

The Five Senses: Taste

Strand Scientific Investigation, Reasoning, and Logic

Topic Investigating the sense of taste

Primary SOL K.2 The student will investigate and understand that humans have senses that allow them to seek, find, take in, and react or respond to information in order to learn about their surroundings. Key concepts include

- a) the five senses and corresponding sensing organs;
- b) sensory descriptors used to describe common objects and phenomena.

Related SOL K.1 The student will demonstrate an understanding of scientific reasoning, logic, and the nature of science by planning and conducting investigations in which

- a) basic characteristics or properties of objects are identified by direct observation.

Background Information

The sensing organs—eyes, ears, nose, tongue, and skin—are associated with the five senses. Using the senses, we can make observations about the world. To communicate what is observed, descriptors are used.

We use our mouths and tongues to taste foods. Our tongues and the roofs of our mouths have taste buds. Taste buds can recognize four basic kinds of tastes: sweet, salty, sour, and bitter. The taste buds receptors for sweet and salty are located near the front of the tongue; the ones for sour are located on either side of the tongue; and the ones for bitter are located in the back of the tongue.

We also have taste buds on the roofs of our mouths, and to a lesser degree, on our lips, inside our cheeks, and at the back of our mouths. If you have ever accidentally burned the roof of your mouth with a hot liquid or hot food, you will notice a difference in taste without these taste buds. The taste buds that we burn get replaced with new ones over time.

Our noses also play a part in our sense of taste. As we chew our food, chemicals released from the food travel into our nasal passages triggering receptors in our noses called olfactory receptors. They work with our tongues to help us taste.

As we get older, we lose the ability to detect tastes on the roofs and sides of our mouths. The number of taste buds gets smaller as we age, however, so does our sensitivity to certain types of food. Some foods that we didn't like as a child because they had too strong a taste, may now taste fine.

Materials

- Hand-held mirrors
- White paper plates – two per student
- Food pictures found in grocery store ads (perhaps mounted on card stock)
- Index cards – four per student
- Science journals

Vocabulary

five senses, taste, tongue, sweet, sour, bitter, salty

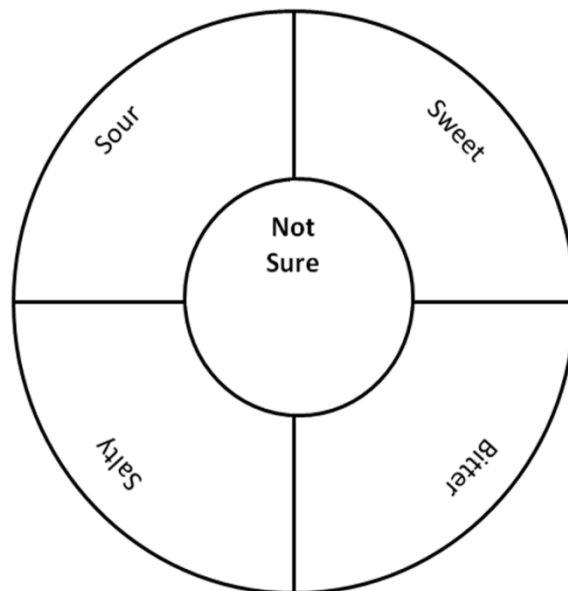
Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

Introduction

1. Have students come together in a circle and talk about their favorite foods and how they are alike and different. This discussion should bring up the idea of sweets, salty foods, vegetables, fruits, candy, and other kinds of food.
2. Brainstorm: “What is it about all these foods that we like? Their TASTE!”

Procedure

1. Ask students what they think they use to taste different things.
2. Pass around their mirrors, and have students look at their tongues and describe them to the class.
3. Talk about taste buds and the job they do.
4. Ask whether they think anything else helps them taste. Talk about their noses and how they also help them taste their food. Talk about what happens to the taste of food when they have a cold and a stuffed-up nose. Ask, “If you hold your nose, can you still taste?”
5. Draw a large four-column chart on the board. Label the columns with: “sweet,” “sour,” “bitter,” and “salty.”
6. Display the pictures of various foods from grocery store ads. Have different students place them in the correct column on the four-column chart on the board. Verify that all students agree with the placements, and if not, discuss what they think might need to be changed.
7. Tell students that they have an “experiment” to conduct at lunch. Give each student a white paper plate that has been divided and labeled as follows:



8. Review the vocabulary words that they will be using.

9. Tell students that as they eat their lunches today, they need to decide where they think each thing that they eat for lunch will fit on their paper plates.
10. When students come back to the classroom after lunch, have them draw a picture of each food on their paper plates where they think it fits. Tell them that if they are not sure what taste to use, they may draw that food in the middle circle labeled “Not Sure.”

Observations and Conclusions

1. Discuss the taste of each food. Use descriptors such as sweet, salty, sour, and bitter. Talk about which part of their tongue reacts to each taste.

Assessment

- **Journal/Writing Prompts**
 - Title a page “My Tongue,” and draw an oversized tongue, and color each of the four sections with a different color.
- **Other**
 - Have each student use four index cards to make “sweet,” “sour,” “bitter,” and “salty” voting cards. Call out common foods that your students have tasted, and have them show the card that describes the taste of the food shown. These cards need to be made in advance with a corresponding picture to help students recognize the words.
 - Have students take home a second paper plate that is divided and labeled identical to the plate they used to describe their lunch. Ask them to do the same thing with the dinner they are having that evening.

Extensions and Connections (for all students)

- Discuss various healthy foods. Talk about which tastes these foods would have.
- At lunch, have students close their eyes, pinch their noses closed, and try two different foods that have the same texture but normally very distinct flavors. (e.g., an apple and a pear, or a piece of bread and a piece of cake.) Talk about the nose’s role in taste.

Safety Note: Take care to discover any food allergies students may have before doing this activity.

Strategies for Differentiation

- Use a chart with clip art and magazine pictures of the different kinds of foods for more practice in sorting (classification of) tastes.
- Have students glue pictures on word labels of foods with different tastes.
- Have students work in small groups to make a poster of an over-sized tongue and put pictures showing where the different foods are tasted.