

Traveling Programs

Do-It-Yourself Rock Cycle

Model the rock cycle right in the classroom! This activity can be done in two different ways – either as an edible version, or an inedible version. Students will first create sedimentary rocks, then change them into metamorphic rocks, and finally end up with igneous rocks. The cycle can even be repeated over again for extra emphasis!

Materials

- Chocolate and white chocolate (for edible version) or different colored crayons (for inedible version)
- Graters or plastic knives
- Tin foil
- Pie plate (aluminum)
- Hot plate
- Oven mitts
- Paper towels or bowls
- Small plastic cups
- Large hardcover book
- Rock Cycle worksheet (page 3 and 4 of this document)

Directions

If choosing the edible version, start by having all students wash their hands. Over the top of a paper towel or bowl, have students grate unwrapped chocolate or unwrapped crayons using a cheese grater or plastic knives. This activity should be supervised, and proper safety procedures followed. Be sure to use different colors of chocolate or crayons so the resulting shavings are not all the same color. Grating the chocolate or crayons simulates weathering of rocks. The shavings can be considered “sediment”.

Now that students each have some “sediment”, they should place it in a piece of tin foil. Then they should wrap the tin foil around their sediment, and press it



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together with their fingers, simulating it being buried and pushed on by other sediment and animals walking over top. Unfold the tin foil,



and reveal how the pieces of “sediment” are now stuck together – this represents a sedimentary rock! Have students note what it looks like on their worksheet.

Next, the sedimentary rock students just made is going to undergo pressure to turn it into a metamorphic rock. Have students wrap their sedimentary rock back up in the tin foil. Place it on the ground, set a heavy book on top, and have students volunteer to stand on the book and squash the packets for 3-5 minutes on end. After the time is up, have the students get off the book, take the tin foil packets out from under the books, and unfold them. Does the rock look different? It’s been pressurized into a metamorphic rock! Have students note what it looks like on their worksheet.

Finally, it’s time to turn the rock into an igneous rock. Fold the metamorphic rocks back up in their tin foil packets (make sure they’re folded up securely!). The teacher should now take the packets and place them over the hot plate. Leave for several minutes, then open them up (again, the teacher should do this step and not the students) and pour the contents into plastic cups. Leave overnight to allow to cool into an igneous rock! Have students note what it looks like on their worksheet.

The cooled igneous rock could conceivably be grated down into sediment, and the cycle can be repeated all over again! As an extra challenge, ask students how they could get an igneous rock from a sedimentary rock, or a metamorphic rock from an igneous rock, or a sedimentary rock from either of the others!



Do-It-Yourself Rock Cycle

Describe or sketch your sedimentary rock:

How is it different from the sediment it came from?

What did you do to change it?

Describe or sketch your metamorphic rock:

How is it different from the sedimentary rock?

What did you do to change it?



Describe or sketch your igneous rock:

How is it different from the metamorphic rock?

What did you do to change it?

Fill in the diagram below with arrows showing the rock cycle (remember, the rock cycle you just modeled is not the only type of rock cycle!):

Igneous

Metamorphic

Sedimentary

Hint: There should be six arrows.