

FULTON FRESH KITCHEN SCIENCE

Chocolate Rock Cycle

Calling all scientist and chocolate lovers!

SAFETY FIRST! Youth should always have parent supervision when performing science experiments.

MATERIALS

- White and milk chocolate
- A grater
- Cutting board
- Hot pads
- Cutting board
- Tin foil
- Baking Tray
- Bowl of hot water

BACKGROUND INFO

The rocks on earth undergo a process called the rock cycle. It's a view into the processes like erosion, cementation, and melting that rocks undergo on the earth's surface. With today's experiment, you are going to make the following rocks below.

There are 3 types of rocks: igneous, sedimentary, and metamorphic.

- Igneous rocks are formed from magma that has melted, crystalized, cooled, and hardened.
- Sedimentary rocks are formed from sediment, or small pieces of rock that have been broken down. The rocks form when the pieces of sediment undergo pressure, which pushes the pieces together.
- Metamorphic rocks are a mixture of rocks that have been exposed to heat and pressure, which molds them into new forms of rock.

THE PROCEDURE

Rock Erosion:

1. Use a grater to carefully shave $\frac{3}{4}$ of your chocolate. The grater symbolizes erosion and weathering (wind or rain, for example).
 2. Just like the chocolate is eroded into smaller pieces, rocks are eroded into smaller pieces by the weathering process. The small pieces of chocolate represent sediment.
- Notice the difference between the full blocks and the small shavings.

This lesson was adapted from: <https://leftbraincraftbrain.com/how-to-make-a-delicious-rock-cycle-with-chocolate-rocks/>

FULTON FRESH KITCHEN SCIENCE

Chocolate Rock Cycle

Why do oranges wear suntan lotion? Because they peel.

THE PROCEDURE CONTINUED

Sedimentary rocks:

1. Take some of the chocolate shavings and press them together in a large clump.
 2. You can use a spoon or knife to do it to avoid melting the chocolate with your fingers. You are exerting pressure on the pieces of rock in order to form a sedimentary rock.
- Observe the newly formed sedimentary rock. What do you see?

Metamorphic rocks:

1. Take a few square pieces of tinfoil and form them into “rock molds.” You can do this with your fingers or wrap the tinfoil halfway around a rock to make a proper shape (shown below)
 2. Take chocolate shavings and sprinkle them into the molds.
 3. Place the molds onto a baking tray and bake in the oven at 200F for 3 minutes.
 4. Let the chocolate cool completely and harden (you can put them in the freezer to speed up the process).
- Notice the differences between the sedimentary rocks and the metamorphic rocks. What different forces were exerted on those rock shavings to form the different rocks? How are they similar?

Igneous Rocks:

1. Since igneous rocks are made from magma, we want to melt the chocolate first. Adult supervision recommended for this step!!
 2. In the microwave, heat up a cup of water until almost boiling.
 3. Wrap a square of chocolate in a piece of aluminum foil. Place the foil packet in the cup of hot water. Let sit until melted, about 5 minutes.
 4. Then carefully remove the foil packet from the water, dry off and place in the refrigerator to cool until hardened, about 1 hour. Impatient? Pop it in the freezer for about 20 minutes instead
- Unwrap the igneous chocolate rock from the foil. How does it compare to the sedimentary and metamorphic rocks?

Visit our website or social media channels for a
follow-along video of this experiment.

www.ugaextension.org/fulton

Share a picture of your experiment with us on social media with the
hashtag #localfoodmadefun.

**CONNECT
WITH US ON
SOCIAL
MEDIA!**

YouTube: Fulton County 4-H UGA Extension

Facebook: UGA Extension Fulton County

Instagram: @uga_fulton_extension

Twitter: @uga_fulton_ext