



3-5 Earth Science

3-5 Nature of Science

Southern Nevada Regional Professional Development Program

Erosion Lesson

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INTRODUCTION

Have you ever been to Red Rock, the Grand Canyon, Zion, or Lake Powell? Have you ever seen a river bed or smooth rocks? Did you ever wonder how they were formed?



WHERE'S THE SCIENCE?

There are many natural processes that change the shape of the earth's surface. *Erosion* is one of these processes. It is when weathered rock and soil particles are moved from one place to another. The rock and soil particles that are carried away by erosion are deposited in other locations.

MATERIALS

Group students into pairs

- Sand (damp)
- Water
- Coins (quarter, half dollar, dollar)
- Two plastic cups
- A plastic tub

- Safety goggles

PROCEDURES

1. Post two questions on the board. The first one will be your pre-assessment question and the second one will be your post assessment question. This one will be ongoing throughout the lesson. Have students record their thoughts in their science notebooks.
 - a. What is **erosion**?
 - b. How do you think erosion changes landscape?
2. Show students different photos of various landscapes, for example (arch, sand dunes, and river rock)
3. Ask students how they think these **landforms** were created. Have the students document this information in their science notebooks.
4. After students brainstorm their ideas, as a class create a graphic organizer using their ideas.
5. **Review safety procedures** for science and be sure students follow them. Be sure they are wearing safety goggles when working these materials.
6. Have students gather sand in one cup and water in another.
7. Have students take the cup with sand in it and carefully tip it upside down into the plastic tub (forming an upside down cup shape).
8. Carefully have the students place the coin on top of the sand (give each group a different coin to use).
9. Carefully have the students drip water onto the coin to see what happens (have them try to drop the water on the same place on the coin) **DO NOT GIVE ANY OTHER DIRECTIONS.** Have the students record their findings in their notebooks to include explanations and drawings.
10. Discuss their findings as a class and discuss variables that occurred during the lesson.

11. Revisit focus questions from beginning of lesson. Have students respond on a separate sheet of paper. These can be used as an evaluative assessment.

a.What is **erosion**?

b.How do you think erosion changes landscape?

Extensions

- Have students brainstorm what could be changed from their original investigation (amount of water poured, rate of pouring, size of coin, and even how the sand was formed).
- Have students choose one of the variables and investigate. They may work individually, in pairs, or in small groups of three or four.
- Be sure they record all data, findings, conclusions, and include drawings and/or photos.
- Have students report their findings to class.

Nevada State Science Standards

E5C2 – Students know water, wind, and ice constantly change the Earth’s land surface by eroding rock and soil in some places and depositing them in other areas. E/S

E5C3- Students know landforms may result from slow processes (e.g. erosion and deposition) and from fast processes (e.g. volcanoes, earthquakes, landslides, flood, and human activity).E/S

N5A1 – Students know scientific progress is made by conducting careful investigations, recording data, and communicating the results in an accurate method. E/S

N5A3 – Students know how to draw conclusions from scientific evidence. E/S

N5A5 – Students know how to plan and conduct a safe and simple investigation. E/S

N5A6 – Students know models are tools for learning about the things they are meant to resemble.

Safety Reminder

Have students wear safety goggles when working with these materials.

Vocabulary

Erosion – movement of rocks and soil by water, ice, or wind

Landforms – natural shapes on the earth's surface such as valleys, canyons, hills, or mountains.

Resources

- *Erosion* ISBN 1-59242-523-2 Delta Science Readers
www.deltaeducation.com
- Reader's Digest, *Scenic Wonders of America*, 1991
International Video Network
- KLVX Videostreaming