Topic: Geology 2 /volcano
Make your own volcano

http://www.sciencebob.com/experiments/volcano.php

What you need

•A volcano - Talk to an art teacher about making a volcano out of paper mâché or plaster. You can also use clay or if you're in a hurry to make your volcano, use a mound of dirt outside.
•A container that 35mm film comes in or similar size container.
•Red and yellow food coloring (optional)
•Vinegar
•Liquid dish washing soap

What to do

1. Go outside or prepare for some clean-up inside
2. Put the container into the volcano at the top
3. Add two spoonfuls of baking soda
4. Add about a spoonful of dish soap
5. Add about 5 drops each of the red and yellow food coloring

Now for the eruption!

6.Add about an ounce of the vinegar into the container and watch what your volcano come alive.

How does it work?

A VOLCANO is produced over thousands of years as heat a pressure build up. That aspect of a volcano is very difficult to recreate in a home experiment. However, this volcano will give you an idea of what it might look like when a volcano erupts flowing lava. This is a classic experiment in which a CHEMICAL reaction can create the appearance of a PHYSICAL volcano eruption. You should look at pictures of volcanoes to be familiar with the different types. (A SHIELD volcano, for example is the most common kind of volcano, and yet few people know about them) The reaction will bubble up and flow down the side like a real volcano (only much faster!) Look for videos of volcanoes erupting and be sure that you understand how heat and pressure work to really make volcanoes erupt.

Make it an experiment

The project above is a DEMONSTRATION. To make it a true experiment, you can try to answer these questions:

1. Does vinegar temperature affect how fast the volcano erupts?
2. Does the shape of the volcano affect the direction the eruption travels?
3. What can be added to the "lava" to slow it down and make it more like real lava?
4. What combination of vinegar and baking soda creates the biggest eruption?

Topic: Geology 2 / The Great Flood
Soil erosion

Discuss how erosion changes the shape of the Earth's crust and demonstrate by making an erosive model of the Great Flood.

What you will need:
Bucket
Water
Sand
Flat board smaller than the diameter of the bucket

What to do:
Fill the bucket with two-thirds water.
Put sand on the flat board.
Slowly submerge the board then gently lift it.

What does it show us?
This shows the erosion of sediments when the continents were uplifted out of the flood water.

Extend the experiment:
Stick rocks to the board before covering it with sand. Repeat the experiment.
You will see how rocky land formations were created by the Great Flood, e.g. Uluru Australia

Topic: Geology 2 / Waterways
Go with the flow

http://www.sciencebuddies.org/science-fair-projects/project_ideas/Geo_p045.shtml#procedure

Materials and Equipment

- 4 empty water jugs or large plastic bottles
- A cutting knife
- Adult helper
- Area with small slope that is OK to get messy. Some examples are: Sloped area in a larger sandbox, suggested dimension 20 inches (50 cm) long, 16 inches (40 cm) wide, and a slope of about 4 inches (10 cm) high, or, a brick or big block under one side of a movable sandbox to obtain a slope.
- Plastic sheet or tarp (20 by 22 inches)
- Soil
- Permanent marker
- sticks
- Water from household or garden tap
- Notebook
- Pen or pencil

Experimental Procedure:

Prepare your jugs

1. Ask an adult to cut a small triangular hole near the bottom of the first jug. Then a medium triangular hole near the bottom of the second jug. Then a large triangular hole near the bottom of the third jug. The fourth jug will be used for filling the other jugs.
2. Using a permanent marker, draw a line where this jug is approximately ¾ full.

Prepare your work area.

1. Cover your work area with the big plastic sheet or tarp. This will make cleanup easy.
2. Flatten the plastic as much as possible.
3. Spread soil evenly over the plastic, covering an area about 16 inches (40 cm) by 20 inches (50 cm) with a layer of soil roughly 1 inch (2 cm) thick.
4. Spread and flatten the soil evenly
5. Use sticks to make three riverbeds in the soil. The three riverbeds should be parallel to each other, leaving about 4 inches (10 cm) of space between them. Start about 2 inches (5 cm) from the side of your workspace.

Let the rivers run

You will pour an equal amount of water on each model riverbed, but the water will run at different speeds, depending on the size of the hole cut in the bottom of the jug. You will start with the slow-running river (the jug with the smallest hole) and move on to the medium- and fast-running rivers as you move from one riverbed model to the next.

- In your notebook, create a table for recording your observations.
- Fill the watering can up to the ¾ line, using the fourth jug.
- Be sure to keep the jugs at the same height as you let the water run in the three different river models.
- Let a helper pour the water from the watering can in the jug with the small hole, being sure that the helper pours the water in without stopping.
- Note any observations about what happened while the river was flowing in your table. Here are some things to look for:

- *Did you observe meandering, or flooding while the water flows?*
- *Were islands created by the water in your river model? Did they stay the entire time, or get washed away?*
- *Did the banks of your river hold firm or break down? If they broke down, did it happen gradually or suddenly?*

- Measure how wide the riverbeds are. Use your table to record your measurements.

	Riverbed 1	Riverbed 2	Riverbed 3
meandering			
flooding			
islands			
banks			
Width of river beds			