

Photo Description



This picture shows a house with a big pile of flat rocks stacked up in front of it. The rocks are different colors like brown, gray, and green. There are plants growing around the rock pile and trees hanging over the house.

Scientific Phenomena

The Anchoring Phenomenon shown here is weathering and erosion of rock materials. The flat, layered appearance of these stacked stones demonstrates how rocks break down over time through natural processes like wind, water, ice, and temperature changes. These sedimentary rock pieces likely formed from layers of sediment that were compressed over millions of years, then broken apart by weathering forces and transported by erosion to be collected and used for landscaping.

Core Science Concepts

1. Rock Formation and Types: These appear to be sedimentary rocks that formed in layers over long periods of time
2. Weathering Process: Natural forces like rain, wind, and temperature changes break rocks into smaller pieces
3. Erosion and Transportation: Moving water and wind carry rock pieces from one place to another
4. Human Use of Natural Materials: People collect and use weathered rock pieces for building and decoration

Pedagogical Tip:

Have students bring in small rocks from home or the playground to examine with magnifying glasses. This hands-on exploration helps them notice details like texture, color, and layers that connect to the larger concepts of rock formation.

UDL Suggestions:

Provide multiple ways for students to represent their rock observations - through drawings, verbal descriptions, or physical sorting activities. This supports different learning preferences and abilities while building the same core understanding.

Zoom In / Zoom Out

1. Zoom In: At the microscopic level, tiny pieces of minerals and sediments are constantly being broken off rocks by chemical reactions with water and air, creating the smaller particles that eventually form new rocks.
2. Zoom Out: These rocks are part of the larger rock cycle system where mountains are slowly worn down by weathering and erosion, with the pieces eventually flowing to oceans where they may form new sedimentary rocks over millions of years.

Discussion Questions

1. What do you think made these rocks flat and smooth? (Bloom's: Analyze | DOK: 2)
2. How do you think these rocks got from wherever they formed to this yard? (Bloom's: Apply | DOK: 2)
3. What might happen to these rocks if they stayed outside for 100 more years? (Bloom's: Evaluate | DOK: 3)
4. Why do you think people choose to use rocks like these for decorating their yards? (Bloom's: Analyze | DOK: 2)

Potential Student Misconceptions

1. Misconception: "Rocks never change - they stay the same forever."
Clarification: Rocks are constantly changing through weathering, just very slowly over long periods of time.
2. Misconception: "Only big storms and earthquakes can break rocks."
Clarification: Even gentle rain, daily temperature changes, and plant roots can slowly break rocks apart over time.
3. Misconception: "All rocks are the same inside and outside."
Clarification: Many rocks have layers or different materials inside that show how they formed over time.

Cross-Curricular Ideas

1. Math - Measurement & Counting: Have students count the rocks in the pile and estimate its height using non-standard measurements (like "about 5 hand-widths tall"). They can create a simple graph showing rocks by color or size, connecting to data representation skills.
2. ELA - Descriptive Writing: Students can write or dictate sentences describing the rocks using sensory words (rough, smooth, brown, heavy). Create a class book titled "Our Rock Collection" where each student contributes one page with illustrations and descriptions.
3. Art - Sculpture & Natural Materials: Students can create their own small rock stacks or rock sculptures using materials from outdoors, experimenting with balance and design. This hands-on activity connects to the anchoring phenomenon while developing fine motor skills and creative expression.
4. Social Studies - Community Helpers: Discuss how people who work with rocks and land (geologists, landscapers, construction workers) help our communities. Take a neighborhood walk to spot other uses of rocks in the community (sidewalks, buildings, playgrounds).

STEM Career Connection

1. Geologist - A scientist who studies rocks, minerals, and the Earth. Geologists examine rocks to learn how they formed and what they're made of, just like we're doing with this rock pile! They help us understand how Earth changes over millions of years. Average Salary: \$92,000/year
2. Landscaper - A person who designs and builds outdoor spaces using plants, rocks, and other natural materials (like the rock pile in this photo!). Landscapers choose which rocks and plants work best together to make yards beautiful and interesting. Average Salary: \$42,000/year
3. Construction Worker/Mason - Someone who uses rocks and stones to build walls, pathways, and buildings. Masons know how to stack and arrange rocks so they stay strong and safe for people to use. They work with many of the same materials shown in this photo! Average Salary: \$48,000/year

NGSS Connections

- Performance Expectation: 2-ESS1-1 - Use information from several sources to provide evidence that Earth events can occur quickly or slowly
- Disciplinary Core Idea: 2-ESS1.C - Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe
- Crosscutting Concept: Patterns - Patterns in the natural world can be observed and used as evidence

Science Vocabulary

- * Weathering: The slow breaking down of rocks by wind, water, and temperature changes
- * Erosion: The movement of rock pieces from one place to another by wind or water
- * Sedimentary: A type of rock made from layers of materials pressed together over time
- * Layers: Flat sections stacked on top of each other, like pages in a book
- * Minerals: The tiny building blocks that make up rocks

External Resources

Children's Books:

- Rocks Hard, Soft, Smooth, and Rough by Natalie Rosinsky
- Let's Go Rock Collecting by Roma Gans
- If You Find a Rock by Peggy Christian