

Science Lesson Plan Submission Profile Report

Date Published: 05/19/2008

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1. Lesson Plan Title:

Mudpile Mountain

2. Subject Area:

K-8 Scope and Sequence

3. Topic(s):

erosion and deposition

4. Suggested Grade Level:

K-8th

5. Standards Used and Source:

Source:: NYC K-8 Scope and Sequence

Standard(s) Used:: 4: Earth movements: Interactions of Air, Water, and Land, 5: Earth Science: Landforms

6. Size of class:

28+

7. Please List Supplies Used and the number of each (1 per line):

3 popsicle sticks/tongue depressors per student
crayons - red, green, orange, blue, yellow, purple
shovel
watering can
mountain of dirt

8. Do any of these supplies need to be ordered in advance?

Yes

9. Which ones? (1 per line)

The teacher will need to establish an outdoor setting for this activity to take place. Preferable a space with enough dirt to make a small 'mountain' that can be revisited in a subsequent class.

10. Post the lesson text or link here, or upload the lesson or extra materials in the next section:

Age: grades 4-6

Subject: Erosion and deposition

Skills: observation, inference, measurement

Duration: 1-3 hours

Group size: any

Setting: outdoors

Key vocabulary: erosion, deposition, transport, alluvial fan, delta, canyon

Materials:

3 Popsicle sticks/tongue depressors per student

crayons - red, green, orange, blue, yellow, purple

shovel

watering can

Objectives:

The student will be able to:

1. Identify landforms caused by erosion.
2. Identify landforms caused by deposition.

Method:

Students will construct a "mountain" of dirt, pour water over it and identify landforms caused by erosion and deposition.

Overview

Some of the same principles involved in the shaping of mountains by water also apply to the erosion of mudpiles. This makes it easy for students, even in flat country, to get a better

understanding of mountains and their erosion and depositional landforms.

Erosion landforms illustrated by this activity are streams, canyons and waterfalls. Depositional features illustrated are alluvial fans and deltas. Also involved is the transport of materials by water - fine particles are carried Further than large particles.

Caution students not to carry the comparison of mountain to mudpile too far. Mountains are not just big piles of dirt but consist chiefly of bedrock. The bedrock is weathered and worn in several different ways and not just simply eroded away by water.

Procedure

1. Have each student rule lines 1 centimeter apart across both sides of a Popsicle stick, starting from one end. Then have them crayon centimeter wide bands, neatly, in this order: red, green, orange, blue, yellow, purple.
2. Take the class outside to a patch of bare ground and dig up dirt, removing larger pebbles and stones. Dump it in a pile and tamp it down to make a "mountain" about half a meter high.
3. Have the students push their sticks into the "mountain" and the surrounding "land," red ends out, so that they are at right angles to the surface and evenly distributed. The boundary between the orange and blue bands should be even with the surface.
4. Have the students sprinkle the "mountain" with a watering can so that the "rain" falls straight down. Let everyone in the class have a chance to be the "rainmaker."
5. After the "mountain" is well eroded, ask the following questions:

Do the markers indicate where erosion is taking place? Where?

Are some places being built up? Where?

Which of these features can you identify:

streams

canyons

waterfalls

lakes

deltas

alluvial fans

Which is carried further by the water, sand or silt?

What, if anything, seems to slow erosion on the "mountain"?

6. Let the class continue to erode the "mountain" and observe it for several days.

Evaluation

Have the student identify an erosion landform and a depositional landform on a picture or drawing of a mountain and its valley.

Suggested Reading

The Sun, the Wind and the Rain by Lisa Westberg Peters. New York: Henry Holt and Company, 1988.

Source

Rockcastle, N., & Schmidt, V. (ISS8) Teaching Science With Everyday Things. New York: McGraw-Hill Book Co.

<http://www.sd5.k12.mt.us/glaciereft/geoer3-8.htm>

11. Upload the file(s) here (gif,jpg,doc,xls,ppt)

12. Contact Information

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