

How Do Your Senses Keep You Safe?



Focus: Students explore how they can use their senses to identify materials and discuss various situations in which their senses help to keep them safe.

Specific Curriculum Outcomes

Students will be expected to:

- 16.0 explore how each of the senses helps us recognize and safely use materials [GCO 1/3]
- 5.0 follow safety procedures and rules [GCO 2]
- 17.0 explore attributes of materials we can learn to recognize through each of our senses [GCO 1/3]
- 3.0 communicate using scientific terminology [GCO 2]
- 8.0 communicate while exploring and investigating [GCO 2]

Performance Indicators

Students who achieve these outcomes will be able to:

- recognize how their senses help to keep them safe from dangers
- identify materials using their five senses
- demonstrate how their senses help them, for example, by choosing appropriately ripe fruit to eat

NOTES:

Attitude Outcome Statements

Encourage students to:

- show concern for their safety and that of others in carrying out activities and using materials [GCO 4]
- willingly observe, question, and explore [GCO 4]

Cross-Curricular Connections

English Language Arts

Students will be expected to:

- respond personally to a range of texts [GCO 6]
- interact with sensitivity and respect, considering the situation, audience, and purpose [GCO 3]

Getting Organized

Program Components	Materials	Before You Begin	Vocabulary
• Science Card 2 • BLM <i>My Senses Protect Me</i> • IWB Activity 2 • <i>The Hockey Tree</i> (Read Aloud) • Science Card 3 • IWB Activity 3 Literacy Place: <i>Rain</i> (Read Aloud—Changes Inquiry Unit)	• digital recording of sounds signalling danger • students' Science Folders • small items inside a bag, box, or sock • variety of scents on cotton balls inside small plastic containers • digitally recorded sounds of materials being manipulated with corresponding pictures of materials • small items in sealed containers (optional) • food and beverage samples • students' Science Journals • fruit samples at differing stages of ripeness • blindfolds, nose plugs, ear plugs or cotton balls, and socks • Lego bricks • pieces of peeled apple and pear • small items in sealed containers	• Prepare five sensory centres with a variety of materials for students to touch, smell, hear, see, and taste (if appropriate). • Compile a digital recording of sounds signalling danger. Sound clips can be found on the Internet. • Gather samples of fruit at different stages of ripeness. Ensure that some samples will be appropriate to taste. • Gather blindfolds, nose plugs, ear plugs or cotton balls, and socks for students to use when exploring what it would be like to live without all of their senses.	• attribute • material

Safety

- Ensure students are not allergic to any foods or scents used for testing. Discuss safety procedures before beginning any investigations.

Science Background

- Our five senses help us to explore the world around us.
- Our senses also protect us by warning of dangers in our surroundings. Information gathered by the sense organs is sent along nerves to the brain. The brain then sends messages to the body telling it how to respond.
- Not everyone is born with five senses but people who are born blind or unable to hear may learn to use the senses they have better than people born with all five senses.
- Technologies are being developed that can replace information from a missing sense by using input from a different sense. For example, devices for people with visual impairments can translate visual images into bursts of music or sound which people learn to decode in order to 'see.'
- Another device uses a vibrating vest to allow people with deafness or severe hearing impairments to perceive auditory information through small vibrations on their torso.

Possible Misconceptions

- Students may think that people with disabilities can't recognize objects. Explain that someone lacking one sense can use another sense to recognize a material or object. For example, a visually impaired person can recognize objects by touch instead of sight.

ACTIVATE



- **IWB Activity:**
- Students can use
- Activity 2: *Keeping safe* to match the
- senses that keep them
- safe to the dangerous
- situations shown (see
- the Teacher's Website).
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Senses and Safety

Display Science Card 2 and invite students to look at the photos and identify the dangerous items. Ask students how their senses can help to keep them safe from these dangers. Provide prompts such as:

- How can you tell if foods/beverages are too hot, too salty, or if they have soured or spoiled?
- How can you tell if an emergency vehicle is approaching?
- How can you tell if materials are hot, sharp, or slippery?
- What other dangers might have been included on the card?

You might provide a digital recording of sounds signalling danger, such as a fire alarm, a police siren, or a shout for help. Ask:

- How does our sense of hearing help to keep us safe?



Distribute copies of BLM *My Senses Protect Me* and challenge students to identify the senses that help to keep them safe from the dangers in each situation.

Role Play

Divide the class into small groups and invite students to role play scenarios where their senses helped them to keep safe.

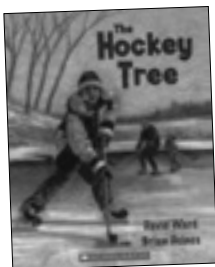
Discuss Safety Procedures

As a class, discuss safety procedures students should follow during the course of the unit to protect their senses while conducting science investigations. Possible rules and procedures include wearing safety goggles, no tasting unless given permission to do so, washing hands after handling materials and tools, and never smelling an unknown substance directly (always waft odours to the nose and sniff). These rules could be recorded on a chart and posted for students to use throughout the unit. Some students may like to draw pictures to accompany the rules.

CONNECT

Read Aloud: *The Hockey Tree*

Before Reading



Remind students of how we use our senses to learn about the world around us. Discuss how we use descriptive language to express what our senses tell us.

Introduce *The Hockey Tree*. Tell students that as you read the text aloud, they are going to listen for the sensory language in the text that tell us what the characters see, hear, smell, and touch with their senses. Explain that they should be ready to identify which sense is being used.

Show students the cover of *The Hockey Tree* and ask:

- What season do you think this is?
- What might you see, feel, hear, and smell, if you were in the scene?

During Reading

As you turn to each new page, read the text and clarify any new vocabulary or concepts. Then, if appropriate, ask students to point out any sensory language they hear and to identify which sense is being used, for example:

Page 6:

- "Owen and Holly crunched through the snow...." (hear)
- "Their breath formed small, puffy clouds in the cold air." (see)
- "Dad helped with their skates, his fingers tugging on the long laces." (touch)

Page 8:

- “The puck smacked the ice.” (see, hear)

Page 12:

- “It [the puck] slid straight toward a fishing hole and disappeared with a small splash.” (see, hear)

Page 15:

- “The trees were heavy with fresh snow.” (see)
- “Owen could smell the scent of pine and poplar as he pushed the branches aside.” (smell)

Page 17:

- “Dad gave it a gentle nudge with his foot. ‘Not this one,’ he said. ‘See how soft it is? This trunk is rotten.’” (touch, see)

Page 18:

- “Owen could smell the fresh wood.” (smell)

Page 23:

- He brought his stick way back and cracked the puck.” (hear)

Page 27:

- “By early afternoon a bright winter sun was turning the ice into a blazing sheet of white.” (see)
- “Shouts and laughter drifted across the lake....” (hear)

Page 28:

- “He watched the poplar trees blur past his window and smiled.” (see)

After Reading

Discuss with students how sensory language helps us to understand what the senses can tell us. Provide prompts such as:

- **How do our senses help us to recognize and identify materials?**
- **How did the sensory descriptions help us to imagine what the characters were seeing, touching, smelling, and hearing?**

Sensory Centres

Set up mini sensory centres for each of the five senses to enable students to explore and identify materials using their senses. Small groups of students can cycle through the centres or, if students need more assistance, the explorations could be completed for one sense at a time with the whole group.

Labels may be provided at the centres to aid with identification. Students can match the labels to numbered materials.

Touch – Provide a variety of mystery materials placed inside a bag, box, or sock. Students place their hand inside the bag and use only the sense of touch to describe and identify the materials.

Smell – Add various scents (e.g., vinegar, cinnamon, vanilla, lemon, pickling juice, etc.) to cotton balls and place them inside small plastic containers. Students open the container, waft the odour to their nose, and gently sniff the air in order to describe and identify the scents.

Hear – Digitally record the sounds of a variety of materials (e.g., a bouncing rubber ball, crumpling paper, popping popcorn, water dripping from a faucet, a flag flapping in the wind, etc.). Students listen to the sounds in order to describe and identify the materials. Provide pictures of the corresponding objects for students to match with the sounds. They could place a marker on the picture as each sound is identified. Students could then sort the pictures by soft (i.e., quiet) and loud sounds.

Alternatively, you could prepare several sealed containers holding one material or a combination of several different materials. Students shake the containers and describe the sounds they hear. Students record a prediction of what is inside and then open the containers to check.

See – Place various materials at the centre. Without touching the items, students can describe and identify what they see.

Taste – Provide a variety of small food and beverage samples (e.g., yogurt, jelly beans, fruit juice, flavoured water, etc.). Students observe and taste the samples in order to describe and identify the flavours.

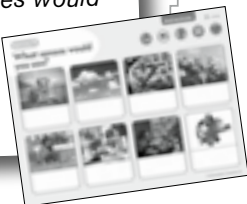
While students are exploring with materials at the sensory centres, encourage them to think about questions they have about the materials. These questions can be recorded on sticky notes or cards and attached to the I Wonder Wall.



CONSOLIDATE



- IWB Activity:**
- Have students identify and explain which senses they can use with each item shown using Activity 3:
 - *What senses would you use?* (see the Teacher's Website).

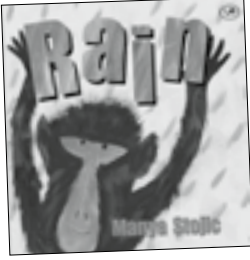


Attributes of Materials

Display Science Card 3. Invite students to identify and describe the materials shown on the card. You may also provide samples of the objects shown to allow students to explore physical sensory learning objects. Students can record the attributes in their Science Journals. Explain the term “attribute” and add this word to the Word Wall. You might provide sentence starters such as “This is a _____. It is _____. Remind students that even if a material does not have a specific observable attribute, it can still be described. For example, a glass has no colour so it is colourless; and water is tasteless and odourless.

Food Safety

Bring in a variety fruit samples at differing stages of ripeness. Have students use all of their senses to describe the fruit samples and to select the most appropriate sample to eat.

**Literacy Place Connection:**

Revisit or read *Rain* by Manya Stojic in which various African animals describe how they know that the rain has come to their dry land. Discuss with students how the animals use their senses. Ask:

- How do their senses help the animals to know the rain has come?
- What senses do the animals use to enjoy their world after the rain stops?

EXPLORE MORE

Loss of a Sense

Help students to realize what it would be like to live without all of their senses by organizing them in groups of four and having each group member simulate the loss of one sense (using a blindfold, nose plug, ear plugs or cotton balls, and putting socks on their hands). Give students several tasks to do such as:

- building a Lego structure (difficult without senses of sight and touch)
- identifying pieces of peeled fruit as apple or pear (difficult without sense of smell)
- identifying objects in sealed containers (difficult without sense of hearing)

Then, as a whole group, discuss how the loss of a sense made the task difficult.

Invite students to discuss which sense they think it would be hardest to live without and why they think so. Have students do a think-pair-share with a partner before holding a whole-group discussion.

My Senses Protect Me

Name: _____

Circle the senses that keep you safe from each danger.

