



NEEDS AND CHARACTERISTICS OF LIVING THINGS: What are your Five Senses?



The Big Eco Idea: All living things have basic needs that are met from the environment

Description Of the Task

While participating in hands-on/minds-on activities, students will work cooperatively in small groups to name the senses and give examples of how animals use their senses to find food. They will develop their observation skills using their senses and demonstrate confidence during participation in hands-on/minds-on activities.

Curriculum Expectations:

SCIENCE & TECHNOLOGY-Understanding Life Systems: Needs and Characteristics of Living Things

- 2.1 follow established safety procedures and humane practices during science and technology investigations
- 2.2 investigate and compare the basic needs of humans and other living things, including the need for air, water, food, warmth, and space
- 2.5 investigate characteristics of parts of the human body, including the five sense organs, and explain how those characteristics help humans meet their needs and explore the world around them
- 3.3 identify the location and function of major parts of the human body, including sense organs

Lesson Title: What are your 5 senses?

Unit: Science-Needs and Characteristics of Living Things

Grade: One

Time: 85 minutes (total)

- 20 minutes for the Introductory Activity (Schema Activation)
- 50 minutes for the Enhancing Activity (Hook – the Five Senses Stations)
- 15 minutes for the Culminating Activity (Wrap Up Activity)

Groupings

- Students working in small groups
- Students working individually
- Students working as a whole class

Teaching / Learning Strategies

- Brainstorming
- Inquiry
- Discussion
- Science learning log/journal
- Direct teaching

Assessment

Assessment Strategies

- Science learning log
- Questions and answers
- Select response
- Observation

Assessment Recording Devices

- Rubric
- Anecdotal record

Resources Required:



Materials

What's So Smelly? Activity

- Film canisters with lids (6)-label 1-6
- White labels (6)
- Cotton balls or sponges (12)
- Scents (vanilla, vinegar, peppermint, cherry, orange, banana)
- Permanent marker (1)
- **BLM 1.1.a** – Smell Activity Worksheet
- **BLM 1.1.b** – Smell Activity Task Card
- **BLM 1.7.a** – Student Rubric for Science Learning Log/ Journal
- **BLM 1.7.b** – Student Criteria for Science Learning Log /Journal
- **BLM 1.7.c** – Student Science Learning Log/Journal Page
- **BLM 1.7.d** – Anecdotal Record Sheet
- **BLM 1.7.g** – Rubric for What's So Smelly?

What's all that Noise? Activity

- Tin Shakers with lids (6)-empty Pringles cans
- Masking tape (tape shakers shut)
- White labels (6)
- Permanent marker
- Popcorn kernels
- Rice
- Coins
- Candy (Skittles)
- Paper clips
- Sugar
- Clear plastic bags (to be filled with air, soil and water)
- Soil and water (to fill bags)
- **BLM 1.3.a** – Sound Activity Worksheet
- **BLM 1.3.b** – Sound Activity Task Card

Touchy Feely Activity

- Cloth bags (6)
- Sponge (1)
- Feather (1)
- Permanent marker
- White labels
- Shells (1)
- Cotton (2)
- Cloth blind folds (6)
- Crayon (1)
- Popsicle stick (1)
- Marbles (2)
- **BLM 1.2.a** – Touch Activity Worksheet
- **BLM 1.2.b** – Touch Activity Task Card
- **BLM 1.7.a** – Student Rubric for Science Learning Log/Journal
- **BLM 1.7.b** – Student Criteria for Science Learning Log/Journal
- **BLM 1.7.c** – Student Science Learning Log/Journal Page
- **BLM 1.7.d** – Anecdotal Record Sheet
- **BLM 1.7.i** – Rubric for Touchy Feely

What's So Tasty? Activity

- Food is optional (sweet = candy, salty = chips, sour = lemon, bitter = orange peel)
- Skittles (3 packages)
- Small plastic containers labelled (1/student)
- Mirror (1)
- Glue
- Scissors
- Photograph of the tongue's taste buds
- **BLM 1.5.a** – Taste Activity Worksheet
- **BLM 1.5.b** – Taste Activity Task Card
- **BLM 1.5.c** – Diagram of the Tongue's Taste Buds
- **BLM 1.5.d** – Taste Activity Food Cards
- **BLM 1.7.a** – Student Rubric for Science

- **BLM 1.7.a** – Student Rubric for Science Learning Log/ Journal
- **BLM 1.7.b** – Student Criteria for Science Learning Log /Journal
- **BLM 1.7.c** – Student Science Learning Log/Journal Page
- **BLM 1.7.d** – Anecdotal Record Sheet
- **BLM 1.7.h** – Rubric for What's all that Noise?

- Learning Log/Journal
- **BLM 1.7.b** – Student Criteria for Science Learning Log/Journal
- **BLM 1.7.c** – Student Science Learning Log/Journal Page
- **BLM 1.7.d** – Anecdotal Record Sheet
- **BLM 1.7.k** – Rubric for What's So Tasty?

<p>Introductory Activity</p> <ul style="list-style-type: none"> • Cloth bag (1) • Mr. or Mrs. Potato Head (1) • Dog biscuit (1) • BLM 1.8.a – Five Senses Cards <p>Culminating Activity (Wrap Up Activity)/Group Discussion</p> <ul style="list-style-type: none"> • BLM 1.6.a – Five Senses Cloze Worksheet • BLM 1.7.e – Student Feedback and Reflection • BLM 1.7.f – Student Feedback and Reflection 2 	<p>Do You See What I See? Activity</p> <ul style="list-style-type: none"> • Binoculars (6) • Bug eye viewers (6) • Photograph of marsh scene – laminated • Duct tape • BLM 1.4.a – Sight Activity Worksheet • BLM 1.4.b – Sight Activity Task Card • BLM 1.7.a – Student Rubric for Science Learning Log/ Journal • BLM 1.7.b – Student Criteria for Science Learning Log /Journal • BLM 1.7.c – Student Science Learning Log/Journal Page • BLM 1.7.d – Anecdotal Record Sheet • BLM 1.7.j – Rubric for Do You See What I See? • BLM 1.8.b – Picture of Marsh Scene - laminated
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Black Line Masters (BLM)

- **BLM 1.1.a** – Smell Activity Worksheet
- **BLM 1.1.b** – Smell Activity Task Card
- **BLM 1.2.a** – Touch Activity Worksheet
- **BLM 1.2.b** – Touch Activity Task Card
- **BLM 1.3.a** – Sound Activity Worksheet
- **BLM 1.3.b** – Sound Activity Task Card
- **BLM 1.4.a** – Sight Activity Worksheet
- **BLM 1.4.b** – Sight Activity Task Card
- **BLM 1.5.a** – Taste Activity Worksheet
- **BLM 1.5.b** – Taste Activity Task Card
- **BLM 1.5.c** – Diagram of the Tongue's Taste Buds
- **BLM 1.5.d** – Taste Activity Food Cards
- **BLM 1.6.a** – Five Senses Cloze Worksheet



Print

- Hickman, P. (1998). *Animal Senses – How Animals See, Hear, Taste, Smell and Feel*. Toronto, ON: Kids Can Press.
- O'Brien – Palmer, M. (1998). *Sense – Abilities – Fun Ways to Explore the Senses*. Chicago, Illinois: Chicago Review Press.
- Kessler, J.H. (1997). *The Best of WonderScience; Elementary Science Activities*. Delmar Publishers.

- **BLM 1.7.a** – Student Rubric for Science Learning Log/ Journal
- **BLM 1.7.b** – Student Criteria for Science Learning Log /Journal
- **BLM 1.7.c** – Student Science Learning Log/Journal Page
- **BLM 1.7.d** – Anecdotal Record Sheet
- **BLM 1.7.e** – Student Feedback and Reflection
- **BLM 1.7.f** – Student Feedback and Reflection 2
- **BLM 1.7.g** – Rubric for What’s So Smelly?
- **BLM 1.7.h** – Rubric for What’s all that Noise?
- **BLM 1.7.i** – Rubric for Touchy Feely
- **BLM 1.7.j** – Rubric for Do You See What I See?
- **BLM 1.7.k** – Rubric for What’s So Tasty?
- **BLM 1.8.a** – Five Senses Cards
- **BLM 1.8.b** – Picture of Marsh Scene - Laminated

Preparation:

1. Be aware of any food allergies or food sensitivities that students may have before conducting the taste activity.
2. Pre-soak cotton balls with scented oils for a few hours before the lesson.
3. Label all containers, shakers, film canisters, and cloth bags with appropriate numbers.
4. Organize the five senses stations with appropriate material.
5. Photocopy all required Black Line Master sheets (**BLM 1.1.a, BLM 1.2.a, BLM 1.3.a, BLM 1.4.a, BLM 1.5.a, BLM 1.5.c, BLM 1.5.d, BLM 1.6.a, BLM 1.7.a, BLM 1.7.b, BLM 1.7.c, BLM 1.7.d, BLM 1.7.e, BLM 1.7.f, BLM 1.7.g, BLM 1.7.h, BLM 1.7.i, BLM 1.7.j, BLM 1.7.k, BLM 1.8.a, and BLM 1.8.b.**)
6. Laminate appropriate activity cards (**BLM 1.1.b, BLM 1.2.b, BLM 1.3.b, BLM 1.4.b, BLM 1.5.b, BLM 1.8.a, and BLM 1.8.b**)

Vocabulary:

- | | |
|--------------|-------------------|
| • Taste buds | • Sight |
| • Tongue | • Sound |
| • Touch | • Taste |
| • Binoculars | • Bug eye viewers |
| • Sour | • Marsh |
| • Salty | • Sweet |

Teaching / Learning:

Lesson Plan Progression

A) Introductory Activity (Schema Activation)	Time	Assessment Techniques	Key Questions
<p>Activate Prior Knowledge: Whole class discussion on the carpet -</p> <ol style="list-style-type: none"> 1. Introduce the concept of the five senses. Ask students to list their senses. As students respond correctly, show the corresponding sense card and either tape it to the white board or have that student come up to the front of the class to hold his/her answer (sense card). 2. Explain to students that they are going to play a game. Hold up the cloth bag and explain to the students that you would like them to guess what is inside the bag. Questioning led by teacher: What is one way that you could try to find out what is inside the bag? 3. As students come up with the body parts they can use to find out what is inside the bag have a volunteer come up and put the corresponding body part on Mr. or Mrs. Potato Head. 4. Discuss the sense that they have described and make sure the students understand the function and location of the sense before moving on. 5. After every new body part is introduced, be sure to repeat the previous one. For example, we use our hands to touch, that's our sense of touch; we use our eyes to see, that is our sense of sight. 6. Pass around the sealed bag for students to feel, smell, listen for what is inside or you might want to hold the bag and select individual students to come up to the front instead. Take several guesses from the class. 7. The cloth bag contains a dog biscuit/bone. Ask students what would a dog do with a biscuit? Why does a dog need to eat? Do we need to eat to survive? (Yes, we are animals and all animals need to eat to survive) 	20 min	<p>Observations: Observation notes will be made during discussion.</p> <p>Questions and Answers: Questions led by the teacher or student. Ask students to recognize and recall specific facts and ideas. Ask students to retell and summarize information.</p>	<p>a) What are your five senses? b) Why do we use our senses? c) How do we use our senses?</p>
<p>B) Enhancing Activity: Hook The Five Senses Stations</p>	50 min		
<ol style="list-style-type: none"> 1. Students are placed in cooperative learning groups of 4-5. Each group will begin at a different sense station and will spend approximately 10 minutes completing the learning task. 2. Explain each activity to the class prior to them beginning the centres. <p>Station #1 - What's So Smelly? In this activity, students use their sense of smell to classify different scents. They use their observation skills to match the correct scent to the correct picture.</p> <p>Prior Knowledge and Skills:</p> <ul style="list-style-type: none"> • Students know how to open a lid on a jar. • Students recognize pictures of familiar objects. • Students are able to match pictures of familiar objects. <p>What to do:</p> <ol style="list-style-type: none"> 1. Students take off the lid of one smell jar and smell the contents. What does it smell like? Do you recognize the smell? 2. Students look at the pictures on their worksheet (BLM 1.1.a – Smell Activity Worksheet) and then try to match them to the smell in their smell jar. 3. Students pass the jar to the next person and repeat these steps with the next scent. 	10 min	<p>Science Learning Log/ Journal – Completed worksheets glued into book and assessed.</p> <p>Anecdotal Record</p> <p>Rubric</p> <p>Science Learning Log/ Journal –</p>	<p>a) Do you remember smelling something like this before? b) What do you think of when you smell this scent? c) Why do you think animals would use their sense of smell? d) Can you think of any animal that has a good sense of smell? Why do they need it?</p>

<p>Station #2 - What's all that Noise? In this activity, students use their sense of hearing to classify different sounds, which they will then match the correct sound to the correct picture. Also, students determine how well sound travels through air, water, and soil environments and then discover how important sound is to an animals' survival.</p> <p>Prior Knowledge and Skills:</p> <ul style="list-style-type: none"> Students know the difference between hard to hear and easy to hear. <p>What to do:</p> <ol style="list-style-type: none"> Students take one shaker and shake the contents. <i>What does it sound like? Do you recognize what object makes that sound?</i> Students look at the pictures on their worksheet (BLM 1.3.a – Sound Activity Worksheet) and try to match the sound made by the objects depicted there to the sound that each shaker makes. Students pass the shaker to the next person and repeat these steps with the next sound. Once students have matched all six shakers, they work with a partner in their group to complete the next task. One student places two bags filled with air up against both his/her ears. The partner then chooses one shaker, shakes it and asks the other student if they hear the sound through the air bag. The process is repeated for the bags of soil and water. Students should trade roles with their partner so they each get a turn listening with each set of bags covering their ears. 	10 min	Completed worksheets glued into book and assessed. Science Learning Log/ Journal – Completed worksheets glued into book and assessed. Anecdotal Record Rubric	<p>a) What would animals be listening for? b) What animals might live underwater? In the soil? c) Which bags could you hear best with? d) Which bags were the most difficult to hear with? e) What do you think animals would rely on if they can't hear as well?</p>
<p>Station #3 – Touchy Feely? In this activity, students use their sense of touch to determine what is in the cloth bags.</p> <p>Prior Knowledge and Skills:</p> <ul style="list-style-type: none"> Students recognize pictures of familiar objects. Students match objects by using their sense of touch. <p>What to do:</p> <ol style="list-style-type: none"> Students take a cloth bag and place their hand inside to feel the object. <i>What do the objects inside feel like? Are they hard/ soft, smooth/bumpy....? Do they feel the same or different?</i> Students look at the pictures on their worksheet (BLM 1.2.a – Touch Activity Worksheet) and try to match that to the object found in the cloth bag. Students pass the bag onto the next person and repeat the steps with the next bag. 	10 min	Science Learning Log/ Journal – Completed worksheets glued into book and assessed. Anecdotal Record Rubric	<p>a) Was it easy to guess the objects without looking? b) How can our sense of touch keep us safe?</p>
<p>Station #4 – Do You See What I See? In this activity, students use their sense of sight to compare different animal eyes. Students learn that an animals' sense of sight can help it find food.</p> <p>Prior Knowledge and Skills: Students know the meaning of close (near) and far. Students need to know how to look through a lens.</p> <p>What to do:</p> <ol style="list-style-type: none"> Place two copies of the marsh scene (BLM 1.8.b – Picture of Marsh Scene) on a classroom wall with tape, leaving a good distance between the pictures. Tape a horizontal line on the classroom floor to mark the spot where students will stand from in order to look at the marsh pictures. Students look at the marsh pictures using their own eyes. <i>What do you see? Can you see everything in the picture?</i> Students record responses on their worksheet (BLM 1.4.a – Sight Activity Worksheet) 	10 min	Science Learning Log/Journal - Completed worksheets glued into book and assessed. Anecdotal Record Rubric Science	<p>a) Can you describe what you see in the picture? b) Which “eyes” could you see the pictures the best with? c) How could better eyesight help an animal? d) How does an insect with</p>

<p>4. Students then look at the picture using a bug-eye viewer. What do you see? Can you see the picture clearly? Students record responses on their worksheet (BLM 1.4.a – Sight Activity Worksheet)</p> <p>5. Next, the students look at the picture using binoculars. What do you see? Can you see everything in the picture? Students record responses on their worksheet (BLM 1.4.a – Sight Activity Worksheet)</p> <p>Station #5 – What’s So Tasty? This activity is optional and will depend on whether students in the classroom have food allergies/food sensitivities. However, the first part of this activity can be completed by everyone. In this activity, students use their sense of taste to compare different flavours.</p> <p>Prior Knowledge and Skills: Students know how to use a mirror. Students need to be familiar with different spatial orientation (front, back, left and right).</p> <p>What to do: Discuss taste. Pass around a mirror and have students look at their taste buds. Go over the four main areas and the four types of taste buds (bitter = back of the tongue, sour = sides of the tongue, salty and sweet = front of the tongue)</p> <ol style="list-style-type: none"> 1. Students take off the lid of one taste container and taste the contents. What does it taste like? Do you recognize the taste? Which taste bud does it represent? Students look at the pictures on their worksheet (BLM 1.5.a – Taste Activity Worksheet) and then try to match them to the taste of the taste containers. 2. Students pass the container to the next person and repeat these steps with the next taste until each container has been tasted. 3. Then from their other handout (BLM 1.5.d –Taste Activity Food Cards), they cut out the food pictures that matches what they just tasted and paste it on the BLM 1.5.c – Diagram of the Tongue’s Taste Buds, next to the corresponding taste bud area of the tongue. 4. Students repeat the entire process until they have identified all four taste bud areas on the tongue diagram. 	<p>10 min</p>	<p>Learning Log/ Journal – Completed worksheets glued into book and assessed.</p> <p>Science Learning Log/ Journal – Completed worksheets glued into book and assessed</p>	<p>compound eyes find food?</p> <ol style="list-style-type: none"> a) What item of food tasted sweet? b) What item of food tasted sour? c) What item of food tasted salty? d) What item of food tasted bitter? e) Where on the tongue could you find the sweet taste bud? f) Where on the tongue could you find the salty taste bud? g) Where on the tongue could you find the bitter taste bud? h) Where on the tongue could you find the sour taste bud?
<p>Culminating Activity (Wrap Up Activity): Group Discussion</p>	<p>15 min</p>		
<ol style="list-style-type: none"> 1. Students sit on carpet for a wrap up discussion. 2. Take up the data sheets and discuss results. Have students hand in their worksheets for evaluation. 3. Introduce self evaluation. Have students share what they did well during the activities and what a member of their group did well. 4. Students think and share something that they can improve on doing for next science activity. 5. Ask students if it was difficult to only use one sense at a time? Would it have been easier if you could have used all of them at once? 6. Explain to students that human beings use clues that we gather using our senses to figure out what things are and how they work. But animals, such as birds, bats, coyotes, and bears have senses many times more powerful than ours 7. If time permits, students can complete the BLM 1.6.a – Five Senses Cloze Worksheet. <p>8. what things are and how they work. But animals, such as birds, bats, coyotes, and bears have senses many times more powerful than ours.</p>		<p>Self Evaluation</p> <p>Rubric</p>	<ol style="list-style-type: none"> a) Can anyone name all of the five senses? b) How do we use our senses everyday?

Notes to Teacher:

Sense of Smell:

Our sense of smell is very important to us because it provides us with information about the world around us. Smell can help animals find food, avoid predators or choose a mate. Humans are able to distinguish over 200 different smells but some animals such as dogs can distinguish between over 10,000 odours! Smell warns us when we shouldn't eat something, and it also sends messages to the brain that help us taste what we are eating. Smell also protects animals from danger. For instance, if you smell smoke, you know there might be a fire nearby.

Sense of Sound:

Sounds are vibrations. All sounds are produced from something that is vibrating. Vibrating objects cause adjacent air molecules to begin vibrating, which in turn cause other air molecules to vibrate. These vibrations are then funnelled into your ear canal by the outer ear. Sound can travel through solids (soil), liquids (water), and gases (air). You can actually hear sounds better when they are travelling through solids and liquids than through air. This is because sound travels faster through liquids and solids. Some animals have amazing adaptations for sound. For example, bats use a system called echolocation. When bats are looking for food, as well as flying, they make high-pitched clicks or chirps. Those sound vibrations travel through the air and bounce off objects, including their food and back to the bat. With their incredible hearing, the bats can tell where the objects and food are located.

Sense of Touch:

Our sense of touch is very important in gathering information about the world around us. It can give us clues about the size, shape, temperature, and texture of different objects. While our other four senses (sight, hearing, smell, and taste) are located in specific parts of the body, our sense of touch is found all over. Our skin is the largest organ in the body. The epidermis or top layer of skin contains many nerve endings that send messages to our brain telling us what we are feeling. It can indicate when something is hot or cold, smooth and sharp, and therefore helps to keep us safe.

Sense of Taste:

Our tongues are covered with little bumps called taste buds. There are thousands of taste buds on your tongue. Taste buds receive chemicals from food and then send messages to your brain about the food you are eating. Your tongue can detect four basic tastes: sweet, salty, sour and bitter.

Sense of Sight:

Our eyes have many parts that work together to help us see images. An eagle's eye is at least four times sharper than that of a human with perfect vision. Eagles have a double fovea – which means they can see forward and to the side at the same time. They are capable of seeing fish in the water from several hundred meters up. Insects can have compound eyes that consist of up to 30 000 lenses, but they can see only form and movement. Like most insects, they rely on a combination of senses to hunt for food and detect predators.

Additional Activities:

Bat / Moth Game (From "Sharing Nature with Children")

1. Inform students that they are pretending to be bats because bats have amazing hearing.
2. Ask students if anyone knows how bats find food?
3. Select one student to be the bat. That person is blindfolded. All of the rest of the participants are moths.
4. The bat counts slowly to three and the moths take large steps away from the bat.

5. Once the bat counts to three, he/she yells “echolocation!”. When the moths hear this, they must freeze. The moths cannot move for the rest of the game.
6. The bat then says, “bat”. Those moths that can see the bat’s face must reply “moth”. If there aren’t any moths in front of the bat, the bat can turn and try again (this is similar to what bats do in real life. They give off really high-pitched sounds that cannot be heard by humans. If the sounds do not bounce back to them, they know that there is no dinner in their path, therefore they change direction and try again.)

Skittles Smorgasbord

1. Students are sitting in a circle with their eyes closed. Explain to them that they are going to be doing an activity on taste.
2. Ahead of time, empty 5-6 skittles into a small plastic cup, one container for each student. Arrange all of the cups onto a carrying tray for easier handling.
3. Hand each student a sample to taste while holding their nose closed (only if they are capable of this) while eating the candy. They must close their eyes for this part of the experiment.
4. After they have all eaten, they can open their eyes and identify the flavour of the candy. If students are having problems, provide hints by holding up a colour.
5. Repeat the activity, but this time do not have the children plug their nose. Have them eat the candy normally. Ask the students if it was easier to tell what the flavour of the candy was when you weren’t plugging your nose?
6. It should be very difficult (nearly impossible) to figure out the flavour of the candy with noses plugged and very easy with noses unplugged. Taste and smell work together. We taste and smell food at the same time. That is why food does not taste the same when we have a cold.

Binocular Vision Game

Supplies needed: Foam balls (1 per group of 2), blindfolds (1 per group of 2)

1. Have children find partners.
2. Have one person in the pair cover one eye with the blindfold.
3. Have the other person throw the blindfolded person the ball (the blindfolded person does not have binocular vision).
4. Have the blindfolded person switch eyes, and then have the partners switch roles.

Adaptations:

All accommodations must take into account the student’s Individual Education Plan. All of the learning tasks and activities are created to accommodate the needs of students at different ability levels. The lesson plan includes pictures and/or examples of a step – by – step process, lists, and graphic organizers to enhance learning. Many of the learning activities provide opportunities for peer/or group interactions, which encourage the use of cooperative learning/social skills and risk taking. Adaptations can be made in the following manner:

- Reduction in the length or number of written responses to the student worksheets.
- Students should be given extended timelines for task completion if required.
- All materials, equipment, and manipulatives should be labelled with text and visual aids.
- Students can be given exemplars (e.g., sample of a completed worksheet to demonstrate the expectations of the task).
- Alternatives to written tasks, such as drawing, pointing to the correct answer, and fill-in-the blanks could be done as well. The use of keypads, word processors and writing software to support the writing task can also be used as alternatives.

Teacher Reflections: