- Oven
- Oven timer

Ingredients

For Each Small Group (of about 5 students):

- 1 teaspoon active dry yeast
- ½ teaspoon sugar
- ½ cup of warm water (100-110 degrees F on instant-read thermometer)
- 1 ¼ cups all-purpose flour (for dough)
- ¼ cup all-purpose flour (for kneading dough)
- ½ teaspoon salt
- ¼ cup of warm clarified butter (for dough)
- 1 teaspoon of clarified butter (for oil)
- 1 small tab of butter for (greasing baking sheet)

Materials for Enjoying or Storing the Food

- Air-tight plastic bag

Materials for Cleaning Up

- Dish soap
- Scrubber (for dishes)
- Drying rack
- Kitchen towels
- Sponge (for counters)
- Broom and dustpan

PREPARE TO COOK (5 MIN)

Have students tie hair back, wash hands, put on aprons (if relevant) and take their seats.

RECIPE INTRODUCTION (5 MINUTES)

1. Explain to students that they will be baking bread and review the main ingredients to make dough for the bread: flour and water. Then, introduce the concept of flavor enhancers and explain how salt and butter, which is a fat, can be used to enhance flavor. Next, explain how leavening agents are added to dough to make it rise. Leavening agents create gas which gets trapped in the dough to form tiny bubbles. When the dough is heated in the oven, the tiny gas bubbles rise like hot air balloons and make the “bread rise”. One leavening agent is called yeast. **Yeast** is a tiny living fungus (like mushrooms!) that likes to eat sugar. When yeast eats sugar, it releases carbon dioxide (humans release carbon dioxide when they breathe out or exhale).
2. Remind students that **grains** nourish our bodies by providing energy in the form of carbohydrates. It is recommended that grains make up a quarter of your plate for each meal.
3. Explain to students that they will be making a certain type of bread called a **flatbread**. Many flatbreads are **unleavened**, meaning they do not use yeast (however, the recipe used today will include yeast).
4. Show students images of flatbreads from around the world using the flatbread flashcards.
5. Explain to students that today they will be making **naan**, a flatbread from India.

FLATBREAD	COUNTRY OF ORIGIN
Focaccia	Italy
Lavash	Armenia
Pita Bread	Greece
Roti	Pakistan
Chipati	India
Arepa	Columbia
Tortilla	Mexico
Naan	India



See “Teaching Strategies” in Appendix section for more information on helping students divide up tasks effectively.

REVIEW FAMILIAR SKILLS (7 MINUTES)

1. Model for students where to find and how to collect the tools their group will need, listed on their tool card. Have students work as a team to retrieve all tools and bring them back to their cooking station.

- 1 set of measuring cups
- 1 set of measuring spoons
- 1 spoon
- 1 sifter
- 5 small bowls for ingredients
- 1 large mixing bowl
- 1 small mixing bowl
- 1 roll of plastic wrap
- 1 large baking sheet
- 1 rolling pin

2. Model for students where to find and how to measure each of the ingredients to place in small bowls at their cooking stations.

- 1 teaspoon active dry yeast
- ½ teaspoon sugar
- ½ cup of warm water (100–110 degrees F on instant read thermometer)
- 1 ¼ cups all-purpose flour (for dough)
- ¼ cup all-purpose flour (for kneading dough)
- ½ teaspoon salt
- ¼ cup of warm clarified butter (for dough)
- 1 teaspoon of clarified butter (for oil)

Have students work as a team to measure all ingredients and bring them back to their cooking station. When all of the groups have collected their ingredients, ingredients should be put back away where they are stored.

3. Introduce the idea of “mise en place” to the teams. It refers to the setup required before cooking, and is often used in kitchens to refer to organizing and arranging the ingredients that a cook will need to complete the menu. Provide time for small groups to create their “mise en place” at their cooking station to be prepared to move forward with directions.



(MEEZ ahn plahs) is a French culinary phrase which means “putting in place” or “everything in its place.”

Note:

While the teams are working, scoop ½ cup of warm water from the stovetop (100–110 degrees F) into glass measuring cups and deliver to each small group.

DEMONSTRATE NEW TOOLS AND SKILLS (5 MINUTES)

1. Review with students how the naan will use yeast to rise. The carbon dioxide released by yeast causes the dough to expand as the gas forms pockets or bubbles. When the dough is baked, the yeast dies and the air pockets “set,” giving the baked product a soft and spongy texture.
2. Model for students how to combine the yeast and sugar, then add the warm water and stir well. Explain to students that they will then let the mixture rest until it’s foamy, for about 5–10 minutes. Provide students with time in their small groups to divide then execute tasks before returning their attention back to the whole group.
3. Explain to students that a **sifter** is a tool used to separate and break up clumps in dry ingredients such as flour, as well as to mix ingredients and mix in air.
4. Model for students how to sift together the flour and salt into the large mixing bowl. Provide students with time in their small groups to divide then execute tasks before returning their attention back to the whole group.


DIVVY UP TASKS (10 MINUTES)

1. Model for students how to make a well in the center of the flour with clean hands and pour the yeast mixture and $\frac{1}{4}$ cup of clarified butter into the center. Demonstrate how to mix together with your fingers until a smooth dough forms that is slightly sticky (add a small amount of extra flour, if needed).
2. Model for students how to lightly flour their surface before transferring the dough to knead for about 3 minutes.
3. Model for students how to oil a small mixing bowl with the remaining 1 teaspoon of clarified butter. Then place the dough in the bowl and turn to coat. Lastly, cover the bowl with plastic wrap and put it aside for it to rise. Explain to students that the dough they created will almost double in size and will be ready for the next class to bake.

Note:

Provide students time in their small groups after each step in DIVVY UP TASKS to divide and then execute tasks before returning their attention back to the whole group.

COOK! (8 MINUTES)


1. Explain to students that the last class (or you) made the dough for them to bake and it has been rising for about an hour. It should be about double the size of the dough they set aside.
2. Show students how to position the rack in the center of the oven and preheat the oven to 400 degrees F. Then, model for students how to lightly grease a large baking sheet using butter and a paper towel. Model for students how to divide the dough into 6 equal pieces, transfer it to their lightly floured work surface, and gently roll them with a lightly floured rolling pin until they are in a circle of about 5 or 6 inches diameter. Lastly, model for students how to transfer the dough circles to the prepared baking sheet. Provide students with time in their small groups to divide then execute tasks before returning their attention back to the whole group.
-  3. As students work in their small groups, remember to use the cooking and cleaning observational checklist to assess students' mastery of cooking skills.
4. When all of the dough circles are placed on the prepared baking sheet, carefully put the baking sheets in the oven, and set the timer for 12 minutes for their first check (it may take up to 15 minutes to bake).

CLEAN UP (5 MINUTES)

1. As the naan is in the oven, model clean up tasks for students, such as washing dishes, wiping cooking stations, sweeping the floor around the cooking station, etc. Demonstrate specifically how to clean new tools, such as the sifters. Also, model for students how to prepare the naan for storage when it comes out of the oven. Provide students with time in their small groups to divide then execute tasks before returning their attention back to the whole group.

Note:

As soon as naan cools, store in the refrigerator for up to 3 days in airtight plastic bag so that it doesn't have time to dry out. Reheat in foil pouches over open flame or reheat in oven at 350 degrees F for 10 to 12 minutes.

-  2. As students work in their small groups, remember to use the cooking and cleaning observational checklist to assess students' mastery of cleaning skills.

ENJOY!

Remove naan from oven, cool and store to enjoy with Vegetable Curry at the Feast Around the World.

REFLECT (5 MINUTES)

1. Recognize specific students' behaviors that aligned with being the best for themselves, their communities, and their environment. Specifically, ask students to reflect on how they showed cooperation and how they communicated in their small groups.
2. Review the essential question, "How is Bread Made?" by providing partner groups with this list of nouns to include in a description of the process.

- yeast
- sugar
- water
- salt
- flour
- butter
- rolling pin
- sifter
- baking sheet
- oven

Ask students to list the verbs they used in their description.

CONNECTIONS TO GARDEN LESSONS

Offer fresh herbs from the garden as an optional garnish on the side, particularly if you grew any herbs common in India in your Herbs of the World bed. Bring compost out to the garden. Serve the final feast out in the garden.

POSSIBLE EXTENSIONS

Community: Ask students if they have family members from India. If so, invite them in to share a favorite recipe from the region.

ADDITIONAL RESOURCES

- *The River Cottage Bread Handbook* by Daniel Stevens
- *The Hot Bread Kitchen Cookbook: Artisanal Baking from Around the World* by Jessamyn Waldman Rodriguez and Julia Turshen

FLATBREAD FLASHCARDS

FRONT



FOCCACIA



ITALY 

BACK

FLATBREAD FLASHCARDS

FRONT



LAVASH

ARMENIA 



BACK

FLATBREAD FLASHCARDS

FRONT



PITA BREAD

GREECE 



BACK

FLATBREAD FLASHCARDS

FRONT



BACK

FLATBREAD FLASHCARDS

FRONT



CHIPATI

INDIA 



BACK

FLATBREAD FLASHCARDS

FRONT



AREPA

COLUMBIA 



BACK

FLATBREAD FLASHCARDS

FRONT



BACK

FLATBREAD FLASHCARDS

FRONT



NAAN

INDIA 



BACK

TOOL CARD



set of measuring cups



set of measuring spoons



spoon



sifter



small bowls for ingredients



large mixing bowl



small mixing bowl



roll of plastic wrap



large baking sheet



rolling pin



GETTING STARTED WITH PARING KNIVES

Kitchen

EST. TIME 45 minutes SEASON fall TYPE cooking

GRADE 3 | LESSON #3

? ESSENTIAL QUESTION(S)

- How are tools used to make tasks easier?
- How can we be mindful with our bodies and energy level to keep ourselves safe when using tools?



MATERIALS

- Handouts / Visual Aids
- Equipment
- Ingredients
- Tableware
- Cleaning Tools

Abc VOCABULARY

- Knife
- Wedge
- Tip, edge, handle
- Slice (verb), slice (noun)

✓ ASSESSMENT

- Observational checklist



Use the lesson template to create your own and share with us!

PREPARATION (15 MINUTES)

- Gather materials, equipment, and ingredients listed above.
- Peel each banana and cut it in half lengthwise to create a flat surface.

TEACHER BACKGROUND

While cooking can be a highly engaging and educational activity, it can also be dangerous. This is particularly true when using kitchen knives. Nonetheless, by effectively establishing procedures at the outset and sufficiently supervising students, students can safely use kitchen knives to participate in a wide variety of food preparation activities. When students are using knives, particularly for the first time, we recommend having them work in groups of 10 or fewer with 1 or more adults. You can do this by running a cutting station while other students work independently on a separate project, or by inviting other adult volunteers to supervise small groups.

Note:

The appropriate grade level to introduce knives and knife safety is at the discretion of the school and its instructors. Schools should always inform parents when students will be handling knives in class, especially for the first time.

LESSON DESCRIPTION

In this lesson, students will explore tools that are used for different tasks including those they have used in the garden and the kitchen. They will then learn about knives—their different parts and how they function as simple machines. Then, the techniques of “claw and slaw” and “low and slow” will be modeled by the teacher before the students utilize knives to slice a banana to eat as a snack.

LEARNING OBJECTIVES

Content Learning Objectives

RC.3.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.

KTE.3.1 Use tools introduced in previous grades independently.

KTE.3.2 Name, identify, locate and safely use new tools (paring knife).

KTE.3.3 Explain form and function of new tools/equipment (paring knife).

KTE.3.4 Select the correct tool to perform and complete a task with minimal instructor input.

Life Skills Learning Objectives

CLS.2 Students cooperate and communicate well with each other.

ACADEMIC CONTENT STANDARD CONNECTIONS

NGSS Crosscutting Concept: Structure and Function

HEALTH STANDARD CONNECTIONS

National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks



LESSON MATERIALS

Materials for Lesson Introduction

Visual Aids

- The Tool Book*
by Gail Gibbons

Equipment

- Cutting boards
(1 per student)
- Paring knives
(1 per student)
- Small bucket to hold
clean knives
(1 per cook station)
- Small bucket to hold
dirty knives
(1 per cook station)

Ingredients

- Bananas
(1 for every 2 students)

Materials for Enjoying or Storing the Food

- Presentation plate
(1 for every
2 students)

Materials for Cleaning Up

- Dish soap
- Scrubber
(for dishes)
- Drying rack
- Kitchen towels
- Sponge
(for counters)
- Broom and
dustpan

PREPARE TO COOK (5 MIN)

Have students tie hair back, wash hands, put on aprons (if relevant) and take their seats.

RECIPE INTRODUCTION (5 MINUTES)

Read aloud *The Tool Book* by Gail Gibbons, noticing tools that different professionals use to help them complete their tasks.

REVIEW FAMILIAR SKILLS (7 MINUTES)

1. Ask students what tools they have used so far in the garden and write a list on a piece of chart paper or on the board.
2. Ask students what tools they have used so far in the kitchen and write a list on a different piece of chart paper in one color.
3. Then ask students what other tools they can think of that chefs use and add that to the chart paper or board in a different color. If no one mentions knives, add knives to the list.

DEMONSTRATE NEW TOOLS AND SKILLS (5 MINUTES)

1. Explain that a **knife** is a useful tool in the kitchen for cutting. The knife itself is a **wedge**, which is a type of simple machine. When a wedge is placed on an object and force is applied, the wedge drives the object apart into 2.
2. Reiterate to students that to use tools, it is important to understand how they work and how to use them safely, particularly if the tools are sharp and could be dangerous, like knives. Explain to students that using knives is a privilege, and if anyone is playing with them or not being safe, that privilege will be taken away in order to keep everyone safe.
3. Show students one of the knives that they will be using and draw a model of it on chart paper. Identify the parts (structures) and label on the model.
 - **tip**
 - **edge**
 - **handle**

Explain that the only part of the knife that students will touch is the handle. It may be useful to wrap the handle in a certain color electrical tape as a visual cue.



See "Best Practices and Guidelines" in the Getting Started section for information on how to practice safety first in any kitchen.

DIVVY UP TASKS (5 MINUTES)

1. Make sure knives are out of reach of students while you introduce and discuss them. Demonstrate how to pick up and hold a knife properly, then return it to its “home base” (the cutting board). Model for students—does the knife go on the counter? on the floor? on your notebook? on a friend? on your lap? (No, only on the cutting board). The only other place it will go is in the cleaning bucket when students are completely finished with their task.
2. Also, demonstrate how their other hand will be holding their fruit or vegetable like a “claw” with their fingers tucked. Students can remember these 2 cues by the phrase “claw and saw.” Another helpful phrase to encourage a safe motion with the knife is “low and slow.” Students may have seen cooking shows where chefs use a fast chop but remind students that in our class we will be using a “claw and saw” and will be doing it “low and slow.”
3. Request that one student per each group of 10 retrieve cutting boards for all of the students at their table. When everyone has returned to their seats, deliver a bucket of knives to each table.
4. Demonstrate for students how to slice their banana approximately every ½ inch. Introduce the vocabulary **slice** which is a specific way to cut something (can be used as either a verb or a noun to describe the result of this cut). On your cue, provide time for students to slice their bananas and then carefully place their knives in the bucket when they are finished.

COOK! (5 MINUTES)



1. As students are slicing their bananas, remember to use the cooking and cleaning observational checklist to assess students’ mastery of cooking skills.
2. Pick up the buckets of dirty knives from each table and place by the sink, explaining to students that the teacher will clean them and that they should not touch them.

ENJOY! (5 MINUTES)

1. Demonstrate for students where to choose a plate for the presentation of their banana slices and provide time for a student in each partner group to retrieve a plate to bring back to the table.
2. Provide students with time to arrange their half-circle banana slices in any way that they feel is beautiful on their plate.
3. On your cue, allow students to enjoy their bananas with their group. Provide groups with conversation prompts to practice conversation skills while they snack. Prompts could include:
 - What profession might you want to pursue?
 - What tools might you use in that profession?

CLEAN UP (5 MINUTES)

1. Provide students with time in their small groups to divide then execute tasks before returning their attention back to the whole group.
2. As students work in their small groups, remember to use the cooking and cleaning observational checklist to assess students' mastery of cleaning skills.

REFLECT (5 MINUTES)

1. Recognize specific students' behaviors that aligned with being the best for themselves, their communities, and their environment. Specifically, ask students to reflect on how they showed cooperation and how they communicated in their small groups.
2. Review with students:
 - How are tools used to make tasks easier?
 - How can we be mindful with our bodies and energy level to keep ourselves safe when using tools?

CONNECTIONS TO GARDEN LESSONS

Compare guidelines for safe knife use with guidelines for safe garden tool use.

POSSIBLE EXTENSIONS

Cafeteria: Invite in your food service director to discuss and demonstrate knife safety.

Community: Invite in a local chef to discuss and demonstrate knife safety.

Classroom: Make the connection between structures and functions of the knife parts (i.e., an edge to cut, a handle to hold) with other examples of structure and function, such as structures of a seed or insect.

ADDITIONAL RESOURCES

- The Parts of a Kitchen Knife:
<http://www.knifeplanet.net/the-parts-of-kitchen-knife/>



SWEET AND SPICY PICKLES

Kitchen

EST. TIME 45 minutes SEASON fall TYPE cooking 

GRADE 4 | LESSON #4

? ESSENTIAL QUESTION(S)

- How are pickles made?
- Why was preserving food important in the past and why is it important today?



MATERIALS

- Recipe
- Handouts / Visual Aids
- Equipment
- Ingredients
- Tableware
- Cleaning Tools

Abc VOCABULARY

- Preserves, preserving
- Pickles
- Brine

✓ ASSESSMENT

- Observational checklist

PREPARATION (30 MINUTES)

- Gather materials, equipment, and ingredients listed above.
- Learn how to preserve foods safely if this is a new skill for you. Safety is critical in canning foods. [The National Center for Home Food Preservation](#) provides great online resources.
- Pre-make 3 bowls of cucumber, onion, and pickling salt mixture to be used with the first class so that it can soak for at least 2 hours before being pickled. The pickling veggies that the first class prepares will soak for about an hour and then be used by the second class, and so forth.
- Sterilize jars.
- Fill a large pot (for canning) with water.
- Recruit adult volunteers to support each table group in using the stoves.

TEACHER BACKGROUND

Pickling is a process of preserving or expanding the lifespan of food by either fermentation in brine or immersion in vinegar. Pickling can preserve perishable foods for months. Antimicrobial herbs and spices, such as mustard seed, garlic, cinnamon, or cloves, are often added to pickled products.

LESSON DESCRIPTION

In this lesson, students will read a narrative article about the history, purpose, and culture around preserving foods. Then they will work together in their table groups to prepare jars of pickles. Because pickles need to sit in brine for at least 2 hours, this lesson requires a set of pickles to be prepared ahead of time for the first class. The following classes can use the pickles prepared by the class that preceded them.



Use the lesson template to create your own and share with us!

LEARNING OBJECTIVES

Content Learning Objectives

CFT.4.2 Create basic flavor combinations using international cuisines.

FP.4.2 Describe and perform food preservation processes such as drying, freezing, pickling.

RC.4.2 Demonstrate the ability to follow recipe instructions with increased independence.

KTE.4.1 Use tools introduced in previous grades independently.

KTE.4.2 Name, identify, locate, and safely use new tools.

KTE.4.3 Demonstrate proper care and storage of tools/equipment.

KTE.4.4 Practice various tool techniques with increasing independence.

Life Skills Learning Objectives

PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.

ACADEMIC CONTENT STANDARD CONNECTIONS

CCSS.ELA-LITERACY.RI.4.3

Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

HEALTH STANDARD CONNECTIONS

National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.



LESSON MATERIALS

**Materials for
Lesson Introduction****Handouts**

- Emeril's Homemade Sweet and Spicy Pickles**, *Emerils.com* (recipe, 1 copy per small group)
- Brine Group Tool Cards (1 per cooking station)
- Brine Group Instruction Cards (1 per cooking station)
- Veggie Group Tool Cards (1 per cooking station)
- Veggie Group Instruction Cards (1 per cooking station)

Equipment*For Each Group of 10:*

- 5 cutting boards
- 1 large, non-reactive bowl
- 5 knives
- 2 small buckets
- 1 set of measuring spoons
- 1 set of measuring cups
- 1 small bowl
- 1 medium saucepan
- 1 roll of plastic wrap
- 1 gallon plastic, re-sealable bag
- 1 glass measuring cup
- 1 colander
- 4 pint jars, with lids and metal rings
- 1 ladle
- 2 towels
- 1 large canning pot
- 1 pair of canning tongs
- Adhesive labels (2 per student)
- 1 set of markers (for decorating labels)

For Whole Class:

- Stovetop

Ingredients*For Each Group of 10:*

- 3 cups white vinegar
 - 1 ½ cups apple cider vinegar
 - 3 ½ cups sugar
 - 2 tablespoons yellow mustard seeds
 - ½ teaspoons turmeric
 - 4 whole cloves
 - 24 dried cayenne peppers
 - ½ cup of pickling salt
- Check the Garden for:**
- 6 medium cucumbers, sliced into ¼ inch thick slices
 - 2 medium onions, sliced
 - 30 cloves of garlic, roughly chopped

**Materials for
Cleaning Up**

- Dish soap
- Scrubber (for dishes)
- Drying rack
- Kitchen towels
- Sponge (for counters)
- Broom and dustpan

PREPARE TO COOK (5 MIN)

Have students tie hair back, wash hands, put on aprons (if relevant) and take their seats.

RECIPE INTRODUCTION (5 MINUTES)

Briefly introduce the purpose, history, and cultural significance of **preserving** food (see Additional Resources below for more information). Have students share examples of preserved foods that they enjoy (pickles, jams, etc).

REVIEW FAMILIAR SKILLS (7 MINUTES)

1. Divide each table into 2 equal groups of students (Each table should have no more than 10 students). Explain to students that they will work together to make **pickles**—one group will be slicing the vegetables and the other will be measuring the ingredients for the **brine**, which is what we commonly think of as the “pickle juice.” Each group will be observing the other group at their table to learn the full method for the recipe.
2. Have students work as a team to locate and bring the tools listed on the group tool cards back to their cooking station. When students have returned to their seats, deliver knife buckets to tables.
3. Model for students where to gather and how to prepare each of the ingredients.
 - **Veggie Group:** Remind students to wash their cucumbers before they begin. Model how to slice cucumbers into $\frac{1}{4}$ -inch thick slices, how to slice the onions, and how to roughly chop the garlic. Request that they leave their veggies on their cutting boards when they are done.
 - **Brine Group:** Request that they measure and pour all of their ingredients into the medium saucepan except for the $\frac{1}{2}$ cup of pickling salt, which should be placed in their small bowl. Remind students to return their ingredients to where they are stored after they have measured what they need.

DIVVY UP TASKS (10 MINUTES)

1. Have students divide and execute the tasks within their groups. Once complete, have students return their attention to the whole group.
2. Ask the veggie group and the brine group at each table to trade the 30 cloves of garlic for the ½ cup of pickling salt. Ask the brine group to add the garlic to their saucepan. Model for the veggie group how to place the cucumbers, onions, and pickling salt in their large, non-reactive bowl and pour 6 cups of water over them before covering.
3. Explain that these will soak for 2 hours and be ready for the next class that day. Explain to students that the class before them that day sliced and soaked the vegetables they'll be using. Using a colander, model for students how to drain the water from the onions and cucumbers, and rinse them well for 5 minutes. Have students work as a team to drain and rinse the veggies for their table.

DEMONSTRATE NEW TOOLS AND SKILLS (15 MINUTES)

1. Demonstrate for students how to heat the brine over high heat on the stove. When it boils, the heat should be reduced to medium. Review with students the idea that heat is always changing and specifically demonstrate what a **boil** and **simmer** look like. Have students bring their brine to a simmer.
2. Demonstrate for students how to safely add some cucumbers and onions without splashing. Have students bring pickle mixture to a simmer, then remove from heat.
3. Demonstrate for students how to fill each of the hot sterilized pint-size preserving jars with the pickle mixture, adding enough of the liquid to come within 1/2-inch of the top. Show students how to wipe the rim with a clean damp towel and fit each jar with a hot lid before screwing on the metal ring just until the point of resistance is met. Have students carefully follow this step.
4. Demonstrate for students **how to process the jars safely and properly** in a hot-water bath. You will start this process with students, but finish it after they have left class.
5. When jars are processed, use tongs to remove the jars, place on a towel, and let cool.
6. Allow the jars to stand at room temperature overnight or until the lids pop. Then tighten the rings and store in a cool dry place. Let the pickles age for at least 2 weeks before eating.


COOK!

After each mini-demonstration above, have students complete the task (i.e., bring to a simmer, add cucumbers, etc.) at their tables, with the help of an adult.

Note:

Enjoy pickles together at least 2 weeks after preparing them. When you eat them, note the flavor combination (sweet and spicy) and brainstorm other foods that use a similar combination, such as mango with chili powder, barbecue sauce, and the like.

CLEAN UP (5 MINUTES)

1. Engage students in their clean up tasks: washing dishes, wiping cooking station, sweeping floor around cooking station, placing cucumber scraps in the compost, etc. Provide a gallon re-sealable plastic bag for tables to save their onion and garlic peels to place in the freezer for a vegetable stock in the winter. Provide students with time in their small groups to divide then execute tasks before returning their attention back to the whole group.
2.  As students work in their small groups, use the cooking and cleaning observational checklist to assess students' mastery of cleaning skills.

REFLECT (5 MINUTES)

1. While jars are processing, recognize specific students' behaviors that aligned with being the best for themselves, their communities, and their environment. Specifically, ask students to reflect on how they showed cooperation and how they communicated in their small groups.
2. Either in class or for homework, review the essential question, "How are pickles made?" by providing students with this list of nouns to include in a description of the process.

cucumbers	onions	garlic	vinegar	sugar
salt	jar	lid	ring	tongs

Ask students to list the verbs they used in their description.

3. Review the essential question, "Why was preserving food important in the past and why is it important today?"

CONNECTIONS TO GARDEN LESSONS

Use cucumbers, onions, and garlic, from your garden. Bring compost out to the garden.

POSSIBLE EXTENSIONS

Community: Make jars of pickles as gifts for loved ones.

BAM! Box Activity: Bring home a jar of pickles and come up with a fun way to enjoy them, such as on crackers or sandwiches. Take photos and share your pickle ideas with the class.

ADDITIONAL RESOURCES

- Williams Sonoma Pickle Guide
<https://www.williams-sonoma.com/pages/basics-of-pickling.html>
- Globalization: A Pickle's Tale
<https://www.theatlantic.com/international/archive/2016/10/globalization-a-pickles-tale/501398/>
- Artisanal Pickle Makers
<http://www.nytimes.com/2012/02/19/magazine/adam-davidson-craft-business.html>
- *101 Things to Do with a Pickle* by Eliza Cross
- *The Joy of Pickling* by Linda Ziedrich
- *Asian Pickles* by Karen Solomon

TOOLS AND INGREDIENTS CARDS

SWEET AND SPICY PICKLES	
VEGGIE GROUP—TOOLS	VEGGIE GROUP—INGREDIENTS
<ul style="list-style-type: none"> • 5 cutting boards • 1 large, non-reactive bowl • 1 glass measuring cup 	<ul style="list-style-type: none"> • 6 medium cucumbers, sliced into ¼ inch thick slices • 2 medium onions, sliced
	<ul style="list-style-type: none"> • 30 cloves of garlic, roughly chopped

FRONT

BACK

TOOLS AND INGREDIENTS CARDS

SWEET AND SPICY PICKLES	
BRINE GROUP—TOOLS	BRINE GROUP—INGREDIENTS
<ul style="list-style-type: none"> • 1 set of measuring spoons • 1 set of measuring cups • 1 small bowl • 1 medium saucepan 	<ul style="list-style-type: none"> • 3 cups white vinegar • 1 ½ cups apple cider vinegar • 3 ½ cups sugar • 2 Tbsp yellow mustard seeds • ½ tsp tumeric • 4 whole cloves • 24 dried cayenne peppers
	<ul style="list-style-type: none"> • ½ cup of pickling salt

FRONT

BACK



FIESTA QUESADILLAS

WITH SIMPLE SALSA AND HOLY MOLY GUACAMOLE

Kitchen

EST. TIME 45 minutes SEASON fall TYPE cooking 

GRADE 5 | LESSON #5

? ESSENTIAL QUESTION(S)

- How are quesadillas made?
- How are salsa and guacamole made?



MATERIALS

- Recipe
- Handouts / Visual Aids
- Equipment
- Ingredients
- Tableware
- Cleaning Tools

Abc VOCABULARY

- Quesadilla
- Salsa
- Guacamole

✓ ASSESSMENT

- Observational checklist
- Student Journals



Use the lesson template to create your own and share with us!

PREPARATION (30 MINUTES)

- Gather materials, equipment, and ingredients listed in the lesson material sheet on page 3.
- Chop and sauté a variety of seasonal vegetables, including at least 1 onion.
- Divide the sautéed vegetables, the chopped onion, and the grated cheeses each into 3 bowls (1 bowl of each for each table).
- Recruit an adult volunteer to heat quesadillas or to support a student volunteer in heating quesadillas.

Note:

If schedule allows, have students assist with harvesting and chopping vegetables and/or grating the cheese in preparation for assembling the quesadillas.

TEACHER BACKGROUND

In the central and southern regions of Mexico, a quesadilla is a tortilla, warmed and typically filled with cheese. The quesadilla is then cooked until the cheese has completely melted. It is cooked without the addition of oil. Often quesadillas are served with green or red salsa, chopped onion, and guacamole. They can also include cooked vegetables, such as potatoes or mushrooms, or different types of cooked meat, such as chicken, beef, or pork. In some places, quesadillas are topped with ingredients such as avocado or guacamole, chopped onion, tomato, serrano chiles, and cilantro. Salsas may also be added as a topping.

LESSON DESCRIPTION

In this lesson, students will learn to assemble quesadillas featuring seasonal sautéed vegetables. While the quesadillas are cooking, students will prepare salsa and guacamole. At the end of class, everyone will enjoy the quesadillas with the salsa and guacamole together.

LEARNING OBJECTIVES

Content Learning Objectives

HC.5.3 Describe the benefits of a nutrient rich diet.

RC.5.2 Demonstrate knowledge of basic recipe techniques using kitchen tools and equipment.

KTE.5.1 Use tools introduced in previous grades independently.

KTE.5.2 Name, identify, locate and safely use new tools.

KTE.5.3 Select the correct tool and explain the reason for selecting the tool.

KTE.5.4 Practice tool skills with increasing independence

Life Skills Learning Objectives

PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.

ACADEMIC STANDARD CONNECTIONS

CCSS.ELA-LITERACY.W.5.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

HEALTH STANDARD CONNECTIONS

National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.



LESSON MATERIALS

Materials for Lesson Introduction

- Fiesta Quesadillas with Simple Salsa and Holy Moly Guacamole,** *There's a Chef in My World* (recipe, 1 copy per small group)
- The Tortilla Factory* by Gary Paulson
- Simple Salsa,** *There's a Chef in My World* (recipe, 1 copy per small group)

Equipment*For Each Group of 10:***For Quesadillas**

- 3 medium bowls (1 for each veggies, onions, cheese)
- 3 serving spoons (1 for each veggies, onions, cheese)
- 1 platter (or tray, baking sheet)

For Guacamole and Salsa

- Cutting boards (1 for each student)
- Knives (1 for each student)
- 1 small bucket for clean knives
- 1 small bucket for dirty knives
- 2 medium bowls
- 2 serving spoons
- 2 forks
- 2 sets of measuring spoons

For Whole Class:

- Stovetop
- Medium skillet (at least 1)
- Olive oil

Ingredients**For Quesadillas**

- Seasonal veggies (from garden, if possible), chopped, sautéed
- 1 onion, chopped
- 16 oz of Monterey jack cheese, grated
- 16 oz of cheddar cheese, grated
- 24, 6-inch tortillas

For Guacamole and Salsa

- 6 medium tomatoes
- 3 avocados
- 3 limes
- 1 onion, quartered
- 1 green bell pepper, quartered
- 6 garlic cloves
- 3 teaspoons of salt
- 2 teaspoon of hot pepper sauce

Check the Garden for:

- Seasonal veggies

Materials for Enjoying the Food

- 6 platters
- Napkins

Materials for Cleaning Up

- Dish soap
- Scrubber (for dishes)
- Drying rack
- Kitchen towels
- Sponge (for counters)
- Broom and dustpan

PREPARE TO COOK (5 MINUTES)

Have students tie hair back, wash hands, put on aprons (if relevant) and take their seats.

RECIPE INTRODUCTION (5 MINUTES)

1. Read *The Tortilla Factory* by Gary Paulson to review the cycle from seed to plant to tortilla.
2. Explain to students in the central and southern regions of Mexico, a quesadilla is a tortilla, warmed and typically filled with cheese. The quesadilla is then cooked until the cheese has completely melted. It is usually cooked without the addition of oil. Often quesadillas are served with green or red salsa, chopped onion, and guacamole. They can also include cooked vegetables, such as potatoes or mushrooms, or different types of cooked meat, such as chicken, beef, or pork. In some places, quesadillas are topped with ingredients such as avocado or guacamole, chopped onion, tomato, serrano chiles, and cilantro. Salsas may also be added as a topping.

REVIEW FAMILIAR SKILLS (5 MINUTES)

1. Explain to students they will be making Fiesta Quesadillas with Simple Salsa and Holy Moly Guacamole and their first task will be assembling **quesadillas**.
2. Provide each table of 10 students with a bowl of sautéed vegetables, a bowl of chopped onions, and a bowl of grated cheese (each with a serving spoon). Also, provide each table with a platter and 8 (6-inch) tortillas.
3. Review safe food handling practices and knife skills with students.

DEMONSTRATE NEW TOOLS AND SKILLS (5 MINUTES)

1. Model for students how to assemble quesadillas by layering cheese, onions, and vegetables on a tortilla before layering another tortilla on top. Request that students arrange assembled quesadillas on the platter and when all are complete, deliver to the stove. Have students work as a team to assemble 4 quesadillas and carefully deliver the quesadillas from their table to the counter by the stove to be heated on the stove by an adult or by a student volunteer with the help of an adult.

DIVVY UP TASKS (10 MINUTES)

1. Explain to students they will now be making the Simple Salsa and Holy Guacamole to go with the quesadillas. **Salsa** simply means “sauce” in Spanish, and **guacamole** is an avocado dip. Divide each table group into 2 smaller groups of 5, one that will work on the **salsa** and one that will work on the **guacamole**.
2. Model for students where to find and how to collect the tools their group will need: cutting boards, bowls, forks, sets of measuring spoons. Have students work as a team to retrieve all tools and bring them back to their cooking station. When students have returned to their seats, deliver knives to their tables and place in their buckets again.
3. Model for students where to find and how to measure or chop each of the ingredients listed on their recipe. Have students work as a team to retrieve and prepare all ingredients as listed in their recipes. Challenge students to consider the different food groups and how each of these ingredients nourishes their bodies.
4. When students have their bowl of salsa and bowl of guacamole prepared, pick up buckets of knives.


COOK! (10 MINUTES)

1. As they’re working, call up a student at a time to flip a quesadilla, with help from an adult.


ENJOY! (5 MINUTES)

1. Distribute platters of quesadillas, already sliced, back to tables.
2. On your cue, allow students to enjoy their quesadillas with their group. Provide groups with conversation prompts to practice table manners and conversation skills while eating.
Prompts could include:
 - How would you make the quesadillas, salsa, or guacamole to fit your taste?
 - How would you make the quesadillas in a different season?

CLEAN UP (5 MINUTES)

1. Remind students of their clean up tasks: washing dishes, wiping the cooking station, sweeping the floor around the cooking station, etc. Additionally, model how to put any fruit or vegetable scraps in the compost. Provide students with time in their small groups to divide then execute tasks before returning their attention back to the whole group.
-  2. As students work in their small groups, use the cooking and cleaning observational checklist to assess student mastery of cleaning skills.

REFLECT (5 MINUTES)

1. Recognize individual students' behaviors aligned with being the best for themselves, the community, and the environment. Ask students to reflect on how they practiced safe and conscientious behaviors.
-  2. Review the essential question, "How are quesadillas made?" by providing time for students in class or for homework to independently record some Cook's Notes in their journals.

CONNECTIONS TO GARDEN LESSONS

Incorporate fresh vegetables from the garden, such as onion, chard, and zucchini, if available, add additional vegetables to the quesadillas. Add avocados, tomatoes, garlic, onions, bell peppers, and limes for the salsa and guacamole. Garnish with cilantro on the side if you have it growing. Bring your food scraps out to the compost.

POSSIBLE EXTENSIONS

BAM! Box Activity: Challenge students to make quesadillas for their family at home and share the recipe they created or any photos they take with the class.

ADDITIONAL RESOURCES

- *Quesadillas* by Donna Kelly
- *The Tortilla Book* by Diana Kennedy
- *The Day it Snowed Tortillas* by Joe Hayes
- "Tortilla History"

https://whatscookingamerica.net/History/Tortilla_Taco_history.htm



WELCOME TO THE KITCHEN

Kitchen

EST. TIME 45 minutes SEASON fall TYPE cooking concept

GRADE 6 | LESSON #1

? ESSENTIAL QUESTION(S)

- How can I be my best self in the kitchen?
- How can we make informed, responsible decisions and keep ourselves safe in the kitchen?
- How can I be my best for my community?
- How can I be my best for my kitchen environment?



MATERIALS

- Chart paper (2 sheets, easel, markers)
- 2 seasonal foods to taste (2 plates per table)
- 2 sheets or poster boards

Abc VOCABULARY

- Present, attentive, aware, engaged
- Responsibility
- Empathy
- Respect

✓ ASSESSMENT

- Observational checklist

PREPARATION (20 MINUTES)

Prepare 2 plates of different seasonal food for each table of 10 students, (for example, a plate of basil leaves and a plate of apple slices for each table). Before class, hide all of the plates from view. Hide the plates with the same type of produce in one location and those with the other produce in another location.

TEACHER BACKGROUND

The development of expectations for the kitchen space happens collaboratively with students in this lesson. This is a process that encourages students to reflect on how they impact their own learning, their community, and the environment along with what behaviors they can agree to as a class to ensure shared goals are met.

LESSON DESCRIPTION

In this lesson, students will share summer memories related to food. Then, as a class, students will discuss how to be the best for themselves, the community, and their environment in this kitchen space as they experience new things together. These conclusions will serve as enduring understandings throughout the year. The teacher will guide them to cohesive language around these understandings before modeling behaviors that align with these understandings. Finally, students will experience a blind taste test game together while practicing these behaviors.



Use the lesson template to create your own and share with us!

LEARNING OBJECTIVES

Content Learning Objectives

CFT.6.2 Understand the relationship between smell and taste in culinary practices.

FP.6.1 Demonstrate knowledge of safe food handling practices.

Life Skills Learning Objectives

PLS.1 Students are self-aware and show respect for their own needs, the needs of others, and the environment. They practice safe and conscientious behaviors in the garden and kitchen environments.

PLS.2 Students are active and engaged learners who show up on time prepared to learn and manage their time wisely.

PLS.3 Students cultivate honest and responsible behaviors that contribute to the learning of the community.

PLS.4 Students are active and engaged learners who show up on time, prepared to learn and participate, and able to manage their time.

PLS.5 Students develop the ability to make informed and responsible decisions.

PLS.6 Students actively seek creative and resourceful solutions.

CLS.5 Students participate in the development of agreed upon protocols and behaviors for the garden and kitchen environments.

IGNITE INTEREST (10 MINUTES) *engage*

1. Welcome students to the kitchen. Have each student share a summer memory involving food. Express interest in their previous unique experiences with foods and excitement for what they will experience together in the class that year.

STIR DISCOVERIES (10 MINUTES) *explore*

1. Explain to students to get the most of the new experiences this year, it is essential each student is best for themselves, the community, and the environment.
2. Introduce the following questions, each written on a separate piece of chart paper:
 - How can we be our best for ourselves?
 - How can we be our best for our community?
 - How can we be our best for the environment?
3. Provide students time to discuss ideas for each question as pairs or in small groups. Walk around the groups, listening, guiding, and challenging the discussions while distributing 1 pencil and 3 post-it notes for each student.
4. Instruct each student to write 1 idea for each of the questions on each post-it note and then stick them to the appropriate piece of chart paper.

CLARIFY NEW IDEAS (10 MINUTES) *explain*

1. Review responses as a class, adding any additional ideas that were not considered by students to result in a comprehensive list of what it means to be our best for ourselves, our community, and our environment in the kitchen.

ESSENTIAL QUESTIONS	EXAMPLES
<p>What does it mean to be self-aware? How can we show respect and caring for our own needs?</p> <ul style="list-style-type: none"> • How can we be our best for ourselves? <ul style="list-style-type: none"> - What does it mean to be self-aware? - How can we show respect and caring for our own needs? • How can we make informed, responsible decisions and keep ourselves safe in the garden? • What does it look like to be an active and engaged listener? • Why is it important to show up on time prepared to learn? 	<ul style="list-style-type: none"> • being active and engaged • being aware of our thoughts, feelings, and needs • being in control of our bodies • sharing our thoughts, feelings, and needs, with others • considering the impact of our choices • taking responsibility for our choices • making choices that keep us safe • using tools safely
<p>How can we be our best for our community?</p> <ul style="list-style-type: none"> • How can we show respect, empathy, and caring for others? • How can we keep others safe in the garden? • How can we contribute to the learning of the community? • Why is it important to participate? • How can we work together to seek creative, resourceful solutions and make informed, responsible decisions? 	<ul style="list-style-type: none"> • being present and attentive • being aware of others' thoughts, feelings, and needs • showing empathy for others' feelings • showing respect for others' thoughts • interacting with our classmates in a gentle way with our bodies and language • considering the impact of your choices on others • being honest with others • including all team members in small group work • joining the group for whole group discussions • listening with a still body and attentive eyes
<p>How can we be our best for our environment?</p> <ul style="list-style-type: none"> • How can we show respect and caring for the environment? 	<ul style="list-style-type: none"> • showing caring and respect for all of the living and nonliving parts of the environment • considering the impact of your choices on the environment • making responsible decisions

WATCH IT RISE (10 MINUTES) *elaborate*

1. Explain to students they will have time to practice these behaviors in pairs through participating in a blind taste test game.
2. Demonstrate the blind taste test game with a volunteer. Each pair will have a Taster and a Guide. The Tasters will close their eyes and plug their noses. The other student in the pair will be the Guide. At each table, have a Guide go get the plate of food, making sure the Tasters keep their eyes closed.
3. Model how to move carefully through the room, pick-up a plate of the selected snack from a specific area, and carry it back to the table. Then, select a student from each table to follow the instructions.
4. Once foods are at tables, have each Guide give the Taster a piece of food to taste, with eyes closed and nose plugged. Have Tasters keep their eyes closed as they guess what it was that they tasted. Then have them open their noses but keep their eyes closed, and try again.
5. Have Tasters open their eyes and discuss how smell and taste are related senses.
6. Have students switch roles and repeat with the other type of food.
7. As students play the game, acknowledge observed behaviors that align with the Life Skills Learning Objectives, such as being engaged learners and being respectful of others. Also, use the observational checklist to assess student current development of the life skills.
8. Model the appropriate clean-up instructions and select a student from each table to follow the instructions.

REFLECT (5 MINUTES) *evaluate*

1. Recognize individual student behaviors aligned with the enduring understandings they developed together with the goal of being the best for themselves, the community, and the environment.
2. Ask students to reflect silently on what it means to be the best for themselves, the community, and the environment beyond the kitchen—perhaps in school or in their home environment.
3. Share appreciation for each of their individual contributions to the kitchen and to the community, and for their respect for the kitchen. Express excitement for your next time together.

CONNECTIONS TO GARDEN LESSONS

For the smelling and tasting activity, use aromatic herbs or produce from the garden. Bring compost out to the garden.

POSSIBLE EXTENSIONS

Classroom: Write a poem about a dish, describing it using all of your senses and then revealing the name and origin of the dish in the end.

ADDITIONAL RESOURCES

For more information on group management and group development of procedures and parameters, see:

- *Tools for Teaching* by Fred Jones.
- *Rethinking Classroom Management* by Patricia Belvel



HOMEMADE YOGURT

Kitchen

EST. TIME 45 minutes SEASON winter TYPE cooking 

GRADE 6 | LESSON #10

? ESSENTIAL QUESTION(S)

- How are dairy products made?
- What is the impact of sourcing dairy products locally?
- How does yogurt nourish our bodies?



MATERIALS

- Recipe
- Handouts / Visual Aids
- Cooking Equipment
- Ingredients
- Tableware
- Cleaning Tools

Abc VOCABULARY

- Dairy
- Calcium
- Protein
- Probiotics

✓ ASSESSMENT

- Observational checklist

PREPARATION (15 MINUTES)

- Gather materials, equipment, and ingredients listed in the lesson materials sheet.
- Sterilize all equipment in boiling water before using.
- Pre-warm thermos for each group immediately before class.

TEACHER BACKGROUND

Yogurt is a food produced by bacterial fermentation of milk. The bacteria used to make yogurt are known as “yogurt cultures.” Fermentation of lactose by these bacteria produces lactic acid, which acts on milk protein to give yogurt its texture and characteristic tart flavor. Cow’s milk is commonly available worldwide and is most commonly used to make yogurt. Milk from water buffalo, goats, ewes, mares, camels, and yaks is also used to produce yogurt where available locally.

LESSON DESCRIPTION

In this lesson, the role of dairy in a healthy diet will be discussed and local sources for dairy will be identified. Then students will work in small groups to make homemade yogurt. After a few days, students will enjoy their yogurt and can choose to sweeten it with sugar, honey, and/or berries.



Use the lesson template to create your own and share with us!

LEARNING OBJECTIVES

Content Learning Objectives

FP.6.1 Demonstrate knowledge of safe food handling practices.

FP.6.2 Name and describe basic cooking techniques and use them as instructed to prepare recipes.

HC.6.4 Identify where products from different food groups are sourced locally.

HC.6.6 Demonstrate knowledge of whole foods, minimally processed foods and processed foods.

KTE.6.1 Use tools introduced in previous grades independently.

KTE.6.2 Name, identify, locate, and safely use new tools.

KTE.6.3 Match tools to tasks and explain selection process.

KTE.6.4 Demonstrate proper and safe use of tools and equipment with independence.

Life Skills Learning Objectives

PLS.5 Students develop the ability to make informed and responsible decisions.

ACADEMIC STANDARD CONNECTIONS

NGSS.MS.PS1.B. Chemical Reactions - Substances react chemically in characteristic ways. In a chemical process, the atoms that make up the original substances are regrouped into different molecules, and these new substances have different properties from those of the reactants.
(MS-PS1-2), (MS-PS1-3), (MS-PS1-5)

HEALTH STANDARD CONNECTIONS

National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.



LESSON MATERIALS

Materials for Lesson Introduction

Handouts

- Homemade Yogurt,**
Emerils.com
(recipe, 1 copy per small group)

Equipment

For Each Group of 10:

- 1 large thermos
- 1 candy thermometer
- 1 medium saucepan
- 1 whisk
- 1 small bowl
- 1 wooden spoon

For Whole Class:

- Stovetop

Ingredients

For Each Group of 10:

- 1 quart milk
- 3 heaping tablespoons commercial plain yogurt
- Sugar or honey, to sweeten to taste

Check the Garden for:

- 1 pint raspberries (or other berries)

Materials for Enjoying the Food

Enjoy 1-4 days after making.

Materials for Cleaning Up

- Dish soap
- Scrubber (for dishes)
- Drying rack
- Kitchen towels
- Sponge (for counters)
- Broom and dustpan

PREPARE TO COOK (5 MINUTES)

Have students tie hair back, wash hands, put on aprons (if relevant) and take their seats.

RECIPE INTRODUCTION (10 MINUTES)

1. Explain to students **dairy**, the food group containing milk and milk products, is an important component of the MyPlate food groups model. The nutrients in dairy products include **calcium**, potassium, vitamin D, and **protein**. They provide many health benefits, such as improved bone health.
2. Explain to students that yogurt specifically has not only the calcium, potassium, vitamins, and protein of other dairy products, but also includes **probiotics**, or “good” bacteria that are naturally present in the digestive system. Evidence suggests that some strains of probiotics can help boost the immune system and promote a healthy digestive tract. This is why many people eat yogurt to repopulate their digestive systems and support digestive health, particularly after taking antibiotics, which can kill not only infectious bacteria but also “good” bacteria that help us digest food.

REVIEW FAMILIAR SKILLS (5 MINUTES)

1. Explain to students that they will be making yogurt on the stovetop and review with them stove safety.
2. Remind students of where to find and how to collect the tools each group will need. Have students work as a team to retrieve the following tools and return to the cooking station.
 - 1 large thermos
 - 1 candy thermometer
 - 1 medium saucepan
 - 1 whisk
 - 1 small bowl
 - 1 wooden spoon
3. Have students find and measure the following ingredients:
 - 1 quart milk
 - 3 heaping tablespoons commercial plain yogurt


DEMONSTRATE NEW TOOLS AND SKILLS (4 MINUTES)

1. Instruct students to bring the milk to a boil. As the milk is heating, recall with students other dairy products they have had in various dishes from diverse cultures.
2. Model for students how to use a candy thermometer to measure the temperature of the milk until it is cooled to 100 degrees F.


DIVVY UP TASKS (1 MINUTE)

1. Encourage students to take turns with tasks to ensure equity as they cook.

COOK! (10 MINUTES)

1. Provide students time to cool milk to 100 degrees F before returning their attention back to the class.
2. Model for students how to carefully measure $\frac{1}{4}$ cup of warm milk and pour it into a small bowl, then whisk in the yogurt. Afterward, whisk the mixture back into the rest of the warm milk. Provide small groups time to work together to add the yogurt to the warm milk before returning their attention back to the whole group.
3. Model for students how to carefully pour the warm milk into a pre-warmed thermos and explain it will be set aside in a warm place for 7 hours. Provide small groups time to work together to pour the milk into a thermos before returning their attention back to the class.
-  4. As students work, use the cooking and cleaning observational checklist to assess students' mastery of cooking skills.
5. Explain to students that after school, you will turn yogurt out into a bowl, set it into another bowl of ice water, and stir it to quicken cooling. Then you will cover and refrigerate the yogurt so it can thicken.

CLEAN UP (5 MINUTES)

1. Review for students the clean up tasks: washing dishes, wiping cooking station, sweeping floor around cooking station, etc. Provide students time in small groups to divide then execute tasks before returning their attention back to the whole group.
-  2. As students work in small groups, use the cooking and cleaning observational checklist to assess student mastery of cleaning skills.

REFLECT (5 MINUTES)

1. Recognize individual student behaviors aligned with being the best for themselves, the communities, and the environment.
2. Look with students at food labels for a variety of store-bought yogurts (including some sweetened flavors) to compare and discuss the differences. Have students explore the amount of particular nutrients and sugars in each example. Also discuss any differences in where or how each is produced, asking how this information might impact a student's decision making when choosing a store-bought yogurt.

ENJOY! (NOT DURING THIS CLASS TIME)

Enjoy yogurt together 1-4 days after preparing (ideally at the Breakfast Party in **Lesson #11: Breakfast Party Preparation**). Before tasting, yogurt can be sweetened with sugar or honey. Yogurt can also be served with seasonal berries.

CONNECTIONS TO GARDEN LESSONS

Use berries (possibly some frozen in fall) from the garden; as you enjoy, trace ingredients back to their source.

POSSIBLE EXTENSIONS

Classroom: Have students read about and discuss the chemical processes involved in making yogurt, using a resource such as "Semisolid Science: Growing Yogurt" from Scientific American.

ADDITIONAL RESOURCES

- My Plate, Dairy Food Group
<https://www.myplate.gov/eat-healthy/dairy>
- WebMD, Benefits of Yogurt
<https://www.webmd.com/diet/health-benefits-yogurt>



FALL QUINOA TABBOULEH

Kitchen

EST. TIME 45 minutes SEASON fall TYPE cooking 

GRADE 7 | LESSON #6

? ESSENTIAL QUESTION(S)

- How can local seasonality influence traditional cultural dishes from around the world?
- How can the appearance, smell, and taste of a dish be described?



MATERIALS

- Recipe
- Handouts / Visual Aids
- Equipment
- Ingredients
- Tableware
- Cleaning Tools

Abc VOCABULARY

- Tabbouleh
- Meze
- Quinoa

✓ ASSESSMENT

- Observational checklist

Create Your Own!

Use the lesson template to create your own and share with us!

PREPARATION (30 MINUTES)

Gather materials, equipment, and ingredients listed in the lesson materials section. Pre-cook the quinoa. On a stove top, heat olive oil and liquid (water, or broth for extra flavor) over medium heat until it comes to a boil. Salt the water, add the quinoa, and stir. Bring it back to a boil then turn down the heat to low and simmer, covered, until the quinoa absorbs all of the water (about 20 minutes). Remove it from the heat and set aside for 10 minutes, still covered, to allow quinoa to fully absorb water and become fluffy. Quinoa takes about 2 cups of liquid to every 1 cup of quinoa. Also, 1 cup of dry quinoa equals about 3 cups of cooked quinoa. Quinoa can be stored in a sealed container in the refrigerator for a few days.

TEACHER BACKGROUND

Tabbouleh is a cold Mediterranean salad that is often served as part of “mezze,” similar to a selection of appetizers. Tabbouleh is typically made with bulgur but in this lesson will be made with quinoa. Quinoa has been cultivated in South America for years but has recently grown in popularity due to its nutty taste, health benefits, and its easy preparation.

LESSON DESCRIPTION

In this lesson, students will be introduced to tabbouleh, a cold salad from the Mediterranean. They will learn how to prepare quinoa and the health benefits of quinoa before learning to chop and measure the rest of the ingredients for the salad. When the salad is combined, they will enjoy the salad together and discuss how the recipe may be altered to include local ingredients during different seasons throughout the year.



Caution:
Contains tree nuts.

LEARNING OBJECTIVES

Content Learning Objectives

CFT.7.1 Utilize taste sensations: sweet, sour, bitter, and salty in a series of lunch items for the class.

CFT.7.2 Describe the relationship between culinary arts and sight, smell, and taste. Use traditional world cuisines as examples.

HC.7.1 Demonstrate an understanding of how seasonality influences traditional cultural dishes.

HC.7.3 Relate seasonality to availability of ingredients.

RC.7.1 Compare and contrast recipes from various world cultures.

RC.7.3 Follow a recipe with increased independence and make modifications with the ingredients.

KTE.7.1 Use tools introduced in previous grades independently.

KTE.7.2 Name, identify, locate, and safely use new tools/equipment.

KTE.7.3 Match tools to tasks and explain selection process.

KTE.7.4 Demonstrate ability to use tools and equipment independently.

New Tools: Stove, pots, pans, skillets, steamer insert, and griddle

Life Skills Learning Objectives

CLS.4 Students appreciate and are respectful of differences and diversity in their communities.

ACADEMIC STANDARD CONNECTIONS

Social Studies: Geography, Cultural Traditions, Diversity and Community.

HEALTH STANDARD CONNECTIONS

National Health Education Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.



LESSON MATERIALS

Materials for Lesson Introduction

- Fall Quinoa Tabbouleh**, *Emerils.com* (recipe, 1 copy per small group)

Handouts

- Image of a mezze (1 copy per small group or projected)
- Image of a quinoa plant (1 copy per small group or projected)

Visual Aids

- White, red, and black quinoa grains

Equipment

- 3 large mixing bowls
- 3 wooden spoons
- 3 small mixing bowls
- 3 whisks
- 6 sets of measuring cups
- 3 sets of measuring spoons

Ingredients

- 9 cups cooked quinoa
- 3 cup toasted walnuts
- 1 ½ cup pomegranate seeds
- 1 ½ cup walnut oil 1 cup apple cider vinegar
- 6 tablespoons honey
- 3 teaspoon pomegranate molasses
- 1 ½ teaspoon sumac
- kosher salt and freshly ground pepper to taste

Check the Garden for:

- 3 medium bunches flat leaf parsley (to equal 3 cups finely chopped)
- 3 medium apples, preferably Honey Crisp or Pink Lady (to equal 3 cups cored and diced)
- 3 small red onions (to equal 1 ½ cup finely diced)

Materials for Enjoying the Food

- 3 serving spoons
- Bowls (1 for every student)
- Spoons (1 for every student)

Materials for Cleaning Up

- Dish soap
- Scrubber (for dishes)
- Drying rack
- Kitchen towels
- Sponge (for counters)
- Broom and dustpan

PREPARE TO COOK (5 MIN)

Have students tie hair back, wash hands, put on aprons (if relevant) and take their seats.

RECIPE INTRODUCTION (10 MINUTES)

1. Introduce to students that they will be making a Mediterranean salad called **tabbouleh**. The word tabbouleh is derived from the Arabic word *tabil*, meaning “seasoning” or more literally “dip.” Connect to prior knowledge in **Lesson #4: Researching Nutrients**.
2. Show an image of a traditional meze and explain that tabbouleh is traditionally served as part of a **mezze** in the Arab world, though variations are made by the Armenians and Turks and its popularity is growing in Western cultures too.
3. Show students an image of a **quinoa** plant. Explain that it is a whole grain that originated in South America and is grown for its edible seeds. After harvest, the outer coating of the seeds are removed and then the seeds are cooked like rice.
4. Show students what uncooked white, red, and black quinoa look like. Explain that while there are 1,800 different varieties, these are the 3 that are most common. We will be cooking with white quinoa because it has the most neutral flavor while the red and black quinoa are bolder and earthier tasting.
5. Explain that you have pre-cooked the quinoa that they will use for this recipe.

REVIEW FAMILIAR SKILLS (3 MINUTES)

1. Divide each table into 2 groups of 5 students. Explain to students that one group will be chopping the fruits, vegetables, herbs, and nuts while the other will be measuring the ingredients for the dressing. Each group will be observing the other to learn the full method for the recipe.
2. Review safe use of tools and equipment, reminding students of where to find and how to collect the tools their group will need.
3. Have students work as a team to retrieve all tools and bring them back to their cooking station. When students have returned to their seats, deliver knife buckets to tables.

CHOPPING GROUP	MEASURING GROUP
<ul style="list-style-type: none"> • 5 cutting boards • 1 large mixing bowl • 1 wooden spoon • 1 set of measuring cups 	<ul style="list-style-type: none"> • 1 small mixing bowl • 1 whisk • 1 set of measuring cups • 1 set of measuring spoons

DEMONSTRATE NEW TOOLS AND SKILLS (6 MINUTES)

1. Model for students where to find, how to gather and how to prepare each of the ingredients. Review knife safety and model how to finely chop parsley, how to core then dice an apple, how to chop walnuts, and how to finely dice an onion.

DIVVY UP TASKS (6 MINUTES)

1. **Chopping Group:** Remind students to wash their parsley and apple before they begin. On your cue have the group follow the chopping instructions. Students may place their chopped ingredients into the large mixing bowl when they are finished.
2. **Measuring Group:** Have students pour all measured ingredients in the small mixing bowl and mix well with a whisk. Remind students to return their ingredients to the proper storage location.

CHOPPING GROUP	MEASURING GROUP
<ul style="list-style-type: none"> • 1 bunch of flat leaf parsley, finely chopped to equal 1 cup • 1 large apple, cored and diced to equal 1 cup • 1 cup toasted walnuts, chopped • 1 small red onion, finely diced to equal ½ cup 	<ul style="list-style-type: none"> • 1/2 cup pomegranate seeds • 1/2 cup walnut oil • 1/3 cup apple cider vinegar • 2 tablespoons honey • 1 teaspoon pomegranate molasses • 1/2 teaspoon sumac • kosher salt and freshly ground pepper to taste

3. Provide students with time in their small groups to divide then execute tasks before returning their attention back to the whole group. As students work, use the cooking and cleaning observational checklist to assess students' mastery of cooking skills.



If you clean as you cook, your tools will be ready the next time you need them, you will have more space to cook and you won't have so many dishes to clean after you enjoy!


COOK! (3 MINUTES)

1. Have a student from the measuring group collect 3 cups of cooked quinoa for the table. Model for students how to carefully add the quinoa to the parsley, apples, walnuts, and onion and mix well with a wooden spoon. Then model for students how to toss the quinoa with the dressing to let it sit before serving.
2. Provide students time for small groups to work together to complete these tasks before returning their attention back to the whole group.

ENJOY! (5 MINUTES)

1. Have students find and gather bowls, spoons, and the serving spoon their group will need to serve the quinoa tabbouleh. Have students work as a team to retrieve all items and bring them back to their cooking station.
2. Explain that each student will serve himself or herself from the bowl and then pass the bowl to the left, ensuring that there is enough for everyone at the table to have a taste. Ask students wait until everyone is served before eating.
3. On your cue, students can enjoy the tabbouleh with classmates.
4. As students enjoy the tabbouleh, explain how tabbouleh is traditionally made (with bulgur, a whole grain from the Middle East) rather than quinoa, and tomatoes rather than apples. Parsley and onion are common in tabbouleh and are often accompanied by mint, olive oil, lemon juice, and salt instead of walnut oil, apple cider vinegar, honey, sumac, along with pomegranate seeds and molasses.
5. Ask students to consider how the appearance, smell, and taste of this dish they created may compare to that of the traditional version described. Challenge students to consider further how world trade and the exchange of ideas and goods has influenced traditional dishes in different regions.

CLEAN UP (5 MINUTES)

1. Review clean up tasks, such as washing dishes, wiping cooking station, sweeping floor around cooking station, etc. Model how to put any parsley, apple, or onion scraps in the compost. Provide students time in small groups to divide then execute tasks before returning their attention back to the class.
-  2. As students work in their small groups, remember to use the cooking and cleaning observational checklist to assess student mastery of cleaning skills.

REFLECT (5 MINUTES)

1. Recognize individual student behaviors aligned with being the best for themselves, the community, and the environment. Ask students to reflect on the value of diversity as it relates to their experiences in class that day.
2. Challenge students to consider not only how this dish may change with traditions around the world but also how it may change with the seasons in your area. For homework, ask students to write a simple recipe for a winter or spring tabbouleh that could be made with ingredients growing in the garden at that time.

CONNECTIONS TO GARDEN LESSONS

Use apples and onions from the garden. Add in other produce from the garden, such as sugar snap peas, corn, or cherry tomatoes. Deliver compost to the garden. As you enjoy, trace ingredients back to the garden.

POSSIBLE EXTENSIONS

Community: Share the Fall Quinoa Tabbouleh with school administration and staff with recipe cards.

ADDITIONAL RESOURCES

- A Brief History of Tabbouleh, Lebanon's National Food <https://theculturetrip.com/middle-east/lebanon/articles/a-brief-history-of-tabbouleh-lebanons-national-food>
- My Jewish Learning, Tabbouleh <http://www.myjewishlearning.com/recipe/tabbouleh/>
- *Modern Flavors of Arabia: Recipe and Memories from My Middle Eastern Kitchen* by Suzanne Husseini
- *Flavors from the French Mediterranean* by Gerald Passedat

MEZZE

Did you know tabbouleh is traditionally served as part of a mezza?

DESCRIPTION

Mezze is a selection of small dishes and is often served at the beginning of multi-course meals. The word “mezza” comes from the Persian word mazze, meaning “taste, snack.” Depending on the region, mezza could consist of hummus, olives, cheeses, melons, nuts, rice-stuffed leaves or vegetables, raw meatballs, dried cured pastrami, pita bread, yogurt with herbs, cucumber or garlic, as well as other cold salads.



QUINOA PLANT

Did you know quinoa is closely related to beetroot and spinach?

DESCRIPTION

Quinoa is known for its nutty taste and superfood qualities, such as its high protein content. It has the perfect balance of all nine amino acids essential for human nutrition. This complete protein is rarely found in plant foods, though it is common in meats. Quinoa also offers a good dose of fiber and iron.

Quinoa has been cultivated in the Andes for over 5,000 years (and was called “the mother grain” or “the gold of the Incas” but its popularity has grown recently because of its nutritional value and it is easy and quick to cook





MY FOOD CART, PART 3

Kitchen

EST. TIME 45 minutes SEASON winter TYPE cooking concept

GRADE 8 | LESSON #10

? ESSENTIAL QUESTION(S)

- What should be considered in menu design?
- How do season, budget and culture affect decisions around menu design?



MATERIALS

- Post-it notes (1 for every student)
- Selection of menus from local restaurants or food businesses
- Menu Planning Worksheet (1 for every student)

Abc VOCABULARY

- Menu
- Appetizers
- Entrees

✓ ASSESSMENT

- Observational checklist



Use the lesson template to create your own and share with us!

PREPARATION (30 MINUTES)

Gather materials and collect menus or photos of menus from local restaurants or food businesses. Select menus representing a diversity of cultures, themes, price ranges and restaurant styles.

TEACHER BACKGROUND

Menus are typically organized into: starters / appetizers, entrees, sides, desserts. In selecting dishes for a high-quality menu, often the following are considered: a central theme around a world culture; dishes with local, seasonal ingredients; and a variety of dishes to accommodate many diets, appetites, and price ranges.

LESSON DESCRIPTION

In this lesson, students will explore menus from a variety of local restaurants and food businesses to determine qualities that make a cohesive, diverse, high-quality menu. Then they will use the Menu Planning Worksheet to guide their creative process as they draft options for a fall and spring menu of their food cart.

LEARNING OBJECTIVES

Content Learning Objectives

CFT.8.3 Create a menu that includes combinations of basic textures and taste sensations from a variety of cultures.

HE.8.1 Design and produce a week of healthy and seasonal recipes and meals on a budget using a world culture.

HC.8.1 Design a seasonal menu plan that reflects the foods grown in your bio-region/state.

MD.8.1 Create a menu using world culture theme.

Life Skills Learning Objectives

CLS.4 Students appreciate and are respectful of differences and diversity in their communities.

ACADEMIC STANDARD CONNECTIONS

Social Studies: Economics, Geography, Cultural Traditions, Diversity and Community

HEALTH STANDARD CONNECTIONS

National Health Education Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.

IGNITE INTEREST (5 MINUTES) *engage*

1. Distribute a post-it note to every student and ask them to write the name of their favorite dish. It can be anything the class cooked together, a dish they like to make at home, or an item from a restaurant. On your cue, ask students to stick their post-it note to the board.
2. Consider with students, would this make a good **menu** at a restaurant? Challenge students to explain why or why not.
3. If necessary, ask leading questions: Is there a central theme or culture represented? Are all of the dishes within the season? Is there enough diversity on the menu to have plenty of options for all diets?


STIR DISCOVERIES (5 MINUTES) *explore*

1. Distribute or project a selection of menus from local restaurants or food businesses.
2. Challenge students to consider what they like about each of the menus or what they would add or improve to each of the menus.

CLARIFY NEW IDEAS (5 MINUTES) *explain*

1. Explain to students there are many factors to consider in menu design. Today, they will build 2 menus for their hypothetical food carts, 1 for fall and 1 for spring. They will start by identifying a world culture theme. Then, they will consider what types of dishes they would like to offer that incorporate local, seasonal ingredients in the fall and in the spring.
2. Make clear to students that the Menu Planning Worksheet is organized into sections to get them started, but they are allowed to omit, add, or rename categories as appropriate for their restaurant or style. In other words, they can use the worksheet as a jumping off point, but can feel free to “make it their own.” For example, the section labeled “Starters” on the worksheet could be titled “Mezze” for a Mediterranean restaurant; “Antipasti” for an Italian restaurant; just **Appetizers** if the student prefers; or “To Share” for a creative twist. Likewise, some menus may include a section for soups and salads but others may replace that with a section with selections for a meat and cheese board, or the like.
3. Explain to students that while there is much creativity in designing the menu structure and selecting dishes, there are also standards to ensure a high-quality menu. Explain that you will be looking for these standards:
 - a central theme that connects all of the dishes to a world culture
 - dishes that feature local, seasonal ingredients
 - a variety of dishes to accommodate many diets, appetites, price ranges, and ages

WATCH IT RISE (25 MINUTES) *elaborate*

1.  Provide time for students to work individually on the menu worksheet. As students are working, use the observational checklist to assess student development of Personal and Community Life Skills.
2. As students complete their drafts, have them trade with other students, reviewing one another’s work for the 3 qualities of a high-quality menu: a central world culture theme, seasonal ingredients reflecting what’s available in fall and spring, and a variety of dishes.

REFLECT (5 MINUTES) *evaluate*

1. Recognize individual student behaviors aligned with being the best for themselves, the communities, and the environment. Specifically, ask students to reflect on the value of diversity.
2. Provide time for students to give feedback to others at the table about their menus, checking that each student menu is cohesive and diverse, sharing creative ideas, and adding to their drafts when appropriate.

CONNECTIONS TO GARDEN LESSONS

Have students work together to recall what's in abundance in their garden each season. Have them use this list to guide their menu ideas for each season.

POSSIBLE EXTENSIONS

Community: Explore a variety of menus from your local restaurants and talk to the chefs to understand how they determine their menu.

MENU PLANNING WORKSHEET

STUDENT NAME: _____ DATE: _____

CHEF NAME:

RESTAURANT NAME:

WORLD CULTURE THEME:

LOCAL REGION:

SEASON

STARTERS:

Soups:

Salads:

ENTREES:

Sides:

DESSERTS:

MENU PLANNING WORKSHEET CONTINUED

BEVERAGES:

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KIDS MENU:

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