

Snails in Grade One – Curricular Connections

Science strand “Understanding Life Systems”

Fundamental Concepts: Sustainability and Stewardship

BIG IDEAS:

- Living things grow, take in food to create energy, make waste, and reproduce. (Overall expectations 2 and 3).
- Plants and animals, including people are living things. (Overall expectations 2 and 3)
- Living things have basic needs (air, water, food, and shelter) that are met from the environment. (Overall expectations 1, 2 and 3).
- Different kinds of living things behave in different ways. (Overall expectations 2 and 3).

OVERALL EXPECTATIONS

By the end of Grade 1, students will:

1. Assess the role of humans in maintaining a healthy environment;
2. **Investigate needs and characteristics of plants and animals, including humans;**
3. **Demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans.**

SPECIFIC EXPECTATIONS

- 2.1 follow established safety procedures and humane practices during science and technology investigations (e.g., show care and concern when handling animals).
- 2.2 investigate and compare the basic needs of humans and other living things, including the need for air, water, food, warmth, and space, using a variety of methods and resources (e.g., prior knowledge, personal experience, discussion, books, videos/DVDs, CD-ROMs).
- 2.3 investigate and compare the physical characteristics of a variety of plants and animals, including humans (e.g., some plants produce flowers and some do not; most plants have roots; some animals have two legs, while others have four; all animals have sense organs).
- 2.6 use appropriate science and technology vocabulary, including investigation, explore needs, space, and food, in oral and written communication.
- 2.7 use a variety of forms (e.g., oral, written, graphic, multimedia) to communicate with different audiences and for a variety of purposes (e.g., create a diorama to illustrate the basic needs of plants and animals, including humans).
- 3.2 identify the physical characteristics (e.g., size, shape, colour, common parts) of a variety of plants and animals (e.g., sunflowers are tall, with a long stalk, leaves, and big, round, yellow flowers with hundreds of seeds; dogs can be big or small, come in many shapes and colours, have four legs, and usually have a tail and are covered with fur).
- 3.5 describe how showing care and respect for all living things helps to maintain a healthy environment (e.g., leaving all living things in their natural environment; feeding birds during

cold winter months; helping to plant and care for plants in the gardens that attract birds and butterflies; caring for the school and the schoolyard as an environment).

3.6 identify what living things provide for other living things (e.g., trees produce the oxygen that other living things breathe, plants such as tomatoes and apple trees and animals such as cows and fish provide food for humans and for other animals; a tree stump provides a home for a chipmunk; porcupines chew off the tips of hemlock limbs, providing food for deer in winter).

3.7 describe how the things plants and animals use to meet their needs are changed by their use and are returned to the environment in different forms (e.g., the food animals eat and the water they drink are returned to the earth as scat and urine).

Inquiry

- **Research** (whole class, small group, individually?)
 - Primary source – careful snail observation, recording findings.
 - Primary source – ask an expert, email letters to organizations, government, etc.
 - Secondary source – library books, videos, Peel TV, blogs, Links to Learning, etc.
- **Initiating and Planning**
 - Ask questions that could lead to an investigation.
 - Select a way to gather and organize information with teacher guidance and support.
 - Use a variety of sources of information (primary and secondary) from those provided by teacher.
- **Performing and Recording**
 - Selects pertinent information from the resources that is related to the question.
 - Records information in some way (audio, visual, drawing, labeling, writing, etc.).
 - Demonstrates an awareness of difference between fact, opinion and unverified assumptions (e.g. snails talk to each other).
 - Able to reference sources (e.g. can answer “How do you know?”).
- **Analyzing and Interpreting**
 - State a reasonable conclusion to their question based on their findings.
 - Reflects on information from different sources.
 - Begins to summarize relevant information.
- **Communicating**
 - Clearly presents the answer to the research question investigated (e.g. oral, pictorial, written, multi-media, etc.).
 - Accurately uses grade level conventions and “science and technology” vocabulary and terminology explored in the classroom.
- **Experimentation (whole class, small group, individually?)**
 - **Initiating and Planning**
 - Recognizes and begins to ask questions that could be answered ethically through tests/experimentation.
 - Develops a plan with teacher guidance and support.

- Begins to understand the need for a fair test, and to show an awareness of variables that should be considered in a fair test.
- Makes relevant predictions about the results of the investigation.
- **Performing and Recording**
 - Follows established safety procedures for tool and equipment used when observing and measuring.
 - Accurately records data and observations using non standard or standard measurements in an organized format based on taught models with teacher guidance and support (e.g. prose, charts, labeled diagrams, etc.).
- **Analyzing and Interpreting**
 - Begins to identify and discuss observations and data, beginning to note any patterns.
 - Based on models, draws reasonable conclusions based on the observations and data.
 - Evaluates the experimental procedure used.
- **Communicating**
 - Clearly recounts (orally/written/sequential) steps and results of the experimental procedure.
 - Accurately uses grade level conventions and “science and technology” vocabulary and terminology explored in the classroom.

SCIENTIFIC PROCESS SUGGESTIONS for INQUIRY

Observation. What do you notice?

- Have students draw what they actually see. Encourage details.
- Students can label their drawings.
- Labeled photography.
- A sticky note pad by the habitat so students can draw/note and then post.
- Chart to create a list and develop vocabulary.
- Consider writing on big strips of paper, or transfer to strips of paper to sort.
- Begin to sort what you notice (movement, food, appearance, shelter and where they spend more time, etc.).
- Consider having students come up with symbols for the sort categories to make it easier for them.
- Could have chart paper with the characteristics at the top, and students sort their observations as they make them.
- Individuals could have snail booklets that help them make observations of each characteristic.

Questioning. What do you wonder?

- This happens at the same time as observation.
- Record questions as you go, as per observations.
- Encourage big questions and specific questions.
- Begin to sort questions (movement, food, etc.).
- Discuss/sort questions by how you might find the answer (experimentations, observation, and research).
- Discuss which questions would have simple or easily found answers, and what questions might be harder to answer.

- Consider heading toward big questions related to the big ideas in the curriculum to guide the overall inquiries. The students could find information toward the big question. Examples of big questions could be:
 - Why are all living things important?
 - Why is it important for us to look after our environment?

Examples of possible experiments

1. The food they eat affects their scat.
 - Create temporary habitats in tall yogurt containers. Poke holes in the top, and put dampened paper towel in the bottom. Put an apple slice in one, and some green veggies in another. Spray the sides to dampen. Place 2 or 3 snails in each and close the lid well. The next day, have students see what happens. How did the results compare to their predictions? What did they learn?
2. What food do they prefer?
 - Put pieces of different food in. Figure out how to know what it looks like when you start (photo, trace and measure, weigh) Observe to see what happens.
3. What is the best way to see a snail slime trail?
4. Can you lure a snail?
5. Are the sizes of slime trails affected by the size of the snail?
6. Which are faster? Small or big snails? Etc. 😊

Cross Curricular Connections

Language (modeled, shared, guided or independent)

- Writing stories, poems, reports, blogs.
- Reading information from various sources (using pictures to gain understanding) and the blog, stories and poems.
- Orally explaining thinking and investigations, presenting information, poems and stories.
- Media posters to share information or to convince people to look after the environment etc. (e.g. Snails Matter!)

Math

- How would we measure a snail trail?
- Map the environment you have created. Plot the snails.
- How would we weigh a snail?
- How big is the habitat? How big should it be?
- How many big snails do we have? Small snails? How do we decide which are big? Small? Medium sized?

Science

- Daily and seasonal change (what do snails do when they stay outside all winter, when are snails most active, etc.)?

The Arts

- Visual arts to paint, draw, collage (think Eric Carle 😊), model snails and habitats.
- Drama to show snail movement.
- Music to express snail movement, care of habitat and environment, etc.