
Grade 1: How might an animal meet its shelter needs?

Experience 1: Nature Walk Provocation

In this set of learning experiences, teachers will guide students using an inquiry model to explore topics such as living and nonliving things, the needs of living things, as well as matter and materials. Students will then apply that knowledge to complete a challenge in which students will use the engineering design process to build a structure for a bird.

There are 4 specific learning experiences outlined in this series and including

Experience 1: Nature Walk Provocation/Outdoor Investigation

Experience 2: Needs of Living Things Snail Investigation

Experience 3: Materials Exploration and Materials Scavenger Hunt

Experience 4: Design Challenge-Build a Bird Nest and/or a Birdhouse

[Long Range Plan Grade 1 Model 1](#) “September”

Overview of learning experiences	At the start of the year as students discuss what it means to be a part of the class and school community, it can also be an opportunity to extend our thinking to include the natural environment and our connection to it. Nurture curiosity and wonder with a nature walk and outdoor investigation, taking note of what students see, hear, touch and smell. Emphasize to students the steps of the scientific process, particularly the first step of observation and asking questions. Students are encouraged to sketch or make notes of their findings. A knowledge circle may be used at this time to assess student understanding. (For example, living and nonliving things, natural and built elements of the space, animals that inhabit the area, basic needs of living things, characteristics of a healthy environment, etc.). It is also an opportunity to encourage student questions and wonderings that will guide the inquiry. Long Range Plan Grade 1 Model 1 “September”
Prior Knowledge / Prior Skill Set(s)	The beginning of the year is a great time to define science as a method for acquiring knowledge of the world and review the steps of the scientific process (observation, question, research, hypothesis, experiment, analysis, and conclusion/communication). In this series of learning experiences, the teacher will model the scientific process, beginning with what it means to make

	<p>observations using our senses. Teachers can also consider introducing a science journal as a place to record questions and observations with pictures and notes. It may be helpful to model this process as well, choosing instead to record ideas on a piece of chart paper as a class. As students gain familiarity with the process, journals can be used as a form of assessment.</p> <p>September is also important to establish routines and safety procedures, especially during science investigations. Students should have a thorough understanding of how to safely handle any tools and/or materials.</p> <p>Students do not need any prior knowledge for this series of learning experiences. The provocation activity and subsequent knowledge circle is instead an opportunity for teachers to assess student knowledge about living and nonliving things, and use questions generated from the nature walk to inform the next steps of the inquiry.</p>
<p>Strand A - STEM Investigation and Communication Skills</p>	<p>A. STEM Skills and Connections</p> <p> A1.1 use a scientific research process and associated skills to conduct investigations</p> <p> A1.4 follow established health and safety procedures during science and technology investigations, including wearing appropriate protective equipment and clothing and safely using tools, instruments, and materials.</p> <p>  A1.5 communicate their findings, using science and technology vocabulary and formats that are appropriate for specific audiences and purposes</p>

<p>Overview / Big Ideas/Fundamental Concepts</p>	<p>Fundamental Concepts:</p> <ul style="list-style-type: none"> ● Systems and Interactions ● Structure and Function <p>In this lesson series, students will make connections between several strands in science including</p> <ul style="list-style-type: none"> A. STEM Skills and Connections B. Life Systems: Needs and Characteristics of Living Things D. Structures and Mechanisms: Everyday Materials, Objects, and Structures <p>Following the steps of the scientific method, students will begin by participating in a nature walk and outdoor investigation, with a strong focus on observation. Students are invited to document what they see, hear, touch and smell. As part of their initial exploration, students may make note of both living and non-living things, natural and built elements of the environment, as well as generate important questions and wonderings that will guide our inquiry. Back in class, students will identify the basic needs of living things, including the need for air, water, food, heat, shelter, and space, and determine how a healthy environment enables living things to meet their needs. In the next activity, students will identify materials that are used to make various everyday objects, including structures. Following a scavenger hunt activity, students will be able to identify properties of materials that enable the objects made from them to perform their intended function. In the final challenge, students will use the engineering design process to construct a birdhouse to consolidate their understanding. Students will present their designs, and materials used, and reflect on the building process.</p>
<p>Learning Goals / Success Criteria</p>	<p>What is the main goal?</p> <p>By the end of this learning experience students will be able to:</p> <ul style="list-style-type: none"> ● Identify and classify living and nonliving components of the natural environment <p>Educators are encouraged to co-create success criteria with students and share “I Can Statements” based on the curricular expectations. Sharing options can include</p> <p>In-person:</p> <ul style="list-style-type: none"> ● Knowledge Circle ● Science Journals (optional) ● Nature Walk Graphic Organizer (see Appendix A: Nature Walk)

(schoolyard, park, trail, etc.). Be sure to go over safety reminders and define the boundaries.

5. Optional: This is an opportunity to lead students in a short mindfulness exercise, to take some deep breaths, and to be calm and focused.
6. Challenge students to pick a spot, slow down, and make observations using their senses.
7. Students may choose to sketch and record their observations on their sheets (see [Appendix A: Nature Walk Observations](#)).

Consolidation (~5-10 min.)

8. Facilitate a knowledge circle, with students taking turns sharing and listening to one another's observations. Take note of questions and/or wonderings that arise from the class discussion.

*Alternate activity for indoors - provide students with pictures of different habitats (wetland, forest, grassland) to generate ideas about nature, including living and nonliving things in the environment and how they are interconnected.

What the students do:

Initiating and Planning

- Brainstorm and share ideas about elements of nature
- Think about how they will use their senses to make observations
- Listen to and follow safety procedures for the outdoor investigation

Performing and Recording

- Engage in a nature walk and outdoor investigation, slowing down to make observations using their senses
- Sketch and record ideas on their journals or on the clipboards

Analyzing and Interpreting

- Identify living and nonliving things in the environment
- Generate questions and wonderings

Communicating

- Participate in the class knowledge circle, listening to and contributing their ideas
- Share their observations, conclusions and further wonderings in their science journal

<p>Science and Technology Expectations</p>	<p>B. Life Systems: Needs and Characteristics of Living Things B2.1 demonstrate an understanding of the natural environment as a place where living and non-living things are interconnected</p>
<p>Science and Technology Vocabulary</p>	<ul style="list-style-type: none"> ● Observe*: to watch carefully, or to make a scientific observation ● Object*: something that can be perceived by the senses ● Natural*: existing in or produced by nature <p>*Definitions are taken from Britannica Kids Online Dictionary https://kids.britannica.com/</p>
<p>Equipment and Materials</p>	<ul style="list-style-type: none"> ● Magnifying glasses ● Clipboards ● Paper, 5 Senses Nature Walk Graphic Organizer, and/or Science Journals ● Pencils <p>Experience 1 Nature Walk/Outdoor Investigation Provocation</p> <ul style="list-style-type: none"> ● Optional: Clipboards, Science Journals (see Appendix B: Science Journal) or 5 Senses Nature Walk Graphic Organizer (see Appendix A: Nature Walk Observations), pencils, magnifying glasses
<p>Timeline and Preparation</p>	<p>Lesson 1 Nature Walk/Outdoor Investigation Provocation (~1 period)</p> <p>First Steps: Survey nearby areas in the schoolyard or beyond, where the class can go to make their nature observations. Identify any potential safety risks and think about potential boundaries for students in each area you are using. Observe any elements of the natural environment that may be of interest to students (e.g., birds nest, ant hill, plants, and/or animals)</p> <p>Prepare clipboards with paper and/or science journals and gather magnifying glasses for students to use if available.</p> <p>Next Steps: Take note of questions and/or wonderings that arise from the class knowledge circle. Think of further avenues for the</p>

	<p>inquiry based on student interests, and make note of student questions that can be addressed in later learning experiences.</p>
<p>Safety Considerations</p>	<p>Personal Protective Equipment (PPE)</p> <ul style="list-style-type: none"> • Dress appropriately for the weather <p>What does the teacher do?</p> <ul style="list-style-type: none"> • Ensure students are aware of boundaries and safety expectations for outdoor investigations. <p>What do the students do?</p> <ul style="list-style-type: none"> • Follow established safety procedures. • Utilize tools and materials in a safe manner. • Be gentle and handle any live specimens (ex. snails) with care. • Wash and clean hands after investigations. <p>Refer to these Safety resources:</p> <ul style="list-style-type: none"> • Safety in Elementary Science and Technology (STAO) • Safe Activity Foundations in Education Document (SAFEdoc) Science and Technology, Grades 1-8 (OCTE) • Ontario Curriculum Program Planning – Health and Safety
<p>Opportunities For Assessment</p>	<p>According to the Ministry of Education Growing Success Document (2010) assessment is about improving student learning!</p> <p>Assessment FOR Learning: Occurs frequently and in an ongoing manner during instruction, while students are still gaining knowledge and practicing skills and is used by teachers to monitor students' progress towards achieving the overall and specific expectations so that teachers can provide timely and specific descriptive feedback to students, scaffold next steps, and differentiate instruction and assessment in response to student needs.</p> <p>Assessment AS Learning: Occurs frequently and in an ongoing manner during instruction, with support, modelling, and guidance from the teacher, and is used by students to provide feedback to other students (peer assessment), monitor their own progress towards achieving their learning goals (self-assessment), make adjustments in their learning approaches, reflect on their learning, and set individual goals for learning.</p>

	<p>Assessment OF Learning: Occurs at or near the end of a period of learning, and may be used to inform further instruction and is used by the teacher to summarize learning at a given point in time. This summary is used to make judgments about the quality of student learning on the basis of established criteria, to assign a value to represent that quality, and to support the communication of information about achievement to students themselves, parents, teachers, and others</p> <p>Please use the following links for reference: https://www.dcp.edu.gov.on.ca/en/assessment-evaluation https://www.edu.gov.on.ca/eng/policyfunding/growsuccess.pdf</p> <p>Throughout this series of learning experiences, a combination of observation, discussion, reflections, journals, and student work samples are used to assess learning.</p> <p>Experience 1: Assessment FOR Learning/AS Learning Opportunity</p> <p>This provocation activity is designed to get students thinking about the natural world around them and connecting to their own experiences. The use of a Knowledge Circle at the end of the activity is an opportunity to hear about students' prior knowledge, questions, and misconceptions and to assess students' understanding of the concept of living and nonliving components of the natural environment.</p> <p>The student's journal pages (if used) can also be used as an example of student thinking and understanding.</p>
<p>Instructional Strategies and Adaptability</p>	<p>Program Planning and Equity and Inclusion and CRP: https://www.dcp.edu.gov.on.ca/en/program-planning/considerations-for-program-planning/human-rights-equity-and-inclusive-education</p> <p>These learning experiences make use of a variety of instructional strategies. You may wish to further adapt, modify or change the lessons as indicated to suit the needs of your students.</p> <p>In this first learning experience, the use of a Knowledge Circle, with students sharing their questions and observations orally is encouraged in lieu of a written science journal.</p>

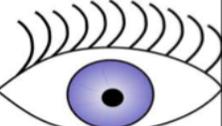
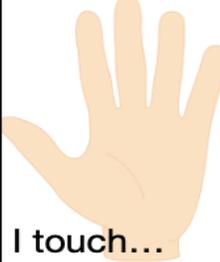
	<p>If a paper science journal is used, encourage students to draw and/or sound out their words or ideas. You may wish to scribe ideas for students who require extra support. Or alternatively, share any journal ideas (questions, observations, etc.) together as a whole class (e.g., on chart paper). With practice, students will have a better understanding of what they may want to include.</p> <p>You may wish to partner students up to facilitate more peer support and collaboration.</p> <p>Some students may benefit from having the vocabulary (with pictures) and definitions on a handout sheet as well as being able to see and refer to them on a bulletin board.</p>
<p>Additional Supporting Resources</p>	
<p>Cross-Curricular Opportunities</p>	<ul style="list-style-type: none"> ● Explore and learn about local microhabitats (ex. forest, wetland, ravine, etc.) and research local plants and animals ● Construct a map of natural and built features of the local community (including human services in, the local community to meet their needs ● Sketch observations of living and nonliving things in the natural environment <p>Language:</p> <p>Oral Communication</p> <ul style="list-style-type: none"> ● Listen in order to understand classmates when sharing observation journals. ● Use speaking skills and strategies appropriately to communicate when in the field and in the classroom. <p>Writing</p> <ul style="list-style-type: none"> ● Generate, gather, and organize ideas and information to write for an intended purpose and audience. <p>Social Studies:</p> <p>Inquiry: use the social studies inquiry process to investigate some aspects of the interrelationship between people and different natural and built features of their local community, with a focus on</p>

	<p>significant short- and long-term effects of this interrelationship (FOCUS ON: Cause and Consequence)</p> <p>Art:</p> <ul style="list-style-type: none"> • Use the nature walk as an inspiration to create artwork (e.g., draw or paint their favourite place in nature or habitat they have visited (e.g., Forest, beach) (VISUAL ARTS) <p>Health & Physical Education:</p> <ul style="list-style-type: none"> • Actively participate in physical activities (e.g., Nature walk), exercising safety and responsibility
<p>Future Opportunities / Next Steps</p>	<p>Further moving forward opportunities for students.</p> <ul style="list-style-type: none"> • Research a local plant or animal and or microhabitat • Introduce an unplugged coding activity where students must code a path through a grid to all the living components (e.g., tree, flower, insect) of the environment or vice versa • Explore how climate change has altered the local habitat (e.g., weather events, temperatures, availability of food, etc.) • Investigate the impact of development on local wildlife (e.g., habitat loss) and positive actions humans can take to protect wildlife (i.e., participate in a garbage clean up, plant native wildflowers as a Monarch waystation, etc.) <p>What will learners do when the work is completed/if they finish early?</p> <ul style="list-style-type: none"> • Sketch in their journals different examples of natural and/or human-made structures • Explore another local microhabitat and compare and contrast what has been observed <p>Contributions to Science and Technology</p> <ul style="list-style-type: none"> • Connect with members of the local community to learn more about themes covered in this set of learning experiences (e.g., Wildlife Rescue, Conservationist, Naturalist, Urban Planner, etc.) • Investigate building innovations (e.g., sustainable architecture, homes made of recycled materials, etc.)

Appendix A: Nature Walk Observations

Name: _____

Date: _____

 <p>I see...</p>	
 <p>I smell...</p>	
 <p>I hear...</p>	
 <p>I touch...</p>	
 <p>I taste...</p>	

Appendix B: Science Journal

**SCIENCE JOURNAL ENTRY
DATA RECORDING**



Name: _____

Date: _____

What Did You Notice?
(Draw, Write, Record, Paste, etc)

What Do You Wonder?
(Draw, Write, Record, Paste, etc)