



Grade 1: The Five Senses Unit Plan



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EDUC 3106: Curriculum Instruction in
Teaching Science (Elementary)

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The Five Senses: How We Use Our Senses and the World Around Us Unit Plan

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November 2, 2015

The Five Senses: How We Use Our Senses and the World Around Us Unit Plan**Michael A. Tschritter****Grade 1 Science- EDUC 3106: Curriculum Instruction in Teaching Science (Elementary)****Introduction/Rationale for Unit**

Whether we are playing outside or spending a night at home with our families, our five senses play an integral part in how we perceive the world around us. Both humans and animals use senses such as touch, taste, smell, hearing, and sight and these senses associated sensory organs (skin, tongue/mouth, nose, ears, and eyes) in order to detect information about the world. In turn, each of our senses is highly interconnected with our brain because all of our senses tell our brains how to perceive nearly every aspect of our lives. On the other hand, we must also come to understand that sometimes there can be limitations to our sensory organs and these limitations will drastically affect the way we perceive the world. “The senses are essential survival mechanisms and any organism deprived of one or more of its senses is at a serious disadvantage if it does not learn to adapt” (Science Alberta Foundation, n.d., p. 70). It is extremely important for young students to begin to grasp how our senses work because understanding the observations that one’s senses help us make form the foundational understandings that students will continue to subconsciously use throughout all other aspects of schooling and in life. The purpose or intended goal of this unit is to allow students to learn about their different senses and sensory organs using student-centered and engaging contexts/activities. Many cross-curricular outcomes have been woven into the very core of this unit to uphold the Alberta Education Ministerial Order of 2013 that schools must try to develop well-rounded students/citizens of the world.

Learner Focus

Students are expected to actively use their prior knowledge of the real world throughout the unit by applying what they know about the world in relation to the different scientific and cross-curricular concepts such as mathematics being taught. There are seven major areas of understandings that students are expected to grasp/learn by the end of the unit. These understandings are: Identifying each of our senses and explaining how our senses help us to interpret the world, recognizing how our senses keep us safe/contribute to our quality of life, applying particular senses to identify and describe the characteristics of objects, understanding the limitations of our senses/how our senses can mislead us, recognizing that other living things have senses, describing ways that people adapt to limited sensory abilities, and explaining how we can take care of our sensory organs. Furthermore, the students will also gain experience working with the scientific skill of bringing focus to investigations by making observations

through inquiry and demonstrating a positive attitude for the study of science. Finally, three of the major cross-curricular outcomes/understandings in mathematics that this unit will achieve are: Obtaining number sense by practicing counting through understanding how to count-on, representing and describing numbers up to 20 concretely, symbolically, and pictorially, and sorting objects using one attribute while being able to explain the sorting rule.

I believe this unit is best suited to be taught at the beginning of the Grade 1 school year (September/October) so that students can practice using their understanding of the senses throughout the remainder of Grade 1. I must help students to bridge the gap between just recognizing the world and introduce them to more sophisticated, academic principles that will form the backbone of their work with science, mathematics, and many other subject areas throughout the rest of their elementary school years. As a teacher I need to not only monitor every students' individual progress in learning these scientific understandings, but I must also self-monitor my own teaching to ensure that I am introducing students to appropriate scientific inquiry investigations that actually help them learn the understandings. Moreover, I must adapt to the reality that the beginning of the Grade 1 school year is a time where students are just beginning to learn how to read and write and I must make this unit accessible to all students by varying the learning experiences to include describing observations in various formats. It is my expectation that by the end of the unit, that the students will be able to use their senses to make general and specific observations and to communicate these observations orally and by producing captioned pictures.

Overview of Unit General Learner Expectations

Science Grade 1 Topic D: Senses:

The students will be able to:

- **General Learner Expectations-1-9:** Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.
- **General Learner Expectations-1-10:** Describe the role of the human senses and the senses of other living things, in enabling perception, and action.

Science Grade 1 Process General Learner Expectations:

Skills:

- **General Learner Expectation- Science Inquiry-1-1:** Bring focus to investigative activities, based on their own questions and those of others.
- **General Learner Expectation- Science Inquiry-1-2:** Describe materials and objects that have been observed and manipulated, and identify what was done and found out.

Attitudes:

- **General Learner Expectation-Attitudes-1-4:** Demonstrate positive attitudes for the study of science and for the application of science in responsible ways.

Overview of Unit Specific Learner Expectations

Science Grade 1 Topic D: Senses:**The students will be able to:**

- **Specific Learner Expectation 1:** Identify each of the senses, and explain how we use our senses in interpreting the world.
- **Specific Learner Expectation 2:** Identify ways that our senses contribute to our safety and quality of life.
- **Specific Learner Expectation 3:** Apply particular senses to identify and describe objects or materials provided and to describe living things and environments. Students meeting this expectation will be able to describe characteristics, such as colour, shape, size, texture, smell and sound.
- **Specific Learner Expectation 4:** Recognize the limitations of our senses, and identify situations where our senses can mislead us; e.g., feeling hot or cold, optical illusions, tasting with a plugged nose.
- **Specific Learner Expectation 5:** Recognize that other living things have senses, and identify ways that various animals use their senses; e.g., sensing danger, finding food, recognizing their own young, recognizing a potential mate.
- **Specific Learner Expectation 6:** Describe ways that people adapt to limited sensory abilities or to the loss of a particular sense; e.g., colour blindness, inability to see objects at close range.
- **Specific Learner Expectation 7:** Describe ways to take care of our sensory organs, in particular, our eyes and ears.

Science Grade 1 Process Specific Learner Expectations:

During this unit, the students will obtain:

Skills of Scientific Inquiry:

- **Focus:**
 - **Specific Learner Expectation:** Ask questions that lead to exploration and investigation.
- **Explore and Investigate:**
 - **Specific Learner Expectation:** Manipulate materials and make observations that are relevant to questions asked.
 - **Specific Learner Expectation:** Identify materials used.
 - **Specific Learner Expectation:** Recognize and describe steps followed, based on independent activity, on directed activity and on observing the activity of others.
- **Reflect and Interpret:**
 - **Specific Learner Expectation:** Describe what was observed, using pictures and oral language.

- **Specific Learner Expectation:** Identify questions being investigated and identify what was learned about each question.

Attitudes:

- **Specific Learner Expectation:** Students will show growth in acquiring and applying the following traits:
 - Curiosity.
 - Confidence in personal ability to explore materials and learn by direct study.
 - Inventiveness.
 - Perseverance: staying with an investigation over a sustained period of time.
 - Appreciation of the value of experience and careful observation.
 - A willingness to work with others and to consider their ideas.
 - A sense of responsibility for actions taken.
 - Respect for living things and environments, and commitment for their care.

Overview of Unit Cross-Curricular Outcomes

Mathematics:

- **Number-General Outcome 1:** Develop number sense.
- **Number-Specific Outcome 3:** Demonstrate an understanding of counting by:
 - Using counting-on [C, CN, ME, R, V].
- **Number-Specific Outcome 4:** Represent and describe numbers to 20, concretely, pictorially and symbolically [C, CN, V].
- **Patterns and Relations-Specific Outcome 3:** Sort objects, using one attribute, and explain the sorting rule [C, CN, R and V].
- **Shape and Space-3-D Objects and 2-D Shapes-General Outcome 2:** Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.
- **Shape and Space-3-D Objects and 2-D Shapes-Specific Outcome 2:** Sort 3-D objects and 2-D shapes, using one attribute, and explain the sorting rule [C, CN, R, V].

English Language Arts:

- **Grade 1-Specific Outcome 1.2-Discover and Explore-Express Ideas and Develop Understanding:** Talk with others about something recently learned.
- **Grade 1-Specific Outcome 2.1-Use Strategies and Cues-Use Textual Cues-** Preview book cover, pictures and location of text to assist with constructing and confirming meaning.
- **Grade 1-Specific Outcome 5.2-Work within a Group-Cooperate with Others:** Work in partnerships and groups.
- **Grade 1-Specific Outcome 5.2-Work within a Group-Work in Groups:** Take turns sharing ideas and information.
- **Grade 1-Specific Outcome 5.2-Work within a Group-Evaluate Group Process:** Recognize personal contributions to group process.

Music:

- **General Learner Expectation 5:** Through the elementary music program, students will develop musical skills and knowledge.
- **Specific Learner Expectation-Concepts-Rhythm Outcome 4:** There are strong and weak beats in music.
- **Specific Learner Expectation-Concepts-Expression Outcome 1:** The beat in music may be fast or slow (tempo).
- **Specific Learner Expectation-Concepts-Expression Outcome 2:** Music may be soft (p) or loud (f), dynamics.
- **Specific Learner Expectation- Skills- Moving Outcome 4:** Perform simple action songs and singing games.
- **Specific Learner Expectation- Skills- Moving Outcome 8:** Move to form in music, like phrases and unlike phrases.
- **Specific Learner Expectation- Skills- Moving Outcome 10:** Perform rhythmic patterns in music.
- **Specific Learner Expectation- Skills- Moving Outcome 13:** Use planned body movements to illustrate rhythmic and/or melodic patterns

Art:

- **General Outcome 7: Component 7: Emphasis:** Students will create emphasis based on personal choices.
- **Component 7 Specific Outcome-Concepts:** A. An active, interesting part of a theme can become the main part of a composition.
- **General Outcome 10: Component 10(i): Expression: PURPOSE 1:** Students will record or document activities, people and discoveries.
- **Specific Outcome-Concepts: A.** Everyday activities can be documented visually.
- **Specific Outcome-Concepts: D.** Knowledge gained from study or experimentation can be recorded visually.

Health:

- **Specific Outcome L-1.2:** Explore different ways to know, or come to know, new things; e.g., seeing, smelling, touching.

Physical Education:

- **General Outcome A:** Students will acquire skills through a variety of developmentally appropriate movement activities; dance, games, types of gymnastics, individual activities, and activities in an alternative environment; e.g., aquatics and outdoor pursuits.
- **Specific Outcome-Basic Locomotor Skills-A1-1:** Perform locomotor skills through a variety of activities.
- **General Outcome C:** Students will interact positively with others.
- **Specific Outcome-Communication-C1-1:** Develop and demonstrate respectful communication skills appropriate to context.

Resources and Materials

Resource Books/Videos List/Digital Materials List:

- Kagan, S. and Kagan, M. (1998). *Multiple intelligences: The complete MI book*. San Clemente, CA: Kagan.
- Komar, M. (2006). *Making sense of our senses*. Niagara Falls, NY: On the Mark Press.
- Science Alberta Foundation. (n.d.). *Let's do science grade 1: Senses*. Retrieved from http://letsdoscience.com/content_pdf/Grade1Senses.pdf
- Small, M. (2013). *Making math meaningful to Canadian students, K-8 second edition*. Toronto, ON: Nelson Education.
- **“Animals Colour Image”** (link to picture: http://freepages.rootsweb.ancestry.com/~hellmers/test/test_image.jpg)
- **“BBC Sound and Hearing Science Clips” interactive game** (link: http://www.bbc.co.uk/schools/scienceclips/ages/5_6/sound_hearing.shtml)
- **“The Five Senses Digital Game”** (game link: <http://www.turtlediary.com/kindergarten-games/science-games/the-five-senses.html>).
- **“The Five Senses Song”** (YouTube link: <https://www.youtube.com/watch?v=iA1uLc1uEbI>).
- **“The Sense of Taste Song!”** (YouTube Link: <https://www.youtube.com/watch?v=14-sCPetUMc>).

Complete Materials/Manipulatives List (see lesson descriptions for specific materials/manipulatives for each lesson for more detail):

- SMART Board.
- A Sheet of Paper with 2 Columns of Pictures.
- 5 Sealable Jars (each with one of marbles, paperclips, rice, water, or sand inside).
- 4 Easy-to-open Containers (each with one of a cinnamon stick, white vinegar, peppermint, or blue cheese inside).
- 3 Unsealed Containers (each with one of jam, pasta sauce, or lemon juice inside) and 90 plastic spoons for students to use to taste (3 spoons/per student).
- 4 Brown Paper Bags (each with one of an eraser, leaves, or pinecones inside).
- Student Senses Portfolios (with pages for certain lessons. See Appendix B for pages).
- 1 Copy of **“Touching” by Rebecca Rissman (2011)** Children’s Picture Book
- 20 Clipboards (1 per student).
- 20 Bitter Cookies.
- 20 Sour Cookies.
- 20 Salty Cookies.
- 20 Sweet Cookies.
- 4 Different Types of Food Colouring (to colour code the different types of cookies).
- 5-7 Film Canisters or Other Small, Opaque Containers with Lids.
- 5-7 Cotton Balls Soaked in Different Types of Food to get the Smells of the Food on the Cotton Ball (use foods with various types of scents such as easily recognizable options like pickles, tuna, orange, crayons, peppermint, banana, and vinegar).
- 10 Blindfolds.
- 10 Earplugs.
- Teacher Whistle.
- 10 Sets of Laminated Cut-outs with Pictures of the 5 Senses (1 picture of each of the senses per group).

- 10 Sets of Laminated Cut-outs with Pictures of Objects/Procedures Used to Protect our Senses (1 picture of five different safety objects per group).
- Class Set of Mini Handheld Mirrors.
- Class Set of Pattern Blocks.
- 7-10 Cookie Sheets.
- Flipchart Paper.
- Flipchart Marker.
- 5-10 “I Spy” Books.
- SMART Board Compatible KWL Chart.
- Nature Object (ideally a small twig, leaf, or rock).
- 2 Identical Smelling Potpourri Sachets (the scent of both must be exactly the same).
- 3-5 copies “*Animal Senses: How Animals See, Hear, Taste, Smell and Feel*” (1998) by Pamela Hickman non-fiction children’s information book.
- CD player.
- Original Mixed CD with Common Everyday Sounds.
- Age-appropriate Mini Pop Kids CD.
- 1 Carton of Apple Juice.
- 1 Carton of Orange Juice.
- 80 Dixie Cups (color coded in 2 colours).
- Whiteboard.
- Various magazines, catalogues, and fliers (as many different varieties as possible).
- 20 Blank Pieces of White Paper (1 per student).
- 20 Pairs of Scissors (1 per student).
- 20 Glue Sticks (1 per student).
- 1 Copy of “*Look, Listen, Taste, Touch, and Smell: Learning About Your Five Senses (The Amazing Body)*” (2004) by Pamela Hill Nettleton Children’s Picture Book.
- 2 Tabletop Popcorn Poppers,
- 20 Brown Paper Bags (1 per student),
- 1 Container of Popcorn Kernels.
- Salt and/or Oil (if desired).
- Pre-Prepared SMART Notebook Document (with spinning vortexes).

***Note: Check for student allergies before starting unit. Substitute other materials accordingly.**

Differentiated Instruction

All students’ needs will be met by this unit because they will be able to collaborate with their new classmates in a safe and caring learning environment. In order for all students to be successful at learning the concepts/outcomes being taught in this unit, the students need to know they can actively construct and share knowledge with their classmates through inquiry in order to build scientific, mathematical, and other curriculum areas understandings. Each of the lessons within this unit was designed to allow for students to use multiple ways/strategies to express their scientific understanding of various concepts. Many of the lessons also contain elements of partner and small group work that will allow the students to engage in the common goal of learning about our senses through scientific inquiry. Through the various tasks/problems posed in this unit, students will use a wide variety of ways of communicating

understandings (including making visual and oral observations, documenting learning through pictures and words, and working with and manipulating physical hands-on materials). As a result of the open-endedness of the learning strategies for scientific inquiry that students can use in this unit, each and every student should have the opportunity to experience some sort of scientific learning success regardless of their individual learning needs and abilities.

Brief List of Different Unit Assessments and Evaluations

Minor Assessments/Formative Assessments/Student Senses Portfolios/Daily Class Work:

- **Various ongoing activities and mini-assignments in Student Senses Portfolios** (see each day of detailed unit plan below for specific details). The teacher will provide verbal feedback to students after analyzing a page in the Students Senses Portfolios (see Appendix B in this document for greater detail about the pages) in order to celebrate the “process of learning” rather than “the product of learning”.
- **Throughout every lesson students will be encouraged to self-monitor** their own learning and ask for help when they are confused on a concept.
- **Informal observations of students’ work** in groups and individually on a wide variety of tasks will occur throughout every lesson.

“My Sense” Collage Project:

- **The “My Sense” Collage Project** is the formative summation of students’ learning about the five basic senses during the first half of this science unit.
- Each student will choose one of their five senses and create a collage by cutting out pictures from magazines, catalogues, and fliers that represent this sense.
- This project will also allow the students to practice communicating orally how their created collage represents one of the five senses.
- The teacher will evaluate the students using the **“My Sense” Collage Project Rubric** (see Appendix C in this document for greater detail of assessment categories).

Final Summative Assessment: Senses Unit Demonstration of Learning/Unit Test:

- **The demonstration of learning/unit test is the culmination of all of the outcomes** students are expected to demonstrate **mastery/competency in by the end of the unit.**
- **This assessment is unique** because it not only allows the teacher to **see each individual student’s attainment of scientific senses concepts**, but it also allows **each student to self-monitor/self-reflect on his or her own learning.**
- **Note:** See Appendix A of this document for a copy of this test and correlated outcomes blueprinting.

Weighting of Assessments and Evaluations:

- 40% for Student Senses Portfolio/Formative Daily Class Work.
- 30% for “My Sense” Collage Project.
- 30% for Final Summative Assessment: Senses Unit Demonstration of Learning/Unit Test.

Calendar for Sequencing of Unit:

***Please Note:** The sequencing for the unit has been planned keeping in mind Alberta Education's 2015 Guide to Education which recommends that roughly 1 ½ hours per week be spent on Science Instruction. I have chosen to dedicate **two 45 minute time blocks per week** for Science Instruction in my Grade 1 Classroom (unless otherwise noted/combined with other subject areas).

Unit Week Number	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1		Lesson 1: Introducing the Five Senses (45 minutes)			Lesson 2: What's in a Touch? (45 minutes)
Week 2		Lesson 3: Yum or Yuck- Understanding Our Sense of Taste (45 minutes)			Lesson 4: Smell like an Ant or Bee (45 minutes)
Week 3		Lesson 5: The Eyes Have It! (45 minutes)			Lesson 6: Hearing and Sound through Our Ears (45 minutes)
Week 4		Lesson 7: My Sense Collage Project (75 minutes- Combine with 30 minute Art Period)			Lesson 8: Use Your Senses like an Animal (45 minutes)
Week 5		Lesson 9: How Can Our Senses Mislead Us? (45 minutes)			Lesson 10: How Do We Live without our Senses/Protecting Them (75 minutes- Combine with Physical Education Period)
Week 6		Lesson 11: Review for Upcoming Summative Assessment (45 minutes)			Lesson 12: Final Summative Assessment- Senses Unit Demonstration of Learning (45 minutes)

Lesson/Day 1: Introducing the Five Senses-45 minutes

Science Grade 1 Senses General Learner Expectations-1-9: Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.

Specific Learner Expectations:

- **Specific Learner Expectation 1:** Identify each of the senses, and explain how we use our senses in interpreting the world.
- **Specific Learner Expectation 2:** Identify ways that our senses contribute to our safety and quality of life.
- **Specific Learner Expectation 3:** Apply particular senses to identify and describe objects or materials provided and to describe living things and environments. Students meeting this expectation will be able to describe characteristics, such as colour, shape, size, texture, smell and sound.

Science Skills and Attitudes Process General and Specific Learner Expectations:

- **General Learner Expectation- Science Inquiry-1-1:** Bring focus to investigative activities, based on their own questions and those of others.
- **Specific Learner Expectation-Focus:** Ask questions that lead to exploration and investigation.
- **Specific Learner Expectation-Explore and Investigate:** Identify materials used.

Cross-Curricular Outcomes:

English Language Arts:

- **Grade 1-Specific Outcome 5.2-Work within a Group-Cooperate with Others:** Work in partnerships and groups.
- **Grade 1-Specific Outcome 5.2-Work within a Group-Work in Groups:** Take turns sharing ideas and information.

Health:

- **Specific Outcome L-1.2:** Explore different ways to know, or come to know, new things; e.g., seeing, smelling, touching.

Instructional Intelligences: Wait Time and Bloom's Taxonomy.

Multiple Intelligences: Visual-Spatial, Bodily-Kinesthetic, Intrapersonal, Interpersonal, and Naturalist.

Ministerial Order Connections:

- **Ethical Citizen:** Think critically.
- **Engaged Thinker:** Know How to Learn, and Demonstrate Good Communication Skills/Ability to Work Cooperatively with Others.
- **Entrepreneurial Spirit:** Apply Multiple Literacies.

Blooms Taxonomy Guiding Questions:

Knowledge Level Questioning (see description of activities section for explanations of centres that put these questions into context for each centre):

- Look at the pictures. Are both lines of pictures the same? If not, what's different?
- Shake each container. What do you hear? Can you tell what is in each jar just by listening even with your eyes closed?
- Smell each container. What do you smell? Does the smell remind you of something? Can you tell what is in each container?

- Taste each sample. How would you describe the taste of each sample? Is it sweet? Salty? Bitter? Sour?
- Close your eyes and put your hand in each bag. What do you feel? What do you think is in each bag?

Evaluation Level Questioning:

- We use our senses everyday while we are at school whether we realize it or not. Close your eyes. Imagine what kinds of things can you see, hear, touch, taste, or smell when you are school? How would you **describe** these things to your mom or dad if they were here?

Cooperative Learning /Kagan Structures: Stand Up, Hand Up, Pair Up.

Materials/Manipulatives:

For the different senses centres:

- Seeing Centre:** A Sheet of Paper with 2 Columns of Pictures.
- Hearing Centre:** 5 Sealable Jars (each with one of marbles, paperclips, rice, water, or sand inside).
- Smell Centre:** 4 Easy-to-open Containers (each with one of a cinnamon stick, white vinegar, peppermint, or blue cheese inside).
- Taste Centre:** 3 Unsealed Containers (each with one of jam, pasta sauce, or lemon juice inside) and 90 plastic spoons for students to use to taste (3 spoons/per student). (*Note: Check several weeks in advance with all parents of students about potential allergies/sensitivities not declared on school information forms and adjust tasting samples accordingly).
- Touch Centre:** 4 Brown Paper Bags (each with one of an eraser, leaves, or pinecones inside).
- 1 sheet/per centre with questions to discuss as groups pre-written on sheet (see Bloom's Taxonomy Knowledge Questioning section for the applicable questions).

Other Materials for Lesson:

- Student Senses Portfolios.
- 20 Copies of "Using Your Senses in School" Page (1 per student).

Description of Activities:

- **Anticipatory Set:**
 - **Imagining Our Senses:** The teacher will ask each student to close their eyes and think of a place that he/she enjoys visiting. Then the teacher will ask them to imagine things that they could see, hear, touch, taste, or smell at this place. After about one minute, the teacher will tell the students to open their eyes. Using the **Stand Up, Hand Up, Pair Up** cooperative learning structure, each student will stand up, put one hand up, and find a partner to share what he or she could see, hear, touch, taste, or smell at this place. Once each student has found a partner they will high-five their partner before they begin sharing with each other.
- **Practice/Development:**
 - **Explaining Our Senses:** The teacher will explain to the students that there are five major senses that we use in order to notice the world around us. These five senses are sight, hear, touch, smell, and taste. You use your eyes to see, your ears to hear, your skin to feel, your nose to smell/breath, and your tongue to taste. Then explain to the students that today we are going to explore how our senses work and what kind of information they tell you.
 - **Exploring Our Senses Centres:** There are five centres that have been placed in different parts of the classroom. Working in groups of four you will move around to each centre and try out using one of your senses. You will not have to write anything down at these centres, but you will be expected to discuss different things at each centre as a group (don't worry the questions you should be discussing will be provided for you at each centre). The teacher will give the students the following directions for each centre:

-Seeing Centre: You will look at a line of pictures in two columns. Begin by looking at the pictures in the first column. Then look at the pictures in the second column. Are both lines of pictures the same? If not, what's different?

-Hearing Centre: There are 5 different sealed jars. One holds marbles, one holds paper clips, one holds some rice, one holds water, and one holds some sand. Shake each container. What do you hear? Can you tell what is in each jar just by listening even with your eyes closed?

-Smell Centre: There are 4 containers, each with something inside. Open each container one at a time. What do you smell? Does the smell remind you of something? Can you tell what is in each container?

-Taste Centre: There are 3 samples to taste (you might know what they are). Using a new plastic spoon for each sample, taste 1 spoonful of all 3 samples. Make sure to throw out your plastic spoons right away after tasting 1 of the samples, do not dip it in other samples, and do not share it with other members of your group. How would you describe the taste of each sample? Is it sweet? Salty? Bitter? Sour?

-Touch Centre: There are 4 "mystery" bags. Close your eyes and put your hand in each bag. What do you feel? What do you think is in each bag?

- **Conclusion/Reflection:**

- **Apply Learning:** Students will use the "Using Your Senses in School" page in their **Student Senses Portfolios** to draw a picture and/or write a few words to respond to the following scenario:

-We use our senses everyday while we are at school whether we realize it or not. Close your eyes. Imagine what kinds of things can you see, hear, touch, taste, or smell when you are school? How would you describe these things to your mom or dad if they were here? Use your science journal to draw a picture to show as many of these things as possible that you think you can see, hear, touch, taste, or smell when you are at school. It your choice if you want to use a few words to help represent things in your picture.

Remediation/Extensions:

- **Remediation:** If students appear to be struggling significantly with the discussion questions during the learning activities centres, it may be beneficial for the teacher to spend a few minutes at the end of the centre time discussing problematic questions/stations before moving onto the conclusion activity. If students struggle with imagining how they use their five senses at school during the conclusion activity, allow for a very quick classroom brainstorm of some of things students can see, hear, touch, taste, or smell at school to help them get an idea of possible pictures they could draw in their science journals.
- **Extensions:** Suggest to the students who require a challenge that they also use words that describe some of the characteristics of the things in their pictures if they can think of any (i.e. not just using only words that state what objects are, but also using words to describe characteristics such as texture, colour, and shape of a particular object).

Assessment/Evaluation:

- **Informally observe students abilities** to use their senses to describe their favourite place during the introductory whole class activity as well as how students use their senses when participating in the activities at each learning centre.
- **Analysis of students' "Using Your Senses in School" page** to determine students' capabilities to communicate their understanding of using the five senses to notice/observe a part of the world around us. Give oral reflective feedback to each student as soon as possible after the lesson on the variety of different pictures a particular student chose to draw in their science journal.

Lesson/Day 2: What's in a Touch?-45 minutes

Science Grade 1 Senses General Learner Expectations-1-9: Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.

Specific Learner Expectations:

- **Specific Learner Expectation 1:** Identify each of the senses, and explain how we use our senses in interpreting the world.
- **Specific Learner Expectation 3:** Apply particular senses to identify and describe objects or materials provided and to describe living things and environments. Students meeting this expectation will be able to describe characteristics, such as colour, shape, size, texture, smell and sound.

Science Skills and Attitudes Process General and Specific Learner Expectations:

- **General Learner Expectation-Attitudes-1-4:** Demonstrate positive attitudes for the study of science and for the application of science in responsible ways.
- **Specific Learner Expectation: Students will show growth in acquiring and applying the following traits:**
 - Curiosity.
 - Confidence in personal ability to explore materials and learn by direct study.
 - Inventiveness.
 - Perseverance: staying with an investigation over a sustained period of time.
 - Appreciation of the value of experience and careful observation.
 - A willingness to work with others and to consider their ideas.
 - A sense of responsibility for actions taken.
 - Respect for living things and environments, and commitment for their care.

Cross-Curricular Outcomes:

Math:

- **Number-General Outcome 1:** Develop number sense.
- **Number-Specific Outcome 3:** Demonstrate an understanding of counting by:
 - Using counting-on [C, CN, ME, R, V].
- **Number-Specific Outcome 4:** Represent and describe numbers to 20, concretely, pictorially and symbolically [C, CN, V].

English Language Arts:

- **Grade 1-Specific Outcome 2.1-Use Strategies and Cues-Use Textual Cues-** Preview book cover, pictures and location of text to assist with constructing and confirming meaning.

Instructional Intelligences: Think-Pair-Share, Wait Time, and Bloom's Taxonomy.

Multiple Intelligences: Naturalistic-Environmental, Visual-Spatial, Logical-Mathematical, Verbal-Linguistic, Bodily-Kinesthetic, and Interpersonal.

Ministerial Order Connections:

- **Ethical Citizen:** Literacy, Think Critically, and Manage Information.
- **Engaged Thinker:** Numeracy, Know How to Learn, and Demonstrate Good Communication Skills/Ability to Work Cooperatively with Others.
- **Entrepreneurial Spirit:** Apply Multiple Literacies.

Blooms Taxonomy Guiding Questions:**Knowledge Level Questioning:**

- Can you **name** some things that you touch before you come to school in the morning?
- Where on our “What’s in a Touch?” page do you think we should **draw** a certain item we touched during our mini field trip? (See Practice/Development section of Description of Learning Activities to put this question into a clear context).

Evaluation Level Questioning:

- Can you **predict** what the picture book “*Touching*” (2011) will be about based on the title of the book and the pictures on its front cover?
- Can anyone in the class **explain** why so many items felt a certain way while there were very few items that felt a different way (E.g. Why were there so many items that felt soft, but not many items that felt hot)?

Cooperative Learning /Kagan Structures: Think-Pair-Share.

Materials/Manipulatives: “*Touching*” by Rebecca Rissman (2011) Picture Book, SMART Board, Student Senses Portfolios, 20 Copies of “What’s in a Touch?” Page (1 per student), and 20 Clipboards (1 per student).

Description of Activities:

- **Anticipatory Set:**
 - **Explain:** To help the students to begin to focus on gaining a deeper understanding of specific senses, the teacher will begin by explaining to the students that while some of your other senses are handled by specific parts of your body like your eyes or ears, your sense of touch is found all over your body. Without the sense of touch you would not feel your feet touch the ground when you walk or feel pain when you are hurt.
 - **Reading Children’s Picture Book:** Explain to the students that today we are going to be reading a non-fiction picture book called “*Touching*” by Rebecca Rissman (2011) which means the information is real. Using a Think-Pair-Share the students will briefly work with a partner to discuss what they can **predict** the picture book “*Touching*” (2011) will be about based on a quick viewing of the book’s front cover illustrations as well as its title. Students will be encouraged to make educated predictions based on both their understandings of Scientific and Language Arts principles. After an appropriate amount of time has been given for discussion and predictions, “*Touching*” (2011) will then be read to the students in order to introduce them to several key ideas. These ideas include that we feel things on our skin because under the top part of our skin are nerves which send messages to our brain. Nerves are like strings spread all over the body. The important things you feel are heat, cold, pain and pressure. Feeling pain protects you by warning you to move away from the source of the pain. Our sense of touch shows us the shape, size and feel of our world.
- **Practice/Development:**
 - **Class Brainstorming Activity:** As a whole class the students will brainstorm a list of some of the things they touch before they come to school in the morning. This list will be written by the teacher on the SMART board. The teacher will ensure that as many students in the class have a chance to contribute to the formation of this list. Then to tie into the concept of “counting on” that the students have been learning in Math, all students will start at the top of the list and begin counting the number of things they touch in the morning before school, chanting each number aloud as they go (i.e. realistically there will probably only be about 20 different items that the students touch in the morning).
 - **Mini School Field Trip for Touching:** After the brainstorming activity, the class will go on a mini field trip within the school where the students will visit places such as the gymnasium, library, and principal’s office to try to find items that our sense of touch tells us are soft, hard, cold, hot, wet, or

sticky. The students will use the “**What’s in a Touch?**” page in their **Student Senses Portfolio** to draw pictures of these items and categorize them according to how they feel. During the mini field trip, the students will actively collaborate with each other through everyone touching the items that students find as well as discuss which category certain items should be placed in.

- **Conclusion/Reflection:**
- **Counting the Categories:** Once the class has returned from the mini field trip, the teacher will ask the students to briefly examine their “**What’s in a Touch?**” page and count how many pictures of items they drew in each of the five characteristics of touch categories.
- **Making Further Connections:** To bring closure to the lesson, the teacher will ask if anyone in the class can **explain** why so many of items felt a certain way while there were very few items that felt a different way (E.g. Why were there so many items that felt soft, but not many items that felt hot)?

Remediation/Extensions:

- **Remediation:** If there are a significant number of students in the class who appear to struggle during the mini field trip with categorizing how different items feel, the teacher could have students turn to a partner quickly and predict a reason together as to why the picture of a certain item should be drawn in a particular category.
- **Extensions:** For those students who are looking for a challenge and finish counting the number of items in each of the different categories on their “**What’s in a Touch?**” page quickly, ask these students to attempt to write a sentence or two to conclude the reason they think the class did not find very many items that felt a particular way in the school (for example, if the class only found one item that felt hot, why did the class not find more items that felt hot in the school)?

Assessment/Evaluation:

- **Informal observation** of the Science/Language Arts clues students used in making predictions about the book.
- **Informal visual observation** of students’ abilities to share ideas about different things they touch in morning before school.
- **Analysis of students’ “What’s in a Touch?” page** in their **Student Senses Portfolio** to determine if they are able to correctly identify the different ways that items in the school feel based on our sense of touch. Additionally, to connect to the mathematical concept of describing numbers, examine if the students correctly counted how many pictures they drew in each category (i.e. the pictorial representation of a number)

Lesson/Day 3: Yum or Yuck: Understanding Our Sense of Taste -45 minutes

Science Grade 1 Senses General Learner Expectations-1-9: Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.

Specific Learner Expectations:

- **Specific Learner Expectation 3:** Apply particular senses to identify and describe objects or materials provided and to describe living things and environments. Students meeting this expectation will be able to describe characteristics, such as colour, shape, size, texture, smell and sound.

Science Skills and Attitudes Process General and Specific Learner Expectations:

- **General Learner Expectation- Science Inquiry-1-1:** Bring focus to investigative activities, based on their own questions and those of others.
- **General Learner Expectation- Science Inquiry-1-2:** Describe materials and objects that have been observed and manipulated, and identify what was done and found out.
- **Specific Learner Expectation-Explore and Investigate:** Recognize and describe steps followed, based on independent activity, on directed activity and on observing the activity of others.
- **Specific Learner Expectation-Reflect and Interpret:** Describe what was observed, using pictures and oral language.

Cross-Curricular Outcomes:

Music:

- **General Learner Expectation 5:** Through the elementary music program, students will develop musical skills and knowledge.
- **Specific Learner Expectation- Skills- Moving Outcome 4:** Perform simple action songs and singing games.
- **Specific Learner Expectation- Skills- Moving Outcome 8:** Move to form in music, like phrases and unlike phrases.
- **Specific Learner Expectation- Skills- Moving Outcome 10:** Perform rhythmic patterns in music.
- **Specific Learner Expectation- Skills- Moving Outcome 13:** Use planned body movements to illustrate rhythmic and/or melodic patterns.

Instructional Intelligences: Four Corners, Bloom's Taxonomy, and Wait Time.

Multiple Intelligences: Musical-Rhythmic, Bodily-Kinesthetic, Intrapersonal, and Visual-Spatial.

Ministerial Order Connections:

- **Ethical Citizen:** Think Critically, and Manage Information.
- **Engaged Thinker:** Know How to Learn, and Demonstrate Good Communication Skills/Ability to Work Cooperatively with Others.
- **Entrepreneurial Spirit:** Innovate.

Blooms Taxonomy Guiding Questions:

Knowledge Level Questioning:

- **How** do you think a muffin tastes?
- **What** taste does each of the four different colours of cookies have?

Evaluation Level Questioning:

- Can you **compare** your reason for choosing the corner that you did with a partner in the same corner?

Cooperative Learning /Kagan Structures: Four Corners.

Materials/Manipulatives: SMART Board, 20 Bitter Cookies, 20 Sour Cookies, 20 Salty Cookies, 20 Sweet Cookies (1 of each type of cookie per student), 4 Different Types of Food Colouring (to colour code the different types of cookies), Student Senses Portfolios, and 20 copies of “Sweet Treats” page (1 copy per student).

The following ingredients/directions need to be followed to make the four different types of cookies:

- The main ingredients for all cookies are two parts flour to one part margarine and a third ingredient for taste.
- To make bitter cookies, the third ingredient will be mustard powder.
- To make sour cookies, the third ingredient will be grated lemon peel.
- To make salty cookies, the third ingredient will be salt.
- To make sweet cookies, the third ingredient will be sugar.
- Beat mixture of ingredients lightly and place in small round ball on cookie sheets.
- Select 4 different types of food colouring and place 1-2 drops of food colouring into each cookie dough mixture to use as a code to ensure each students get 1 of each type of cookie.
- Cook at 350°F for 15 minutes.

*Note: Be aware of the potential allergies your students may have. If any of the above ingredients are allergy triggers for students, substitute other ingredients of similar taste accordingly.

Description of Activities:

- **Anticipatory Set:**
 - **Sense of Taste Song:** The students will begin by singing and dancing along with the “**The Sense of Taste Song!**” (YouTube Link: <https://www.youtube.com/watch?v=14-sCPetUMc>). This video should help introduce the students to the different ways that they use the taste buds on their tongues to taste different things.
- **Practice/Development:**
 - **Four Corners Activity:** The teacher will gauge students’ knowledge of the four basic tastes that we have by asking the students to participate in a short **Four Corners activity** in order to assess what prior knowledge students have of recognizing how different foods taste. The teacher will explain to the students that in this activity you move to a certain corner of the room depending on what your answer to the question is. The teacher will then point out four corners in the room and state that each one of these corners represents one of the four basic tastes humans have (bitter, sour, salty, or sweet). Once the students sufficiently understand which taste each corner represents, the teacher will explain that the question for this activity is how do you think candy tastes? Each student will then move to one of the four corners depending on how they think the candy could taste. Once students are in a specific corner, the teacher will instruct them to briefly discuss for about 2 minutes with the other students in their corner why each of them picked that corner. The teacher will then randomly pick someone from each of the four corners to share why they chose that corner and why the rest of their group chose the same corner. This activity should allow the students to see that with some foods there are multiple different tastes that the food could have.
 - **Tasting Cookies Investigation:** After completing the Four Corners activity, the students will be put into groups of four and told that today they will be exploring the four different tastes that humans have. The teacher will explain that each group will receive 16 different cookies (4 bitter cookies, 4 sour cookies, 4 salty cookies, and 4 sweet cookies). The teacher will state that in order to make this experiment fair for everyone the cookies have been colour coded so that everyone gets to try 1 of each type of cookie. However, the challenge that the experiment asks the students to investigate is

that the teacher will not tell the students what taste each cookie represents. It is up to all students in the group to sample 1 of each colour of cookie and then discuss which of the four basic tastes they think that cookie had. The teacher will emphasize that they do not need to be writing anything down during the experiment, but instead should be focusing on achieving agreement within the group on what kind of taste they think a certain cookie has. If a group of students achieves consensus on what taste they think each cookie had before other groups are finished, they can discuss as a group what ingredient they think were put in the cookie to give it that taste.

- **Conclusion/Reflection:**

- **Apply Learning:** To build on the understandings of the four basic tastes that students gained during the cookies experiment, the teacher will have the students take out their **Student Senses Portfolio** and turn to the page called “**Sweet Treats**”. The teacher will explain that this page asks the students to look at the pictures of different food items and circle the items that students think taste sweet. If students are unsure what a certain food tastes like because they have never personally tried that food, it is perfectly acceptable to turn to an elbow partner and ask them to quickly describe its taste.

Remediation/Extensions:

- **Remediation:** If students struggle with deciding how to categorize the different tastes in the cookies experiment, have them discuss with another group why the other group decided a certain colour cookie tasted a certain way. In addition, during the work time for the “**Sweet Treats “portfolio page** if students are unsure what a certain food tastes like because they have never personally tried that food, it is perfectly acceptable to turn to an elbow partner and ask them to quickly describe its taste
- **Extensions:** For those students needing a challenge, ask them to take the “**Sweet Treats” page** a step further by identifying and labelling which of the other three taste categories the picture that s they did not circle would fit into.

Assessment/Evaluation:

- **Informal observation of students’ discussions** during the Four Corners activity in order to assess what prior knowledge of the four basic tastes that students have.
- **Information group observation of students’ during experimentation** to see what methods of reasoning/investigation groups of students are using to distinguish what type of taste each cookie has.
- **Analysis of students’ “Sweet Treats” page in their Student Senses Portfolios** in order to see the students’ abilities to recognize one specific type of taste.

Lesson/Day 4: Smell like an Ant or Bee-45 minutes

- **Science Grade 1 Senses General Learner Expectations-1-9:** Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.
- **Science Grade 1 Senses General Learner Expectations-1-10:** Describe the role of the human senses and the senses of other living things, in enabling perception, and action.

Specific Learner Expectations:

- **Specific Learner Expectation 3:** Apply particular senses to identify and describe objects or materials provided and to describe living things and environments. Students meeting this expectation will be able to describe characteristics, such as colour, shape, size, texture, smell and sound.
- **Specific Learner Expectation 5:** Recognize that other living things have senses, and identify ways that various animals use their senses; e.g., sensing danger, finding food, recognizing their own young, recognizing a potential mate.

Science Skills and Attitudes Process General and Specific Learner Expectations:

- **General Learner Expectation- Science Inquiry-1-1:** Bring focus to investigative activities, based on their own questions and those of others.
- **Specific Learner Expectation-Explore and Investigate:** Identify materials used.
- **Specific Learner Expectation-Reflect and Interpret:** Describe what was observed, using pictures and oral language.

Cross-Curricular Outcomes:

Art:

- **General Outcome 10: Component 10(i): Expression: PURPOSE 1:** Students will record or document activities, people and discoveries.
- **Specific Outcome-Concepts: A.** Everyday activities can be documented visually.
- **Specific Outcome-Concepts: D.** Knowledge gained from study or experimentation can be recorded visually.

Health:

- **Specific Outcome L-1.2:** Explore different ways to know, or come to know, new things; e.g., seeing, smelling, touching.

Instructional Intelligences: Inside-Outside Circle, Thumbs Up-Thumbs-Down, Bloom's Taxonomy, and Wait Time.

Multiple Intelligences: Verbal-Linguistic, Interpersonal, Intrapersonal, and Naturalistic.

Ministerial Order Connections:

- **Ethical Citizen:** Think Critically, and Manage Information.
- **Engaged Thinker:** Know How to Learn, and Identify Career and Life Skills.
- **Entrepreneurial Spirit:** Apply Multiple Literacies.

Blooms Taxonomy Guiding Questions:

Knowledge Level Questioning:

- **What** is the best thing you have ever smelt in your life?
- **What** is the worst thing you have ever smelt in your life?
- **What** smell do you think the cotton ball has? Why?

Evaluation Level Questioning:

- Can you use a few words to **describe** to me how the item you chose to draw smells?

Cooperative Learning /Kagan Structures: Inside-Outside Circle.

Materials/Manipulatives: 5-7 Film Canisters or Other Small, Opaque Containers with Lids, 5-7 Cotton Balls Soaked in Different Types of Food to get the Smells of the Food on the Cotton Ball (use foods with various types of scents such as easily recognizable options like pickles, tuna, orange, crayons, peppermint, banana, and vinegar), Student Senses Portfolios, and 20 Copies of “The Nose Knows” Page.

*Note: Check for students’ allergies before teaching the lesson and substitute materials accordingly.

Description of Activities:

- **Anticipatory Set:**
- **Best/Worst Smells:** The teacher will explain to the students that we use our noses to breath and smell things. The sense of smell tells us about our environment. We can smell good things like food, horrible smells like dirty socks, and dangerous smells like smoke from a fire. Ask the students to stop and think for a moment about what the best thing they have ever smelt in their lives was and what the worst thing they have ever smelt in their lives was and why these things smelt good/bad to them. The students will indicate with a **Thumbs Up-Thumbs Down** hand signal when they feel that they have had sufficient time to think of a good smell and bad smell. Then the teacher will explain to the students that they are going to participate in an **Inside-Outside Circle** to discuss the different things they think smell good and bad. To participate in the Inside-Outside Circle, the students will stand in two circles, facing a partner. The inside circle faces out; the outside circle faces in. The students will take turns telling their partner what they decided was their best and worst smells. After discussing the question, students in the outer circle rotates to the next partner and the sharing of students’ best and worst smells will continue. The goal of the activity is to help all students to realize that there are many different things which smell good and bad.
- **Practice/Development:**
- **Smell like an Ant or Bee Investigation:** The teacher will explain to the students that despite having eyes, bees and ants don't use their eyes the same way we do; in fact, some ants are blind. So instead of their sight, bees and ants often will rely on their sense of smell. Special scents called pheromones help them recognize each other and their homes. In today’s activity, you'll be the bee (or ant) and see if you can tell different scents apart. The teacher will then have the students sit in a circle. The teacher will begin by passing around a small film canister with a cotton ball inside it that is soaked with the smell of a certain type of food. Each student will use one hand to cover his or her eyes to pretend like they are an ant or bee and use the other hand to smell the cotton ball inside the canister. After all of the students have had a chance to smell the item, the students will be instructed by their teacher to turn to an elbow partner and discuss what each of them thinks the smell was. After sharing briefly with a partner, the class will reconvene and the teacher will guide the students through the a whole group discussion about what the students think the smell was and why they think it was that smell. This process of smelling different cotton balls and then sharing about what students discovered about their smells will be repeated 5-7 times with a different smelling film canister and cotton ball each time.
- **Conclusion/Reflection:**
- **Apply Learning:** The students will take out their **Student Senses Portfolio** and turn to the “**The Nose Knows**” page. The teacher will explain that the students are to begin by choosing something that smells. It can be something that smells good, bad, or even dangerous. Then once you have thought of something that smells, you will draw a picture of it in the blank box on the page. After you

have drawn your picture, please name what the item is, and use a few words (one or two words) to **describe** to me how the item smells.

Remediation/Extensions:

- **Remediation:** If the students appear to be struggling with explaining why they think one of the cotton balls smell like a certain item, the teacher could take the smelly socks example mentioned in the introduction and go through a guided modelling process to teach the students how to describe observations using their sense of smell.
- **Extensions:** For those students who require a challenge, ask them to predict a reason that causes they item they drew to smell the way it does. For example, a student who draws a rotten sandwich might explain that sandwich smells rotten to our nose so that we know not to eat it (as we could get sick from it).

Assessment/Evaluation:

- **Informal observation of students' discussions** during the smelling like a bee/ant investigation to see what ways students use to describe smelling a cotton ball and explain what smell they think the soaked cotton ball has.
- **Analysis of students' "The Nose Knows" pages in their Senses Portfolios** to examine the students' abilities to communicate observations about the sense of smell in both pictures and words.

Lesson/Day 5: The Eyes Have It! -45 minutes

Science Grade 1 Senses General Learner Expectations-1-9: Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.

Specific Learner Expectations:

- **Specific Learner Expectation 1:** Identify each of the senses, and explain how we use our senses in interpreting the world.
- **Specific Learner Expectation 3:** Apply particular senses to identify and describe objects or materials provided and to describe living things and environments. Students meeting this expectation will be able to describe characteristics, such as colour, shape, size, texture, smell and sound.

Science Skills and Attitudes Process General and Specific Learner Expectations:

- **General Learner Expectation- Science Inquiry-1-2:** Describe materials and objects that have been observed and manipulated, and identify what was done and found out.
- **Specific Learner Expectation-Reflect and Interpret:** Describe what was observed, using pictures and oral language.

Cross-Curricular Outcomes:

Math:

- **Patterns and Relations-Specific Outcome 3:** Sort objects, using one attribute, and explain the sorting rule [C, CN, R and V].
- **Shape and Space-3-D Objects and 2-D Shapes-General Outcome 2:** Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.
- **Shape and Space-3-D Objects and 2-D Shapes-Specific Outcome 2:** Sort 3-D objects and 2-D shapes, using one attribute, and explain the sorting rule [C, CN, R, V].

Instructional Intelligences: Numbered Heads Together, Plus/Minus/Interesting (PMI) Chart, Bloom's Taxonomy, and Wait Time.

Multiple Intelligences: Naturalistic-Environmental, Visual-Spatial, Logical-Mathematical, Verbal-Linguistic, and Interpersonal.

Ministerial Order Connections:

- **Ethical Citizen:** Think Critically, and Manage Information.
- **Engaged Thinker:** Numeracy, Know How to Learn, and Demonstrate Good Communication Skills/Ability to Work Cooperatively with Others.
- **Entrepreneurial Spirit:** Innovate, and Apply Multiple Literacies.

Blooms Taxonomy Guiding Questions:

Knowledge Level Questioning:

- What do you **see** when you look in the mirror at your own eyes?
- Can you **share** with your group what kinds of things you can see with your eyes in everyday life?
- What do you **notice** happen to your partner's pupil when the lights go off? Does the pupil change at all when the lights come back on?

Evaluation Level Questioning:

- Look at the pattern blocks on your group's cookie sheet. Can you **select** a way using what you see to sort them and **describe** how you went about sorting them?

Cooperative Learning/Kagan Structures: Numbered Heads Together.

Materials/Manipulatives: Class Set of Mini Handheld Mirrors, Class Set of Pattern Blocks, 7-10 Cookie Sheets, Flipchart Paper, Flipchart Markers, Student Senses Portfolios, 20 Copies of “What Can Your Eyes See? Page (1 per student), and 5-10 I Spy Books (for extension).

Description of Activities:

- **Anticipatory Set:**

- **Mini Mirrors:** The teacher will introduce the sense of sight by explaining to the students that we use our eyes to see things. Each student will be given a mini handheld mirror and asked to look closely at their eyes. The teacher will ask the students to take a minute, look closely at their own eyes, and think about what they see.
- **Observations Discussion:** Using the **Numbered Heads Together** cooperative learning structure, the students will briefly work in small groups of four to first discuss what different kinds of things they noticed when they looked in the mirror and what kinds of things we can see in everyday life. Each of the students’ in a group must ensure that they are able to explain what the group discussed as the teacher will randomly call on someone from each group to share their brainstormed ideas with the class.

- **Practice/Development:**

- **Parts of the Eye:** The teacher will begin by briefly explaining that we have many different parts in our eyes and that each part has a different purpose or job. Talk to the students about how eyelids, eyelashes, and tears protect our eyes by keeping dust and other harmful things from getting in. Mention how the coloured part of our eye is called the iris. Then explain that we have something called a pupil which is the little black circle you might have noticed when you looked in the mirror and that the pupil allows light to go through to a part of our eye called the retina which then forms a picture for us to see. Have each student pick a partner and stand close together so that they can look into each other’s eyes. The teacher will turn off the lights in the classroom and the students will look closely at what happens to their partner’s pupils when the lights are off and when they are turned back on. The class will then discuss briefly some of the observations students made.
- **Characteristics of Things We See:** Very briefly introduce the students to some of the characteristics of things our eyes can see by playing a verbal game of I Spy as a whole class. The teacher will give the students clues based on observable characteristics such as colours, shapes, and sizes of objects. All students will then simultaneously point to objects in the classroom that match the characteristic given in the clue. It is important for the teacher to pick clues which have multiple possible answers as it is important for the students to see that there are many similar colours, shapes, and sizes amongst the things we see in life.
- **Sorting Pattern Blocks Investigation:** The teacher will put the students into groups of three and give each group of students a cookie sheet with pattern blocks on it. Each cookie sheet will have approximately 15 pattern blocks of different colours, sizes, and shapes on it. The teacher will instruct the students to work together to observe the blocks and sort them based on any one observable attribute that they see with their eyes. Students can begin this activity discussing as a group what similarities and differences they notice in things they see when looking at the tray of blocks. It is important for the teacher to resist the temptation to tell the students what attribute to use to sort the blocks as it is important for the students to learn to use their eyes to see similarities and differences between groups of items. Once the students believe they have properly sorted their pattern blocks, they will take out their individual **Student Senses Portfolio** and turn to the **“What Can Your Eyes See?” page**. On this page, each student will draw pictures of the way that their group sorted the item during the investigation. The students will also indicate what attribute they sorted their blocks by and write a few words to describe their pictures keeping in mind this attribute (E.g. Naming the colours of different groupings of the blocks).

- **Conclusion/Reflection:**
- **Bringing Learning Together:** Using a piece of blank flipchart paper, have the whole class create a **Plus/Minus/Interesting (PMI) Chart** about what they liked about today's activities, what they didn't like, and what they learned about their eyes and the sense of sight. As many students as possible will be given the opportunity to share their thoughts and the teacher will write down these thoughts on the flipchart paper.

Remediation/Extensions:

- **Remediation:** If the students have trouble sorting their pattern blocks by observable attributes, the teacher could model an example on the whiteboard of how to sort objects based on observable attributes such as colour, shape, and size by using items in the classroom as the visual context instead of pattern blocks. This modelling example would then help reduce confusion amongst students when they go back to sort the pattern blocks with their group.
- **Extensions:** An interesting way to build on students newly gained understandings of sight would be to allow them to look at "*I Spy*" books and discuss amongst each other what kinds of things they see on the pages. Completing this task would have direct connection to the lesson because the students would see how characteristics such as colour, shape, and size are observed by humans through looking at them.

Assessment/Evaluation:

- **Informal observation of students' abilities** to make observations about their eyes and sense of sight during the Mini Mirrors Activity, Parts of the Eye Pupil Observation, and Characteristics of Things We See Activity.
- **Analysis of students' "What Can Your Eyes See?" page in their Senses Portfolios** to examine the students' abilities to communicate observations about the sense of sight in both pictures and words.

Lesson/Day 6: Hearing and Sound through our Ears-45 minutes

Science Grade 1 Senses General Learner Expectations-1-9: Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.

Specific Learner Expectations:

- **Specific Learner Expectation 1:** Identify each of the senses, and explain how we use our senses in interpreting the world.
- **Specific Learner Expectation 3:** Apply particular senses to identify and describe objects or materials provided and to describe living things and environments. Students meeting this expectation will be able to describe characteristics, such as colour, shape, size, texture, smell and sound.

Science Skills and Attitudes Process General and Specific Learner Expectations:

- **General Learner Expectation- Science Inquiry-1-1:** Bring focus to investigative activities, based on their own questions and those of others.
- **Specific Learner Expectation-Reflect and Interpret-**Describe what was observed, using pictures and oral language.
- **Specific Learner Expectation-Reflect and Interpret-** Identify questions being investigated and identify what was learned about each question.

Cross-Curricular Outcomes:

Music:

- **Specific Learner Expectation-Concepts-Rhythm Outcome 4:** There are strong and weak beats in music.
- **Specific Learner Expectation-Concepts-Expression Outcome 1:** The beat in music may be fast or slow (tempo).
- **Specific Learner Expectation-Concepts-Expression Outcome 2:** Music may be soft (p) or loud (f), dynamics.

Instructional Intelligences: Bloom's Taxonomy and Wait Time.

Multiple Intelligences: Naturalistic/Environmental, Musical-Rhythmic, Intrapersonal and Verbal-Linguistic.

Ministerial Order Connections:

- **Ethical Citizen:** Think Critically, Identify and Solve Complex Problems, and Manage Information.
- **Engaged Thinker:** Know How to Learn.
- **Entrepreneurial Spirit:** Apply Multiple Literacies.

Blooms Taxonomy Guiding Questions:

Knowledge Level Questioning:

- How would you **describe** each instrument's sound when it was played lightly? What about when it played strongly?
- **What** job/purpose do you think our ears have in our body?
- Can you **identify** and draw the sound you hear being played on the CD? How would you **describe** this sound?

Evaluation Level Questioning:

- Can you **justify** why you think we have two ears to help us hear? Do we hear the source of a sound more accurately when we use two ears instead of one?

Cooperative Learning /Kagan Structures: Stand Up, Hand Up, Pair Up.

Materials/Manipulatives: SMART Board, “**BBC Sound and Hearing Science Clips**” Interactive Game Website (link: http://www.bbc.co.uk/schools/scienceclips/ages/5_6/sound_hearing.shtml), CD Player, Original Mixed CD with Common Everyday Sounds, an Age-appropriate Mini Pop Kids CD, Student Senses Portfolios, and 20 Copies of “What Can You Hear?” Page (1 per student).

Description of Activities:

- **Anticipatory Set:**

- **Introducing Characteristics of Sound/Hearing:** The teacher will begin by asking the students to describe what part of their body they think they use to hear. After a student has answered that it is our ears that help us to hear, the teacher will bring up the “**BBC Sound and Hearing Science Clips**” interactive game (link: http://www.bbc.co.uk/schools/scienceclips/ages/5_6/sound_hearing.shtml) on the SMART Board. This game is unique because it has interactive instruments (i.e. shakers, a guitar, drums, and a recorder) that allow for different buttons to be pressed to hear how the instrument sounds when it is played lightly vs. strongly. This interactive game serves as an excellent starting point to helping students to understand hearing and sound because the students can discuss what effect playing a certain instrument lightly vs. strongly had on the sound that they heard. As many students as possible will get the chance to come up to the SMART board and press one of the buttons to allow the class to observe how the instrument sounds when it is played lightly or strongly. After several students have tried out the interactive instruments and using the **Stand Up, Hand Up, Pair Up** cooperative learning structure, each student will stand up, put one hand up, and find a partner to share how they would describe the sounds they heard when the instruments were played lightly and strongly. Once each student has found a partner they will high-five their partner before they begin sharing with each other.

- **Practice/Development:**

- **Explain Characteristics of Sounds and the Ear:** Using some of the knowledge gained in the introductory activities to this lesson, the teacher will ask the students what job they think the ears do to help our body? A brief discussion will be held with the students suggesting some possible things they think our ears help us to do and the teacher will build on this knowledge by introducing the idea that our ears help us to hear different sounds and that certain parts of our ear like the eardrum help to transmit sounds to our brains for processing. It also is extremely beneficial if the teacher encourages students to connect their learning about hearing to the interactive game in the previous activity and understand that the most basic characteristic of sound is that our ability to hear allows us to recognize how soft or loud a sound is.
- **Investigation of Two Ears:** Then the teacher will ask the students to consider for a moment why they think we have two ears? After a brief class brainstorming session about why we have two ears, the teacher will have all of the students to come sit in a circle in the centre of the room. The students will close their eyes and cover their right ear. The teacher will walk around the classroom while the children remain sitting in the middle of the room. The teacher will choose a spot somewhere in the classroom to stop and say “Where am I?” All of the students will be instructed to point where they think the teacher is, judging by the sound of his or her voice. Then have the students open their eyes and observe where they are pointing. Ask the students to explain why they think very few of them were actually pointing where you were standing? If it does not come up during the students’ explanations, discuss with the students how we have a very hard time distinguishing the source of a sound with only one ear. Repeat this experiment again using the left ear to allow the student to figure out if there is any difference between using only one of your left or right ear (teacher note: there shouldn’t be). Try to experiment a third time, but allow the students to use both ears to figure out where you are. Discuss with the students whether or not they think we can hear the source of a sound more accurately when we use two ears instead of one.

- **Drawing Pictures of Heard Sounds:** The students will take out their **Senses Portfolio** and turn to the **“What Can You Hear Page?”** The teacher will explain to the students that they are going to listen to various sounds from a teacher created CD on a CD player. The teacher will explain that the sounds will be common sounds that the students may already know. After each sound is played, the teacher will pause the CD player and the students will be given a few minutes to use blank boxes/space on their page to draw a picture of the item/object that they think would make that sound and to indicate whether the sound they heard was soft or loud. The teacher will then play several sounds for the students to hear (teacher note: make sure that when you burn the CD you use common sounds such as a siren, a school bell, a car horn honking, etc.).
- **Conclusion/Reflection:**
- **Dance to the Sound of Music:** The lesson will come to a close with a short class movement break that involves sound. The teacher will tell the students to stand up. The teacher will then explain that the class is going to listen to a Mini Pop Kids CD with a wide variety of songs on it. The teacher will challenge the students to use what they have learned about listening and sound to listen closely to the song and dance to the music based on whether the music is soft or loud. The teacher will then select parts of several songs on the CD that the students may be familiar with and the class will use their ears to listen to how the songs sounds and to determine how they should dance to the music.

Remediation/Extensions:

- **Remediation:** If the students appear to be struggling significantly with understanding how sounds can either be loud or soft, play a sound/rhythm-making game such as “Pattern Maker” or “Where’s My Garden Key”. Playing either of these games would help the students to understand that there are many ways to make sound but at a basic level two of the most definable potential characteristics of sound are whether the sound is loud or soft
- **Extensions:** If students are interested in exploring their sense of hearing further, suggest to these students that they play “What Sound Am I?” This fairly straight-forward game is an alternate version of “I Spy” in which one student thinks of a sound and then gives clues to other students. The other students must then think about the clues and try to guess what sound the original student thought of.

Assessment/Evaluation:

- **Informal observation of students’ discussions** during the introductory interactive instrument sounds game to understand whether or not students are able to make observations about the differences of characteristics in sound (E.g. Playing loudly vs. softly).
- **Analysis of students’ “What Can You Hear?” pages in their Student Senses Portfolios** to assess whether or not students are able to use their listening skills and newly built knowledge of listening to recognize sounds and to describe characteristics of those sounds.

Lesson/Day 7: My Sense Collage Project-75 minutes (Combine a 45 minute Science Period and 30 minute Art Period on the Same Day)

Science Grade 1 Senses General Learner Expectations-1-9: Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.

Specific Learner Expectations:

- **Specific Learner Expectation 1:** Identify each of the senses, and explain how we use our senses in interpreting the world.
- **Specific Learner Expectation 3:** Apply particular senses to identify and describe objects or materials provided and to describe living things and environments. Students meeting this expectation will be able to describe characteristics, such as colour, shape, size, texture, smell and sound.

Science Skills and Attitudes Process General and Specific Learner Expectations:

- **General Learner Expectation-Attitudes-1-4:** Demonstrate positive attitudes for the study of science and for the application of science in responsible ways.
- **Specific Learner Expectation: Students will show growth in acquiring and applying the following traits:**
 - Curiosity.
 - Confidence in personal ability to explore materials and learn by direct study.
 - Inventiveness.
 - Perseverance: staying with an investigation over a sustained period of time.
 - Appreciation of the value of experience and careful observation.
 - A willingness to work with others and to consider their ideas.
 - A sense of responsibility for actions taken.
 - Respect for living things and environments, and commitment for their care.

Cross-Curricular Outcomes:

Art:

- **General Outcome 7: Component 7: Emphasis:** Students will create emphasis based on personal choices.
- **Component 7 Specific Outcome-Concepts:** A. An active, interesting part of a theme can become the main part of a composition.
- **General Outcome 10: Component 10(i): Expression: PURPOSE 1:** Students will record or document activities, people and discoveries.
- **Component 10(i) Specific Outcome-Concepts:** A. Everyday activities can be documented visually.

Multiple Intelligences: Naturalistic-Environmental, Visual-Spatial, Verbal-Linguistic, and Intrapersonal.

Ministerial Order Connections:

- **Ethical Citizen:** Think Critically, and Manage Information.
- **Engaged Thinker:** Know How to Learn.
- **Entrepreneurial Spirit:** Innovate, and Create Opportunities.

Blooms Taxonomy Guiding Questions:

Knowledge Level Questioning:

- What do you **remember** about each of your five senses?
- What kinds of pictures could we look for to **represent** the five senses?

Creation Level Questioning:

- Can you **create** a collage with pictures that shows one of the five senses?

Evaluation Level Questioning:

- Can you **explain** to me (your teacher) how the pictures you glued onto your collage show the sense you chose to use?

Materials/Manipulatives: SMART Board, Whiteboard, 20 Blank Pieces of White Paper (1 per student), 20 Pairs of Scissors (1 per student), 20 Glue Sticks (1 per student), Various Magazines/Catalogues/Fliers and Digital Five Senses Game (link: <http://www.turtlediary.com/kindergarten-games/science-games/the-five-senses.html>).

Description of Activities:

- **Anticipatory Set:**

- **Explain Purpose/Brainstorming:** The teacher will tell the students that today we will be creating collages to show what we have learned about our five senses. The teacher will explain that a collage is a picture that is created by gluing items to a paper. In order to make our collages, the teacher will tell the students that they will each choose ONE of the five senses and then look for pictures in magazine, catalogues, and flyers that they can cut out to represent that sense. The class will quickly brainstorm as a whole group what kinds of pictures they might look for in the catalogues/magazines to represent our five senses. The teacher will record the students' brainstorming thoughts on the whiteboard for students to use as a starting point during the creation of their own collages.

- **Practice/Development:**

- **Creation/Work Time:** The teacher will reemphasize to the students that today each of them will make a collage of things that they like to see, hear, taste, smell, or touch. The teacher will tell the students to begin by choosing ONE of their five senses. Then using various magazines, catalogues, and flyers the students will look for pictures that they can use their scissors to cut out to represent that sense. Each student will be given a blank piece to glue their cut out pictures on. The students will be actively encouraged to try to fill as much of the space on their page as possible with pictures that represent their sense. The students will then get a significant portion of the extended class period (upwards of 45-50 minutes) to work on creating their sense collage.

- **Conclusion/Reflection:**

- **Tell the Teacher about Your Collage:** As students complete/finish their collage, the teacher will call each student to come over to the teacher's desk to talk about the student's collage. The conversation the student has with the teacher will be very brief and the conversation will be about the student explaining how the pictures he or she chose for the collage represents one of the senses. This conversation is an important piece in gauging new understandings about the five senses and their characteristics that students have formed in the first half of the unit.

Remediation/Extensions:

- **Remediation:** If the majority of students appear to be struggling during the collage activity, the teacher could suggest that the whole class brainstorm additional examples of things students could look for in their magazines, catalogues, and fliers. Alternatively, the teacher could use this additional brainstorming time to have the students recall a few of the characteristics of objects that our senses help of detect (E.g. Our sense of taste helps us to whether food is sweet, salty, bitter, or sour).
- **Extensions:** Students will finish at different times during this lesson. After having a one-on-one conversation with the teacher about their collage or while students are waiting to speak to the teacher, students can go up to the SMART board and play a digital game about the five senses (game link: <http://www.turtlediary.com/kindergarten-games/science-games/the-five-senses.html>). This game is

both informational and interactive and allows for multiple students to work together at once to play and learn about their five senses.

Assessment/Evaluation:

- **Informally observe student ability to access previously learned knowledge** during the whole class brainstorming activity.
- **Use outcome-based marking rubric (see Appendix C: Collage Outcome-Based Marking Rubric within this document) to formally assess students' understanding** of what they have been learning in Science about their five basic senses.
- **Oral/verbal feedback** to students in response to the conversation each student will have about why they selected the pictures they did for their collage.

Lesson/Day 8: Use Your Senses like an Animal-45 minutes

- **Science Grade 1 Senses General Learner Expectations-1-9:** Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.
- **Science Grade 1 Senses General Learner Expectations-1-10:** Describe the role of the human senses and the senses of other living things, in enabling perception, and action.

Specific Learner Expectations:

- **Specific Learner Expectation 5:** Recognize that other living things have senses, and identify ways that various animals use their senses; e.g., sensing danger, finding food, recognizing their own young, recognizing a potential mate.

Science Skills and Attitudes Process General and Specific Learner Expectations:

- **General Learner Expectation-Attitudes-1-4:** Demonstrate positive attitudes for the study of science and for the application of science in responsible ways.
- **Specific Learner Expectations: Students will show growth in acquiring and applying the following traits:**
 - Curiosity.
 - Confidence in personal ability to explore materials and learn by direct study.
 - Inventiveness.
 - Perseverance: staying with an investigation over a sustained period of time.
 - Appreciation of the value of experience and careful observation.
 - A willingness to work with others and to consider their ideas.
 - A sense of responsibility for actions taken.
 - Respect for living things and environments, and commitment for their care.

Cross-Curricular Outcomes:

English Language Arts:

- **Grade 1-Specific Outcome 5.2-Work within a Group-Work in Groups:** Take turns sharing ideas and information.
- **Grade 1-Specific Outcome 5.2-Work within a Group-Evaluate Group Process:** Recognize personal contributions to group process.

Instructional Intelligences: KWL Chart, Bloom's Taxonomy, and Wait Time.

Multiple Intelligences: Naturalistic-Environmental, Interpersonal, Intrapersonal, Bodily-Kinesthetic, and Verbal-Linguistic.

Ministerial Order Connections:

- **Ethical Citizen:** Think Critically, and Manage Information.
- **Engaged Thinker:** Know How to Learn, and Demonstrate Good Communication Skills/Ability to Work Cooperatively with Others.
- **Entrepreneurial Spirit:** Create Opportunities, and Innovate.

Blooms Taxonomy Guiding Questions:

Knowledge Level Questioning:

- **What** do you already **know** about how animals use their senses?
- **What** would you like to **know** about how animals use their senses?
- **How** do you think animals use their sense of hearing? **Why?**

- **How** do you think animals use their sense of touch? **Why?**
- **How** do you think animals use their sense of smell? **Why?**

Evaluation Level Questioning:

- Can you **summarize** to your group the most important thing you think you learned during today's outdoor activities? **Compare** what you learned with the rest of the members of your group.

Cooperative Learning /Kagan Structures: Oral RoundTable.

Materials/Manipulatives: SMART Board, SMART Board Compatible KWL Chart, Nature Object (ideally a small twig, leaf, or rock), 2 Identical Smelling Potpourri Sachets (the scent of both must be exactly the same), a Large Outdoor Space (school yard/playground), and 3-5 Copies *Animal Senses: How Animals See, Hear, Taste, Smell and Feel* (1998) by Pamela Hickman non-fiction children's information book.

***Note: Ensure that you keep in mind potential perfume/scent allergies that students may have and choose a type of potpourri that is safe for all students to smell.**

Description of Activities:

- **Anticipatory Set:**
- **KWL Chart about Animal Senses:** The teacher will begin the lesson by explaining to the students that today we are going to learn about how and why animals use their senses. The teacher will assess what prior knowledge the students have about how animals use their senses by having the class participate in the formation of a whole class **KWL Chart** to find out what students already **know** about animals' senses, what the students **want** to know about animals' senses, and ultimately once the lesson is complete what the students **learned** about the senses of animals. The students will verbalize their thoughts concerning the different parts of the chart and the teacher will write down the students' thoughts on the SMART Board.
- **Practice/Development:**
- **Getting Ready:** The teacher will then explain that today the class is going to go outside and get the chance to participate in a few different activities that will allow the students to experience how animals use some of their senses. After the students participate in each animal sensory experience, they will have a brief chance to discuss what they learned through participating in the investigations.
- **Hearing to Hunt:** The teacher will have the students sit down on the ground in a circle and close their eyes. The teacher will instruct them to remain still and listen carefully for signs of wildlife and nature. After the students listen for two minutes, the teacher will ask them to open their eyes. Students will then be called on to describe what they have heard. They may have heard things like insects, birds, leaves rustling in the tress, or cats and dogs. Discuss/brainstorm with the students how animals use their sense of hearing to hunt and survive.
- **Hearing an Animal's Young:** Next, the teacher will pair the students into groups of two. Have one student in each group sit down on the ground with their eyes closed. Have the other student in the group stand near the sitting student. In this activity, when the teacher says "move" the standing student walks in circles around the sitting student. When the teacher says "stop", the standing student stands still. Each sitting student (whose eyes are still closed) then has to guess if the standing student is in front of them, beside them, or behind them. Then the class will discuss how animals can use their hearing to sense different things in their environment such as sensing where their young (animal children) are.
- **Touching to Navigate Environment:** The teacher will have each student sit down with their eyes closed. The teacher will then pass an object around to each student and allow them to feel the object. Once each student has had a chance to feel the object, the teacher will hide the object and allow the

students to open their eyes. Ask the students to guess what the object was. Discuss/brainstorm with the students how animals use their sense of touch to navigate their environment.

- **Smelling for Food and to Survive:** The teacher will explain to the students that some animals use their sense of smell to find food. The teacher will pass a potpourri sachet around to the students, allowing each of them to smell it. Instruct the students to use their sense of smell to find an identical smelling potpourri sachet that you have previously hidden on the playground (it is best to contain the search area to a fairly small area such as the playground equipment area). The teacher must emphasize to the students that we are only using the potpourri sachet as pretend animal food and they cannot eat the sachet when they find it. Once the sachet has been found, the class will have a brief discussion about how they think animals could use their sense of smell to survive.
- **Conclusion/Reflection:**
- **Oral RoundTable/Completion of KWL Chart:** Once the students get back inside the classroom, the teacher will tell the students to sit in a group of four. The students will number themselves off 1-4 in their group. Each group of four will then participate in an **Oral RoundTable** where the students will go around the table and take turns explaining some of the different things they learned today about how animals use their senses. Once a few minutes has been given for all students to share what they learned with their group, the teacher will bring up the class **KWL Chart** from earlier in the lesson and the students will have the chance to share what they have learned today about how/why animals' use their senses. The teacher will record the ideas that students share in the final column of the **KWL Chart** to complete it. By completing the **KWL Chart** in combination with the **Oral RoundTable** sharing, the students will get the chance to see how their own learning and increased understandings contributed to a group process.

Remediation/Extensions:

- **Remediation:** If the majority students struggle with any of the main learning activities, the best course of action is for the teacher to take the time to repeat the activity and guide the students through the process. It is important to ensure if an activity must be repeated that the teacher resist the temptation to just tell the students what they should be learning because it is important for the students to make connections between the activities and their own understandings/learning. Alternatively, if the students struggle during the **Oral RoundTable**, provide the class with a few extra minutes to consolidate and share their learning. It is very important that the students be given sufficient time to think about and articulate what they have learned so a teacher should not unreasonably rush this process.
- **Extensions:** Allow those students who are extremely interested in learning more detailed information about how animals use their senses to look/read the information from *Animal Senses: How Animals See, Hear, Taste, Smell and Feel* (1998) by Pamela Hickman. This non-fiction children's information book allows children to explore how specific animals from all over the world use their senses throughout everyday life.

Assessment/Evaluation:

- **Informal observation of students' abilities and willingness** to contribute to a group process during the formation of the class KWL Chart and the closing Oral RoundTable.
- **Informal observation of students' effort to participate** in the outdoor animal senses activities.
- **Informal observation of students' abilities** to connect observations made during the learning activities to how/why animals use their senses.

Lesson/Day 9: How Can Our Senses Mislead Us? -45 minutes

Science Grade 1 Senses General Learner Expectations-1-9: Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.

Specific Learner Expectations:

- **Specific Learner Expectation 4:** Recognize the limitations of our senses, and identify situations where our senses can mislead us; e.g., feeling hot or cold, optical illusions, tasting with a plugged nose.
- **Specific Learner Expectation 6:** Describe ways that people adapt to limited sensory abilities or to the loss of a particular sense; e.g., colour blindness, inability to see objects at close range.

Science Skills and Attitudes Process General and Specific Learner Expectations:

- **General Learner Expectation- Science Inquiry-1-1:** Bring focus to investigative activities, based on their own questions and those of others.
- **Specific Learner Expectation-Explore and Investigate:** Identify materials used.
- **Specific Learner Expectation-Reflect and Interpret:** Describe what was observed, using pictures and oral language.

Cross-Curricular Outcomes:

English Language Arts:

- **Grade 1-Specific Outcome 1.2-Discover and Explore-Express Ideas and Develop Understanding:** Talk with others about something recently learned.

Health:

- **Specific Outcome L-1.2:** Explore different ways to know, or come to know, new things; e.g., seeing, smelling, touching.

Instructional Intelligences: Think-Pair-Share, Bloom's Taxonomy, and Wait Time.

Multiple Intelligences: Naturalistic-Environmental, Visual-Spatial, Bodily-Kinesthetic, and Intrapersonal.

Ministerial Order Connections:

- **Ethical Citizen:** Think Critically, and Manage Information.
- **Engaged Thinker:** Demonstrate Good Communication Skills/Ability to Work Cooperatively with Others.
- **Entrepreneurial Spirit:** Demonstrate Global and Cultural Understanding.

Blooms Taxonomy Guiding Questions:

Knowledge Level Questioning:

- Can you **describe** how one or more of your five senses were affected the last time you had a cold?
- What colours do you **see** in the picture? What parts of the picture do you **think** a person who is colour blind would have trouble seeing?
- Can you **identify** what the two samples of juice are by their tastes? Can you still **identify** the juice samples by their tastes when you have your nose plugged?

Application Level Questioning:

- What do you **think** life would be like if you could not see certain colours?

Evaluation Level Questioning:

- Can you **explain** to your partner one of the most important things you learned today? Why do you feel this idea was important to learn?

Cooperative Learning/Kagan Structures: Think-Pair-Share.

Materials/Manipulatives: Smart Board, Website for “Animals Colour Image” (link to website: http://freepages.rootsweb.ancestry.com/~hellmers/test/test_image.jpg), 1 Carton of Apple Juice, 1 Carton of Orange Juice, 80 Dixie Cups (color coded in 2 colours), Student Senses Portfolios, and 20 Copies of “Seeing Colours” Page.

***Note: Check for potential student allergies before teaching the lesson and substitute other juices accordingly.**

Description of Activities:

- **Anticipatory Set:**
 - **Building on Prior Knowledge:** The teacher will begin by asking the students to consider what they think their lives would be like if they could not see certain colours? After giving the students a minute or two to ponder this question, the teacher will explain to the students that some people experience the loss of one or more of their senses. Then the teacher will ask the students to consider the last time they had a cold. Ask the students to think about how one or more of their senses were affected by this cold? Give the students another minute or two to ponder this second question. Tie both questions together by explaining to the students that sometimes our senses can mislead us. Sometimes the loss of a sense is more permanent such as the inability of some people’s eyes to see certain colours (colour blindness) and sometimes our senses mislead us due to a more common everyday event like having a cold.
- **Practice/Development:**
 - **Limited Ability to See Colour:** The teacher will reemphasize to the students that sometimes our senses can mislead us such as when we only have limited use of one sense. To understand what causes color blindness, you need to know about the cones in your eyes. These very small cones are on your retina. You have "red," "blue," and "green" cones, which are sensitive to those colors and combinations of them. You need all three types to see all colours properly. When your cones don't work properly, your brain doesn't get the right message about which colors you're seeing. This does not mean that you can only see black or white or that you are blind. In fact, many people who are colour blind can see most colours just not certain ones. People who are colour blind often have trouble seeing colours like red or green. The teacher will allow the students to get a visual understanding of colour blindness by showing them the “Animals Colour Image” (link to picture: http://freepages.rootsweb.ancestry.com/~hellmers/test/test_image.jpg) on the SMART board. After a few minutes of observation, have the students use the “**Seeing Colours**” page in their **Student Portfolios** to write down what colours they observed in the picture. The class will then discuss some of the colours they saw in the picture and what parts of the picture they think a person who is colour blind would have trouble seeing (*Note: It is very important for a Grade 1 teacher to approach the topic of colour blindness sensitively. You must ensure that you conduct colour blindness learning experiences in such a way that students will not get singled out if they are colour blind. It is important to emphasize that colour blind individuals are completely normal and should not be treated any differently than anyone else. Finally, ensure to keep to basic discussions about the cones in the eyes so that you do not overwhelm your students).
 - **Common Everyday Situations that Senses Can Mislead Us:** The teacher will then explain to the students that even if we do not experience the loss of a particular sense permanently such as the loss of ability to see some colours with our eyes in colour blindness, there are still many times throughout everyday life where we will all experience situations where our senses can mislead us. The teacher

will share with the students that today they will get the chance to participate in a learning experience to investigate how our sense of taste and smell are affected when we have a cold.

- **Exploring Taste When You Have a Cold:** The teacher will give each student in the class two different samples of juice (denoted by two different colours of Dixie cups for easy teacher reference). The students will close their eyes and taste both samples. As a whole class, the students will discuss whether it was easy or hard to figure out what the two types of juices were. Then the teacher will distribute another sample of each juice to the students. However, this time the students will use one of their hands to hold their noses shut. The teacher should explain to the students that by holding their nose shut they are pretending like they have a cold. Ask the two students to try both of their second samples of the juices. As a class, discuss whether or not it was still easy for the students to identify what the two types of juices were.
- **Conclusion/Reflection:**
- **Verbally Self-Assessing Learning:** The teacher will bring the lesson to a close by having all of the students participate in a **Think-Pair-Share** with a partner. Once every student has found a partner they are to take a few minutes to think about what they learned today about how our senses can mislead us and then take turns sharing ideas with their partner. Once the students have had sufficient time to discuss their learning with a partner, the whole class will reconvene and the students will be given the opportunity to share their ideas with the whole class if they choose. Sharing about how our senses can mislead us as a class will be a valuable experience for students to participate in because it will allow them to consolidate their learning for the lesson.

Remediation/Extensions:

- **Remediation:** If the students struggle with identifying the tastes of the two types of juice during the “Exploring Taste When You Have a Cold” activity, the teacher could spend a few additional minutes brainstorming with students what they learned about how to classify tastes earlier in the unit. Recalling this previous information about taste may then help the students identify the juices before they move on to trying the experiment with a plugged nose.
- **Extensions:** Students who are extremely interested in how their senses mislead them could be encouraged to view pictures or books of optical illusions. Optical illusions are a great extension to understanding how our senses mislead us because they provide the opportunity to explore the changing of visual perception. Two easy pictures of optical illusions that students could investigate are:
 - Elephant: http://kids.niehs.nih.gov/games/illusions/illusion_04.htm
 - Rabbit or Duck: http://kids.niehs.nih.gov/games/illusions/illusion_07.htm

Assessment/Evaluation:

- **Informal observation of students’ abilities** to communicate new understandings of colour blindness after participating in the “Limited Ability to See Colours” activity.
- **Informal observation of students’ abilities** to communicate new understandings of how our sense of taste can be misled when we have a stuffed nose from a cold after participating in the “Exploring Taste When You Have a Cold” activity.
- **Student verbal self-assessment of formative learning** during the closing activity to allow students to express to a partner what they learned today and why this learning was important.
- **Analysis of Students’ Senses Portfolios** in order to see the students’ abilities to look at a picture and make observations about it using their sense of sight.

Lesson/Day 10-What Do We Do without Some of Our Senses/How Do We Protect Them?: -75 minutes (Combine a 45 minute Science Period and 30 minute Physical Education Period on the Same Day)

Science Grade 1 Senses General Learner Expectations-1-9: Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.

Specific Learner Expectations:

- **Specific Learner Expectation 2:** Identify ways that our senses contribute to our safety and quality of life.
- **Specific Learner Expectation 6:** Describe ways that people adapt to limited sensory abilities or to the loss of a particular sense; e.g., colour blindness, inability to see objects at close range.
- **Specific Learner Expectation 7:** Describe ways to take care of our sensory organs, in particular, our eyes and ears.

Science Skills and Attitudes Process General and Specific Learner Expectations:

- **General Learner Expectation- Science Inquiry-1-1:** Bring focus to investigative activities, based on their own questions and those of others.
- **Specific Learner Expectation-Explore and Investigate-** Manipulate materials and make observations that are relevant to questions asked.

Cross-Curricular Outcomes:

Physical Education:

- **General Outcome A:** Students will acquire skills through a variety of developmentally appropriate movement activities; dance, games, types of gymnastics, individual activities, and activities in an alternative environment; e.g., aquatics and outdoor pursuits.
- **Specific Outcome-Basic Locomotor Skills-A1-1:** Perform locomotor skills through a variety of activities.
- **General Outcome C:** Students will interact positively with others.
- **Specific Outcome-Communication-C1-1:** Develop and demonstrate respectful communication skills appropriate to context.

Instructional Intelligences: Gallery Tour/Walk, RallyRobin, Wait Time, and Bloom's Taxonomy.

Multiple Intelligences: Bodily-Kinesthetic, Verbal-Linguistic, Interpersonal, and Existential.

Ministerial Order Connections:

- **Ethical Citizen:** Think Critically, Identify and Solve Complex Problems, and Manage Information.
- **Engaged Thinker:** Identify and Apply Career and Life Skills, and Demonstrate Good Communication Skills/Ability to Work Cooperatively with Others
- **Entrepreneurial Spirit:** Innovate, and Demonstrate Global and Cultural Understanding.

Blooms Taxonomy Guiding Questions:

Knowledge Level Questioning:

- **What** did you notice about the use of your other senses when you experienced losing your sight or hearing?
- Working together as a group, can you **match** the picture of one of the five senses with another picture of a safety object that helps protect that sense?

Evaluation Level Questioning:

- Can you **explain** to a partner how you think it would feel to be a person who lives their life without the use of one or more of the five senses?

Cooperative Learning /Kagan Structures: RallyRobin.

Materials/Manipulatives: 10 Blindfolds, 10 Earplugs, Teacher Whistle, a Large Space to Conduct the Investigations (ideally school yard grass), 10 Sets of Laminated Cut-outs with Pictures of the 5 Senses (1 picture of each of the senses per group), and 10 Sets of Laminated Cut-outs with Pictures of Objects/Procedures Used to Protect our Senses (1 picture of five different safety objects per group).

Description of Activities:

- **Anticipatory Set:**
 - **Discuss Concepts:** The teacher will begin by explaining that some people don't have all five senses and ask the students to consider for a moment what they think it would be like for these people. Using a **RallyRobin** cooperative learning structure, the students will then find a partner and the pairs will take turns sharing their ideas about what they think life is like for people who do not have all five senses. After the **RallyRobin** is complete, the students will reconvene as a whole group and the teacher will ask a few students to share what they discussed with their partner.
- **Practice/Development:**
 - **Explain Purpose:** The teacher will explain to the students that today we are going to go outside (or the gymnasium if weather is not permitting) and the students will get the chance to work in pairs to find out what it would be like to live without one of their senses. Once we are outside, one partner will lose the use of one of their senses while the other leads them through the task of walking around on the grass. Once your partner finishes, or when the teacher blows the whistle, you will switch roles.
 - **Losing Your Sight:** We will begin by finding out what it would be like to lose your sight. One partner will be blindfolded. The goal of the other partner is to utilize one or more of the blindfolded partner's other senses (E.g. Hearing and Touch) to help them successfully walk around on the grass. After a few minutes the teacher will indicate to switch roles and you will now be blindfolded with your partner leading you around on the grass. Then before moving on to the next activity, the class will discuss how you could adapt to the loss of your sense of sight by discussing things such as using a guide dog or specialized white cane to help you adjust to being blind.
 - **Losing Your Hearing:** The other loss of sense experience that students will have the chance to investigate is losing your hearing (through using ear plugs), and how you can go about leading your partner when he or she has very little or no hearing. The same leading/observing and switching of roles process will also be used for this second scenario. After all students have had the chance to experience being deaf, the class will discuss how devices such as hearing aids can help people who are experiencing hearing loss. (Note: It is very important for the sake of safety to ensure that the teacher chooses an area of the school yard grass that is in good condition with no obstacles that could potentially injure students during the loss of senses simulations. It is also helpful to have a second adult present for this part of the lesson to model an example for the students of how to positively lead your partner through a task and how to be aware of being safe during the activities). Once the students are back in class, briefly talk as a class what it was like for the students to lose the use of one of their senses and brainstorm a list of possible ways that students know they can take care of their senses (E.g. Protecting your hearing by not playing music extremely loudly).
- **Conclusion/Reflection:**
 - **Group Matching Activity for Senses Safety Items:** Due to the extended time period being utilized for the lesson, the teacher will begin a substantial lesson reflection activity by explaining to the students that there are certain safety devices which can help us to protect our senses. The teacher will split the class into groups of four. Each group will be given two sets of laminated cut-outs. One set of

the laminated cut-outs will have pictures of five senses on them. The second set of cut-outs will show pictures of a variety of objects or procedures used to protect our senses (such as sunglasses and safety goggles for the eyes, gloves and tongs for the hands, plugs for the ears, masks for the mouth and nose, and washing hands regularly to cleanse skin scrapes/cuts and prevent germs). The students will work in their small groups to link the pictures of the objects/procedures to the picture of the correct sense that these objects/procedures protect. Once the students have completed the task, the whole class will participate in a **Gallery Tour/Walk** where they will walk around the classroom and see what pictures groups linked together.

Remediation/Extensions:

- **Remediation:** If the students struggle significantly during the matching safety devices to their corresponding senses activity, it might be useful for the teacher to use a **Ghost Walk** instead of a **Gallery Tour** because the **Ghost Walk** would allow one or two members from each group to visit another group and gain ideas about how to match the items. The group members who visited another group could then take a few of these ideas back to their own group and build increased understanding of all members in their group.
- **Extensions:** If the students are extremely interested and/or inspired by their new understandings about how people function with the loss of one or more of their senses and time within the yearly instructional time permits, the teacher could invite a local person with a disability (such as a para-athlete) to come into the class and explain how he or she copes with the loss of their senses.

Assessment/Evaluation:

- **Informally observe the level of participation/effort students give** during the outdoor loss of senses simulation activities.
- **Informally observe during Galley Tour/Walk** whether groups of students were able to correctly make inferences between the safety objects and which of the senses they protect.

Lesson/Day 11: Review for Upcoming Summative Assessment-45 minutes

- **Science Grade 1 Senses General Learner Expectations-1-9:** Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.
- **Science Grade 1 Senses General Learner Expectations-1-10:** Describe the role of the human senses and the senses of other living things, in enabling perception and action.

Specific Learner Expectations:

- **Specific Learner Expectation 1:** Identify each of the senses, and explain how we use our senses in interpreting the world.
- **Specific Learner Expectation 2:** Identify ways that our senses contribute to our safety and quality of life.
- **Specific Learner Expectation 3:** Apply particular senses to identify and describe objects or materials provided and to describe living things and environments. Students meeting this expectation will be able to describe characteristics, such as colour, shape, size, texture, smell and sound.
- **Specific Learner Expectation 4:** Recognize the limitations of our senses, and identify situations where our senses can mislead us; e.g., feeling hot or cold, optical illusions, tasting with a plugged nose.
- **Specific Learner Expectation 5:** Recognize that other living things have senses, and identify ways that various animals use their senses; e.g., sensing danger, finding food, recognizing their own young, recognizing a potential mate.
- **Specific Learner Expectation 6:** Describe ways that people adapt to limited sensory abilities or to the loss of a particular sense; e.g., colour blindness, inability to see objects at close range.
- **Specific Learner Expectation 7:** Describe ways to take care of our sensory organs, in particular, our eyes and ears.

Science Skills and Attitudes Process General and Specific Learner Expectations:

- **General Learner Expectation- Science Inquiry-1-1:** Bring focus to investigative activities, based on their own questions and those of others.
- **General Learner Expectation- Science Inquiry-1-2:** Describe materials and objects that have been observed and manipulated, and identify what was done and found out.
- **Specific Learner Expectation-Reflect and Interpret:** Identify questions being investigated and identify what was learned about each question.

Cross-Curricular Outcomes:

English Language Arts:

- **Grade 1-Specific Outcome 5.2-Work within in a Group-Cooperate with Others:** Work in partnerships and groups.
- **Grade 1-Specific Outcome 5.2-Work within in a Group-Work in Groups:** Take turns sharing ideas and information.

Instructional Intelligences: Bloom's Taxonomy and Wait Time.

Multiple Intelligences: Naturalistic-Environmental, Verbal-Linguistic, Interpersonal, Intrapersonal, and Bodily-Kinesthetic.

Ministerial Order Connections:

- **Ethical Citizen:** Literacy, Think Critically, and Manage Information.
- **Engaged Thinker:** Know How to Learn and Demonstrate Good Communication Skills/Ability to Work Cooperatively with Others.
- **Entrepreneurial Spirit:** Apply Multiple Literacies.

Blooms Taxonomy Guiding Questions:**Knowledge Level Questioning:**

- Can you **identify** which of our five senses are being used on this page in the book?
- How would you **describe** the ways we use our five senses when we are making and eating popcorn?
- Can you **recall** a few of the safety devices/items that can help us to protect our eyes and ears?
- Can you **tell** a partner about how your pet or favourite animal uses its senses? Why is it important for animals to use these senses?

Materials/Manipulatives: 1 Copy of Children’s Picture Book *“Look, Listen, Taste, Touch, and Smell: Learning About Your Five Senses (The Amazing Body)”* (2004) by Pamela Hill Nettleton, 2 Tabletop Popcorn Poppers, 20 Paper Bags (1 per student), 1 Container of Popcorn Kernels, Salt and/or Oil (if desired), SMART Board, and Pre-Prepared SMART Notebook Document (with spinning vortexes).

*Note: Check for potential student allergies well in advance of this lesson and substitute ingredients accordingly.

Description of Activities:

- **Anticipatory Set:**
- **Reading Children’s Picture Book about the Five Senses:** The teacher will read a children’s picture book called *“Look, Listen, Taste, Touch, and Smell: Learning About Your Five Senses (The Amazing Body)”* (2004) by Pamela Hill Nettleton to the students. This book will serve as an excellent introduction to reviewing the five senses humans have because the book explains the interconnectedness between how we use multiple senses in everyday life situations, some of the characteristics of these senses, how we adapt to having limited sensory abilities, and how our senses can sometimes mislead us. The teacher will ensure to pause at appropriate intervals throughout the book to allow the class to discuss things they understand about the senses concepts being discussed in the book.
- **Practice/Development:**
- **Making Popcorn and Understanding Our Five Senses:** The teacher will have the students gather around a table near the back of the classroom. The teacher will ask how many of the students have ever eaten popcorn before. Once the students have responded to the teacher’s question, the teacher will ask the students to turn to a partner and briefly discuss how we might use each of our five senses when making popcorn. Once the students have finished their discussions, the teacher will tell the students that today we are going to be making popcorn and using our five senses to observe the popcorn making process. The teacher will put popcorn kernels into each of the tabletop popcorn makers and begin popping the popcorn. (Note: The teacher will caution the students not to stand too close as the popcorn makers are hot). While the popcorn is popping the teacher will ask the students to discuss as a class what senses they are able to use now as the popcorn is being popped. Then when the popcorn has been prepared, each student will receive approximately 1/4 of a bag of popcorn to eat and enjoy. Before the students begin eating, the teacher will ask the whole class to brainstorm a few ways that we can use the remaining senses that we have not yet discussed when enjoying our popcorn. The students can then snack on their bag of popcorn during the next learning activity.

- **Swirling Vortexes of Protective Safety Items:** The teacher will bring up SMART Notebook document with two swirling vortexes and numerous pictures of safety items/objects that we can use to protect our senses. The teacher will clarify to the students that what they are going to do for this activity is look at each of the pictures below the vortexes. Then several students will randomly be selected one at a time to come up to the SMART Board and the rest of the class will have to tell the student whether they think we should slide the picture of a certain safety item/object into the vortex of ways that we can protect our eyes or if we should slide the picture into the vortex of ways that we can protect our ears. As many students as possible will get a chance to come up to the SMART board to trying dragging a picture to the vortex. After a student has dragged a picture of the safety item into the vortex that the class thinks the item corresponds with, the vortex will either swallow the picture (if the class correctly matched the safety item with the sensory organ it protects) or reject the picture (if the class incorrectly matched the safety item with the sensory organ it protects).
- **Conclusion/Reflection:**
- **Pet/Favourite Animal and Its Senses:** To bring closure to this review lesson and briefly review the concept of recognizing that other living things have senses, the teacher will ask the students to take a moment to think of a pet they have at home or their favourite animal if they do not have a pet. Then after the students have thought of an animal, the teacher will ask the students to partner up with the person beside them and discuss how that animal may use their senses. The students will hopefully recall in their discussions that animals use their senses for things such as finding food, sensing danger, and recognizing their young. After the students have had sufficient time to share their thoughts with a partner, the whole class will reconvene and discuss some of the things that the students talked about in their pairs.

Remediation/Extensions:

- **Remediation:** If the students have difficulty matching the safety item with the correct sensory organ it protects during the “Swirling Vortexes of Safety Items” activity, use this incorrect answer as a learning opportunity to discuss with the class some of the various safety devices/items that protect each of our senses. This discussion can also serve as a great opportunity to remind the students some of the devices that people can use when they experience the permanent loss of one or more of their senses.
- **Extensions:** Challenge enrichment students to use multiple descriptive words when describing how they use each of their five senses during the popcorn making/eating activity. While most students will be able to use a few words to describe characteristics of the popcorn, enrichment students should be challenged to consider as many different characteristics as possible that can be used to describe the popcorn.

Assessment/Evaluation:

- **Informal observation of students’ work** during the review activities.
- ***Tomorrow: Final Summative Assessment: Senses Unit Demonstration of Learning Test.**

Lesson/Day 12: Summative Assessment Senses Demonstration of Learning/Unit Test-45 minutes

- **Science Grade 1 Senses General Learner Expectations-1-9:** Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.
- **Science Grade 1 Senses General Learner Expectations-1-10:** Describe the role of the human senses and the senses of other living things, in enabling perception and action.

Specific Learner Expectations:

- **Specific Learner Expectation 1:** Identify each of the senses, and explain how we use our senses in interpreting the world.
- **Specific Learner Expectation 2:** Identify ways that our senses contribute to our safety and quality of life.
- **Specific Learner Expectation 3:** Apply particular senses to identify and describe objects or materials provided and to describe living things and environments. Students meeting this expectation will be able to describe characteristics, such as colour, shape, size, texture, smell and sound.
- **Specific Learner Expectation 4:** Recognize the limitations of our senses, and identify situations where our senses can mislead us; e.g., feeling hot or cold, optical illusions, tasting with a plugged nose.
- **Specific Learner Expectation 5:** Recognize that other living things have senses, and identify ways that various animals use their senses; e.g., sensing danger, finding food, recognizing their own young, recognizing a potential mate.
- **Specific Learner Expectation 6:** Describe ways that people adapt to limited sensory abilities or to the loss of a particular sense; e.g., colour blindness, inability to see objects at close range.
- **Specific Learner Expectation 7:** Describe ways to take care of our sensory organs, in particular, our eyes and ears.

Blooms Taxonomy Assessment Blue Printing Structure:

- Refer to attached Assessment Blue Printing sheet to get a detailed visual/understanding of how all demonstration of learning/test questions are directly correlated with Alberta Education's Science Programs of Study for Grade 1 Senses and the related Cognitive Levels of Mental Activity Verbs Listed in the Programs of Study.

Materials/Manipulatives: Smart Board (so that the teacher can read the test to the students), and 20 copies of Senses Unit Demonstration of Learning Test (1 per student).

Description of Summative Assessment Testing Process:

- **Before the Test:** The teacher will explain to the students before the illustration of learning to make sure that they answer each question within the illustration of learning. The teacher will also clarify to the students that they can (but ARE NOT expected to on their own at the Grade 1 level) read the questions on the illustration of learning. Instead, to combat the possibility that many of the students may not be able to read, the teacher WILL READ each question on the test to the students before giving them some time to answer the question. For each question, the teacher will also tell the students to consider how they think they did. The students will then refer to the feelings guide (see the actual demonstration of learning/unit test handout for this guide) and draw a face beside each question that shows how they feel they did on that question.
- **During the Test:** The demonstration of learning consists of 7 questions with several of the larger questions being worth more than one mark (refer to assessment blueprint for more details). The students will answer each question to the best of their individual abilities. The teacher will begin reading each question on the test to the students. The teacher will ensure after reading a question that he or she allows the students' sufficient time to complete the question and express their learning.

After completing a question, each student will self-evaluate their own learning by drawing a face to show how they feel they did on that question.

- **After the Test/Cool-Down Extension:** If time permits after the demonstration of learning, the teacher will use the SMART board to bring up a YouTube song called “**The Five Senses Song**” (YouTube link: <https://www.youtube.com/watch?v=iA1uLc1uEbI>). Every student in the class will use this song as a movement break after the summative assessment demonstration of learning/unit test. The teacher will encourage the students to celebrate all they have learned over the past 6 weeks in this unit by standing up and dancing to the song while trying to do some of the actions that are in the song.

Assessment/Evaluation:

- **Summative assessment of students’ understanding of all scientific outcomes** relating to Alberta Education’s Specific Learner Expectations (SLEs) for the Grade 1 Senses Unit. The teacher should look at both the students’ abilities to express their understanding of content knowledge and the students’ own self-reflection feeling faces (see demonstration of learning document for feelings guide/greater detail) when evaluating the success of the unit.
- **Active self-monitoring by the students of their own learning** through communicating their level of confidence with the concept(s) being tested by any particular testing question through drawing a face beside each question that shows how they feel they did on that question.

Two Detailed Science Lesson Plans with Mathematics Integration

What's in a Touch?
Lesson #2 –Friday, September 9, 2016-Grade 1
45 minutes

GENERAL OUTCOMES

Science-Topic D-Senses:

- **General Learner Expectations-1-9:** Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.

SPECIFIC OUTCOMES

- **Specific Learner Expectation 1:** Identify each of the senses, and explain how we use our senses in interpreting the world.
- **Specific Learner Expectation 3:** Apply particular senses to identify and describe objects or materials provided and to describe living things and environments. Students meeting this expectation will be able to describe characteristics, such as colour, shape, size, texture, smell and sound.

SCIENCE SKILLS AND ATTITUDES PROCESS GENERAL AND SPECIFIC LEARNER EXPECTATIONS

- **General Learner Expectation-Attitudes-1-4:** Demonstrate positive attitudes for the study of science and for the application of science in responsible ways.
- **Specific Learner Expectation:** Students will show growth in acquiring and applying the following traits:
 - Curiosity.
 - Confidence in personal ability to explore materials and learn by direct study.
 - Inventiveness.
 - Perseverance: staying with an investigation over a sustained period of time.
 - Appreciation of the value of experience and careful observation.
 - A willingness to work with others and to consider their ideas.
 - A sense of responsibility for actions taken.
 - Respect for living things and environments, and commitment for their care.

CROSS-CURRICULAR CONNECTIONS

Math:

- **Number-General Outcome 1:** Develop number sense.
- **Number-Specific Outcome 3:** Demonstrate an understanding of counting by:
 - Using counting-on [C, CN, ME, R, V].
- **Number-Specific Outcome 4:** Represent and describe numbers to 20, concretely, pictorially and symbolically [C, CN, V].

English Language Arts:

- **Grade 1-Specific Outcome 2.1-Use Strategies and Cues-Use Textual Cues-** Preview book cover, pictures and location of text to assist with constructing and confirming meaning.

MINISTERIAL ORDER CONNECTIONS (NUMERACY/LITERACY; ENGAGED/ETHICAL/ENTREPRENEURIAL STUDENT)

Ethical Citizen:

- Literacy.
- Think Critically.
- Manage Information.

Engaged Thinker:

- Numeracy.
- Know How to Learn.
- Demonstrate Good Communication Skills/Ability to Work Cooperatively with Others.

Entrepreneurial Spirit:

- Apply Multiple Literacies.

COOPERATIVE LEARNING STRUCTURES/KAGAN STRATEGIES/INSTRUCTIONAL INTELLIGENCES

- Think-Pair-Share.
- Wait Time.
- Bloom's Taxonomy.

MULTIPLE INTELLIGENCES/LEARNING STYLES

- Naturalistic-Environmental.
- Visual-Spatial.
- Logical-Mathematical.
- Verbal-Linguistic.
- Bodily-Kinesthetic.
- Interpersonal.

BLOOM'S TAXONOMY – GUIDING QUESTIONS

Knowledge Level Questioning:

- Can you **name** some things that you touch before you come to school in the morning?
- Where on our “What’s in a Touch?” page do you think we should **draw** a certain item we touched during our mini field trip? (see Practice/Development section of Teacher/Student Activities to put this question into a clear context).

Evaluation Level Questioning:

- Can you **predict** what the picture book “*Touching*” (2011) will be about based on the title of the book and the pictures on its front cover?
- Can anyone in the class **explain** why so many items felt a certain way while there were very few items that felt a different way (E.g. Why were there so many items that felt soft, but not many items that felt hot)?

MATERIALS/MANIPULATIVES

- “Touching” by Rebecca Rissman (2011) Picture Book.
- SMART Board.
- Student Senses Portfolios.
- 20 Copies of “What’s in a Touch?” Page (1 per student).
- 20 Clipboards (1 per student).

TEACHER ACTIVITIES	STUDENT ACTIVITIES
<p>Anticipatory Set (Hook)</p> <ul style="list-style-type: none"> • The lesson will begin with the students’ teacher explaining to them: <ul style="list-style-type: none"> ○ That while some of your other senses are handled by specific parts of your body like your eyes or ears, your sense of touch is found all over your body. ○ Without the sense of touch you would not feel your feet touch the ground when you walk or feel pain when you are hurt. • Reading Children’s Picture Book: The teacher will explain to the students that today we are going to be reading a non-fiction picture book called “Touching” by Rebecca Rissman (2011) which means the information in the book is real: <ul style="list-style-type: none"> ○ Using a Think-Pair-Share the students will briefly work with a partner to discuss what they can predict the picture book “Touching” (2011) will be about based on a quick viewing of the book’s front cover illustrations as well as its title. For the Think-Pair-Share the teacher will put the students into pairs, tell the students to think for a moment about what they can predict the book will be about, and finally take turns sharing their ideas for a minute or two. ○ Students will be encouraged to make educated predictions based on both their understandings of Scientific and Language Arts principles. ○ After an appropriate amount of time has been given for discussion and predictions, “Touching” (2011) will then be read to the students by their teacher in order to introduce them to several key ideas. These ideas include that: <ul style="list-style-type: none"> ▪ We feel things on our skin because under the top part of our skin are nerves which send messages to our brain. ▪ Nerves are like strings spread all over the body. The important things you feel are heat, cold, pain and 	<ul style="list-style-type: none"> • The students will gain introductory knowledge to the sense of touch by listening to their teacher explain to them: • That while some of your other senses are handled by specific parts of your body like your eyes or ears, your sense of touch is found all over your body. • Without the sense of touch you would not feel your feet touch the ground when you walk or feel pain when you are hurt. • Reading Children’s Picture Book: The students will listen to the teachers explanation that today we are going to be reading a non-fiction picture book called “Touching” by Rebecca Rissman (2011) which means the information in the book is real: <ul style="list-style-type: none"> ○ Using a Think-Pair-Share the students will briefly work with a partner to discuss what they can predict the picture book “Touching” (2011) will be about based on a quick viewing of the book’s front cover illustrations as well as its title. For the Think-Pair-Share the students will be put into pairs by their teacher, think for a moment about what they can predict the book will be about, and finally take turns sharing their ideas for a minute or two. ○ Students will be encouraged to make educated predictions based on both their understandings of Scientific and Language Arts principles. ○ After an appropriate amount of time has been given for discussion and predictions, “Touching” (2011) will then be read to the students by their teacher in order to introduce them to several key ideas. These ideas include that: <ul style="list-style-type: none"> ▪ We feel things on our skin because under the top part of our skin are nerves which send messages to our brain. ▪ Nerves are like strings spread all over the body. The important things you feel are heat, cold, pain and

<p>pressure.</p> <ul style="list-style-type: none"> ▪ Our sense of touch can also tell us if something feels soft, hard, wet, or sticky. ▪ Feeling pain protects you by warning you to move away from the source of the pain. ▪ Our sense of touch shows us the shape, size and feel of our world. <p style="text-align: right;">[5-10 min]</p>	<p>pressure.</p> <ul style="list-style-type: none"> ▪ Our sense of touch can also tell us if something feels soft, hard, wet, or sticky. ▪ Feeling pain protects you by warning you to move away from the source of the pain. ▪ Our sense of touch shows us the shape, size and feel of our world.
<p>Practice/Development</p> <ul style="list-style-type: none"> ○ Class Brainstorming Activity: The teacher will ask the students to take a moment to think of some of the things they touch before they come to school in the morning. The teacher will then encourage the students to brainstorm a list of some of the things they touch before they come to school in the morning: <ul style="list-style-type: none"> ○ This list will be written by the teacher on the SMART board. ○ The teacher will ensure that as many students in the class as possible have a chance to contribute to the formation of this list. ○ Then to tie into the concept of “counting on” that the students have been learning in Math, all students will start at the top of the list and begin counting the number of things they touch in the morning before school, chanting each number aloud as they go (i.e. realistically there will probably only be about 20 different items that the students touch in the morning). ○ Mini School Field Trip for Touching: After the brainstorming activity, the class will go on a mini field trip within the school where the whole class will visit places such as the gymnasium, library, and principal’s office to try to find (and touch) items that our sense of touch tells us are soft, hard, cold, hot, wet, or sticky. <ul style="list-style-type: none"> ○ The students will use the “What’s in a Touch?” page in their Student Senses Portfolio to draw pictures of these items and categorize them 	<ul style="list-style-type: none"> ● Class Brainstorming Activity: In response to their teacher’s question, the students will take a moment to think of some of the things they touch before they come to school in the morning. The students will brainstorm a list of some of the things they touch before they come to school in the morning: <ul style="list-style-type: none"> ○ This list will be written by the teacher on the SMART board. ○ As many students in the class as possible will have a chance to contribute to the formation of this list. ○ Then to tie into the concept of “counting on” that the students have been learning in Math, all students will start at the top of the list and begin counting the number of things they touch in the morning before school, chanting each number aloud as they go. ○ Mini School Field Trip for Touching: After the brainstorming activity, the class will go on a mini field trip within the school where the whole class will visit places such as the gymnasium, library, and principal’s office to try to find (and touch) items that our sense of touch tells us are soft, hard, cold, hot, wet, or sticky. <ul style="list-style-type: none"> ○ The students will use the “What’s in a Touch?” page in their Student Senses Portfolio to draw pictures of these items and categorize them according to how they feel (see attached “What’s in a Touch?” page for visual of how this categorization will take place). ○ During the mini field trip, the students will actively collaborate with each other through everyone

<p>according to how they feel (see attached “What’s in a Touch?” page for visual of how this categorization will take place).</p> <ul style="list-style-type: none"> ○ The teacher will give each student a clipboard to place their “What’s in a Touch?” page on during the mini field trip. ○ During the mini field trip, the students will actively collaborate with each other through everyone touching the items that students find as well as discussing which category certain items should be placed in. ○ Note: It is extremely important for the teacher to resist temptation to tell the students items they should touch throughout the school and instead allow the students to actively touch different items in various places to determine how these items feel. ○ Safety Note: The teacher should be aware of potential safety risks that might exist in different rooms throughout the school (E.g. A stove in the school’s kitchen) and should actively warn students about the potential safety risks in these rooms. <p style="text-align: right;">[25-30 min]</p>	<p>touching the items that students find as well as discussing which category certain items should be placed in.</p>
<p>Check for Understanding</p> <ul style="list-style-type: none"> ● By having the students discuss with a partner what they can predict the picture book will be about based on the title and front cover illustrations, the teacher is actively encouraging the students to use metacognitive thinking because the students have to use their understanding of both science and language arts clues in order to formulate a potential prediction about the book. ● The teacher will be informally checking the students’ prior knowledge of how humans touch things during the discussion about what the students touch in the morning before they come to school. ● By having the students chant to count the number of items that were written down on 	<ul style="list-style-type: none"> ● Under the guidance of their teacher, the students will be using metacognitive thinking to check their own learning when they discuss with a partner what they can predict the picture book will be about based on both science and language arts clues. ● By listing things that the students touch in the morning before coming to school, the students are being given the chance to access their own prior knowledge and/or experience with the concept of touch. ● By chanting to count the number of items that were written down on the class brainstorming list, the students will be reviewing their recently gained understanding from math class of counting on.

<p>the class brainstorming list, the teacher will be informally reviewing the recent understanding the students have gained in their math class of counting on.</p> <ul style="list-style-type: none"> • The teacher will analyze each student’s “What’s in a Touch?” page to see if the mini school field trip helped the students to gain a greater understanding of how everyday items feel to touch. In addition, the teacher will also be checking to see if the students are able to use pictorial representations of numbers (through the items drawn in each category) by having the students count how many pictures of items were drawn in each category. • The teacher should actively encourage the students to ask for clarification on any of the steps to any of the activities that students do not fully understand. 	<ul style="list-style-type: none"> • By completing the “What’s in a Touch?” page each student gets the chance to express his or her own level of understanding of how everyday items around the school feel to touch. Each student is also getting the chance to show the teacher his or her own level of understanding about the mathematical concept of representing numbers pictorially by counting the number of items that were drawn in each category. • Students should self-monitor their own learning by asking for help from the teacher during the learning activities if they have a question or feel confused about something.
<p>Closure/Reflection</p> <ul style="list-style-type: none"> • Counting the Categories: Once the class has returned from the mini field trip, the teacher will ask the students to briefly examine their “What’s in a Touch?” page and count how many pictures of items they drew in each of the five characteristics of touch categories. By counting how many pictures they have drawn in each category, the students are getting the chance to practice representing numbers pictorially. • Making Further Connections: To bring closure to the lesson, the teacher will ask if anyone in the class can explain why so many items felt a certain way while there were very few items that felt a different way (E.g. Why were there so many items that felt soft, but not many items that felt hot)? <p style="text-align: right;">[5-7 min]</p>	<ul style="list-style-type: none"> • Once the class has returned for the mini field trip, each student will look closely at his or her “What’s in a Touch?” page and count how many pictures of items they drew in each of the five characteristics of touch categories. This counting exercise has two purposes. The first purpose is that by counting the number of items in each category, the students should hopefully come to realize that are numerous characteristics we use to describe how things feel through using our sense of touch. The second purpose is that it allows the students to get some additional practice with representing numbers pictorially and basic counting. • The students will make further connections to new understandings gained throughout the lesson by explaining why so many items felt a certain way while there were very few items that felt a different way (E.g. Why were there so many items that felt soft, but not many items that felt hot)?

REMEDIATION/MODIFICATIONS and EXTENSIONS

- **Remediation/Modification:**
 - If there are a significant number of students in the class who appear to struggle during the mini field trip with categorizing how different items feel, the teacher could have students turn to a partner quickly and predict a reason together as to why the picture of a certain item should be drawn in a particular category.

- **Extension:**
 - For those students who are looking for a challenge and finish counting the number of items in each of the different categories on their “What’s in a Touch?” page quickly, ask these students to attempt to write a sentence or two to conclude the reason they think the class did not find very many items that felt a particular way in the school (for example, if the class only found one item that felt hot, why did the class not find more items that felt hot in the school)?

EVALUATION and ASSESSMENT

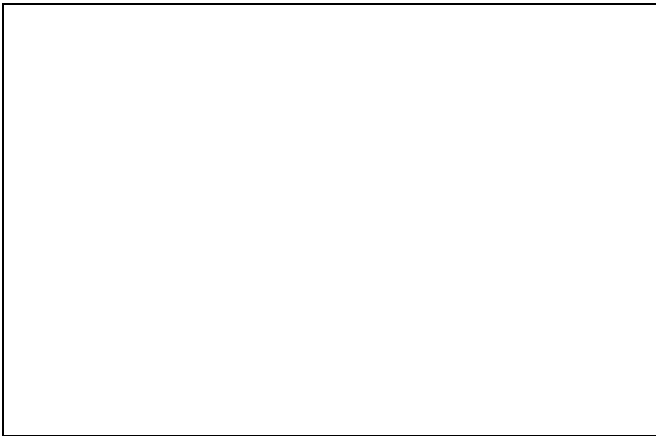
- **Informal observation** of the Science/Language Arts clues students used in making predictions about the book.
- **Informal visual observation** of students’ abilities to share ideas about different things they touch in morning before school.
- **Analysis of students’ “What’s in a Touch?” page** in their **Student Senses Portfolios** to determine if they are able to correctly identify the different ways that items in the school feel based on our sense of touch. Additionally, to connect to the mathematical concept of describing numbers, the teacher will examine if the students correctly counted how many pictures they drew in each category (i.e. the pictorial representation of a number). Provide the students with oral feedback after analyzing their page as soon as possible in order to address any possible misconceptions/misunderstandings.

NOTES AND REVISIONS

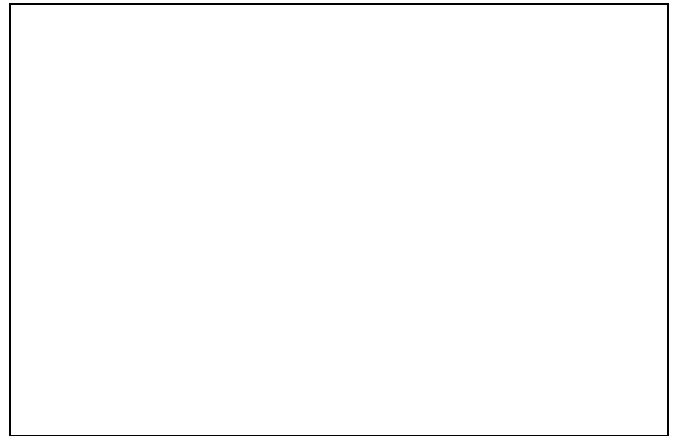
- To be determined after the lesson is taught.

What's in a Touch?

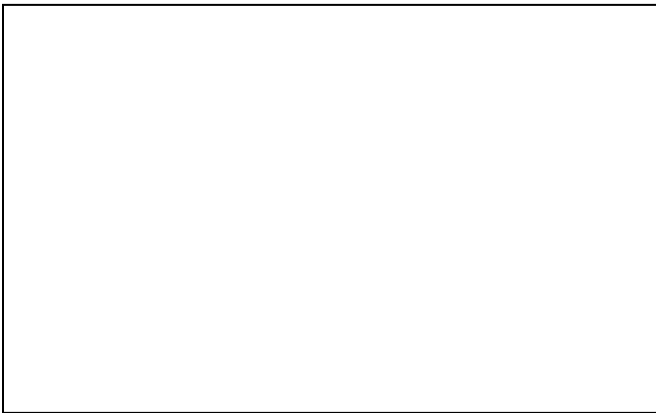
Draw pictures of things you see on the field trip in each box. Count the items.



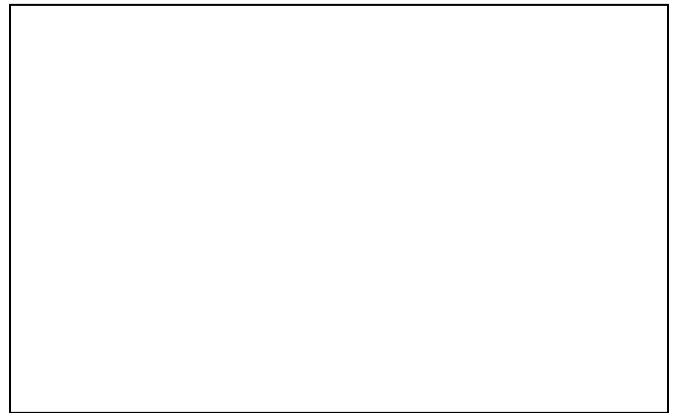
Soft



Hard



Cold



Hot



Wet



Sticky

The Eyes Have It!
Lesson #5 –Tuesday, September 20, 2016-Grade 1
45 minutes

GENERAL OUTCOMES

Science-Topic D-Senses:

- **General Learner Expectations-1-9:** Use the senses to make general and specific observations, and communicate observations orally and by producing captioned pictures.

SPECIFIC OUTCOMES

- **Specific Learner Expectation 1:** Identify each of the senses, and explain how we use our senses in interpreting the world.
- **Specific Learner Expectation 3:** Apply particular senses to identify and describe objects or materials provided and to describe living things and environments. Students meeting this expectation will be able to describe characteristics, such as colour, shape, size, texture, smell and sound.

SCIENCE SKILLS AND ATTITUDES PROCESS GENERAL AND SPECIFIC LEARNER EXPECTATIONS

- **General Learner Expectation- Science Inquiry-1-2:** Describe materials and objects that have been observed and manipulated, and identify what was done and found out.
- **Specific Learner Expectation-Reflect and Interpret:** Describe what was observed, using pictures and oral language.

CROSS-CURRICULAR CONNECTIONS

Math:

- **Patterns and Relations-Specific Outcome 3:** Sort objects, using one attribute, and explain the sorting rule [C, CN, R and V].
- **Shape and Space-3-D Objects and 2-D Shapes-General Outcome 2:** Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.
- **Shape and Space-3-D Objects and 2-D Shapes-Specific Outcome 2:** Sort 3-D objects and 2-D shapes, using one attribute, and explain the sorting rule [C, CN, R, V].

MINISTERIAL ORDER CONNECTIONS (NUMERACY/LITERACY; ENGAGED/ETHICAL/ENTREPRENEURIAL STUDENT)

Ethical Citizen:

- Think Critically.
- Manage Information.

Engaged Thinker:

- Numeracy.
- Know How to Learn.
- Demonstrate Good Communication Skills/Ability to Work Cooperatively with Others.

Entrepreneurial Spirit:

- Innovate.
- Apply Multiple Literacies.

COOPERATIVE LEARNING STRUCTURES/KAGAN STRATEGIES/INSTRUCTIONAL INTELLIGENCES

- Numbered Heads Together.
- Plus/Minus/Interesting (PMI) Chart
- Wait Time.
- Bloom’s Taxonomy.

MULTIPLE INTELLIGENCES/LEARNING STYLES

- Naturalistic-Environmental.
- Visual-Spatial.
- Logical-Mathematical.
- Verbal-Linguistic.
- Interpersonal.

BLOOM’S TAXONOMY – GUIDING QUESTIONS

Knowledge Level Questioning:

- What do you **see** when you look in the mirror at your own eyes?
- Can you **share** with your group what kinds of things you can see with your eyes in everyday life?
- What do you **notice** happen to your partner’s pupil when the lights go off? Does the pupil change at all when the lights come back on?

Evaluation Level Questioning:

- Look at the pattern blocks on your group’s cookie sheet. Can you **select** a way using what you see to sort them and **describe** how you went about sorting them?

MATERIALS	MANIPULATIVES
<ul style="list-style-type: none"> • 7-10 Cookie Sheets. • Flipchart Paper. • Flipchart Markers. • Student Senses Portfolios. • 5-10 I Spy Books (for extension). 	<ul style="list-style-type: none"> • Class Set of Mini Handheld Mirrors. • Class Set of Pattern Blocks.

TEACHER ACTIVITIES	STUDENT ACTIVITIES
<p>Anticipatory Set (Hook)</p> <ul style="list-style-type: none"> • Mini Mirrors: The teacher will introduce the sense of sight by explaining to the students that we use our eyes to see things. Each student will be given a mini handheld mirror and asked to look closely at their eyes. The teacher will ask the students to take a minute, look closely at their own eyes, and think about what they see. • Observations Discussion: Using the Numbered Heads Together cooperative learning structure, the teacher will ask the students to briefly work in small groups of four to discuss what different kinds of 	<ul style="list-style-type: none"> • Mini Mirrors: The students will be introduced to their sense of sight through listening to the teacher’s explanation that we use our eyes to see things. Each student will be given a mini handheld mirror and asked to look closely at their eyes. The students will take a minute to look closely at their own eyes, and think about what they see. • Observations Discussion: Using the Numbered Heads Together cooperative learning structure, the students will briefly work in small groups of four to discuss what different kinds of things they noticed when they looked in the mirror and then

<p>things they noticed when they looked in the mirror and then what kinds of things we can see in everyday life. The teacher will give the following directions to the students to help them understand how to participate in the Numbered Heads Together cooperative learning structure:</p> <ul style="list-style-type: none"> ○ All students will be put into their groups of four by the teacher. ○ The teacher will then ask the students to think about for a moment what they noticed when they looked in the mirror and what kinds of things they see in everyday life. ○ The teacher will tell the students to stand up from their chairs, huddle together, and discuss the above two ideas. ○ The teacher will also indicate to the students that they are to sit down when everyone in the group has had a chance to share. ○ Each of the students' in a group must ensure that they are able to explain what the group discussed as the teacher will randomly call on someone from each group to share their brainstormed ideas with the class. <p style="text-align: right;">[5-10 min]</p>	<p>what kinds of things we can see in everyday life. The students will listen to the following directions from their teacher to help them understand how to participate in the Numbered Heads Together cooperative learning structure:</p> <ul style="list-style-type: none"> ○ All students will be put into their groups of four by the teacher. ○ The students will think for a moment about what they noticed when they looked in the mirror and what kinds of things they see in everyday life. ○ The students will stand up from their chairs, huddle together, and discuss the above two ideas. ○ The students will sit down when everyone in the group has had a chance to share. ○ Each of the students' in a group must ensure that they are able to explain what the group discussed as the teacher will randomly call on someone from each group to share their brainstormed ideas with the class.
<p>Practice/Development</p> <ul style="list-style-type: none"> ● Parts of the Eye: The teacher will begin by briefly explaining that we have many different parts in our eyes and that each part has a different purpose or job. <ul style="list-style-type: none"> ○ Talk to the students about how eyelids, eyelashes, and tears protect our eyes by keeping dust and other harmful things from getting in. ○ Mention how the coloured part of our eye is called the iris. ○ Then explain that we have something called a pupil which is the little black circle you might have noticed when you looked in the mirror and that the pupil allows light to go through to a part of our eye called the retina which then forms a picture for us to see. ○ Have each student pick a partner and stand close together so that they can look into each other's eyes. ○ The teacher will turn off the lights in 	<ul style="list-style-type: none"> ● Parts of the Eye: The students will listen to a brief explanation by their teacher about how we have many different parts in our eyes and that each part has a different purpose or job. The students will listen to their teacher explain the purpose/job of the following parts of our eyes: <ul style="list-style-type: none"> ○ Eyelids, eyelashes, and tears protect our eyes by keeping dust and other harmful things from getting in. ○ The coloured part of our eye is called the iris. ○ A pupil is the little black circle you might have noticed when you looked in the mirror and that the pupil allows light to go through to a part of our eye called the retina which then forms a picture for us to see. ○ Each student will pick a partner and stand close together so that they can look into each other's eyes. ○ The teacher will turn off the lights in

<p>the classroom and the students will look closely at what happens to their partner’s pupils when the lights are off and when they are turned back on.</p> <ul style="list-style-type: none"> ○ The class will then discuss briefly some of the observations students made. <ul style="list-style-type: none"> ● Characteristics of Things We See: The teacher will very briefly introduce the students to some of the characteristics of things our eyes can see by playing a verbal game of “I Spy” as a whole class: <ul style="list-style-type: none"> ○ The teacher will give the students clues based on observable characteristics such as the colours, shapes, and sizes of objects. ○ All students will then simultaneously point to objects in the classroom that they think matches the characteristic given in the clue. ○ It is important for the teacher to pick clues which have multiple possible answers as it is important for the students to see that there are many similar colours, shapes, and sizes amongst the things we see in life. ● Sorting Pattern Blocks Investigation: The teacher will put the students into groups of three and give each group of students a cookie sheet with pattern blocks on it. Each cookie sheet will have approximately 15 pattern blocks of different colours, sizes, and shapes on it. <ul style="list-style-type: none"> ○ The teacher will instruct the students to work together to observe the blocks and sort them based on any one observable attribute that they see with their eyes. ○ Students can begin this activity discussing as a group what similarities and differences they notice in characteristics they see when looking at the tray of blocks. ○ Note: It is important for the teacher to resist the temptation to tell the students what attribute(s) to use to sort the blocks as it is important for the students to learn to use their eyes to see 	<p>the classroom and the students will look closely at what happens to their partner’s pupils when the lights are off and when they are turned back on.</p> <ul style="list-style-type: none"> ○ The class will then discuss briefly some of the observations students made. <ul style="list-style-type: none"> ● Characteristics of Things We See: The students will be very briefly introduced to some of the characteristics of things our eyes can see by playing a verbal game of “I Spy” as a whole class: <ul style="list-style-type: none"> ○ The teacher will give the students clues based on observable characteristics such as the colours, shapes, and sizes of objects. ○ All students will then simultaneously point to objects in the classroom that they think matches the characteristic given in the clue. ○ There will be multiple possible answers to each clue as it is important for the students to see that there are many similar colours, shapes, and sizes amongst the things we see in life. ● Sorting Pattern Blocks Investigation: The students will be put into groups of three by their teacher and each group of students will be given a cookie sheet with pattern blocks on it. Each cookie sheet will have approximately 15 pattern blocks of different colours, sizes, and shapes on it. <ul style="list-style-type: none"> ○ The students will be instructed by their teacher to work together to observe the blocks and sort them based on any one observable attribute that they see with their eyes. ○ Students can begin this activity discussing as a group what similarities and differences they notice in characteristics they see when looking at the tray of blocks. ○ Once the students believe they have properly sorted their pattern blocks, they will take out their individual Senses Portfolio and turn to the “What Can Your Eyes See?” page. On this page, each student will draw
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<p>similarities and differences between groups of items.</p> <ul style="list-style-type: none"> ○ Once the students believe they have properly sorted their pattern blocks, they will take out their individual Senses Portfolio and turn to the “What Can Your Eyes See?” page. On this page, each student will draw pictures of the way that their group sorted the blocks during the investigation. The students will also indicate what attribute they sorted their blocks by and write a few words to describe their pictures keeping in mind this attribute (E.g. If the students chose to sort there pattern blocks by colour, they would indicate that they sorted by colour and would name the different colours of the blocks in their pictures). <p style="text-align: right;">[25-30 min]</p>	<p>pictures of the way that their group sorted the blocks during the investigation. The students will also indicate what attribute they sorted their blocks by and write a few words to describe their pictures keeping in mind this attribute (E.g. If the students chose to sort there pattern blocks by colour, they would indicate that they sorted by colour and would name the different colours of the blocks in their pictures).</p>
<p>Check for Understanding</p> <ul style="list-style-type: none"> ● The teacher will circulate around the classroom and watch the types of observations students are making about their eyes and sense of sight during the Mini Mirrors Activity, Parts of the Eye Pupil Observation, and Characteristics of Things We See Activity in order to address any confusion about the concepts that students are learning about their eyes and sight. ● The teacher will analyze each student’s “What Can Your Eyes See?” page to see if the students were able to use their eyes to examine the patterns blocks and use characteristics of the blocks as a way of describing what their eyes see. In addition, the teacher will also be checking if the students understand the mathematical principle of sorting objects (pattern blocks) based on one attribute and are able to explain the sorting rule (i.e. drawing pictures of the way they sorted their blocks and then using a few words to describe the pictures). ● The teacher should actively encourage the students to ask for clarification on any of the steps to any of the activities that students do not fully understand. 	<ul style="list-style-type: none"> ● The students are building understanding of their eyes and sense of sight during the Mini Mirrors Activity, Parts of the Eye Pupil Observation, and Characteristics of Things We See Activity because they are making observations about things they see and the types of characteristics that can be used to describe what we see. The students can use what they learn throughout the different parts of the activities in order to help them gain a more thorough understanding of the sense of sight. ● By completing the “What Can Your Eyes See?” page each student gets the chance to express his or her own level of understanding of how we can use our eyes to observe different objects and then describe them. Each student is also getting the chance to show the teacher his or her own level of understanding about the mathematical concept of sorting objects based on one attribute and then explaining the sorting rule through drawing pictures of the way their group chose to sort the pattern blocks and explaining the characteristics of the blocks. ● Students should self-monitor their own learning by asking for help from the teacher during the learning activities if they

	<p>have a question or feel confused about something.</p>
<p>Closure/Reflection</p> <ul style="list-style-type: none"> • Bringing Learning Together: Using a piece of blank flipchart paper, the teacher will have the whole class create a Plus/Minus/Interesting (PMI) Chart about what they liked about today’s activities, what they didn’t like, and what they learned about their eyes and the sense of sight: <ul style="list-style-type: none"> ○ As many students as possible will be given the opportunity to share their thoughts in order to contribute to the discussion and the teacher will write down the students’ thoughts on the flipchart paper. <p style="text-align: right;">[5-7 min]</p>	<ul style="list-style-type: none"> • Bringing Learning Together: Using a piece of blank flipchart paper, the whole class will create a Plus/Minus/Interesting (PMI) Chart about what they liked about today’s activities, what they didn’t like, and what they learned about their eyes and the sense of sight: <ul style="list-style-type: none"> ○ As many students as possible will be given the opportunity to share their thoughts in order to contribute to the discussion and the teacher will write down these thoughts on the flipchart paper.

REMEDIATION/MODIFICATIONS and EXTENSIONS

- **Remediation/Modification:**
 - If the students have trouble sorting their pattern blocks by observable attributes, the teacher could model an example on the whiteboard of how to sort objects based on observable attributes such as colour, shape, and size by using items in the classroom as the visual context instead of pattern blocks. This modelling example would then help reduce confusion amongst students when they go back to sort the pattern blocks with their group.
- **Extension:**
 - An interesting way to build on students newly gained understandings of sight would be to allow them to look at “*I Spy*” books and discuss amongst each other what kinds of things they see on the pages. Completing this task would have direct connection to the lesson because the students would see how characteristics such as colour, shape, and size are observed by humans through looking at the books.

EVALUATION and ASSESSMENT

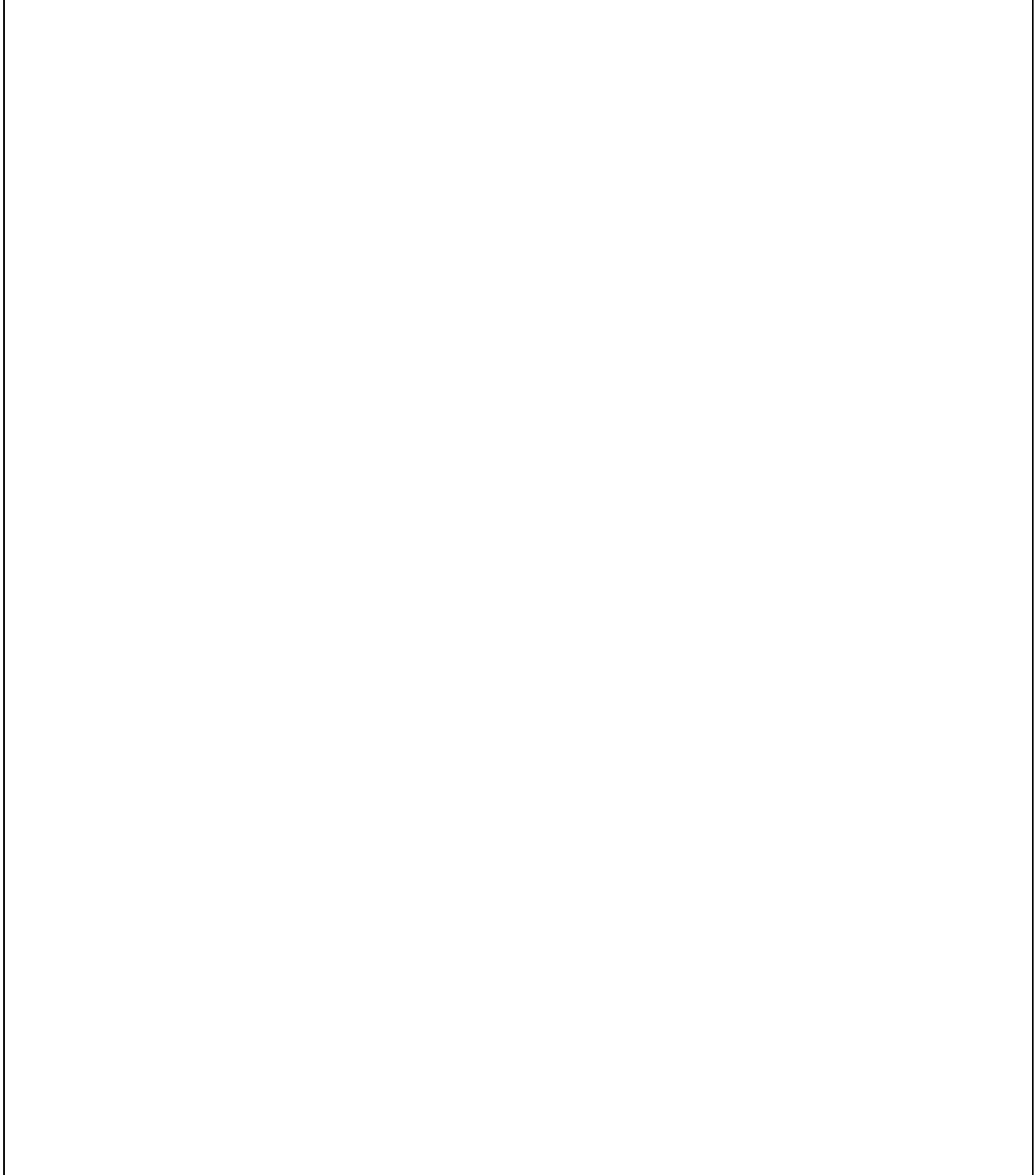
- **Informal observation of students’ abilities to make observations** about their eyes and sense of sight during the Mini Mirrors Activity, Parts of the Eye Pupil Observation, and Characteristics of Things We See Activity.
- **Analysis of students’ “What Can Your Eyes See?” page in their Student Senses Portfolios** to examine the students’ abilities to communicate observations about characteristics of the sense of sight in both pictures and words. Additionally, to connect to the mathematical concept of sorting objects using one attribute, the teacher will examine if the students communicated a way to sort the pattern blocks using pictures and were able to successfully communicate the sorting rule through writing a few words (i.e. communicating that they used one of colour, shape, or size to sort the pattern blocks). Provide the students with oral feedback after analyzing their page as soon as possible in order to address any possible misconceptions/misunderstandings.

NOTES AND REVISIONS

- To be determined after the lesson is taught.

What Can Your Eyes See?

Draw pictures to show how you sorted the pattern blocks. Write words to describe them.

A large, empty rectangular box with a thin black border, intended for students to draw their sorted pattern blocks and write descriptive words.

Appendix A: Summative Assessment Senses Unit Demonstration of Learning and Blueprinting




Name: _____

Total: ____/12

Senses Unit Demonstration of Learning

Make sure that you answer each question. For each of the questions consider how you think you did. Then referring to the feelings guide below as an example, draw a face beside each question that shows how you feel you think you did on that question.

Feelings Guide:

 <p>I feel GREAT about this... This question was easy cheesy.</p>	 <p>I feel OK about this... I am not exactly sure about this question.</p>	 <p>I feel SAD about this... I must have still been thinking about everything I did on summer vacation when we learned this.</p>
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- If Mr. Tschritter has trouble seeing the colours red and green... **Circle** which of the following problems Mr. Tschritter might have? (1 mark)
 - Hungry.
 - Colour blind.
 - Deaf.
- In the box below, **draw** a picture of one way that you can take care of your eyes. (1 mark)

3. Do some animals use their sense of smell to hunt? Circle your answer. (1 mark)

Yes

No

4. Match the picture of body part with the sense. (5 marks)

See



Hear



Taste



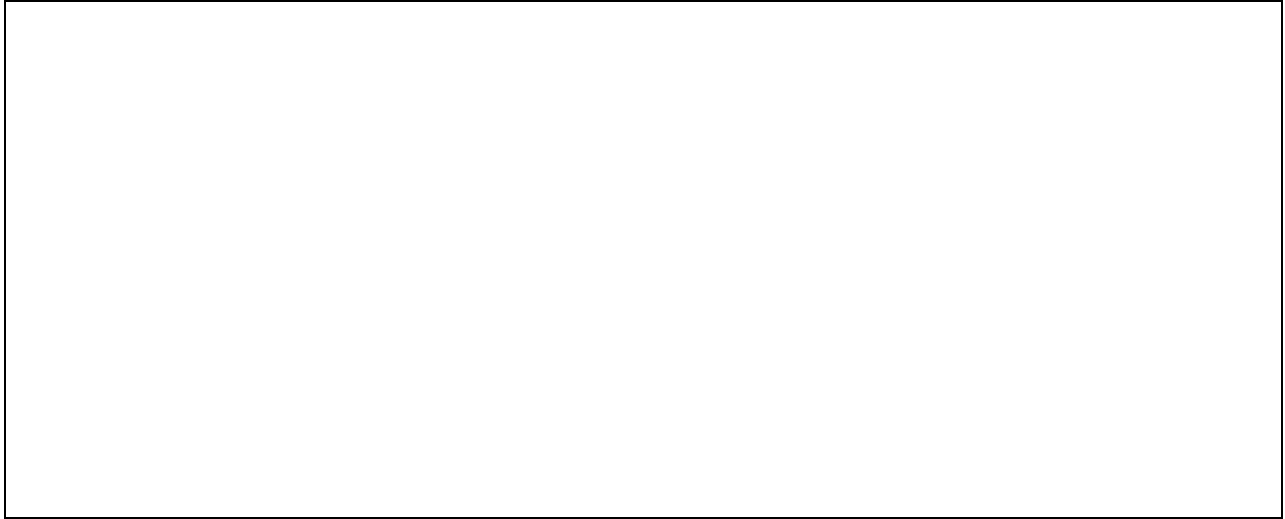
Touch



Smell



5. In the box, **draw** a picture of a food that would taste salty. **Name** the food. (2 marks)



6. Will your sense of taste be different when you have a plugged nose? **Circle** your answer. (1 mark)

Yes

No

7. How many senses do we have? **Circle** your answer. (1 mark)

a. 1.

b. 3.

c. 5.

Summative Assessment Blueprinting

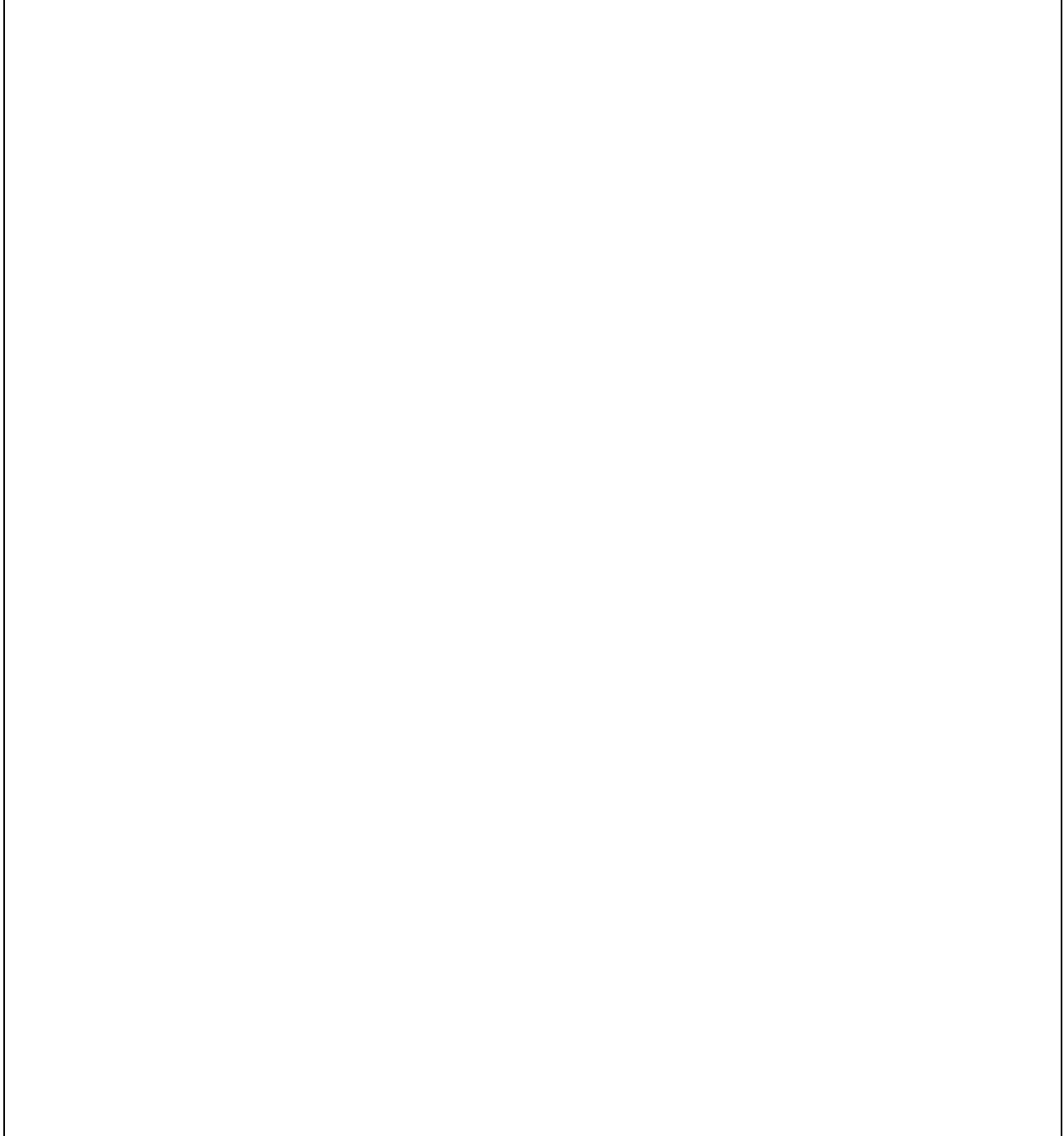
“The Senses Unit Demonstration of Learning Test” Summative Assessment has been blueprinted below. All questions on the test are directly correlated to Alberta Education’s Grade 1 Science Senses Specific Learner Expectations (SLEs) and the associated cognitive level verbs.

Test Design Correlating to Curriculum			Type of Question/Cognitive Levels of Mental Activity		
Question Number on Test	Grade 1 Science Senses SLEs Outcomes and Associated Outcome Verbs	Point(s) Value for Each Question (Total=12)	Knowledge	Comprehension and Application	Higher Mental Activities
#1	SLE 6: Describe limited sensory abilities	1	Multiple Choice		
#2	SLE 2: Identify ways our senses contribute to our safety SLE 7: Describe ways to care for sensory organs	1	Short Answer		
#3	SLE 5: Recognize and identify animal senses	1	Yes/No		
#4	SLE 1: Identify and explain each of our senses	5	Matching		
#5	SLE 1: Identify and explain each of our senses. SLE 3: Apply particular senses to describe objects/items.	2	Short Answer		
#6	SLE 4: Recognize and identify where our senses can mislead us	1	Yes/No		
#7	SLE 1: Identify and explain each of our senses	1	Multiple Choice		

Appendix B: Pages for Student Senses Portfolio

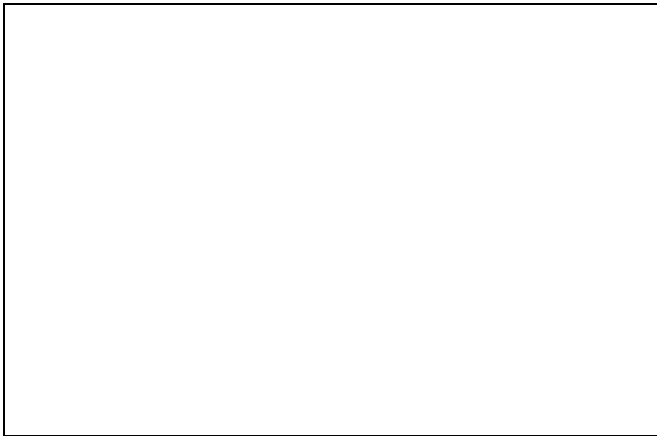
Using Your Senses in School

Draw a picture or write words about what kinds of things you can see, hear, touch, taste, and smell in your school.

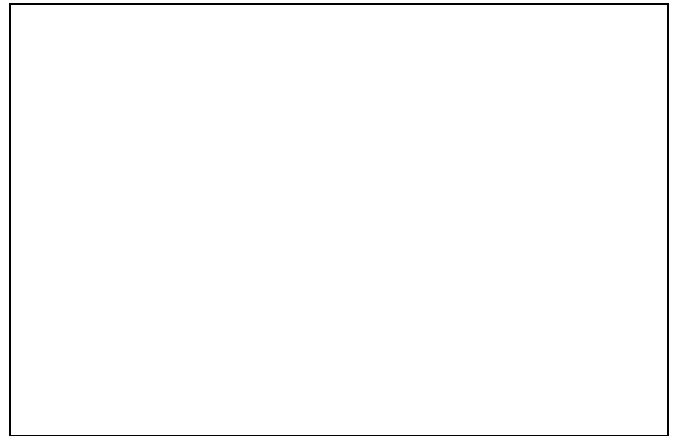
A large, empty rectangular box with a thin black border, intended for a student to draw a picture or write words about their school experiences.

What's in a Touch?

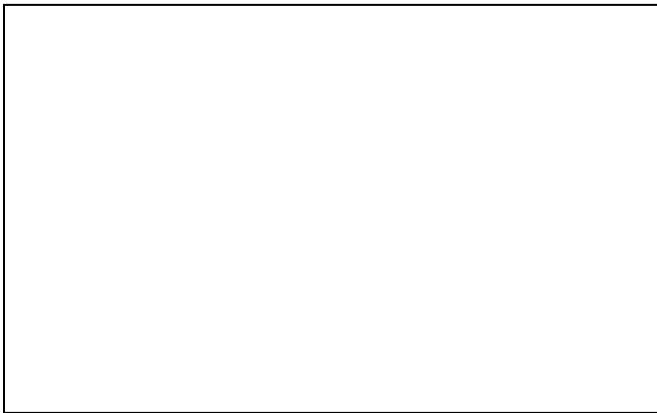
Draw pictures of things you see on the field trip in each box. Count the items.



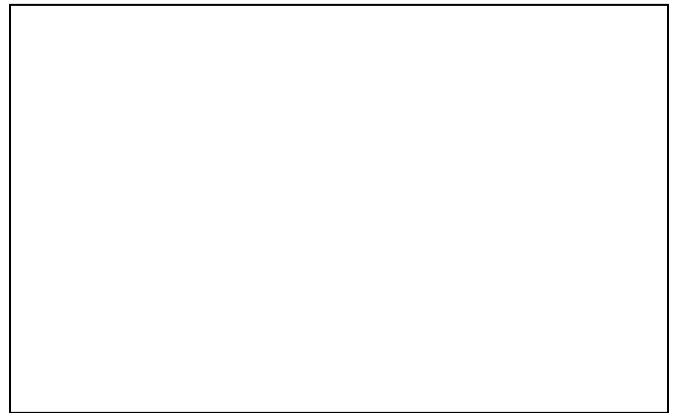
Soft



Hard



Cold



Hot



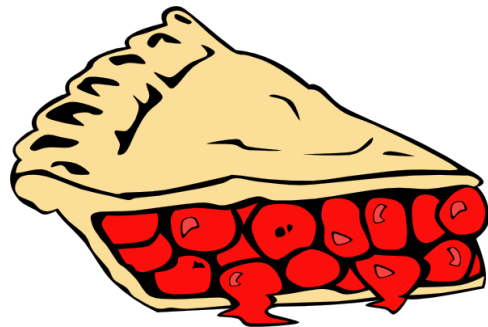
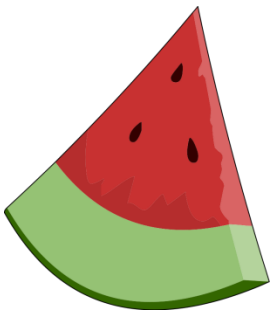
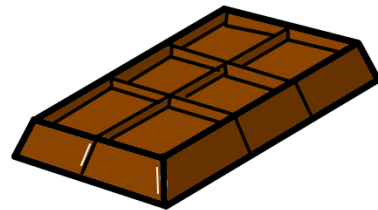
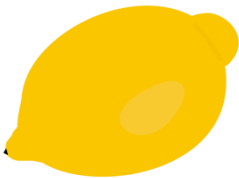
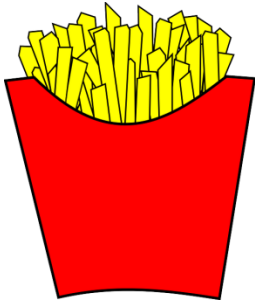
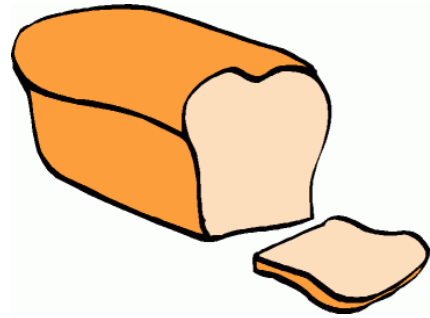
Wet



Sticky

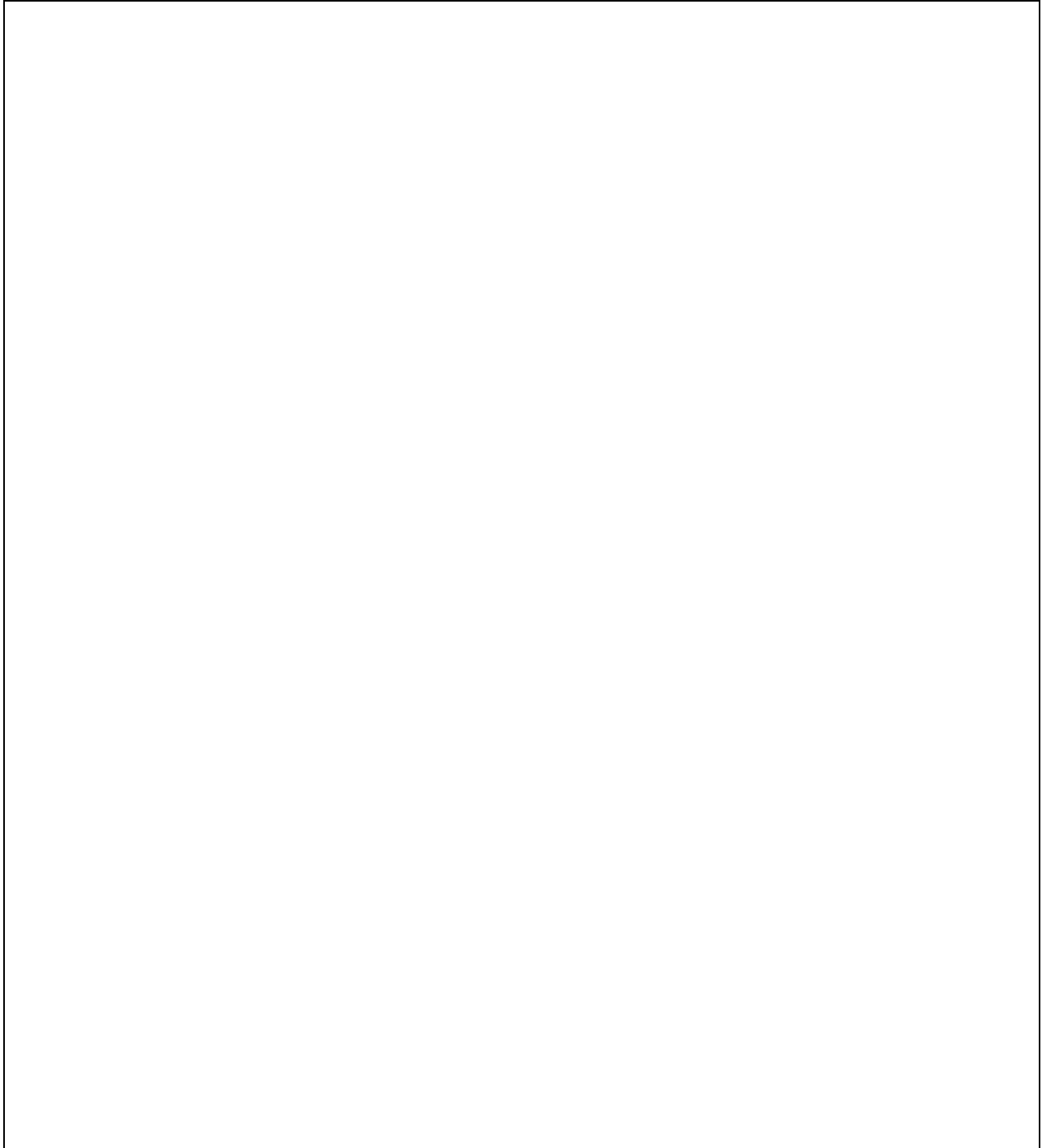
Sweet Treats

Look at the pictures below. If the food in the picture tastes sweet, circle it.



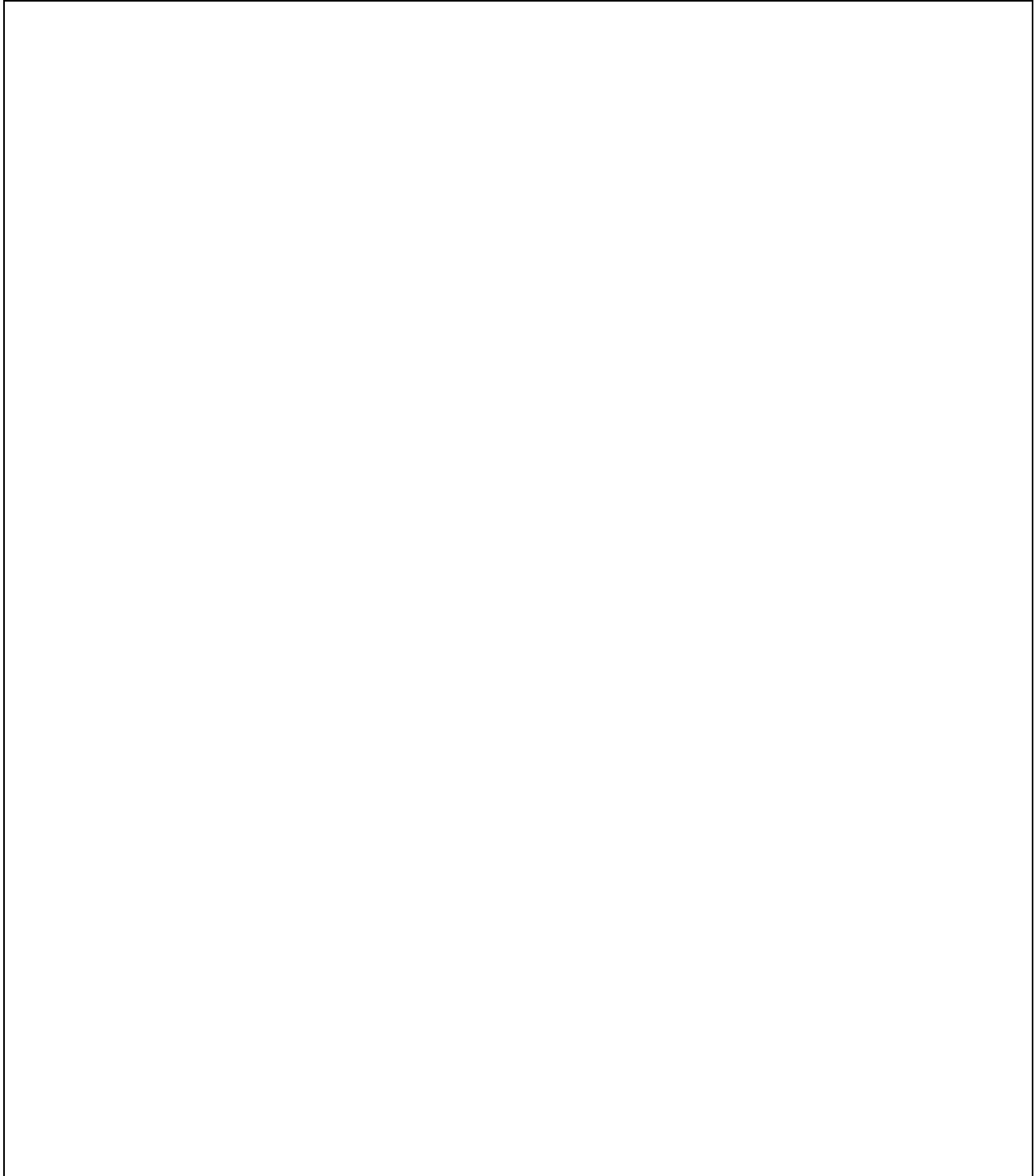
The Nose Knows

Draw a picture of something that smells. Name your picture. Describe how the item smells.

A large, empty rectangular box with a thin black border, intended for a student to draw a picture of something that smells, name it, and describe its scent.

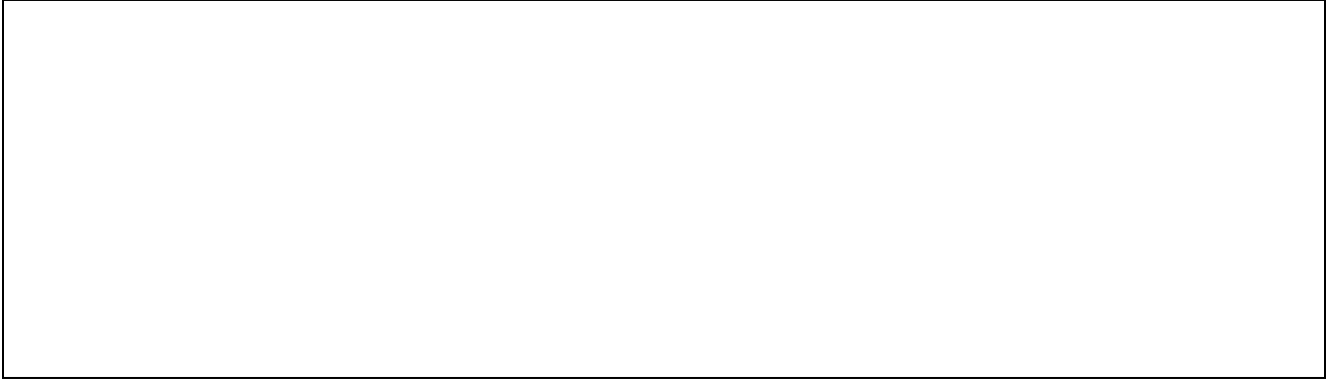
What Can Your Eyes See?

Draw pictures to show how you sorted the pattern blocks. Write words to describe them.

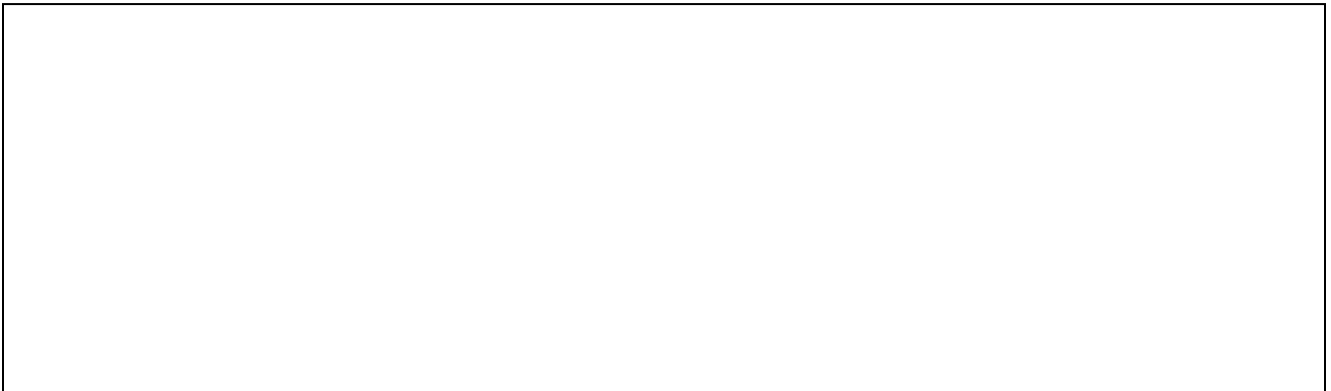
A large, empty rectangular box with a thin black border, intended for students to draw their sorted pattern blocks and write descriptive words.

What Can You Hear?

Listen to each sound as it is played on the CD by your teacher. Then draw a picture of the item that would make that sound and name what it is.



Sound 1



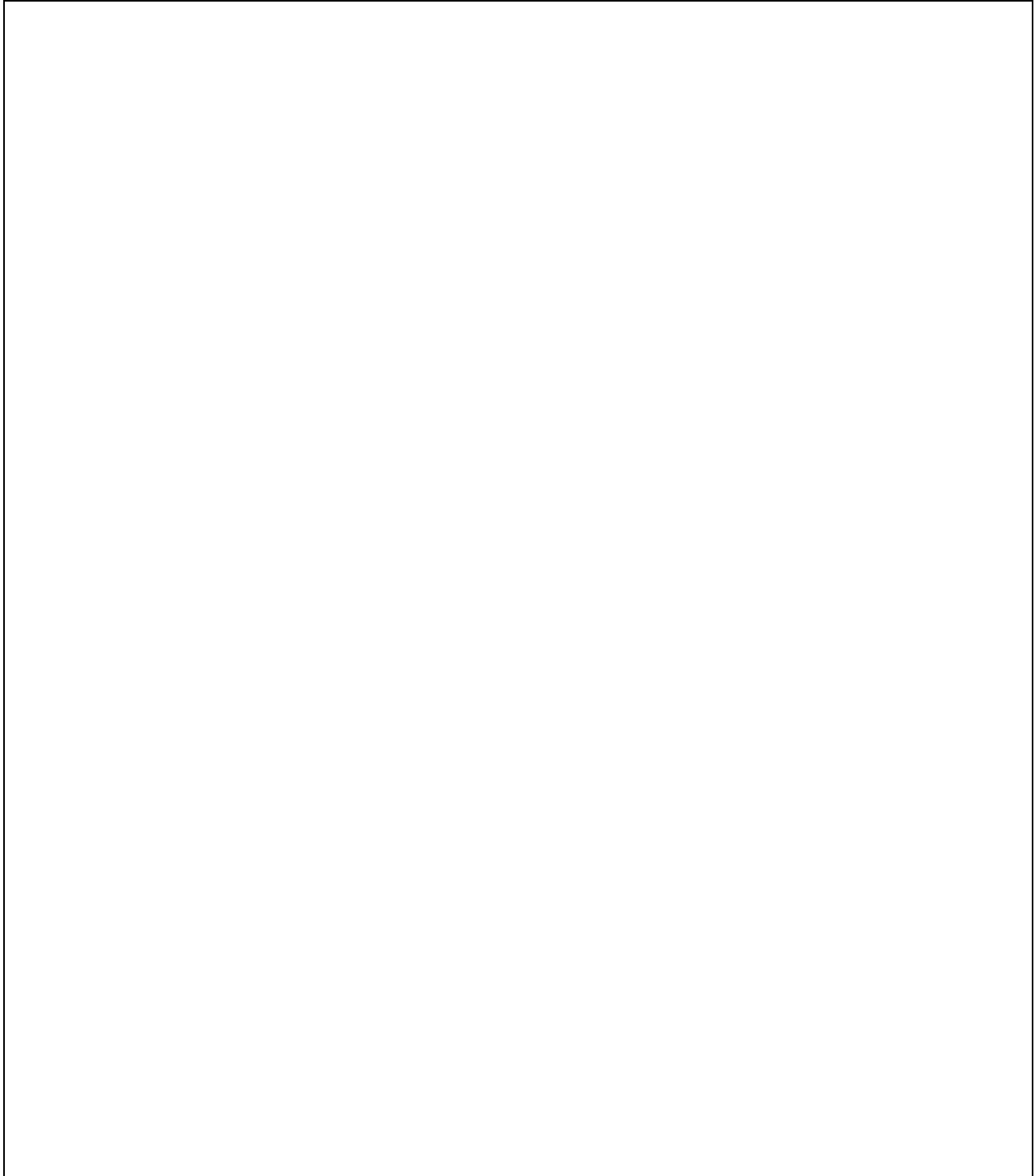
Sound 2



Sound 3

Seeing Colours

What colours do you see in the picture on the SMART Board? Make a mark with a crayon to represent that colour.



Appendix C: Marking/ Assessment Rubric for My Sense Collage Project

Student Name: _____

My Sense Collage Project

Level of Achievement	Outcome Standards
3- Meeting Outcome	<ul style="list-style-type: none"> ➤ The student chose pictures for their collage that accurately represent one of the five senses. ➤ The student was able to clearly explain to the teacher how the pictures in his or her created collage represent one of the five senses. ➤ It is clear that effort was put into the collage to make it visually appealing to look at.
2- Approaching Outcome	<ul style="list-style-type: none"> ➤ The student chose pictures for their collage that accurately represent one of the five senses. ➤ The student was not able to explain to the teacher how the pictures in his or her created collage represent one of the five senses. ➤ Effort was put into the collage to make it appealing to look at.
1- Needs Improvement to Reach Outcome	<ul style="list-style-type: none"> ➤ The student chose pictures for their collage that did not accurately represent one of the five senses. ➤ The student was not able to explain to the teacher how the pictures in his or her created collage represent one of the five senses. ➤ A lack of effort is apparent in making the collage appealing to look at.

Comments: