Life Cyle

Life Science | Lesson Guide

1st Grade

Photo Description

This image shows two eggshell halves resting on soil, wood chips, and grass. One shell still has part of a green leaf or sprout visible inside it. The shells are white on the inside and have brown speckles on the outside. This picture shows what happens after a baby bird or reptile hatches and leaves its egg.

Scientific Phenomena

Anchoring Phenomenon: Hatching—when a baby animal breaks out of its egg and begins its life outside the shell.

Why This Happens: Living things grow inside eggs. When the baby animal gets big enough and strong enough, it uses a special hard bump on its nose (called an egg tooth) to crack the shell from the inside. The baby pushes and breaks through, leaving behind the empty eggshell. This is a natural part of the life cycle—the stages all living things go through from birth to growth to having babies of their own. The empty shells in the photo show that hatching has already happened; the babies have moved on to the next stage of their lives.

Core Science Concepts

* Life cycles have stages: All animals go through different stages: being born (or hatching), growing bigger, and becoming adults who can have babies.

* Animals grow and change: Babies start small inside eggs and grow until they are ready to hatch. After hatching, they continue to grow and change.

* Eggs protect developing babies: Eggshells are hard and keep the baby animal safe while it grows inside.

* Living things leave evidence of their activities: Empty eggshells tell us that hatching happened here—we can observe and learn about animal life even when we don't see the animals themselves.

Pedagogical Tip:

Use this image as a "mystery" hook: Show students the photo without explanation and ask, "What story does this picture tell?" Before providing answers, let students share their observations and predictions. This builds curiosity and activates prior knowledge before introducing the concept of life cycles and hatching.

UDL Suggestions:

Multiple Means of Representation: Provide real eggshells (cleaned, from grocery store eggs or with parent permission from backyard bird nests) for students to handle and observe. Combine the visual image with tactile exploration and a simple diagram showing the stages: egg !' hatching !' grown animal. This multi-sensory approach supports diverse learners, especially those who benefit from kinesthetic input.

Zoom In / Zoom Out

Zoom In: Inside the Egg (Unseen Process)
Before the baby animal hatches, it is growing inside the egg where we cannot see it. The baby is getting bigger and stronger every single day. It drinks nutrients from the yellow yolk (food) and breathes air through tiny holes in the eggshell called pores. We cannot see this happening, but it is going on the whole time! The baby's heart is beating, its bones are getting harder, and its muscles are getting stronger—all inside the shell. This is called development, and it happens in stages we cannot observe from the outside.

Zoom Out: The Ecosystem & Food Chain (Larger System)
These eggshells are part of a much bigger story in nature. The egg came from a bird or reptile that laid it in a safe place. After the baby hatches, it will need food, water, and shelter to survive in its habitat (home). The empty eggshell becomes part of the soil and ecosystem. Insects, worms, and microorganisms break it down over time, returning nutrients back to the earth. This helps plants grow, which feed other animals. The baby animal that hatched will eventually eat plants or other animals, and when it grows up, it may lay eggs of its own. This cycle keeps repeating, connecting all living things in nature together.

Discussion Questions

1. What do you think was inside this eggshell before it broke open? (Bloom's: Understand | DOK: 1)
2. How do you think the baby animal got out of the egg? What clues from the picture help you? (Bloom's: Analyze | DOK: 2)
3. If we found these empty shells in your yard or a park, what could we learn about what animals live there? (Bloom's: Apply | DOK: 2)
4. What might happen to this baby animal during the next stage of its life after hatching? (Bloom's: Evaluate | DOK: 3)

Potential Student Misconceptions

Misconception 1: "The baby animal breaks out all at once with a big crack."
Clarification: Hatching happens slowly, not all at once. The baby pushes and pecks at the shell for several hours. It makes tiny cracks and holes, then rests, then pushes again. The baby gets tired! Eventually, after all that hard work, the baby has made enough cracks that it can wiggle out. This is why we sometimes see shells with pieces missing rather than one clean break.

Misconception 2: "All baby animals hatch from eggs."
Clarification: Many animals lay eggs and hatch from them—like birds, reptiles, frogs, and fish. But some animals, like puppies, kittens, and baby humans, grow inside their mother's body and are born alive instead. Both ways are part of different life cycles, and both are natural and healthy ways for babies to start their lives.

Misconception 3: "The eggshell is useless after the baby leaves it."
Clarification: The eggshell is very important even after hatching! Shells break down in the soil and become food for plants. Animals like birds, reptiles, and insects may also eat pieces of the shell to get calcium, which helps their own bones and eggs grow strong. Nothing in nature is truly "trash"—everything has a purpose!

Extension Activities

1. Hatch It Yourself (Observation): With parent permission or using a classroom incubator, observe chicken or quail eggs over time. Create a simple picture chart where students draw the egg each week and notice changes. When hatching occurs, document the process with photos and have students dictate observations.

2. Life Cycle Stages Game: Create four station areas labeled "Egg," "Hatching," "Baby," and "Grown-Up." Give students pictures of various animals at different life stages and have them sort and place pictures at the correct station. Discuss why some animals lay eggs and others don't.

3. Eggshell Art & Exploration: Provide clean, broken eggshells for students to observe with magnifying glasses. Let them draw what they see, then use shells in a sensory tub with soil, leaves, and toy animals. Students can narrate stories about what hatched and where the babies went.

Cross-Curricular Ideas

Math Connection: Sorting & Counting
Collect pictures of eggs from different animals (chicken, dinosaur, frog, bird, turtle, fish). Have students sort the eggs by size (small, medium, large) or by type of animal. Count how many eggs each animal might lay. Create simple picture graphs: "Which animal lays the most eggs? Which lays the fewest?" This builds data analysis and comparison skills while reinforcing the concept that different animals lay different numbers of eggs.

ELA Connection: Narrative Writing & Sequencing
Read aloud a simple story about an egg hatching (such as Chicken and Egg by Meg Ryder). Then have students retell the story using picture cards in order: "First the egg was laid. Next the baby grew inside. Then it hatched. Finally the baby grew into a grown-up." Students can dictate or draw a four-panel comic strip showing the stages. This builds sequencing skills and story comprehension.

Art Connection: Eggshell Collage & Texture Exploration
Provide clean, dyed eggshell pieces (dye them with food coloring or coffee for natural colors). Students create a nature collage by gluing shell pieces onto paper to make a picture of a bird, nest, or landscape. This combines fine motor skills with sensory exploration and celebrates the natural beauty of real eggshells. Display finished artwork with captions: "My hatched bird" or "The nest where a baby bird was born."

Social Studies Connection: Caring for Life & Responsibility
Discuss how parents (both animal parents and human parents) care for eggs and babies. Show pictures of different animals protecting their eggs (birds sitting on nests, crocodiles guarding eggs, fish protecting their young). Connect to how families care for new babies at home. Talk about responsibility: "What do babies need to stay safe and healthy?" This builds empathy and understanding of nurturing across the natural world.

STEM Career Connection

Veterinarian (Animal Doctor)
A veterinarian is a doctor who takes care of animals when they are sick or hurt. Some veterinarians work with farm animals like chickens and help them have healthy eggs and babies. Others care for pets, birds, reptiles, or wild animals. They learn all about how animals grow, what they eat, and how to keep them healthy. If you love animals and want to help them, being a vet might be perfect for you!
Average Annual Salary: $99,250 USD

Ornithologist (Bird Scientist)
An ornithologist is a scientist who studies birds. They observe birds in nature, learn about their life cycles, where they build nests, and how they lay eggs and raise babies. Ornithologists might go on hikes, climb trees, use binoculars and cameras, and write down what they see. They help us understand birds better and protect them. If you like watching birds and asking questions about them, you could become an ornithologist!
Average Annual Salary: $68,500 USD

Embryologist (Growth & Development Scientist)
An embryologist is a scientist who studies how babies grow inside eggs or inside their mothers. They use special tools like microscopes to look at tiny cells and see how they change and develop into a whole animal. Embryologists work in labs and hospitals, and their work helps us understand life and health better. If you like asking "How do things grow?" and love looking at tiny details, embryology could be your science path!
Average Annual Salary: $72,000 USD

NGSS Connections

Performance Expectation:
1-LS1-2: Use models to describe that organisms have unique and diverse life cycles but all animals have in common birth, growth, reproduction, and death.

Disciplinary Core Ideas:
1-LS1.B - Growth and Development of Organisms

Crosscutting Concepts:
Patterns - Patterns in the natural world can be observed and used to make predictions (life cycles follow predictable stages)

Science Vocabulary

* Hatch: When a baby animal breaks out of its egg and is born.

* Life cycle: All the stages a living thing goes through—being born, growing big, and having babies.

* Eggshell: The hard, protective covering that keeps a baby animal safe while it grows inside the egg.

* Develop: To grow and change over time.

* Stage: One part of a life cycle, like being a baby or being a grown-up.

External Resources

Children's Books:
Chicken and Egg* by Meg Ryder (National Geographic Little Kids First Big Book of Animals)
From Egg to Chicken* by Gail Gibbons
The Best Nest* by P.D. Eastman (beginner reader; shows nest/egg context)

Teacher's Note: This image is an excellent entry point to the broader concept of life cycles. First graders are naturally curious about animals and growth, making hatching a highly relatable and engaging phenomenon to explore!