

Rock Cycle Lab



Problem: How do pressure and/or heat affect the rock cycle?

Research: Earth's rocks are not as unchanging as they seem. Forces inside Earth and at the surface produce a rock cycle that *builds, destroys, and changes* the rocks. The **rock cycle** is a series of processes on and beneath Earth's surface that slowly change rocks from one kind to another. **Sedimentary rock** is formed from pressure, **igneous rock** is formed from heat and **metamorphic rock** is formed from great heat and pressure.

Define the following words:

weathering: the process by which exposed rocks are broken down on the spot by the action of rain, frost, wind and other elements of the weather.

sediment: _____

erosion: _____

Hypothesis: If I use heat and/or pressure then _____

Materials: Three (3) crayons of different colors, two (2) textbooks per table, one (1) candle, one (1) sheet of aluminum foil, clothes pin, plastic knife or sharpener.

Experiment:

1. Use the knife or sharpener to shave pieces from your crayons. Cover the small box with shavings.

Cover this
box with
shavings.

Answer the following questions (refer to the definitions above to help you with questions A and B):

- A. In the real world, what **process** does shaving the crayon represent?
- B. What do the **crayon shavings** represent?
- C. What must happen to the crayon shavings in order for **sedimentary rock** to form?

Circle one:

pressure

heat and pressure

heat

2. Place all of the shavings on the piece of foil. Fold the foil over to cover the shavings. Place two (2) textbooks on the packet for 30 seconds.

Answer the following questions:

- A. What type of rock did you make? _____
- B. Describe how it looks. _____
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3. Close your crayon packet back up and attach your clothes pin to one side of the packet. Carefully light the candle and heat the foil over the flame for 15 seconds. Blow out the candle and quickly place the foil packet on the floor, stack two books on the packet and stand on the books for 1 minute. Put the books back on the table and open the foil packet.

Answer the following questions:

- A. Describe what the shavings look like now. _____
-
- B. What type of rock was formed? _____
-
- C. What step in the rock cycle did the textbooks represent? _____
-
- D. How did this type of rock form from a sedimentary rock? _____
-

4. Fold the foil into a pan shape (you are going to want to see what happens during the heating process). Carefully relight your candle. Using your clothes pin, heat the foil over the flame of the candle until it completely melts. Blow out the candle and set the foil on the table.

Answer the following questions:

- A. Describe the crayon rock. _____
-
- B. What type of rock was formed? _____
-
- C. How could you change this rock into a sedimentary rock? _____
-

Using the information that you gathered while doing this lab answer the following questions.

Sedimentary Rock

How did the crayon form a sedimentary rock?



How do real rocks form sedimentary rocks?

Metamorphic Rock

How did the crayon form a metamorphic rock?



How do real metamorphic rocks form?

Igneous Rock

How did the crayon form a igneous rock?

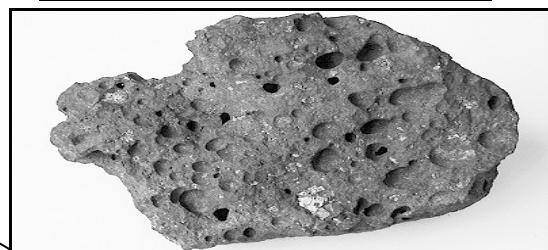


How do real igneous rock form?

Using the word bank, fill in the arrows on the diagram below:

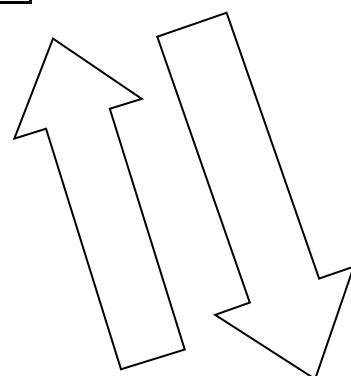
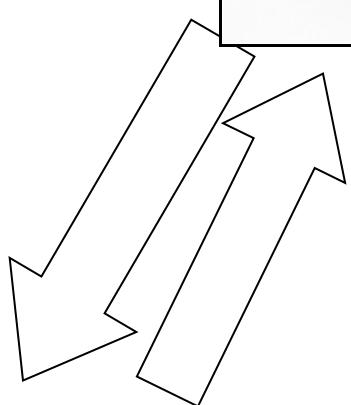
The Rock Cycle

Igneous Rock

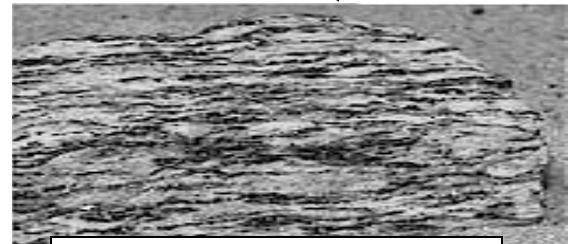
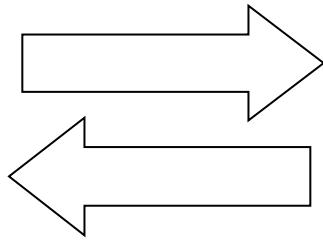


Word Bank:

heat and pressure
erosion, deposition, compaction
heating and cooling
heat and pressure
erosion, deposition, compaction
heating and cooling



Sedimentary Rock



Metamorphic Rock