



# Grade 1

## Example for Place-Based Learning

### GRADE 1

#### Big Ideas for Science

##### **B** BIOLOGY

Living things have features and behaviours that help them survive in their environment.

##### **C** CHEMISTRY

Matter is useful because of its properties.

##### **P** PHYSICS

Light and sound can be produced and their properties can be changed.

##### **E** EARTH SCIENCES

Observable patterns and cycles occur in the local sky and landscape.

**PLACE:** Outside under the sky, in a natural place - schoolyard and school garden

### 1 Experience Place

**TONE:** open-minded, unburdened, curious, playful

Start with *Sensory Wake-up Circle* from HCTF's Get Outdoors Manual. Pay particular attention to sounds and sight. For sight, remember to look up at the sky and see what's there. Look down at the ground and see what's there. Later, play as detectives and (with a hand magnifier - optional) explore for plant seeds, leaves and/or flowers and life in the ground throughout the garden or schoolyard.

Use the seasonal rounds in the garden throughout the school year to explore and get to know how plants (and all their parts) interact with the environment, as well as how animals, birds, insects and other invertebrates (earthworms, slugs, spiders, sow bugs, etc.) interact in the garden environment or school yard, and how lighting and sky patterns change over the course of the year. Plant seeds, tend the plants, harvest and cook with the produce, and prepare the garden for winter or summer.

- How are the plants changing with the different seasons? What's different about the plants?
- What's different about the daylight and the sounds outside in the different seasons?
- Are there many insects flying around? Birds?, etc.

Invite a First People's representative to the class to speak of their traditional rounds of activities through the year, according to sky patterns and life cycle of plants and animals, and the adaptations of plants and animals. Welcome drumming, for insights into how First People's use nature for their technology, and to create sound. If possible, invite the guest speaker back to the class throughout the seasonal round.

- How would you know when to fish or gather food?  
What did/do you gather?
- How do you make a drum? What is the sound? Why is drumming so important to First People's culture?

## 2 Questioning and Predicting

**tone:** more focused, curious, reflective

Listen to the narration of the story, *Why Coyote Howls*.

<http://www.lpi.usra.edu/education/skytellers/constellations/preview/>

A good introduction to First Peoples' use of story with the story that science tells us, and how the two ways of knowing inform us.

- B E** How did First Peoples know about the life cycle of plants and animals and when it was time to hunt, fish or harvest from plants? What do First Peoples understand about plant and animal adaptations?

What things can you see in the sky? (consider day and night sky). What kinds of patterns in the sky have you seen?

- C** What kinds of things did First Peoples make from plant matter? Are any plants in the schoolyard or garden like those First Nations use? Refer to *First Nations Plants and Their Uses* for information, in addition to the guest speaker's information. [http://www.scientistinresidence.ca/pdf/life-science/Soils,%20Plants,%20and%20First%20Nations/SRP\\_Soil,%20Plants%20and%20First%20Nations\\_Lesson%205%20WF.pdf](http://www.scientistinresidence.ca/pdf/life-science/Soils,%20Plants,%20and%20First%20Nations/SRP_Soil,%20Plants%20and%20First%20Nations_Lesson%205%20WF.pdf)

How do plants in the garden adapt to changes in the seasons? How do the small animals in the garden adapt to changes in the garden (dry soil, wet soil, cold or frozen soil)?

- P** 1) Which sounds are natural and which are human caused? What is percussion?  
2) What colours are common in nature? How did First Nations make colour dyes? (see reference above)

## 3 Planning and Conducting

**tone:** creative, restrained, calculating, collaborative

- B E** Play gardener and keep records of garden observations throughout the year through drawings and any annotations. Discuss as a class. Study and follow the moon calendar of First Peoples, consider the 13 Moon Salish calendar, or another of a local First Nation, as it relates to garden observations.

<http://www.racerocks.com/racerock/firstnations/13moons/13moons.htm>

- C** Choose from activities with edible plants, natural plant dyes, making bannock and weaving cedar. <http://waterdropswaterstewards.weebly.com/uploads/6/9/8/8/6988396/watercycle-rainpathways.pdf>, &/or make a drum with the First Nation guest.

- P** 1) Sit in stillness in a Sit Spot. Draw your attention to the sounds around you; focusing initially on those far away, and then those that are closer. Eventually bring your attention to the sound of your breath. After sitting silently and attentive to sounds for about 5 minutes, then make a Sound Map (see HCTF's *Get Outdoors* Manual).
- 2) Sing a First People's song with drumming for good luck on a hunt, or good luck fishing, as learnt from the guest visitor.
- 3) Play *Rainbow Chips* from HCTF's *Get Outdoors* Manual looking for the spectrum of colours to be found in nature. Consider the different plant colours and what that indicates about the plant or plant part.
- 4) Play with hand shadow puppets. Experiment with different light sources, and different distances between the light, hand and backdrop with the shadow. Watch a YouTube video on the Hungarian Theatre Group that uses shadow to create images.

## 4 Processing and analyzing data and information

**TONE:** observant, methodical

- B E** Compare drawings of changes in plants and animals in the garden/schoolyard over time. Consider sky patterns and the seasons of the moon. How are they related?
- C** Use a T-Table to make a list of First Nations technologies and contemporary technologies. In particular, consider the sources of foods, dyes, and fabric of the two technologies.
- P** 1) RE: Sound Map: What were the sounds you heard that you identified? How would you describe these sounds? RE: drumming (if an option) - what does the sound of the drum represent? What does it do?  
2) RE: Rainbow Chips: What colours were hard to find? What colours were easy to find? Which colour surprised you?  
3) Read "The Raven Steals the Light" <http://www.historymuseum.ca/cmc/exhibitions/aborig/reid/reid14e.shtml>  
Discuss the significance of the sun's light to our world.

## 5 Evaluating

**TONE:** discerning, reflective, interdependent, collaborative

- B P C** Consider the origin of matter for First Nation technologies and the origin of stuff/matter that we buy in stores. What is the influence or role of local place in the two different technologies?
- P** Reflect on the colour of plants. What does a green leaf tell you? And a brown leaf? **SIDEBAR:** Plants are green because the cells inside them that make food (from sunlight and water) reflect green light. When a plant is no longer green it is no longer making food and dying.
- E** Reflect on sunlight, moonlight and starlight. How do they make you feel? In science there is reflected light and emitted light. What kind of light are these lights? *Light and colour are related. Colour is the way something reflects or emits light.*  
Reflect on how sky patterns inform First People's traditional activities and how everything is connected. What do you do that relates to sky patterns?

## 6 Applying and Innovating

**TONE:** creative, open-minded, interconnected, engaging

- B** Draw a plan for the garden habitat based on new understandings. Consider planting native plants for harvest and use like First People.
- C P E** View and discuss Alex Janvier's painting of Morning Star at the National Museum of History (view the text of the different sections and symbols in the painting). <http://www.historymuseum.ca/morningstar/>
- P** Create the sound of rain in a forest with percussion. Access this url for activity details:  
<http://waterdropswaterstewards.weebly.com/uploads/6/9/8/8/6988396/watercycle-rainpathways.pdf>

## 7 Communicating

**TONE:** confident, engaging, interpretive, expressive, sensory, using technology

- B Draw a seasonal wheel of a native or garden plant, or local animal, through the year. Include sky patterns.
- P E Make a finger puppet shadow theatre play of The Raven Steals the Light. (If you have made a drum incorporate the sound into the play).
- B C Make bannock and serve after the puppet show. Express and reflect on personal experiences of place.
- P E B C Paint like Alex Janvier in his Morning Star.