

Photo Description



This picture shows a fossil shell in rock. The shell has lines that spread out like a fan. It looks like it was pressed into the rock a very long time ago.

Scientific Phenomena

This image represents the Anchoring Phenomenon of fossil formation through preservation. This brachiopod shell fossil was created when an ancient marine animal died and its shell was buried in sediment. Over millions of years, the sediment turned to rock while the shell left its impression, creating a permanent record of life from long ago. This demonstrates how Earth's materials can preserve evidence of past life forms.

Core Science Concepts

1. Fossils are evidence of living things from long ago - This shell fossil shows us that different animals lived on Earth before we were here
2. Rocks can form layers over time - The animal's shell got covered by mud and sand that slowly turned into rock
3. Patterns in nature - The fan-like ridges on this shell show how living things have special shapes and patterns
4. Earth changes slowly over time - It took millions of years for this fossil to form in the rock

Pedagogical Tip:

Use concrete, hands-on experiences like making play dough "fossils" by pressing shells or leaves into the dough. Kindergarteners learn best when they can touch and manipulate materials to understand abstract concepts like "long ago."

UDL Suggestions:

Provide multiple ways to explore fossils - real specimens to touch, large photographs to examine with magnifying glasses, and simple drawings to trace. This supports different learning styles and abilities while building vocabulary through multi-sensory experiences.

Zoom In / Zoom Out

1. Zoom In: Inside the original shell were tiny chambers and soft body parts of the brachiopod animal that filtered food from ocean water. The hard shell protected the soft animal inside, just like how a turtle's shell protects it today.
2. Zoom Out: This fossil is part of rock layers that tell the story of an ancient ocean that covered this area millions of years ago. Many similar fossils found together help scientists understand what the whole underwater environment was like long before humans existed.

Discussion Questions

1. What do you notice about the lines on this shell fossil? (Bloom's: Remember | DOK: 1)
2. How do you think this shell got stuck in the rock? (Bloom's: Analyze | DOK: 2)
3. What does this fossil tell us about what lived on Earth long ago? (Bloom's: Evaluate | DOK: 3)
4. If you found this fossil, what questions would you want to ask about it? (Bloom's: Create | DOK: 2)

Potential Student Misconceptions

1. Misconception: "Fossils are just old rocks that look like animals"

Clarification: Fossils are actual remains or impressions of real animals and plants that lived long ago - they show us evidence of life, not just rock shapes

2. Misconception: "All animals that die become fossils"

Clarification: Only very few animals become fossils because special conditions are needed - most animals decompose completely without leaving fossil evidence

3. Misconception: "Fossils formed recently, maybe when grandparents were young"

Clarification: Most fossils are millions of years old - much, much older than any person who has ever lived

NGSS Connections

Performance Expectation: K-ESS3-1: Living things need water, air, and resources from the land, and they live in places that have the things they need

Disciplinary Core Ideas:

- K-ESS3.A - Living things need water, air, and resources from the land
- 2-ESS1.C - Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe

Crosscutting Concepts:

- Patterns - Patterns in the natural world can be observed and used as evidence
- Scale, Proportion, and Quantity - Natural objects exist from very small to very large

Science Vocabulary

- * Fossil: The remains or print of a plant or animal that lived long ago
- * Shell: The hard outer covering that protects some animals
- * Ancient: Something that is very, very old
- * Preserved: Kept safe and protected for a long time
- * Evidence: Clues that help us learn about something
- * Pattern: Shapes or designs that repeat or have order

External Resources

Children's Books:

- Fossils Tell of Long Ago by Aliki
- If You Find a Rock by Peggy Christian
- Digging Up Dinosaurs by Aliki

YouTube Videos:

- "What is a Fossil? | Natural History Museum" - Simple explanation of fossil formation for young learners: <https://www.youtube.com/watch?v=1QVaKhJoLjM>
- "Fossils for Kids | Learn about how fossils are formed" - Educational video showing different types of fossils with kid-friendly narration: https://www.youtube.com/watch?v=H_2N75IgK7w