

Grade 3 • 45 mins • Fall

ADAPTED

GRADE 3

SCHOOL PARTNER  
LESSON PLAN

## Submitted by

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## ? ESSENTIAL QUESTIONS

- How do we taste foods?
- What part(s) of our bodies deliver information about the taste of foods to our brains?
- What words can we use to describe taste?
- What are some examples of foods that have the following tastes: sweet, bitter, salty, sour?

## Abc VOCABULARY

- Senses/Sensory/Sensation
- Taste buds
- Receptors

## ✓ ASSESSMENT

- Student Journals
- **Class Life Skills Observational Checklist**

## 🍲 MATERIALS

### Materials for Introduction

- Student Journals
- Dry erase board or chart paper with Sweet, Salty, Sour, Bitter, and Umami written on left and Lime, Pineapple, Tortilla Chip, and Arugula written on the right.
- Picture of tongue with taste buds evident.  
This can be hand drawn or projected onto wall or smart board from internet.

### Equipment

#### *For Each Group of 10*

- 4 Large bowls and spoons or tongs. One for each sample.
- 10 Plates
- 10 Forks

#### *For Whole Class*

- 12 Large bowls and spoons or tongs. One for each sample.
- 30 Plates
- 30 Forks

### Ingredients

- 1/8 lime per student
- 2 chunks pineapple per student
- 2 tortilla chips per student
- 2–3 pieces arugula per student (arugula can be found in garden, or can be substituted for other bitter greens in garden such as mustard.)

### Materials for Enjoying the Food

- Forks

### Materials for Cleaning Up

- 1 spray bottle of cleaner per table
- 2 cloth towels per table
- Sink with available sponges and dish soap for cleaning dishes
- Dish towels for drying.

## NOTE:

Adapted from **Grade 3 Kitchen Lesson #2: Flavors**, pg. 307.

## PREPARATION

- Draw picture of tongue on dry erase board or find suitable visual to project onto board or smartboard.
- Write foods to sample and first 4 major tastes onto dry erase board or chart paper.
- Cut limes into eighths, and pineapple into small chunks (canned pineapple can be used) and place these into bowls for serving. Divide bagged tortilla chips into bowls for serving. Harvest arugula if available or purchase arugula and place into bowls for serving.

## TEACHER BACKGROUND

Taste is a sensation that begins when food enters our mouths. On the surface of our tongue are small bumps called papillae. Each of these papilla holds as many as 10,000 taste buds, and each of these taste buds contain 50–150 receptor cells. As we eat, saliva in our mouths break down chemicals in foods. The chemicals enter holes in your taste buds and interact with the receptor cells. Signals are sent to the brain by the receptor cells and these signals are combined with other information on the food that is derived from your sense of smell. The combination of this information results in the experience of flavor. There are four tastes that we generally recognize: Sweet, Salty, Bitter, and Sour. Foods that contain glutamate (msg) cause us to experience a fifth flavor known as umami (and sometimes referred to as savory.) In addition to being a receptor for taste our tongue can perceive pressure, temperature and pain. This allows us to experience other aspects of food beyond taste and to be able to identify foods as hot,cold, spicy or as having a particular texture. Some people have more taste buds than others and can be highly sensitive to certain tastes. As we age our taste buds decrease and change and this can explain why we may grow to like foods that we once found distasteful.

## LESSON DESCRIPTION

Students will learn how taste receptor cells on the tongue send information to our brains that allow us to interpret the taste of foods. Students will sample 4 foods relative to the first 4 major tastes and report what flavors they associate them with.

## LEARNING OBJECTIVES

**Content Learning Objectives***Culinary Flavors and Textures*

**CFT.3.1** Demonstrate an understanding of taste sensations.

**CFT.3.2** Describe foods and their flavor attributes.

**Life Skills Learning Objectives***Personal Life Skills*

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

## ACADEMIC STANDARD CONNECTIONS

**CCSS.ELALITERACY.W.3.2.C** Use linking words and phrases (e.g., also, another, and, more, but) to connect ideas within categories of information.

## HEALTH STANDARD CONNECTIONS

**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.

*Lesson Sequence***Preparation to Cook (3 mins)**

Prior to beginning their taste tests students will need to thoroughly wash their hands and then return to their seats.

**Recipe Introduction:**

Teacher will ask students if they think that everyone's tongue has exactly the same number of tastebuds. When students answer "no", teacher will ask students if they think that the same food might taste different to them as it does to another person. If all people perceive the taste of food differently then will something that tastes "good" or "great" necessarily taste that way to someone else?

Students will be asked to recollect on a dish that they ate recently. Students should visualize the food in their mind and see if they remember how it tastes.

Students will be asked to challenge themselves to describe the food to a classmate without the use of non-specific adjectives such as good, great, or bad. Instead, students should be able to describe the food based on their sensory elements. What did the food look like? What did it feel like in their mouth (i.e. soft, chewy, crunchy, etc.)? What did it smell like? Most importantly, what did it taste like? What adjectives would you use to describe the taste?

Teacher will call on a few students to share their descriptions of food and ask follow up questions based on their description.

**Review Familiar Skills (3 mins):**

- Students should wash hands for a minimum of 20 seconds with soap and by rubbing both hands together under the water.
- When serving food samples from bowl, students should use the provided spoon or tongs and not pick up or touch any food that might be eaten by another student.
- When participating in the taste test, students should close their eyes and try to focus solely on the food atop their tongue.

**Demonstrate New Skills (4 mins):**

Demonstrate how to properly use tongs to pick up food from a bowl and place it onto a plate.

- *Five Major Senses*: touch, taste, smell, sight, feel
- *Sensory*: the collection of information from your senses that the brain uses to perceive the world around us.
- *Taste Buds*: nerve endings on the tongue that provide the sense of taste.
- *Receptors*: an organ or cell able to respond to light, heat, or other external stimulus and transmit a signal to a sensory nerve.

**Divvy Up Tasks (3 mins):**

Assign separate students within each table group to hand out plates, forks, napkins, and to bring the bowls of sample foods to the table.

Explain that students should take a sample of predetermined size (i.e. one piece lime, two tortilla chips) and pass the bowl to the next student. Multiple bowls can make their way around the table in the interest of time.

**Cook (15 mins):**

Students should sample the four foods (lime, pineapple, tortilla chips, and arugula) in the order that the teacher announces them. Students should pause and reflect on each sample before moving on. Teacher may choose to ask questions about the foods after each tasting or to hold off on receiving student feedback until the end of the tasting.

After students have closed their eyes and focused on the sample food they are tasting students can place any remaining part of the sample on their plate. Students can record their thoughts about the sample in their journal or on a taste test sheet. Students should record which of the major tastes they thought were most prevalent within the food. Students should record whether this flavor profile was what they expected prior to trying the food.

Explain to students that it is okay if they felt that the food had more than one major flavor, such as sour and bitter.

If students finish this before the class is ready to move on, they can write any other observations of the food that are sensory based, such as the texture or mouth feel of the food, what the food smelled like, and what it looked like.

**Enjoy (5 mins):**

Students will be given time to speak with each other at their tables about how they felt the samples tasted. Students can brainstorm other foods that exhibit the 4 major flavors and think of prepared dishes that may taste like more than one of the major tastes (i.e. a chocolate snack that is sweet and salty, or a stir fry sauce that is sweet and sour.)

**Clean Up (10 mins):**

Students will be assigned to one of several jobs: Collect dishes and bring to the sink. Wash dishes and place in sanitizer. Remove dishes and dry with cloth. Place dishes on drying rack. Wipe down tables, chairs and other surfaces with towels and spray.

**Reflect (10 mins):**

Teacher will also ask for volunteers to share if they were surprised by the taste of one of the foods or if the taste they found prevalent was different than what is usually associated with the food (i.e. a lime that tastes sweet.)

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## CONNECTIONS TO GARDEN LESSONS

Arugula for sampling can be harvested from garden. If the garden has lemon or lime trees they can provide the sour food sample.

Ask students what things in the garden they think might be easily identifiable with one of the major 4 tastes. What are things they might want to plant that are sweet, salty, bitter or sour?

Food waste from the taste test can be collected and brought to the garden for composting.

## POSSIBLE EXTENSIONS

**BAM! Box:** Work with your caregivers to find and record something in your regular diet that fits each of the taste sensations. Share in a future class.

## ADDITIONAL RESOURCES

[Our Sense of Taste](#)

## OTHER COMMENTS

Remember to have students describe future dishes made in future lessons using the major tastes and other sensory information.