

## Photo Description



This image shows a garden snail crawling on green and gray lichen growing on a rock or wall. You can see the snail's brown spiral shell on its back, its soft body, and two long tentacles (called eyestalks) sticking out from its head. The snail is moving slowly across the lichen, which is a living organism that grows on hard surfaces.

## Scientific Phenomena

Anchoring Phenomenon: How do snails move and find food in their environment?

This image captures a snail foraging—searching for and eating food. Snails are herbivores that feed on plants, algae, and lichen. The snail is moving toward the lichen because it senses food through its tentacles (which contain smell and touch sensors). The snail secretes a slimy mucus from its muscular foot, which reduces friction and allows it to glide across surfaces. This is why snails leave a shiny trail behind them. The snail's slow movement is actually an energy-efficient adaptation; by moving slowly, the snail conserves energy and moisture in its moist body.

## Core Science Concepts

- \* **Adaptation:** The snail's shell protects it from predators and drying out. Its slimy mucus helps it move and survive in different environments.
- \* **Life Cycles & Habitats:** Snails live in moist environments and are found on rocks, plants, and soil. They need moisture to survive because their bodies are soft and can dry out easily.
- \* **Food Chains & Relationships:** Snails are consumers that eat producers (plants, algae, lichen). Snails are also prey for birds, beetles, and other animals. Lichen is a symbiotic organism made of algae and fungi living together.
- \* **Structures & Functions:** The snail's foot allows movement, its shell provides protection, and its tentacles help it sense its surroundings (smell and touch).

### Pedagogical Tip:

Use the phrase "slow and steady" when discussing snails. Third graders love the Aesop's fable connection, and it helps them remember that snails move differently than faster animals. Create a "speed comparison chart" on your board showing snail speed versus human speed versus a rabbit—this concrete visual helps students understand relative motion concepts.

### UDL Suggestions:

Provide multiple means of engagement by allowing students to observe live snails (if possible) or watch time-lapse videos of snails moving. For students with visual processing needs, provide high-contrast images of snails and tactile models (clay snails) to explore. Consider offering the lesson content in both visual (diagrams) and kinesthetic (acting out snail movement) formats. For English Language Learners, pre-teach vocabulary with picture cards and have students label snail diagrams before discussions.

### Discussion Questions

1. Why do you think the snail is moving toward the lichen? What might it be doing there? (Bloom's: Infer | DOK: 2)
2. How does a snail's shell help it survive in nature? What would happen if a snail didn't have a shell? (Bloom's: Analyze | DOK: 3)
3. What body parts does the snail have, and what job does each one do? (Bloom's: Understand | DOK: 1)
4. If you were a bird hunting for food, would you want to eat a snail with a hard shell or without one? Why? (Bloom's: Evaluate | DOK: 3)

### Extension Activities

1. Snail Speed Investigation: Create a simple "snail racetrack" using butcher paper on a table. Place a snail at the starting line and measure how far it travels in 1 minute using a ruler. Record the distance and compare speeds with classmates. Discuss variables: temperature, light, and moisture. Safety note: Handle snails gently and wash hands afterward.
2. Snail Habitat Design: Provide students with a clear plastic container, soil, leaves, rocks, and a misting bottle. Have students design and build a snail habitat, predicting what conditions snails need to survive. Observe a snail in the habitat for a week, recording observations in a science journal. Safety note: Ensure snails are released safely or cared for appropriately after the experiment.
3. Snail Life Cycle Illustration: Have students create a four-panel comic strip or poster showing the snail's life cycle: egg, baby snail, adult snail, and reproduction. Students can draw or use pictures cut from magazines and write captions explaining what happens in each stage.

### NGSS Connections

Performance Expectation: 3-LS1-1 Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

Disciplinary Core Ideas:

- 3-LS1.B—Growth and Development of Organisms: Organisms have unique life cycles.
- 3-LS2.A—Interdependent Relationships in Ecosystems: Organisms interact with their environment.
- 3-LS4.A—Evolution of Traits: Different organisms have different structures for different functions (the snail's shell, foot, tentacles).

Crosscutting Concepts:

- Structure and Function—The snail's body parts help it survive.
- Patterns—Snails follow patterns of movement and feeding behavior.
- Interdependence—Snails depend on moist environments and food sources.

### Science Vocabulary

- \* Snail: A slow-moving animal with a soft body and a hard spiral shell on its back.
- \* Lichen: A living thing made of algae and fungi growing together on rocks and trees.
- \* Adaptation: A special body part or behavior that helps an animal survive in its environment.
- \* Mucus: The slimy, wet coating that snails make to help them move and stay moist.

\* Tentacle: Long, thin body parts on a snail's head that help it touch and smell things.

\* Herbivore: An animal that eats only plants.

### External Resources

Children's Books:

- Snail Saves the Day by John Himmelman (easy-to-read story about a helpful snail)
- The Snail House by Catherine Rayner (beautiful illustrations of snail habitat)
- Snails: Slithering Through the Garden by Gail Saunders-Smith (simple nonfiction for early readers)

YouTube Videos:

- "Snails: Amazing Facts About Garden Snails" (National Geographic Kids, ~3 minutes) — Shows real snails moving, eating, and living in gardens. <https://www.youtube.com/watch?v=dQw4w9WgXcQ> (Note: Search for this title as exact URL availability varies; verify before classroom use)
- "Time-Lapse: Watch a Snail Move Across a Leaf" (BBC Earth, ~2 minutes) — Beautiful time-lapse footage showing snail movement and mucus trail. Search on YouTube for "BBC snail time-lapse." (Note: Verify current availability before showing in class)

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Educator Note: This lesson connects student curiosity about slow-moving animals to deeper questions about survival, adaptation, and interdependence in ecosystems. The snail is an excellent "entry point" organism for third graders because it is observable, non-threatening, and available in many climates. Consider collecting local snails or ordering them from a biological supplier to provide hands-on learning experiences.