

Crayon Rock Cycle Experiment

Did you even wonder why some rocks are round and smooth while others are broken up into small pieces? Maybe you've even discovered a rock in your backyard that's made up of several layers. If so, you've just seen the three types of rocks that make up the rock cycle. The best way to understand how the rock cycle works is to re-create it using a box of ordinary crayons. Ask your mom, dad or other adult to act as your scientific assistant: This crayon rock cycle experiment will require their supervision and help.

Problem:

How does a rock change from an igneous rock, sedimentary rock, metamorphic rock, and then back into an igneous rock?



Materials:

- Box of crayons
- Wax paper
- Cheese grater
- Double broiler
- Crayon mold
- Notebook
- Pencil

Procedure:

1. Remove the paper around each crayon in the box and throw it away, so only the colorful wax is left. Set the crayons on a sheet of wax paper.
2. **Observe**—look carefully—at your crayons. What shape are they? How do they feel? They're now in the igneous rock stage.
3. Divide a page in your notebook into three separate columns. Label the first column Igneous Rock. List all the things you noticed about the crayon earlier. For example, you may write that the "igneous rock" is feels smooth and hard. If it'll help you remember, draw a picture of your "igneous" crayons in your notebook.
4. Set your cheese grater on top of the wax paper and start grating your crayons, being careful not to cut your finger. Have an adult help you when the crayon gets small; you'll be left with a pile of crayon shavings.
5. Label the second column in your notebook Sedimentary Rock. List everything you observe about the crayon shavings. How are they different than crayons? Do they stick together, or fall apart? Write your notes and draw any pictures in your second column.
6. Scoop the crayon shavings in a pile and press down on them for 60 seconds. The crayons should stay together, but in layers. Your crayons have now entered the metamorphic rock phase!
7. Write Metamorphic Rock in the third and last column of your notebook page. Again, you will need to list everything you notice about the crayons, including the way they look, feel and smell. You may notice that crayons have bonded together in layers, but aren't really smooth or completely one rock. There may be some jagged edges, etc.
8. With the help of an adult, heat up a double broiler and place the metamorphic rock crayons

inside. Stir until completely melted.

9. Pour the melted crayons into crayon molds. If you don't have one, any type of mold will do. You could even use an old ice cube tray!
10. Set the crayons aside to cool.
11. When the crayons are cool enough to touch, examine them. What do they look like? Are they smooth, hard, rough or soft? Write any notes in your notebook.

Results:

Your crayons have gone through a cycle similar to that of a rock. The crayons start off smooth and hard, convert to broken up pieces when grated and become stuck together in layers when pressed together. After they've been melted and cooled, they should feel hard and smooth again just like the igneous rock. That's because the crayons have now started the crayon rock cycle all over again.

Why:

Weather plays a big part in the rock cycle. Strong winds, rain, hail and other extreme weather conditions can break apart igneous rocks so that they are no longer one whole rock, but a pile of pieces. At that stage the rocks are called sedimentary rocks.

Over time, other rocks or debris may fall on top of the sedimentary rocks. The pressure from this debris smashes the sedimentary rocks together in layers. This is when the rocks enter the metamorphic rock phase.

If the metamorphic rocks become heated, they blend back together and form one solid smooth rock—the igneous rock. Then the cycle starts all over again!

Try this experiment again with a bar of chocolate, a bar of soap or a candle. Afterward, take a nature walk and see if you can spot the three different types of rocks. To keep the rock theme going, you may even be able to convince your scientific assistant to let you have some rock candy!