

## Unit 2

# The Senses

## Books for Children

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Bergman, Thomas. *Seeing In Special Ways*. Milwaukee: Gareth Stevens Children's Books, 1989.

\_\_\_\_\_. *Finding a Common Language*. Milwaukee: Gareth Stevens Children's Books, 1989.

Graves, Kimberlee. *I Can't Sleep*. Learn to Read Science Series, Level 2. Cypress, CA: Creative Teaching Press, 1994.

\_\_\_\_\_. *What's In My Pocket?* Learn to Read Science Series, Level 2. Cypress, CA: Creative Teaching Press, 1994.

Graves, Kimberlee, and Rozanne Lanczak Williams. *Where Are You Going?* Learn to Read Science Series, Level 2. Cypress, CA: Creative Teaching Press, 1994.

Intrater, Roberta Grobel. *Two Eyes, a Nose and a Mouth*. New York: Scholastic, 1995.

MacKinnon, Debbie. *All About Me*. Hauppauge: Barron's, 1994.

Maynard, Christopher. *Why Are Pineapples Prickly?* Toronto: Scholastic, 1997.

Miller, Margaret. *My Five Senses*. New York: Simon & Schuster, 1994.

Peterson, Jeanne Whitehouse. *I Have a Sister, My Sister Is Deaf*. New York: Harper & Row, 1977.

Pluckrose, Henry. *Exploring Our Senses – Hearing*. Milwaukee: Gareth Stevens Publishing, 1995.

\_\_\_\_\_. *Exploring Our Senses – Seeing*. Milwaukee: Gareth Stevens Publishing, 1995.

\_\_\_\_\_. *Exploring Our Senses – Smelling*. Milwaukee: Gareth Stevens Publishing, 1995.

\_\_\_\_\_. *Exploring Our Senses – Tasting*. Milwaukee: Gareth Stevens Publishing, 1995.

\_\_\_\_\_. *Exploring Our Senses – Touching*. Milwaukee: Gareth Stevens Publishing, 1995.

Suhr, Mandy. *Hearing*. Minneapolis: Carolrhoda Books, 1994.

Williams, Rozanne Lanczak. *What's Going On?* Learn to Read Science Series, Level 2. Cypress, CA: Creative Teaching Press, 1994.

Creative Teaching Press books are available from Peguis Publishers, Winnipeg.

# Web Sites

- <http://tqjunior.advanced.org/3750>

An excellent introduction to the five senses. Click on Mr. Potato Head's eyes, nose, ears, mouth, or hands to learn more about each of the senses.

- <http://www.hhmi.org/senses>

Web site for the Howard Hughes Medical Institute. Interesting and informative articles on seeing, hearing, and smelling the world.

- <http://weber.u.washington.edu/~chudler/neurok.html>

Neuroscience for Kids has been created for teachers and students interested in the nervous system. Clicking on "Experiments and Activities" will take you to "The Senses." This site includes experiments, teacher resources, and extensive links.

- <http://www.fi.edu/tfi>

The Franklin Institute Science Museum: scroll down and click on "Minutes from ME," an index to classroom activities on hearing, smelling, and seeing.

- <http://ericir.syr.edu/Projects/Newton/11/tstesmll.html>

Newton's Apple web site: Effectively answers questions regarding the connections between taste and smell. Includes classroom activities.

- <http://family.com.go>

Disney's online family magazine: enter "the senses" in their search field and find extensive articles and activities related to the senses.

- <http://www.cnib.ca/cci/braille/index.htm>

Web site for the Canadian National Institute for the Blind. Learn the history of Braille and the Braille system.

- <http://dww.deafworldweb.org/>

Learn American Sign Language with a complete interactive ASL dictionary. Includes articles written for and by deaf people. Link to Canadian Cultural Society for the Deaf.

# Introduction

This unit focusses on the investigation of the five senses. Students will identify and describe the function of the main body parts with which the five senses are associated. Through hands-on activities, students will use their five senses to describe the properties of objects and classify these objects. Students will also investigate the importance of the senses and learn about ways that they can protect the body and preserve the senses.

Students will be expected to taste, smell, and touch various foods and objects. Stress the importance of safety throughout the unit: be aware of students' allergies and ensure that students understand that they are not to taste, smell, or touch objects without your permission. These issues can also be addressed through integration with health safety lessons.

When collecting materials, consider the ways in which you will conduct activities. If students are working individually, you will need more materials. If, on the other hand, students are working in small groups, fewer materials are required. Keep in mind that working in small groups stimulates interactions and allows students to learn from their classmates.

## Science Vocabulary

Throughout this unit, teachers should use, and encourage students to use, vocabulary such as: *taste, sweet, salty, sour, smell, nose, nostrils, odour, sight, shape, colour, size, eye, eyelash, eyebrow, eyelid, pupil, iris, eyeball, hearing, sound, loud, quiet, outer ear, inner ear, touch, texture, rough, smooth, bumpy, soft, and hard.*

## Materials Required for the Unit

**Classroom:** scissors, tape, pencils, paper clips, chart paper, glue, clay or Plasticine, paint, crayons, felt pens

**Books, Pictures, and Illustrations:** diagram of the eye (included), labels of the parts of the eye (included), drawing of ear (included), drawing of nose (included), picture cards for discussion on how our senses can protect and mislead (included), magazines and newspaper flyers (with pictures of portraits, landscapes, cityscapes, food), copy of *I Have a Sister, My Sister Is Deaf*, pictures of people on the job

**Household:** popcorn, paper plates, paper cups, plastic spoons, napkins, salt, items with easily identifiable scents (e.g., onion, perfume, ground coffee, vinegar), food items with various tastes (e.g., lemon, pickles, sugar), rice, opaque containers with secure lids, musical recordings (compact disks or cassettes), sport socks, old dress shirts with buttons, tray, shoeboxes, hand-held mirrors (small), cotton ball, cotton batting, cookie dough

**Equipment:** popcorn popper with transparent lid, overhead projector and screen

**Other:** empty box, tennis ball, bell, blindfolds, block of wood and sandpaper, ukulele or other stringed instrument, fabric swatches (e.g., cotton, felt, silk, satin), textured items (e.g., fabric swatches, varnished wood, sandpaper, plastic ball, sponge ball), apples, potatoes, toy car, small stuffed animal, marbles, Popsicle sticks, ear plugs, objects for scavenger hunt (e.g., candle, whistle, mitten, eyeglasses, book)

# 1

## The Senses

### Materials

- popcorn
- air popcorn popper with transparent lid
- paper cups or paper plates
- napkins
- salt
- large empty box to cover popcorn popper
- pencils

### Activity

Popping corn is one experience that involves all the senses. Prepare the popcorn popper while the students are out of the room. Hide the popcorn popper under a box on a low table or on the floor in the centre of the room. As the students enter, have them sit or stand around the box. Ask the students:

- How can we find out what is under the box without lifting the box?

Plug in the popcorn popper. Encourage the students to describe the sounds and smells coming from the box. Remove the box and allow the students to watch as the popcorn finishes popping. Sprinkle salt on the popcorn and give each student a small cup or plate of popcorn.

Ask the students:

- Is the popcorn warm? How do you know?
- What part of your body helps you to feel?
- What does popcorn look like now?
- How did the popcorn look before it popped?
- How has the popcorn changed?
- What part of your body helps you to see?
- What does popcorn taste like?
- What part of your body helps you to taste?
- Can you taste any salt?
- What did the popcorn sound like as it was coming out of the popper?

- What sound does the popcorn make when you eat it?
- What part of your body helps you to hear?
- What sense(s) did you use to discover what was under the box?
- What does the popcorn smell like?
- What part of your body helps you to smell?

Review the senses the students have used to learn about popcorn.

**Note:** Be sure to supervise the hot popcorn popper at all times.

### Activity Sheet

#### Directions to students:

Draw a picture that shows something you like to do that uses each of your senses (e.g., I see with my eyes, I like to see the sunset) (2.1.1).

### Extension

Discuss how your senses can affect your safety. Ask students:

- How do you sense danger? (Some examples are: smell smoke, hear a dog growling, see a car coming toward you as you are about to cross the street.)

### Activity Centre

Create a senses centre.

**Touch:** Make a "Feely Box." Cut a hole in the box large enough for a student's arm to fit through. Fill the box with various items and have the students identify the items without looking at the objects.

**Smell:** Fill old film containers with various things that have distinctive odours (e.g., perfume, vinegar, cinnamon, vanilla).

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**Note:** If using a liquid such as perfume, soak a cottonball with the perfume, and place the cottonball in the film container.

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Punch a couple of holes in the top of the lid. Have the students identify the items using their sense of smell. Remind students that when they are smelling objects they should not inhale the fumes directly, but should wave a hand over the object toward their nostrils.

**Taste:** Place a number of different foods on a tray. Have the students identify the foods. Blindfold the students and see if they can identify the foods through taste.

**Sound:** Tape-record a variety of familiar sounds (e.g., school bell, voices, birds

chirping). Have the students identify the sounds they hear.

**Sight:** Have the students work with a partner or in a small group. Place a number of familiar classroom objects on a tray (e.g., chalkboard eraser, clock, felt pen, crayon). Invite the students to identify each of the items on the tray. Have the students close their eyes while one student removes an object from the tray. Ask the students to open their eyes and identify the missing object.

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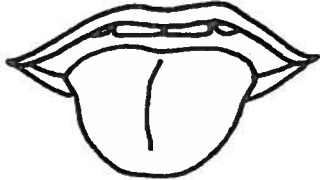

**Note:** Before selecting items, be aware of allergies students might have.

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Date: \_\_\_\_\_

Name: \_\_\_\_\_

## My Five Senses

<p><b>I see with my</b></p> 	<p><b>I like to see</b></p>
<p><b>I hear with my</b></p> 	<p><b>I like to hear</b></p>
<p><b>I smell with my</b></p> 	<p><b>I like to smell</b></p>
<p><b>I taste with my</b></p> 	<p><b>I like to taste</b></p>
<p><b>I feel with my</b></p> 	<p><b>I like to feel</b></p>

# 2 The Eyes – Parts and Functions

## Science Background Information for Teachers

The parts and functions of the eye are as follows:

**eyelashes:** protect the eye by keeping out dust and dirt

**eyebrow:** keeps dust and sweat out of the eye

**eyelid:** keeps the eye moist (when you blink, tear fluid is spread over the surface of the eye); protects the eye by keeping out dust and dirt

**pupil:** allows light into the eye (the pupil, which is the black part of the eye, is really a hole)

**iris:** The iris allows the right amount of light to enter the eye. The iris is stretchy because it is a muscle and can, therefore, make the pupil larger when it is dark and smaller when there is lots of light. The iris is the coloured part of the eye.

**eyeball:** The eyeball is a ball filled with liquid and jelly. The inside of the eyeball is divided into two chambers: the small front chamber is filled with watery liquid; the larger back chamber is filled with a soft jelly. Between the two chambers is a clear disk called the lens, which bends the light as it enters the eye.

## Materials

- several shoeboxes with lids (for peep boxes)
- scissors
- tape
- diagram of the eye (included) (for best results, make this diagram into an overhead transparency) (2.2.1)
- overhead projector and screen
- labels of the parts of the eye (included) (2.2.2)
- mirror

- objects familiar to students, such as pencils, scissors, toy car, small stuffed animal, and so on
- peep boxes

**Preparing the peep boxes:** Poke a small peephole into the side of a shoebox. Cut a small 2 cm x 8 cm rectangular window on the top (cover) of the box. Leave one side of the rectangle attached so the window can be shut to keep out the light. Place an object familiar to the students inside each box. These may include items such as a pencil, scissors, toy car, small stuffed animal, carrot, and so on. Seal the box with tape around the lid to keep out the light. Label the boxes with numerals “1” to “3.”

## Activity: Part One

Divide the class into small groups. Give each group three peep boxes.

Have the students peek through the peephole in each box, keeping the window closed to eliminate light. You may want to have them cover the rectangular window with their hand or with a piece of black paper. Have them predict what they think is in the box then, using words or pictures, record their ideas on activity sheet A. Then, have them open the rectangular window and peek through the peephole once again. Have them record on their activity sheet what they see in the box. Each student should repeat this activity for each of the three peep boxes.

Following the activity, ask the students:

- What did your eyes need in order to see the object in the box?
- How much light did you need?
- Could you see colour in the box? If so, when?
- Why do you think you need light in the box in order to see the object?



**Activity: Part Two**

Display the diagram of the eye on the over-head projector. At the same time, provide students with mirrors so they can examine their own eyes to identify the different parts. Label the eye together and discuss the functions of:

- the eyebrow
- the eyelid
- the eyelashes
- the eyeball
- the pupil
- the iris

Following this discussion, provide the students with activity sheet B and have them continue to use the mirror to observe their eye while they draw a diagram of this body part. Encourage the students to label their diagrams.

**Activity Sheet A****Directions to students:**

Record what you think you see in each peep box when there is no light (prediction), then record what you see in each peep box when there is light (result) (2.2.3).

**Activity Sheet B****Directions to students:**

Draw a picture of your own eye. Label your eye with the name of each part (2.2.4).

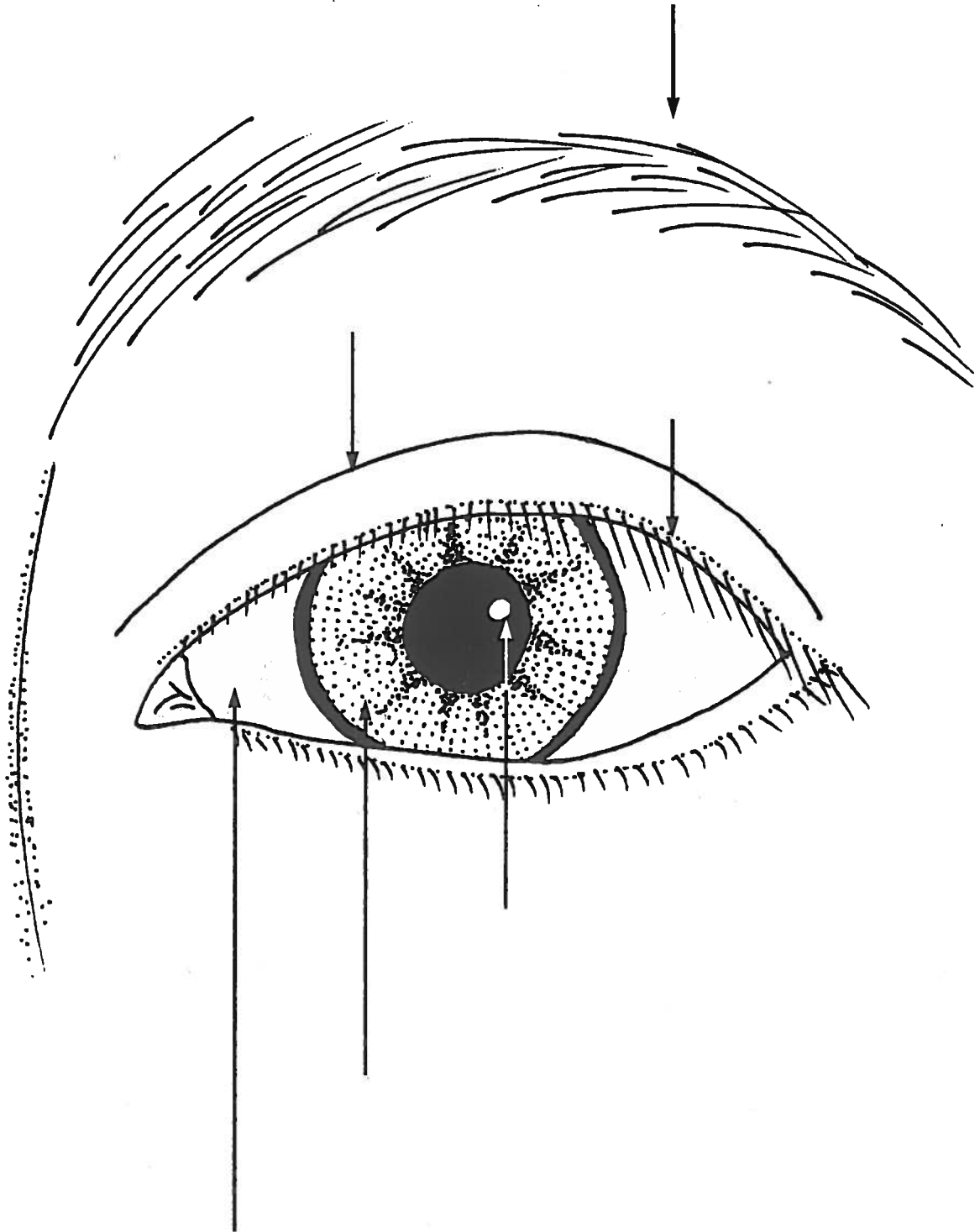
**Extensions**

- Have students look at their eyes in a mirror, taking notice of the size of their pupils. Have them shut their eyes and cover them with their hands. Aloud, count slowly to one hundred. Now, have them open their eyes quickly and look into the mirror. Ask them what they notice about their pupils. (The pupils will become larger to let in more light.)
- Have students take a survey of the colours of their friends' eyes and record their findings on a graph (use coloured circle stickers for graphing).

**Assessment Suggestion**

Using activity sheet B, have each student tell you the name and function of the (1) iris, (2) pupil, (3) eyeball, (4) eyebrow and eyelashes, and (5) eyelids. Use the rubric on page 17 for recording results.

# Diagram of the Eye



## **Labels**

**eyebrow**

**eyelid**

**eyelashes**

**eyeball**

**pupil**

**iris**

Date: \_\_\_\_\_

Name: \_\_\_\_\_

# Peep Boxes

## Box 1

Prediction	Result
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## Box 2

Prediction	Result
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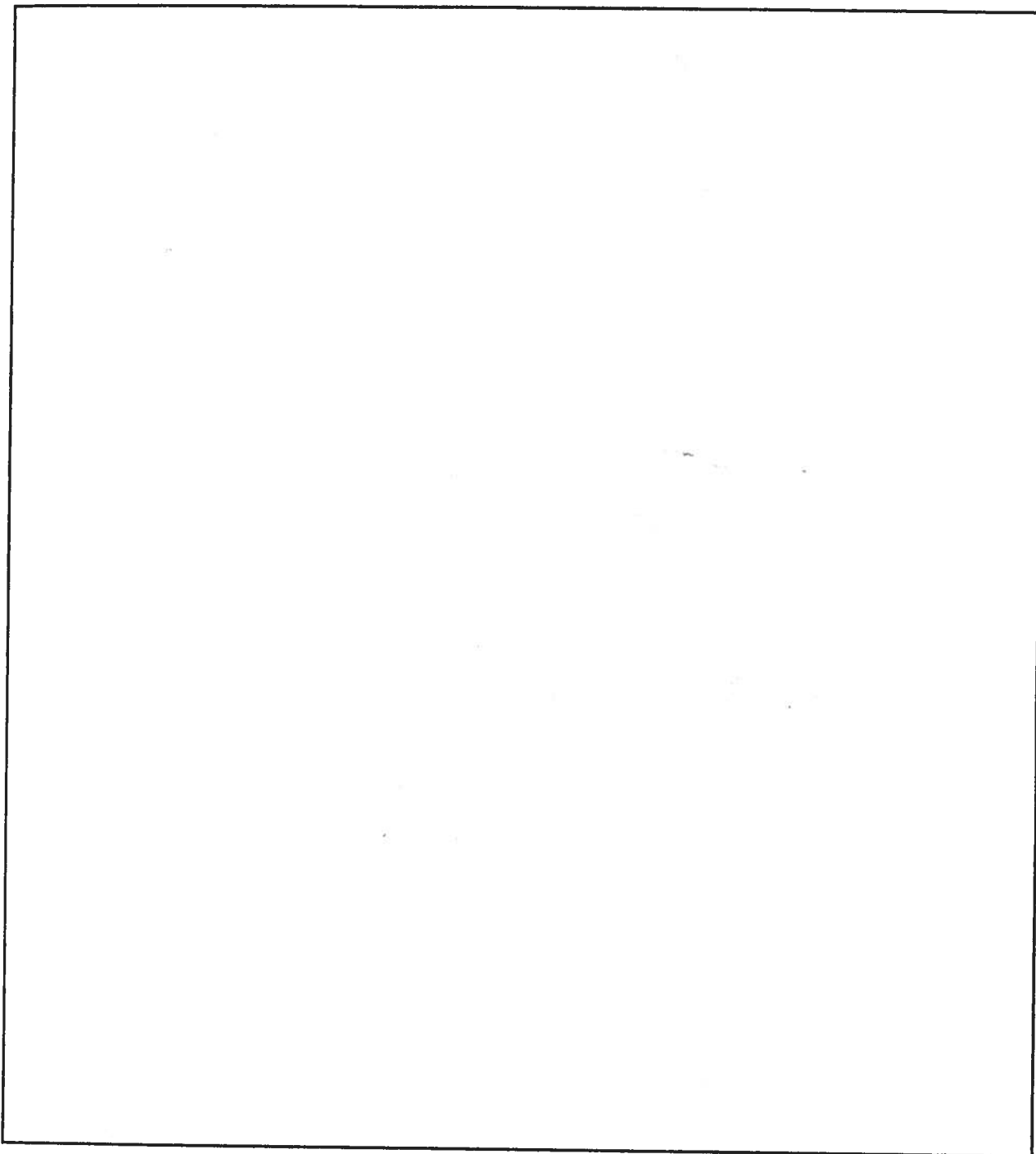
## Box 3

Prediction	Result
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Date: \_\_\_\_\_

Name: \_\_\_\_\_

## My Amazing Eye



**Label the parts:**

- eyebrow    ■ eyelid    ■ eyelashes
- eyeball    ■ pupil    ■ iris

# 3 The Ears – Parts and Functions

## Science Background Information for Teachers

Sounds travel through the air in sound waves. When the sound waves reach our ear, the outer ear funnels the sound waves into the inner ear. (At this time, do not get into a detailed explanation of sound waves. Sound is covered in detail in the grade 4 curriculum.)

## Materials

- 6 shoeboxes with lids (for mystery boxes)
- tennis ball
- bell
- pencil
- cotton ball
- handful of marbles
- handful of rice
- diagram of the ear (2.3.1) (included) or a model of the ear

**Preparing the mystery boxes:** Put an item in each shoebox: tennis ball, bell, pencil, cotton ball, marbles, rice. You may wish to wrap the shoeboxes so that they all look the same (make sure you wrap the lid separate from the base). Label the boxes with numerals "1" to "6."

## Activity

Have students sit in a circle on the floor. Tell them that they are going to sit still without moving or talking for two minutes. Have them focus on all of the sounds they hear. Following the two minutes, ask them:

- What sounds did you hear?
- How were these sounds different?
- Could you see the objects that made the sounds?
- How did you know where the sounds came from if you could not see the objects?

- Did any of the different sounds you heard have any special meaning (e.g., a bell signals that it is time to change classes or go out for recess)?

Divide the class into pairs of students. Have each student in the pair whisper something in the other's ear. Ask:

- What did you do with your hands to help your partner hear better?

Show the model or diagram of the ear. Discuss how the external part of the ear is used to catch sounds, in much the same way the students used their hands to catch sounds when they whispered to one another.

Divide the class into six groups. Have the groups of students sit in circles on the floor or at tables. Place one of the mystery boxes in the centre of each group. Tell the students you want them to try to guess what is inside the boxes. Have each student pick up the box and try to determine its contents without lifting the lid. Remind the students that they are to use only their sense of hearing to gather clues about the object. They may shake the box and listen to the sound created by the object in each box. Make sure each student in the group has a chance to hold the box.

Have the students record their predictions on their activity sheet (they may print what they think is in the box, or draw a picture).

Have the groups rotate to each table or circle and repeat the activity until each group has examined all six boxes.

Once all students have made their predictions, reveal the contents of the boxes. Beside their prediction, have the students record the name of the actual object.

**Activity Sheet****Directions to students:**

Record your predictions and results for each box, using words or pictures (2.3.2).

**Extension**

Have students work in partners. Explain that they are going to find out about the direction of sound. Ask one student to sit on a chair blindfolded, while the partner moves a few steps away. Have the partner make a noise, such as clapping hands. Ask the blindfolded student to point in the direction of where the sound is coming from. Repeat the test covering the left ear, then the right. Have the students discuss what happens.

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**Note:** Having two ears helps us tell the direction of sound. The brain puts the information from both ears together to determine where the sound comes from.

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**Activity Centre**

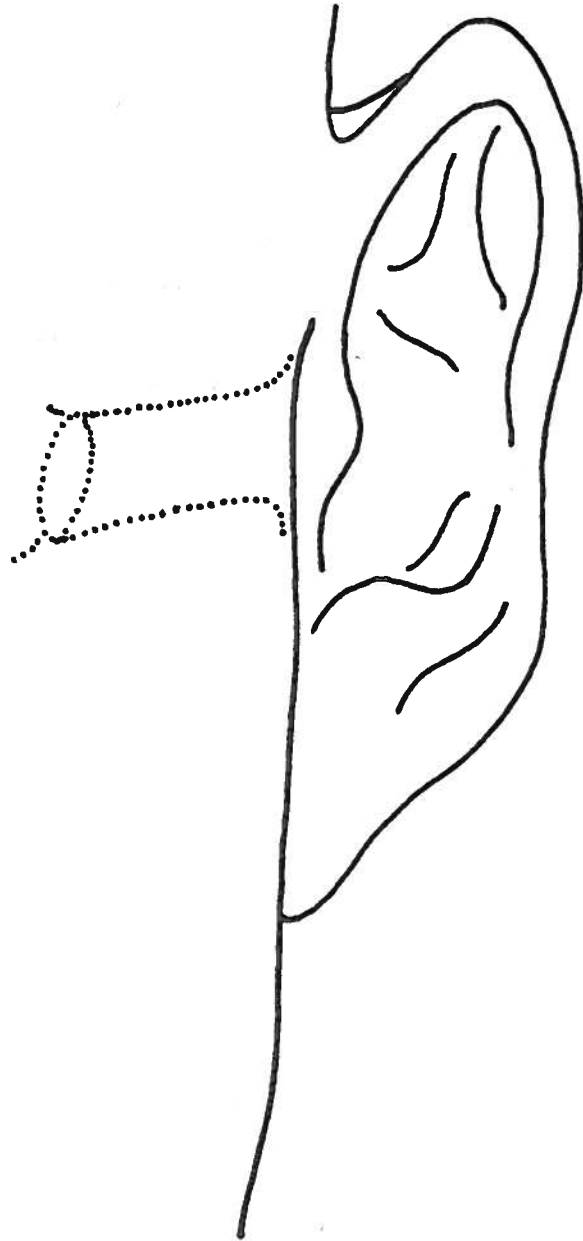
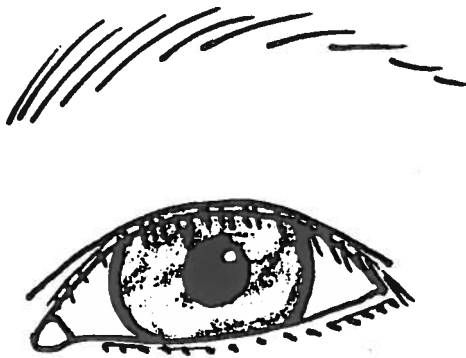
Set out several different-size jars and pencils or mallets. Fill some jars with water and leave the rest empty. Have the students listen carefully as they tap one of the jars filled with water.

Encourage students to find ways to make different sounds.

Date: \_\_\_\_\_

Name: \_\_\_\_\_

## Diagram of the Ear





Date: \_\_\_\_\_

Name: \_\_\_\_\_

# Mystery Boxes

## Box 1

<p>Prediction</p>	<p>Result</p>
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## Box 2

<p>Prediction</p>	<p>Result</p>
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## Box 3

<p>Prediction</p>	<p>Result</p>
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Date: \_\_\_\_\_

Name: \_\_\_\_\_

## Mystery Boxes

### Box 4

<b>Prediction</b>	<b>Result</b>
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### Box 5

<b>Prediction</b>	<b>Result</b>
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### Box 6

<b>Prediction</b>	<b>Result</b>
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# 4 The Nose – Parts and Functions

## Science Background Information for Teachers

The cartilage in the nose helps to give it shape, and ensures that the nostrils remain open. The nostrils allow air and scents to enter the nose. The hair in the nose traps dust and dirt so that dust and dirt do not enter the sensitive areas of the nose and, subsequently, the air passages and lungs.

## Materials

- cotton batting
- objects with easily identifiable scents (e.g., a slice of onion, dishwashing detergent, perfume, ground coffee, popcorn, a sliced orange, bubble gum, vinegar)
- opaque containers with secure lids (to hold objects that have easily identifiable scents)
- diagram of a nose (included) (2.4.1) or a model of a nose

**Note:** Place cotton batting over the object so that it cannot be seen when the lid is taken off the container. Liquids will soak into the batting, but scents will remain strong.

**Note:** Ensure that objects and liquids are nontoxic and be aware of any student allergies. Students should be taught to smell objects by waving a hand across the container toward their noses, not directly inhaling over the open container.

## Activity

Have the students handle the containers. Ask:

- Can you tell what is inside the container without using your eyes?
- How could you figure out what is inside the container without using your eyes?

Take the lid off one container and let the students smell the contents, then have them infer the identity of the object. Ask:

- What does the object smell like?
- What words describe the smell?
- What do you think is in the container?

Encourage students to use descriptive terminology when identifying the scents. Smell is perhaps the most evocative sense; students will enjoy talking about what a particular smell reminds them of (e.g., the laundromat, McDonalds, a picnic).

Continue this activity using all the containers.

At the completion of the activity, discuss the different parts of the nose (cartilage, nostril, hairs), using the diagram or model of the nose.

## Activity Sheet

**Note:** Have the students brainstorm a list of favourite scents and record five of their ideas on chart paper. Students will then use these ideas to complete their activity sheets.

## Directions to students:

Survey all of your classmates and record their favourite scent. On the tally sheet, use a tally mark to show what smell each classmate likes best (2.4.2).

## Extensions

- Use the results of the tally sheets of favourite scents to create a class picture graph.
- Play What's My Smell. Write the names of the items from the opaque containers on index cards (add pictures as well to assist students in reading these names). Tape one index card to the back of each student (make sure none of the students has seen the name on the card). Have the students try to identify their item by asking one another questions about it (for example, Is it a kind of food? Is it a fruit?).

- Have the students use the index cards from the previous extension activity to sort smells on a sorting mat, for example, Smells I Like and Smells I Do Not Like.

## Activity Centre

Give the students containers to take home and fill with scented objects from home. As before, cover the objects with cotton batting. Place the containers at the centre and have students use their sense of smell to identify objects. Encourage language development through descriptive terminology.

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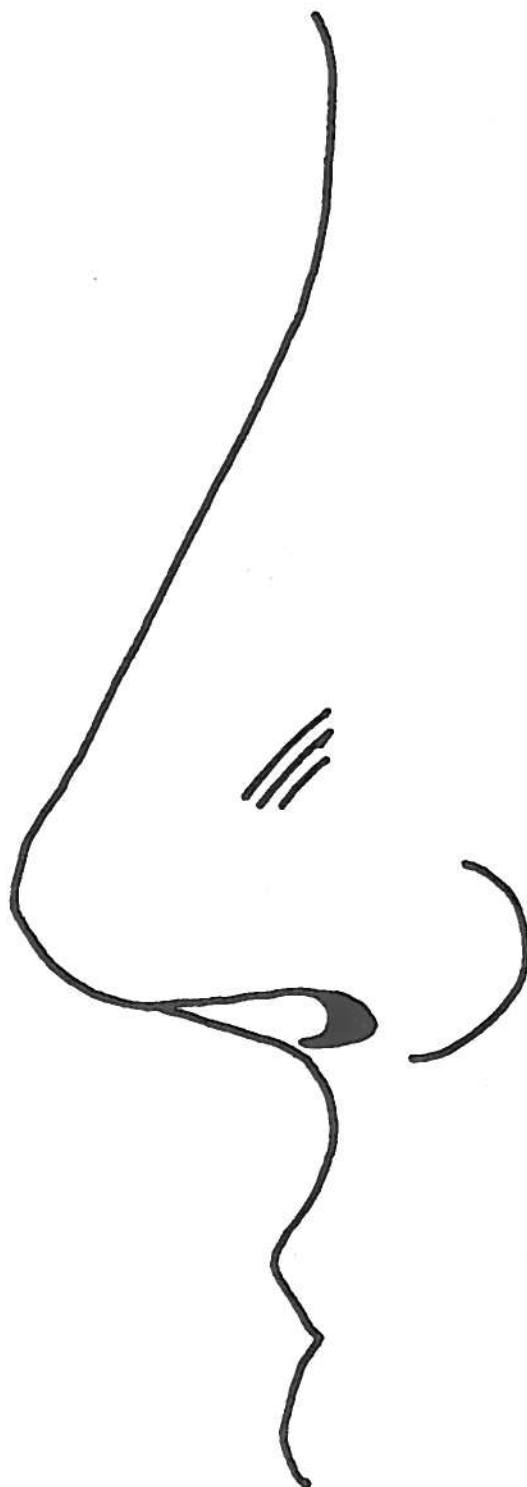
**Note:** Objects in the containers will have to be replaced as the scents dissipate.

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## Assessment Suggestion

Using the activity sheet, have students explain their tally results. Determine if each student can successfully record and count the tally, and answer questions about the results (e.g., How many students liked the smell of popcorn best? What was the favourite smell?). Use the anecdotal record sheet on page 13 to record results.

## Diagram of the Nose



Date: \_\_\_\_\_

Name: \_\_\_\_\_

## Favourite Scents

Scent	Tally	Total

Which was the most favourite scent? \_\_\_\_\_

\_\_\_\_\_

Which was the least favourite scent? \_\_\_\_\_

\_\_\_\_\_

# 5 The Sense of Taste

## Materials

- food items with various tastes, such as lemons, pickles, honey, sugar, salt, and potato chips (ensure that these are foods that can be classified as sour, sweet, and salty)
- small paper plates (enough for all students to taste three different kinds of food)
- blindfolds
- mirror
- chart paper
- markers
- Popsicle sticks
- plastic spoons
- plastic knives
- scissors
- magazines and flyers that have pictures of foods

## Activity

**Note:** Be aware of any food allergies during this activity.

Select an item with a sour taste, such as the lemon. Blindfold students, then provide them each with a plate with a small slice of lemon on it. Let them taste the lemon. Ask:

- What food do you think this is?
- How does it taste?
- What words describe how it tastes?

Have the students try the lemon again, but with their noses plugged. Ask:

- Could you still taste lemon?
- Did having your nose plugged make a difference when you tasted the lemon? If so, how?
- Have you ever had a cold and lost your sense of taste?
- Have you actually "lost your taste"?

- Why can you not taste your food as well when you have a cold?

Select a food item with a contrasting taste, such as honey. Again, blindfold students and have them taste the honey, identify what it is, and describe what it tastes like.

Discuss the importance of both the tongue and the nose in tasting.

Continue this activity, comparing and describing the various foods.

Classify the foods according to taste: sour, sweet, and salty. Make a chart titled Tastes, then divide the chart into three columns. Print the headings Sour, Sweet, and Salty in the three columns and record the students' classifications.

## Activity Sheet

**Note:** Enlarge the activity sheet to ledger size to provide students with more space for pictures.

### Directions to student:

Cut out pictures from magazines or flyers and classify the foods as sweet, sour, or salty. Glue the pictures under the correct heading (2.5.1).

## Extension

Give the students many opportunities to make and taste a variety of foods. Cooking activities encourage many skills, including how to follow directions, listen, and measure. Try to select foods that vary in taste: try a sweet food such as chocolate pudding one week, followed by a salty food such as popcorn the next week. Let the students help select food items, prepare them, and clean up.

**Note:** An excellent resource for cooking in the classroom is the book *Cook With Me* by Lorelei Liddelow.

Date: \_\_\_\_\_ Name: \_\_\_\_\_

## Tasting Foods

sweet	sour	salty



# 6 The Sense of Touch

## Materials

- objects of various textures that can be described using words such as *rough*, *smooth*, *soft*, *sharp*, and *bumpy*, such as swatches of different fabrics, paper, sandpaper, varnished wood, rough wood, a plastic ball, a sponge ball, a tennis ball, tree bark, carpet samples, coffee grounds, aquarium gravel
- chart paper, felt pens

## Activity

Have the students select two objects and classify them as to which is smoother (or which is rougher). Ask:

- Which object is smoother?
- Which object is rougher?

Have students put in order, from smoothest to roughest, three objects. Ask:

- Which is the smoothest?
- Which is the roughest?
- Which is smoother than this one?
- Which is rougher than this one?

Discuss other words that can be used to describe the texture of different objects. Encourage students to use descriptive terminology when they are identifying what they touch.

Have the students sort the textures into different groups and describe the textures. Have the students name the groups.

On chart paper, record the different descriptive names the students have used to sort the textures.

## Activity Sheet

**Note:** Be sure to have enough small swatches of material so the students can use them for sorting on a Venn diagram.

### Directions to students:

Choose a way to sort the pieces of material by the way they feel. Sort the material pieces on the Venn diagram. Label each circle with your sorting rule (2.6.1).

## Extensions

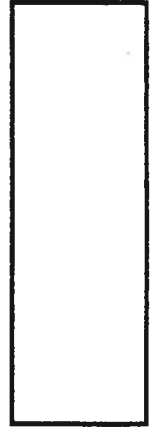
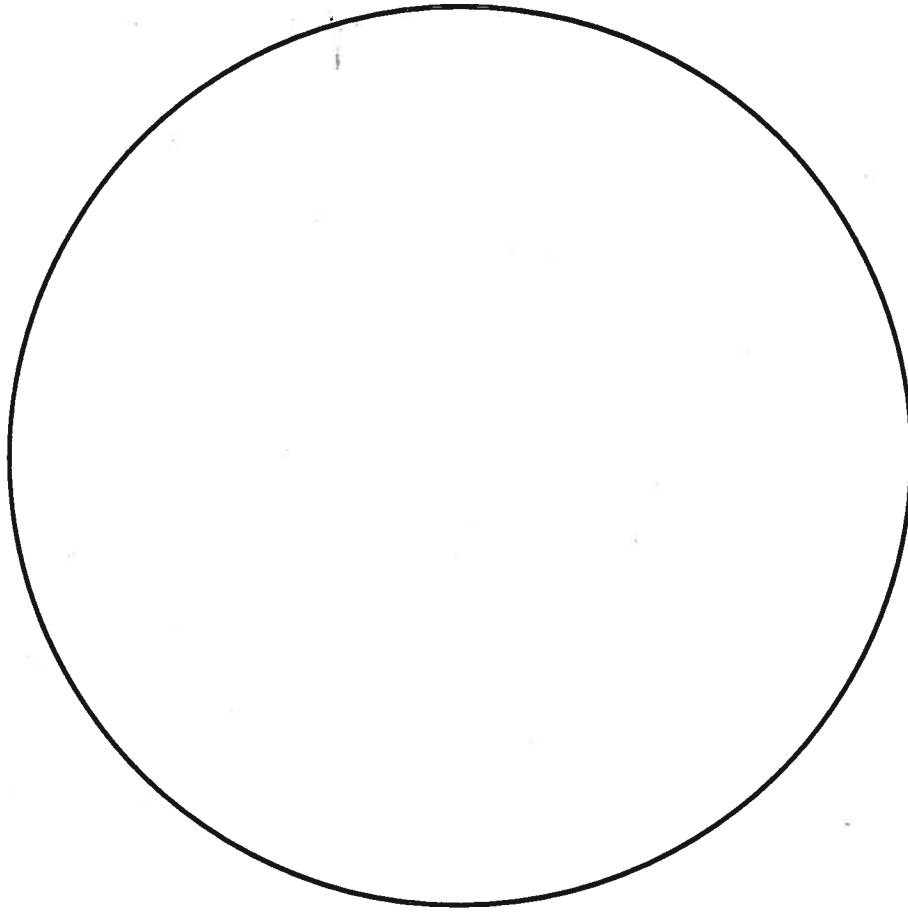
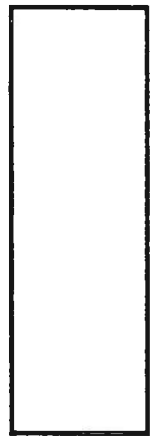
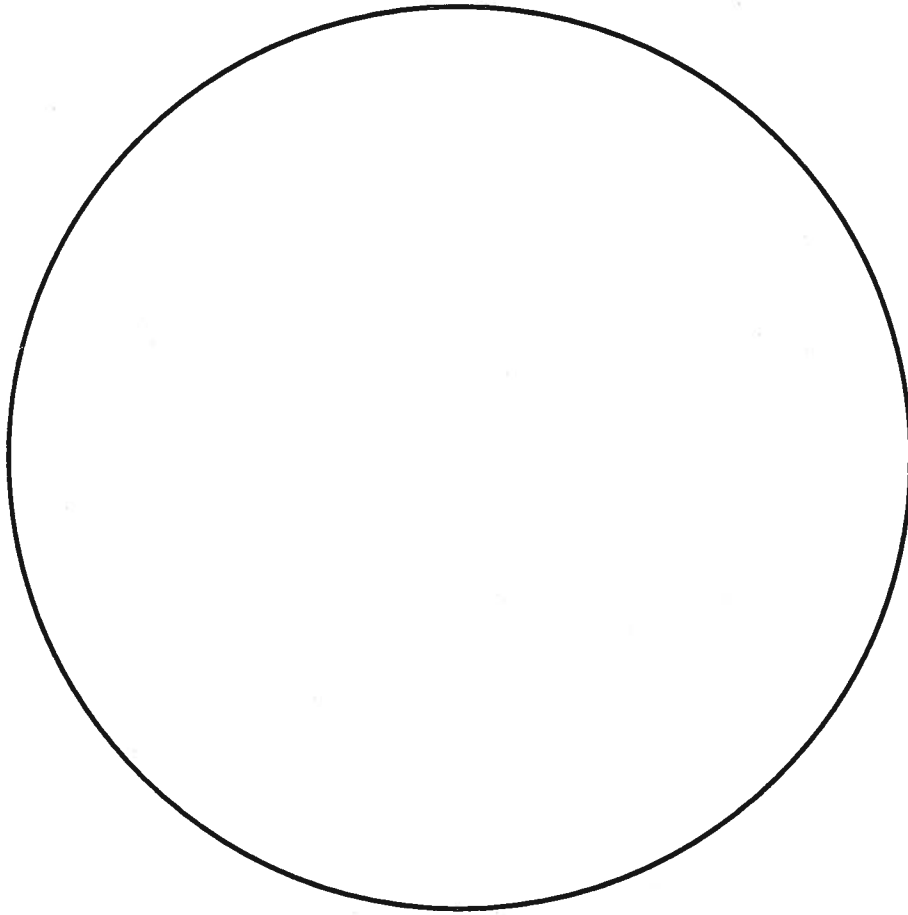
- Have students make a class texture book. Have each student glue small quantities or pieces of the textured items on large sheets of paper. Have them label the pages using the categories outlined on the chart paper from the class activity. Gather the pages, bind into a book, make a cover, then place the book in the class library.
- **Science in a Sock:** Place familiar objects inside clean socks and tie the end of the socks closed. Have the students use their sense of touch to identify the objects.

## Activity Centre

Provide various textured objects and pieces of cloth, drawing paper, and crayons. Have the students make texture rubbings by placing drawing paper over the objects and colouring the paper. (The textures will appear on the paper.) Students can then compare, classify, and order their rubbings.

**Date:** \_\_\_\_\_

**Name:** \_\_\_\_\_



# 7

## Different Interpretations of Sensory Observations

### Materials

- food (for taste testing)
- pieces of different textured fabric swatches (e.g., cotton, felt, silk, satin, leather)
- musical recordings (on compact disc or cassette)
- scents (e.g., different types of perfume, soap, potpourri)
- visual images (e.g., portraits, landscapes, cityscapes)

**Note:** Provide three examples of each of the above items. Materials will be used to set up five activity centres in the classroom. At each of the five tables, display items used to focus on a particular sense. Label each table with the name of one of the senses. Make sure each item on the table is clearly labelled so that students can record the names of the items on their activity sheet.

### Activity

Have students form a circle and observe one another. Have them describe the similarities and differences they observe among themselves. Ask:

- Are there other similarities or differences between us that you cannot see (e.g., one student may love to swim, whereas another may love to play soccer)?

Have the students turn to the person beside them and find out one thing they have in common and one thing they differ on.

Explain that each of us is unique in the way that we look, as well as in the way we interpret or observe the world around us. We also have different likes and dislikes. Some of us, for example, like a certain food, while others do not. Talk about the variety of foods in a grocery store and discuss what the students like and do not like. You may also want to discuss videos and compact discs to compare

similarities and differences in preferences. Students will find each person has his or her own preference of things he or she likes.

Divide the class into five groups and have each group rotate from one centre to the next. At each centre the students will rate the items from favourite to least favourite.

Following the rotation, have students gather and reflect on their findings. Ask:

- Did everyone in the class have the exact same ratings at each centre?
- Was there an item that was most popular? Least popular?

### Activity Sheet

#### Directions to students:

Rate each item at the centre from most favourite to least favourite. Record the name of the item and your rating (2.7.1).

### Extension

Select one centre and tally the results from the class. Graph the results on a class picture graph. Discuss the findings.

### Assessment Suggestion

Have students individually explain the rating scale on the activity sheet. What does each face represent? Have each student interpret his or her results by answering such questions as:

- Which was your favourite?
- Which was your least favourite?
- Did you like \_\_\_\_\_ more than \_\_\_\_\_?  
How can you tell from your activity sheet?
- Did you like \_\_\_\_\_ less than \_\_\_\_\_?  
How can you tell from your activity sheet?

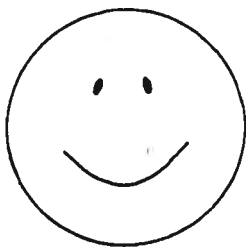
Use the individual student observations sheet on page 14 to record results.

Date: \_\_\_\_\_

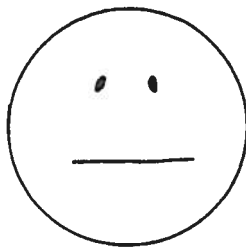
Name: \_\_\_\_\_

## Using Our Senses to Rate What We Like

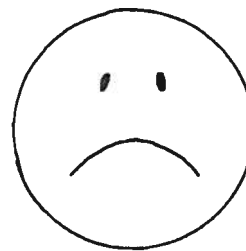
### Rating Scale



**My favourite**



**My second favourite**



**My least favourite**

### Taste



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### Touch



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Date: \_\_\_\_\_

Name: \_\_\_\_\_

## Using Our Senses to Rate What We Like

**Smell**



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**Hearing**



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**Sight**



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# 8 Using the Senses to Sort and Classify

## Materials

- objects for a scavenger hunt, suggested items: baby powder, coffee grounds, bell, perfume, cookie, book, wax candle, whistle, cotton, nylon, pictures, mitten, pepper, drum, radio, magazine, binoculars, chocolate, eyeglasses, and so on (approximately five to ten items for each sense)
- chart paper listing all objects to be hidden in the classroom (pictures can also be used along with the words to assist the students)
- felt pens
- display tables or desks
- labels for display tables (titled sight, hearing, touch, taste, smell)

## Activity A

Prior to the lesson, hide all objects around the classroom.

Tell students that they are going to go on a cooperative scavenger hunt using the five senses. Review the five senses and their functions.

Display the list of objects or gather pictures that students can refer to as they try to locate each of the items in the classroom. Explain to the students that they are working together as a cooperative team to locate all of the objects. As each object is found, they are to bring it to a designated area (e.g., front of classroom, centre of the carpet) and the object is to be crossed off the list.

Once all objects are found, have students gather around the objects. Explain that they, as a class, are going to sort the objects and display the objects on each of the designated tables. Although most objects could be placed on more than one table, have the students decide on the object's placement based on the sense with which it is most commonly

associated (e.g., a cookie would be placed on the taste table). While sorting, discuss the ways that we often use more than one sense for certain objects. For example, we associate a cookie with both the sense of smell and the sense of taste.

## Activity B

Divide the students into five groups and assign each of the groups to one of the five senses' tables. Give the students plenty of time to observe, manipulate, and describe the objects. Now challenge them to sort and classify the objects at their designated table. Ask the students at each table:

- Which sense do we use most with these objects?
- Is it possible to sort these items once again? How?

### Examples:

**touch:** rough and smooth

**smell:** pleasant and not pleasant

**taste:** sweet, sour, salty

**hearing:** high sound, low sound, loud, quiet

**sight:** colour

After all the groups have sorted their objects, challenge other groups of students to guess the sorting rules.

## Extension

Play What's My Rule. Encourage students to bring items from home that are associated with the different senses. Have students work in small groups. Have them gather their items together and sort them based on a common characteristic. After all of the items have been sorted, have students from another group guess the sorting rule. Objects can be sorted by sense or by using subsets of a sense (e.g., rough and smooth things).

**Assessment Suggestions**

- Use informal observation. Circulate from group to group to see how students are sorting the objects at their table. Ask such questions as:

- What is your sorting rule?
- How did you choose your sorting rule?
- How did you decide which objects will belong in each group?

Use the anecdotal record sheet on page 13 to record results.

- Use the cooperative skills teacher assessment sheet on page 19 to record each student's ability to work in a group.

# 9

## Altering Characteristics of Items

### Materials

- popcorn kernels
- air popcorn popper (optional)
- chart paper, felt pens
- clay or Plasticine
- blocks of wood, sand paper
- ukuleles or other stringed instruments
- cookie dough
- paper and paints

### Activity

Have students recount the introductory lesson of this unit (using popcorn to investigate each of the five senses). Pass each student a popcorn kernel. Ask:

- What does the kernel look like?
- What does it smell like?
- What does it feel like?
- What does it taste like?
- Does it make a sound?

Explain that by using the popcorn popper we were able to alter the popcorn kernel's look, smell, taste, and feel, and the way the kernels sound when they pop.

**Note:** You may wish to conduct the popcorn popping activity again for review purposes. Have students place their kernels into the popcorn popper. Pop the kernels and, once again, ask the questions listed above.

Now ask:

- How has the popcorn kernel been changed?
- What was needed to change its look, texture, sound, smell, and taste?
- Is it possible to change the look, texture, sound, smell, or taste of other objects? If so, how?

Display the block of wood, Plasticine, ukelele, cookie dough, and paper. Have students

suggest ways that the look, texture, sound, smell, or taste of these items can be changed. Divide chart paper into four columns. Record suggestions on chart paper using the following format:

- Item (e.g., piece of wood)
- Description (e.g., rough, sharp edges)
- What Is Needed to Change It (e.g., sandpaper)
- Changes Observed (e.g., from rough to smooth)

Have the students choose and manipulate the appearance, texture, smell, and taste of the various objects by having them do the following activities:

- Sand a block of wood to observe, using the sense of touch, changes in texture.
- Manipulate a piece of Plasticine and observe, using the sense of sight, the changes in shape.
- Manipulate the tuning keys on the ukelele and observe, using the sense of hearing, the changes in sounds produced.
- Determine the changes in texture, smell, taste, and appearance of cookie dough before and after baking.
- Change the appearance of paper by folding it, crumpling it, or painting on it.

Use the chart to record the changes and the observations made by students.

### Activity Sheet

#### Directions to students:

Draw a picture of an object. You can include a sentence or words to describe your object. Decide on a way you could change your object. Use pictures and words to describe the changes (2.9.1).

**Note:** Students may select an object used during the lesson, or another object of their choice.



Date: \_\_\_\_\_ Name: \_\_\_\_\_

## Making Changes

Object	Changed Object

Object	Changed Object

# 10 Loss or Limitation of the Senses

## Materials

- blindfolds
- earplugs
- sport socks
- old dress shirts with buttons
- *I Have a Sister, My Sister Is Deaf*, a book by Jeanne Whitehouse Peterson
- chart paper, felt pens

## Activity

Begin by reading *I Have a Sister, My Sister Is Deaf*.

Following the story, ask the students:

- What activities could the sister not do because she was deaf?
- There were some activities that she could do very well. What were they?
- Why do you think she was so good at these activities? What senses did she use?
- Have you ever lost the use of one of your senses (e.g., loss of smell or taste when you have a cold)?
- What was it like?

Have the students brainstorm other physical disabilities that limit the use of one or more of the senses.

Provide the students with several experiences simulating the loss of a sense:

- loss of sight: Work in partners. Blindfold one partner. Have the other partner lead the blindfolded student around the classroom or gymnasium.
- loss of hearing: Have students wear earplugs around the classroom for a period of time.
- physical disability (limited use of part of the body, e.g., limb): Have students put on a dress shirt over top of their clothes, then place a sport sock over each of their

hands. Have them attempt to do up the buttons on the shirt with their hands in the sport socks.

Following the activities, have the students share their experiences. Ask:

- What was it like? How did you feel?
- How did you cope with your disability? Did you rely on your other senses?

Refer back to your original list of physical disabilities. Discuss ways that people can use aids to help them sense, and communicate with, the world around them (e.g., eyeglasses, seeing-eye dogs, wheelchairs, sign language, and hearing aids).

Ask the students what they can do to help people with a disability.

## Activity Sheet

**Note:** You may find it beneficial to invite a guest speaker with a disability to present to the class prior to having students complete the activity sheet. This will provide students with background knowledge necessary to complete the task.

### Directions to students:

You will each be responsible for making one page for our class book called *Helping Everyone Sense the World Around Them*. Draw a picture of how humans or some object can help those with a disability. Write a sentence to describe your picture (2.10.1).

**Note:** Students may use invented spelling to write their sentences, or you can scribe the sentences for your students.

## Extension

Invite guest speakers with various disabilities to the classroom. Have the guest speakers share their experiences.

**Activity Centre**

Provide samples of Braille for the students to touch. Display posters of the American Sign Language and encourage students to learn to sign the alphabet.

**Assessment Suggestion**

Have students orally present their page from the class book. Prior to presentations identify, as a class, five criteria for the activity. For example:

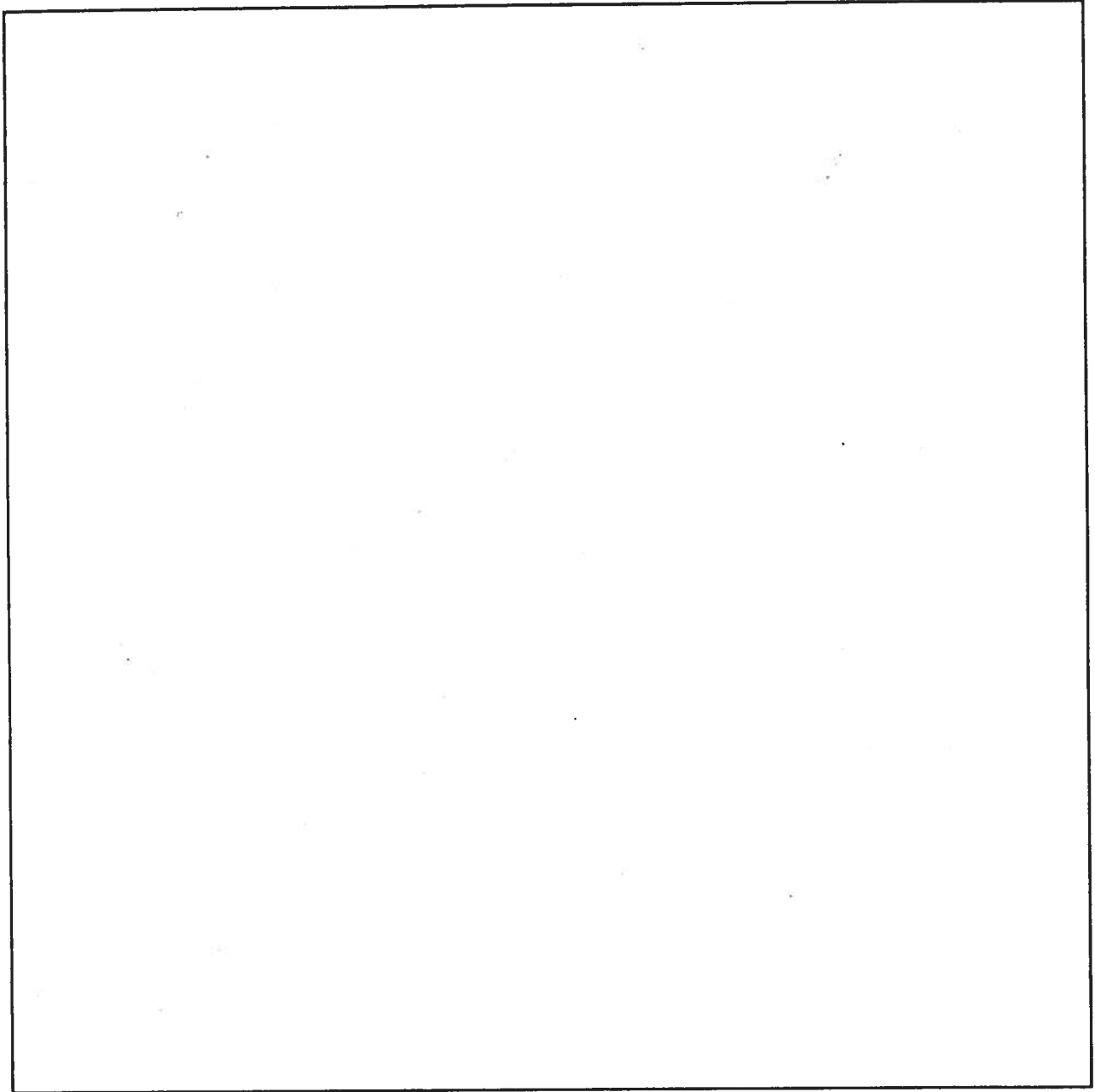
1. I made a detailed picture.
2. I showed an example of a disabled person.
3. I showed an example of how to help a disabled person.
4. I presented my page using a clear speaking voice.
5. I worked hard on my page.

Use the rubric on page 17 to list these criteria and record results.

Date: \_\_\_\_\_

Name: \_\_\_\_\_

## Helping Everyone Sense the World Around Them



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# 11

## How Our Senses Protect and Mislead

### Materials

- apples (peel, cut into cubes)
- potatoes (peel, cut into cubes)
- toothpicks
- paper plate or tray
- picture cards (included) (The five picture cards are: a house on fire, a dog barking, a boy crossing a busy street, children building a sandcastle at a beach on a sunny day, and a boy dressed inappropriately for the weather.) (2.11.1-5)

### Activity A

Have the students sit in a circle. Place a tray of cut up apple and potato cubes in the middle of the circle (mix up apple and potato pieces). Do not tell the students what is on the tray (the students will probably not be able to discriminate between the apple and potato pieces with their sense of sight). Have students predict what the items are on the tray.

Have each student pick up a piece of the food on the tray with a toothpick. Make sure they do not eat the food until everyone has a piece. Have the students taste their pieces at the same time.

Have the students identify what they have eaten. Ask:

- What did you taste?
- Did you have the same item as the person on either side of you?
- What did they have?
- What was on the tray?
- Was your prediction right?
- Did you know there were two different foods on the tray?

- How did your senses fool you?
- What other foods that look similar could we use to do this experiment? (Examples are mangoes and peaches, sour cream and yogurt.)

### Activity B

Discuss how our senses can protect us. Use the pictures cards provided to help with the discussion.

#### For each picture:

- Describe the picture (e.g., smoke from a house fire).
- Ask how our senses can help us stay safe (e.g., smell the smoke, can see where the flames are coming from, feel the heat around a door).

Now, discuss ways that the senses can trick us. For example:

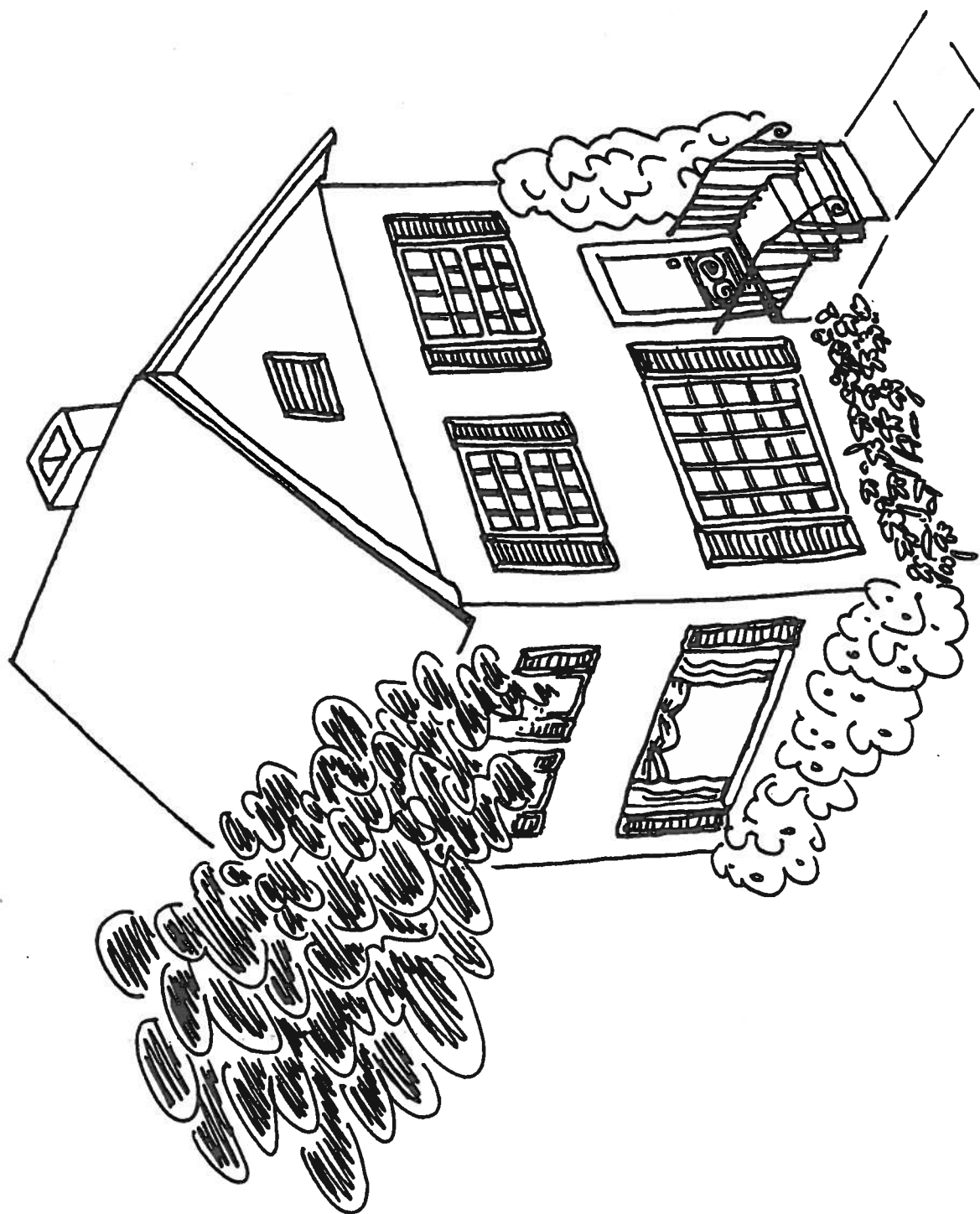
- Some pills look like candy, but can be dangerous if swallowed.
- Some liquids look good to drink, but can be poisonous.
- Ice on a river or lake can look frozen, but may be unsafe to walk on.

### Activity Sheet

#### Directions to students:

Draw a picture to show how your senses can help you to avoid danger. Include a sentence to describe the picture (2.11.6).

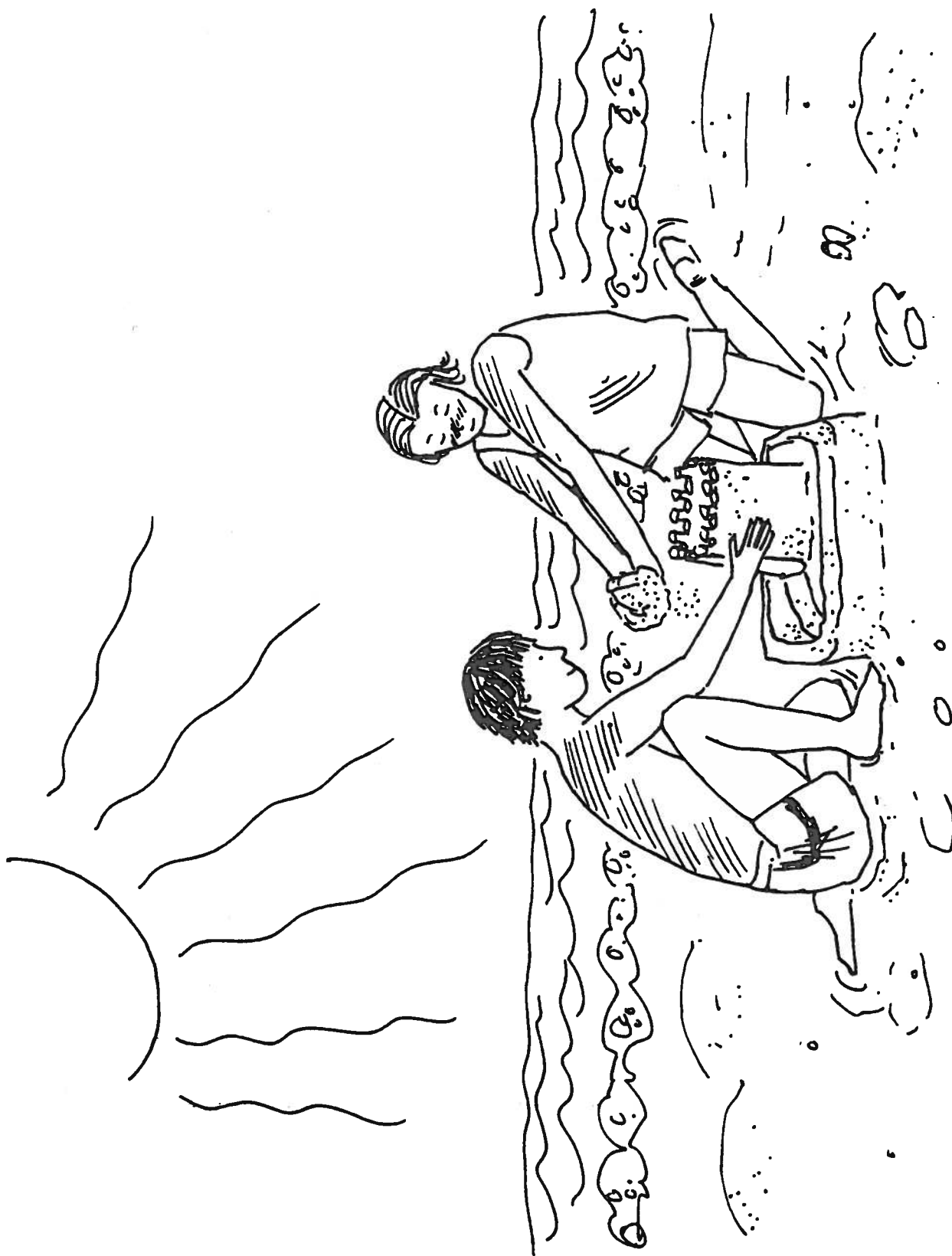
**Note:** Compile the pages in a class book titled *How Our Senses Can Help Us Avoid Danger*.

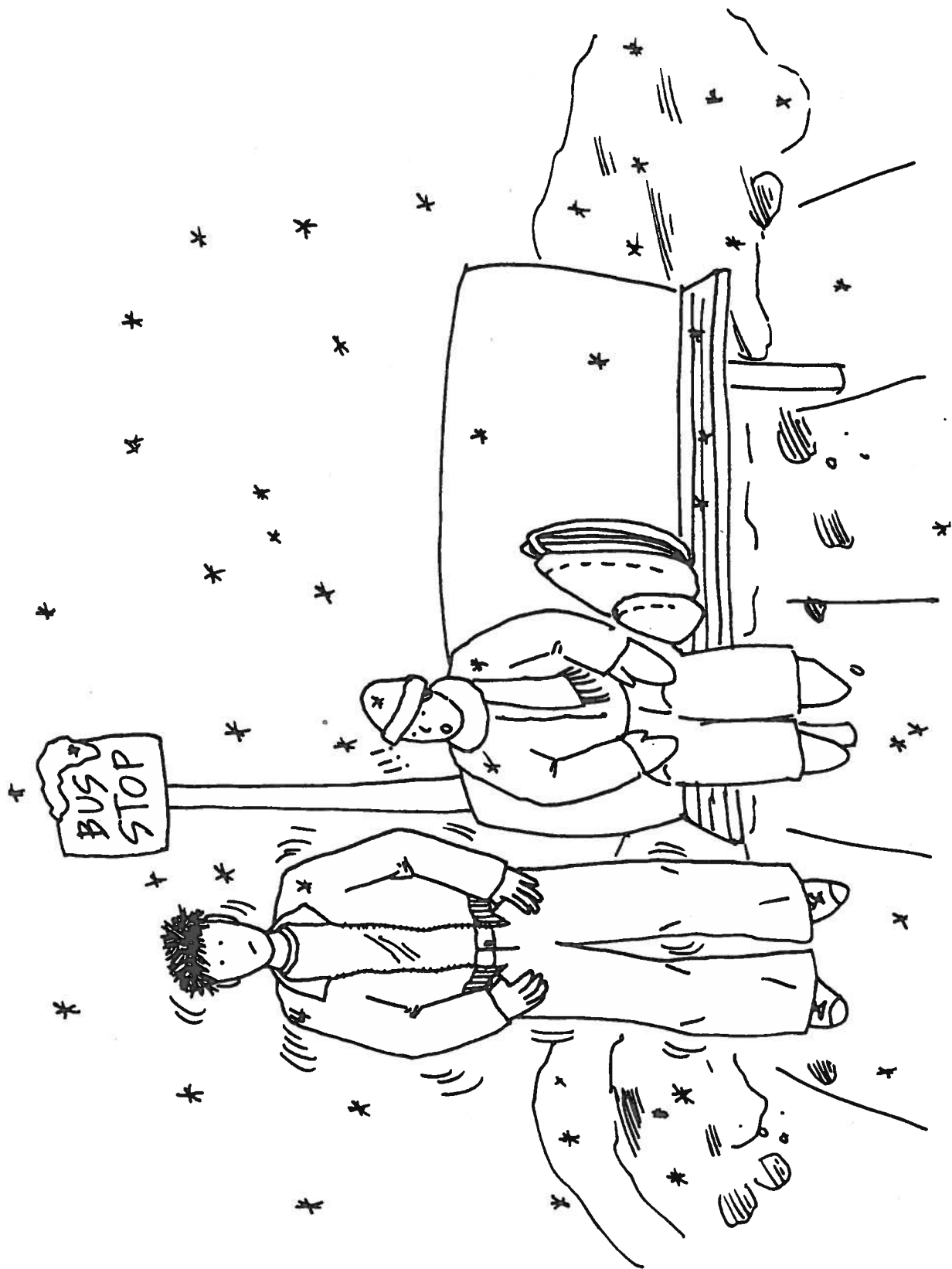






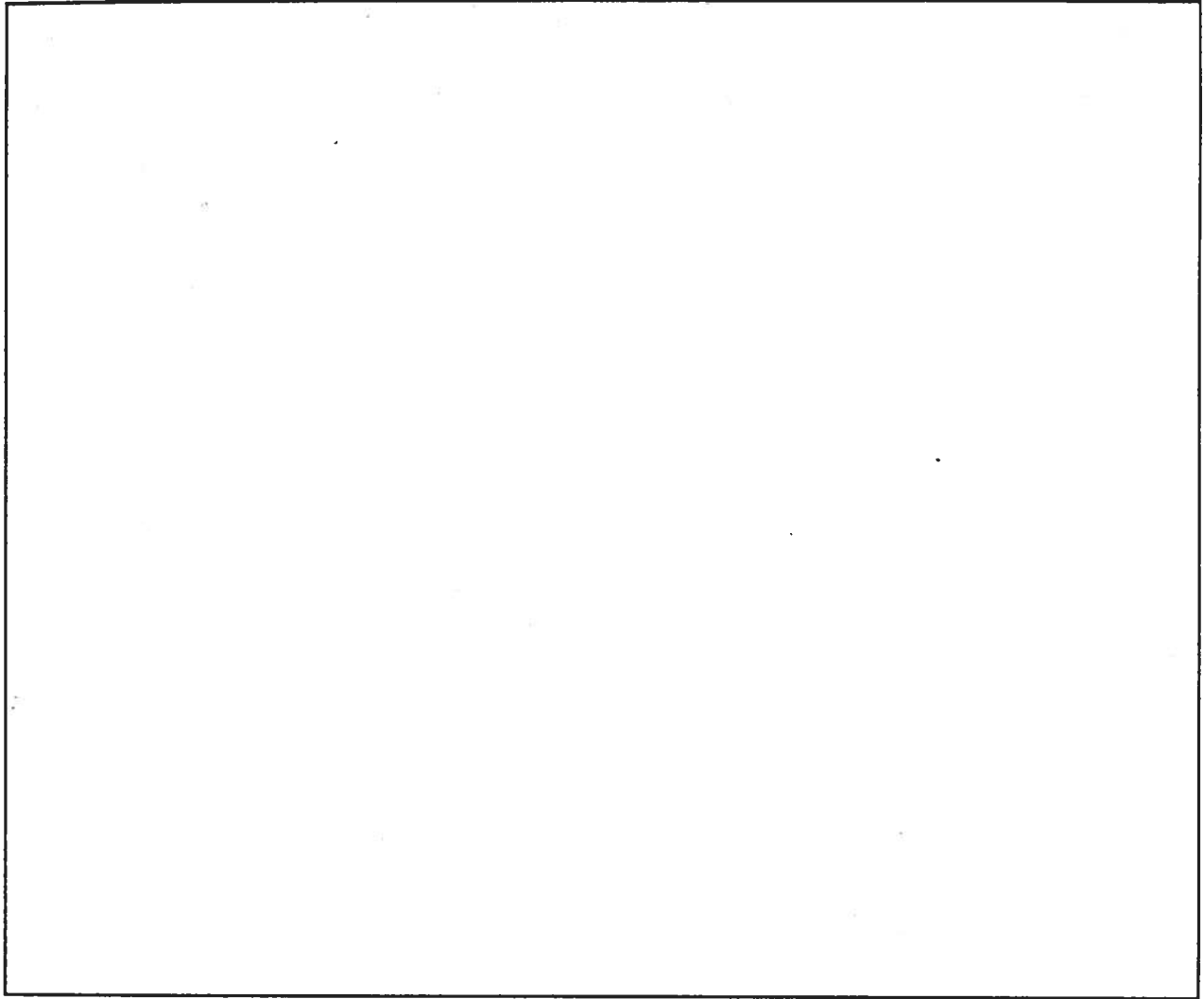






Date: \_\_\_\_\_ Name: \_\_\_\_\_

## How Our Senses Can Help Us Avoid Danger



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# The Importance and Protection of Our Senses

## Materials

- pictures of people on the job (e.g., a construction worker, a chef, a baseball player, a musician) from magazines, newspapers, college/university brochures, and so on
- magazines or newspaper flyers
- glue, scissors

## Activity A

Display the occupation pictures on the chalkboard or a bulletin board. Have the students identify each of the occupations.

Have the students recall each of the five senses. Tell them that they are going to sort the pictures using the following rule: "The single most important sense you would need for each job." Although all of the senses are important for each job, identify and agree upon the most important sense (e.g., sight for a hockey player).

## Activity B

Once all of the occupations have been sorted into one of the five senses, discuss the importance of protecting the body and each of the senses. Select one picture as an example (e.g., hockey player). Ask:

- What would happen if a hockey player lost his or her sense of sight?
- How can a hockey player protect his or her sight? (Example: wear a visor and helmet)

Work through each of the pictures together as a class to discuss the consequences of losing a sense, and what can be used to protect or preserve the sense.

## Activity Sheet

**Note:** Enlarge the activity sheet to ledger size to provide students enough space for pictures.

### Directions to students:

Take magazines and newspaper flyers and cut out pictures of items that are available to protect each of your senses. Sort your pictures into groups according to the sense that they protect, and glue the pictures into the correct boxes (2.12.1).




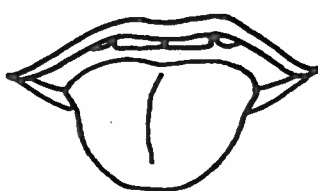
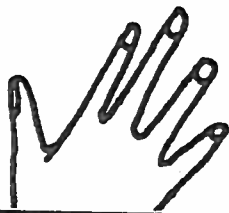
## Assessment Suggestions

- Through observation, discussion, and individual conferencing, find out if students are aware of ways to protect their senses. Review the activity sheet with each student. Have students explain the items they have selected, why they selected these items, and which senses they protect.
- You may also informally observe the students' transference of this concept to everyday situations. For example: Do they dress themselves appropriately when they go outside at recess time?
- Use the individual student observations sheet on page 14 to record results.

Date: \_\_\_\_\_

Name: \_\_\_\_\_

## Protecting the Senses

<b>sight</b> 	
<b>hearing</b> 	
<b>smell</b> 	
<b>taste</b> 	
<b>touch</b> 	

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