



# Vegetable Tasting

## INTRODUCTION

A vegetable tasting is a fun and approachable way to sample fruits and vegetables, learn more about tastes, and play with flavor. This activity focuses on individual student experience and introduces the five tastes: Sweet, Sour, Salty, Bitter, and Umami. Students will sample different vegetables from the school garden. Then they will add different ingredients to the vegetables, compare the tastes, and determine likes and dislikes.

## KEY CONCEPTS

- Identifying and naming the five basic tastes
- Introduction to ingredients and flavors
- Understanding difference
- Observing personal reactions
- Determining likes and dislikes

## WHAT IS "TASTE"?

Taste is one of our five senses and one of the building blocks of flavor. Our tongue senses five basic tastes: sweet, salty, sour, bitter and umami. Flavor, on the other hand, is what our brains understand when we combine taste with our other senses (smell, touch in the form of texture, sight, and even sound).

## 5 BASIC TASTES

### *Sweet*

Sweet is one of the most familiar of the tastes. Foods are sweet because they contain a form of sugar (carbohydrates). The sugar helps give us energy which helps our body



function. That sugar triggers our brains to release endorphins and make us feel happy. It is also a biological way that we identify ripe (and therefore 'safe') foods to eat.

### *Salty*

Salty is also a familiar taste. Salt is essential to human survival because it helps our nerves and muscles function properly, so that we can feel that we are holding hands or help us run really fast.

### *Sour*

Have you ever accidentally tried lemonade before you added sugar? Sour foods, like lemons, taste sour because they all have a common trait: acidity. Acidity is what makes our mouths pucker when we've tried something sour. Eating acidic foods helps our bodies break down the food that we eat in a process called "digestion."

### *Bitter*

Bitter is probably a new word for most students. Ask students if they have ever tried dark chocolate that didn't have enough sugar? Or cocoa powder? Or their parents' coffee? It doesn't taste very nice, does it? Humans and animals are naturally suspicious of bitter flavors because bitterness can be a sign of a food that is poisonous when found in the wild. However, there are a lot of bitter foods - like spinach, kale, and even nuts - that are healthy.

### *Umami*

Umami is a Japanese word that means "pleasant and savory taste." Umami naturally occurs in foods that are rich in certain amino acids—predominantly glutamate. Umami flavors can also be developed using techniques like aging, drying, and curing. For example, tomatoes, mushrooms, beef jerky all are rich in umami. Foods that have an umami taste are basically the way that your body identifies that food contains protein. Protein helps our bodies build and repair themselves. For example, when you cut yourself, the proteins of your body go to work to grow new skin.



## WARM-UP ACTIVITIES

Ask students if they can name different foods with these tastes. Include some food items to help prompt if needed. Follow the discussion of sweet and salty by asking how the students feel after eating this food item. For sour, bitter, and umami, ask students if they like those food items.

- Sweet - strawberries, maple syrup, peaches
  - How do they feel? Energetic, happy, etc.
- Salty - popcorn, pretzels, butter
  - How do they feel? Tired, thirsty, etc.
- Sour - lemon juice, lime juice, vinegar, sour candy
- Bitter - dark chocolate, cocoa powder
- Umami - mushrooms, tomatoes, beef jerky

*Optional:* Show [video by MFC](#) (~4 mins) discussing the difference between flavor and taste. The majority of the information above is contained in this video. The visuals can help students better understand bitter and umami. Leave time for questions after watching.

## MATERIALS

*For 20 students, divided across 4 student tables*

- Print-out of worksheet for every student (*provided*)
- Markers for completing the worksheet
- Select 5 different types of vegetables from the school garden. The quantity will depend on the vegetables chosen.
  - We recommend starting this activity with: 2 cups of carrots, sliced ~ ¼ inch; 2 cups of tomatoes, sliced; 2 cups of cucumbers, sliced; 2 cups of green beans, chopped into thirds (⅓); 2 cups of spinach, loosely packed



- 1 cup of sugar - SWEET
  - Alternatives: brown sugar, honey, pure maple syrup, agave, ripe strawberries
- 1 cup of table salt - SALTY
  - Alternatives: sea salt, low sodium soy sauce, miso paste
- 1 cup of lemon juice - SOUR
  - Alternatives: lime juice, pickle juice
- 1 cup of low sodium soy sauce - UMAMI
  - Alternatives: mushroom umami seasoning blend, toasted sesame oil, nutritional yeast, liquid smoke
- 1 cup cocoa powder - BITTER
  - Alternatives: kale, dandelion greens (leaves), green tea
- 20 small paper plates or napkins
- 20 spoons per liquid ingredient
- Hand sanitizer for every table

## **ACTIVITY**

### *Preparation*

Cut up the various vegetables prior to the lesson. Try to include some vegetables that the students may not have tasted before or are not familiar with. Provided in the Materials section are example vegetables and ingredients.

### *In Class*

Provide each table of students with a bowl of each prepared vegetable and ingredient. Distribute student worksheets. Ask the students if they have seen or tried any of the vegetables before. Divide the vegetables and ingredients into bowls for each table. Ask a few student volunteers to help bring the vegetables and ingredients to each table.

Taste each vegetable one at a time and ask the students to raise their hands if they like, dislike, or are not sure/neutral about each vegetable. Then have students mark their



feelings on the worksheet. Ask students to pick their favorite vegetable and their least favorite vegetable. It's okay if students don't want to try every vegetable, but try to encourage them to become familiar with the food using one of their other senses like touch or even sight (see Description & Observation lesson guide).

Ask students to try their sweet vegetable. Now, add the sweet ingredient to their sweet vegetable (i.e. sprinkle brown sugar on carrot slice), taste the vegetable again. What did the students think - like, dislike or not sure? Repeat with the salty, sour, bitter and umami vegetables and ingredients. It does not matter if students like or dislike the vegetable. Encourage and support that they are trying new foods.

## VARIATIONS

- Try the taste test with different vegetables.
- Use different foods to illustrate each basic taste, such as different types of salts, lemon and lime juice, etc.
- Use one type of vegetable for all of the samplings. For example, carrots or cucumbers with the different sweet, salty, sour, bitter, and umami ingredients.
- Work with the students to assign a different movement/dance move to each taste. Call out the tastes and have students do the movement.
- Assign a different day to cover each of the five basic tastes and do the corresponding sampling activity. The break between samplings can help students better understand/differentiate the tastes.
- Ask students to find descriptive words to describe the vegetables during the first sampling. Is the vegetable crunchy or mushy? What color is it? (See Description & Observation lesson guide).
- If you are working on knife skills, students can help with cutting some of the softer foods with child-safe knives.