



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.choosemyplate.gov/dairy-nutrients-health>
- WebMD, Benefits of Yogurt
<http://www.webmd.com/food-recipes/features/benefits-yogurt#1>