

### MATERIALS

- 9 apples (choose 3 contrasting apple varieties that differ in taste, texture, and appearance – e.g. MacIntosh, Pink Lady, and Jonagold)
- Apple peeler-corer-slicer machine
- Kid-safe knife and cutting board
- 3 bowls
- Paper plates and napkins
- Apple Tasting Grid

### PREPARATION

- Fasten the apple machine to the base of a sturdy table with an adequate amount of open workspace. Place the cutting board, knife, and bowls nearby.
- Arrange apples across the workspace so that they are visible to the class.

## PROCEDURE

### Part 1: Introduce Apple Varieties

- “Today’s lesson features a popular and versatile fruit – apples. Apples can be enjoyed in an endless number of ways, whether eaten fresh, as applesauce, or as part of a delicious dessert. What is your favorite way to eat apples?” Encourage student responses.
- Then, have the students brainstorm as many adjectives as they can to describe the taste, texture, and physical characteristics of apples (ex. sour, sweet, round, colors, tart, mushy, crisp). Record their responses on the flip chart until you have a sizeable adjective word bank. Hang the adjective work bank in a place where all can see.
- Pass out the apple tasting grid. On the board, recreate the grid with the three apple variety names along the top and the three physical characteristics down the left-most column: large, round, red. (You do not need to recreate the grid for the crisp, tart, and sweet characteristics. Students will complete this on their own.)
- Introduce each of the apple varieties. Then, as a class, rate each variety for each characteristic. For example, the variety that is largest would be given a 1, and the variety that is smallest would be given a 3. Fill in the grid on the board, and encourage students to fill in their individual grids simultaneously.

### Part 2: Apple Tasting

- Pass out a paper plate to each student. Guide students through the process of drawing lines on their plate to separate it into three roughly equal sections. Then, have students label each section with the variety name.
- Introduce the apple corer-peeler-slicer machine. Demonstrate how to place an apple in the machine and turn the handle to completely process the apple. As you turn, point out the sharp parts of the machine and explain how each part works. Place processed apple on a cutting board, cut in half, and set aside.
- Working with the first featured apple variety, place an apple in machine and select a student volunteer to carefully turn the handle. Select another student to cut the apple in half and place it in a bowl. Repeat the process with new volunteers until all the apples have been processed (place each variety in separate bowls). Select volunteers to pass out samples, instructing students to place each variety in the appropriate section on their plates and to wait until everyone has been served.
- When everyone has been served, taste apples as a group. First, guide students through the process of tasting for crispness: take a small bite of the first variety, then a small bite of the second variety, then a small bite of the third variety. Encourage students to chew slowly, paying close attention to the crispness. After all varieties have been tasted, rate each variety for its crispness, with the crispest variety receiving a 1 and the least crispy receiving a 3. Repeat this process for tartness, then for sweetness.

# The Five Senses and Food

## Senses & Survival

### ENGAGE

Have students share the five senses. Have students act them all out to get them physically engaged. Ask which is their “favorite” sense. Why? Then, hone in on the sense of taste. What effects how something tastes? Is it only the flavor, or do consistency (how it feels) and the look of the food contribute to flavor? Our senses work together to give us information! Today we will be using many of our senses in an apple exploration.

### OBJECTIVES

- Students will be able to use adjectives to describe apple varieties based on sensory perceptions.
- Students will understand how to plot contrasting apple varieties along a taste and texture continuum.

### EXPLAIN

#### Color, Flavor, Texture, Taste...

We use all five of our senses when we experience our food. **Color**, which we perceive through our sense of sight, has an effect on how we experience food. Some researchers have found that the deeper the color of a food, the stronger we perceive its flavor to be. **Flavor** is mostly a function of our sense of smell. **Texture** has to do with how the food feels in your mouth. It can be crisp, mushy, grainy, gummy, wet, dry, or any number of other textures. Interestingly, the piquancy (“spiciness”) of food is related to texture in that the sense of touch is involved. When you harvest Jalapeno peppers you may notice your fingers tingling. The same sensation, though stronger, happens in your mouth when you bite into the pepper. **Taste** is divided into five different categories: Bitter, sweet, sour, salty, and umami. Bitterness is often an indication of a toxic substance in the natural world, though some of the world’s most popular foods—chocolate, coffee, and beer included—are bitter. Sweetness is almost universally pleasurable. Sourness is the taste that detects acidity. Saltiness is relative to the amount of sodium in food. And umami is taste that many cultures in the East have known about for a long time but that we in the West have only recently come to appreciate. It can be described as savory or meaty. Monosodium glutamate (MSG) produces a strong umami flavor.

#### ...and Sound

We can hear our food as we chew. Crackers crunch. Cheeses squeak. But there are also other sounds that we hear when we are eating. Music may be playing. People may be talking. These sounds have an effect on how much food we eat. Too much aural stimulation can actually keep our brain from hearing our stomach say it’s full. Some researchers have found that eating in front of a loud TV causes us to eat more than we would around a table.

The best cuisines combine all of these sensations into one meal. Try squirting juice from a lime on a slice of honeydew, then sprinkling some salt and crushed red pepper on top. Wrap the whole thing in a piece of prosciutto! Play some Mozart while you enjoy. Or, just imagine that treat and you still get the idea!

### ADDITIONAL CONTENT INTEGRATION *(see previous page)*

Option #1: As students brainstorm adjectives for the apples, ask them to think about color, flavor, texture, and taste adjectives. Group the adjectives according to those headings.

Option #2: Try this lesson using Heirloom Tomatoes for tasting!

### ADDITIONAL MATERIALS

- #1. Onion, cutting board, knife
- #2. Heirloom Tomatoes

### EVALUATE

**Journal prompt:** Pick another characteristic and rate each of the apples according to that characteristic.

Completed Sample Grid

	Pink Lady	Jonagold	McIntosh
Large	3	2	1 (large)
Round	3	2	1 (round)
Red	3	2	1 (dark)
Crisp	1 (crisp)	2	3
Tart	1 (tart)	3	2
Sweet	3	1 (sweet)	2

	Pink Lady	Jonagold	McIntosh
Large			
Round			
Red			
Crisp			
Tart			
Sweet			

	Pink Lady	Jonagold	McIntosh
Large			
Round			
Red			
Crisp			
Tart			
Sweet			

	Pink Lady	Jonagold	McIntosh
Large			
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