



# Five Senses

## Educator Notes

### Learning Objectives

- Identify and describe the five main senses.
- Provide examples of what students may observe using their five main senses.

### Safety

- Provide non-allergenic foods for students to taste. Check with parents and the school nurse concerning any food allergies students may have before conducting this lesson.

### Teacher Background

Students observe various objects using their five main senses and discuss how senses can change in various environments. First, students learn the five main senses and how humans use these senses in their everyday life. This Classroom Connection consists of two inquiry activities giving students an opportunity to explore two separate environments with their five senses.

We use our five main senses to observe and adapt to the environment around us. Astronauts aboard the International Space Station have slight alterations to their senses as they adapt to the microgravity environment approximately 250 miles above Earth's surface in low-Earth orbit, in addition to changes as they return to Earth. These alterations are largely due to the shift of fluids as the body reacts to microgravity and include, but are not limited to, changes in eyesight, stability, taste, and smell. Astronauts also experience short-term changes in their stability as the vestibular system located in the inner ear adjusts to changes in gravity. Past and ongoing studies aim to identify the cause of these alterations, in addition to providing possible solutions to these issues for the future of human space travel.



NASA Astronaut Leroy Chiao, Expedition 10 commander and NASA International Space Station science officer, eats a meal aboard the space station. **Credits:** NASA

### Introduce the Challenge

#### Ask (Inquiry Discussion)

- Any additional background information should not be given to the students prior to the questions and activity due to it being a discovery-based learning lesson. Use this discussion and the following activity to segue into the Five Senses STEMonstration video. Start this activity by asking students the following:
  - What is an observation?
  - Who uses observations and for what purpose?
  - Why do we need to make observations?

## Grades K to 4

### Suggested Pacing

60 minutes total

- Inquiry Discussion – 5 min
- STEMonstration video – 5 min
- Classroom Observations – 20 min
- Outdoor Observations – 20 min
- Environment Comparison Discussion – 10 min

### Materials

Provide one per student.

- Classroom Observations student worksheet
- Outside Observations student worksheet
- An item students can taste in the classroom (examples: small candy, piece of non-allergenic food)
- An item students can taste from the environment (examples: lettuce, fruit, vegetable)
- Pencil
- Clipboard (optional)

### Next Generation Science Standards

- 4-LS1-2

## Five Senses

- How do you observe the world around you?
- What are the five main senses we use to observe the world around us?

### STEMonstration Video

- Watch the Five Senses STEMonstration video available at <https://www.nasa.gov/stemonstrations>
  - Discuss the similarities and differences between how senses function here on Earth and how astronauts use their senses aboard the space station.
  - Discuss with your students how some people do not have all five of their senses. Blindness is the condition in which a person is unable to see and deafness is the condition in which a person is unable to hear. Scientific evidence suggests however, the brain can adapt to the loss of a sense through enhancing the other senses.

## Facilitate the Challenge

### Test (Classroom Observations)

- Hand out the Five Senses Student Worksheet, a pencil, and a clipboard (optional) to each student. Review the classroom observations portion of the student worksheet with your students and have them write down as much information as they can for each section. Students should also draw a picture of their observation in the table where indicated.
- Ask students to safely explore their classroom environment and record their observations on the Five Senses Student Worksheet titled classroom observations.

### Test (Outdoor Observations)

- Have students look at the outdoor observations section of the Five Senses Student Worksheet and have them hold onto their pencil, and a clipboard (optional) from the previous classroom activity. Go over each portion of the student worksheet and have students write down as much information as they can for each section. Students should draw a picture of their observations in the table where indicated.
- Give students a safety briefing prior to letting them explore the new environment. If weather does not allow for outdoor exploration, take students to a location indoors with an environment different from their classroom.
- Ask students to safely explore their new environment and record their observations on the Five Senses Student Worksheet titled outdoor observations.

### Share (Environment Comparison Discussion)

- Once students return to the classroom, allow time for the students to share their observations with each other.
- Prompt students to think about any differences they noticed between their observations in the classroom and their observations outdoors (or the alternative location). Ask students to record these differences where indicated on their Five Senses Student Worksheet.
  - Once everyone has their list of differences, ask a few students to share what they wrote down and elaborate on why these differences may exist due to the change in environment.
- Following this discussion, ask students to compare what they observed in these two environments on Earth, to what the astronauts may be observing aboard the International Space Station. Revisit the Five Senses STEMonstration video if needed to remind students of the change in the five senses while adjusting to life aboard the space station.

## More to Explore

- What's Hidden Inside? <https://www.nasa.gov/stem-ed-resources/whats-hidden-inside-activity.html>
- Sky Viewer <https://mynasadata.larc.nasa.gov/lesson-plans/sky-viewer>

# Five Senses Student Worksheet

## Classroom Observations

**Directions:** Identify, describe, and draw observations within your classroom environment using the five main senses.

Five Senses	Observations	Drawing
<b>Sight</b>	What I am looking at: _____ What does it look like? _____ _____	
<b>Taste</b>	Teacher-provided item I am tasting: _____ What does it taste like? _____ _____	
<b>Smell</b>	Item I am smelling: _____ What does it smell like? _____ _____	
<b>Hear</b>	Sound I am hearing: _____ What does it sound like? _____ _____	
<b>Touch</b>	Item I am touching: _____ What does it feel like? _____ _____	

# Outdoor Observations

**Directions:** Identify, describe, and draw observations within your outdoor environment using the five main senses.

Five Senses	Observations	Drawing
<p><b>Sight</b></p>	<p>What I am looking at: _____                      What does it look like? _____                      _____</p>	
<p><b>Taste</b></p>	<p>Teacher-provided item I am tasting: _____                      What does it taste like? _____                      _____</p>	
<p><b>Smell</b></p>	<p>Item I am smelling: _____                      What does it smell like? _____                      _____</p>	
<p><b>Hear</b></p>	<p>Sound I am hearing: _____                      What does it sound like? _____                      _____</p>	
<p><b>Touch</b></p>	<p>Item I am touching: _____                      What does it feel like?                      _____</p>	

**What differences do you notice between your classroom observations and your outdoor observations? List as many differences as you can think of and be prepared to share these with your class.**

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