



Rock Cycle Simulation – Crayola™ Crayon Demonstration

The rock cycle is the most basic principle of geology. All rocks relate to each other and may be transformed from one kind of rock to another. In its simplest form, the rock cycle describes the relationships between the three major types of rock.

Objective: To describe the three major rock types (sedimentary, metamorphic, and igneous), discuss their relationships, and diagram the stages of the rock cycle.

Materials

- Aluminum foil (15–20 cm square sheet)
- Small aluminum pie plates (3)
- Wooden block (1)
- Large beaker (400 ml / 600 ml)
- Plastic knife
- Tongs
- Vegetable peeler
- Popsicle stick
- Water
- Ice
- Different colours of Crayola™ wax crayons (3–4)

Procedure

1. Shave crayons into small pieces using the plastic knife and/or vegetable peeler. Collect the shavings in an aluminum plate. Keep the colours separate.
2. Pile the shavings, in coloured layers, at the centre of the sheet of aluminum foil.
3. Carefully fold the aluminum foil in half, trapping the loose crayon layers inside.
4. Place the wooden block on top of the folded aluminum foil and press down hard for at least one minute. Unfold the aluminium foil and observe the “sedimentary” crayon rock.
5. Break off a piece of the crayon rock produced in step 4 and set it aside for later.
6. Place ice and cold water into the beaker, making an ice bath. Place an aluminum plate in the beaker. If necessary, bend the sides to make it fit.
7. Plug in and turn on the hot plate. Set it to medium heat.
8. Place the crayon rock that was set aside into a small aluminum plate and place it on the hot plate. Observe the crayon product as it melts.



9. Remove the aluminum plate from the hot plate when the wax is soft to the touch. Do not allow the wax to melt completely. Allow the “metamorphic” crayon rock to cool and examine it.

10. Return the “metamorphic” crayon rock to the hot plate. Stir the melting rock with the Popsicle stick until the entire product has melted. Using tongs, pour the melted sample into the aluminum plate in the ice bath.

11. Turn off the hot plate.

12. Once the sample “igneous” rock has cooled, break off pieces and examine carefully.

13. Discuss and clean up!

Discussion

Ask students if they think the igneous rock could be turned into sedimentary rock? Encourage them to explain how. Along the same lines, could a metamorphic rock turned into a sedimentary rock?

Have students draw and label what they observed during the demonstration/simulation.

Going Further

See if students can offer explanations as to what other earth processes are occurring that allows the rock cycle to continue.