

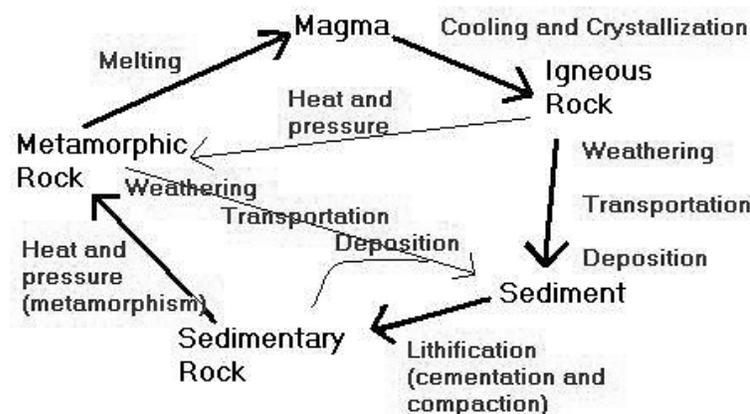
Name _____

Modeling the Rock Cycle

Problem: To model the changes that occur during the rock cycle.

Background information: the term 'rock cycle' refers to the constant recycling of material in the crust

- ▷ Mountains are worn down by **weathering** and **erosion**, and the pieces of eroded rock may eventually be deposited and form **sedimentary** rocks.
- ▷ Sedimentary rocks may become buried and compressed; if they are subjected to heat and pressure, they may be transformed into **metamorphic** rocks.
- ▷ Sedimentary rocks may be **uplifted** by movements of the Earth's crust.
- ▷ Metamorphic rocks may continue to be uplifted to form mountain ranges, which may be weathered and eroded.
- ▷ Metamorphic rocks may sink deeper into the hot mantle, and melt to form **magma**.
- ▷ Magma is pushed up towards the crust by pressure and **convection**, eventually cooling and hardening to form **igneous** rock.
- ▷ If the magma is pushed out from the crust by volcanic activity it will form **extrusive igneous rock** on the surface.
- ▷ If magma cools below the surface it will crystallize into **intrusive igneous rock**.
- ▷ Any type of rock may eventually reach the surface as a result of mantle or crust movements, and be weathered and eroded – and the cycle begins again.



<http://rst.gsfc.nasa.gov/Sect2/rockcycle.jpg>

Materials:

Sugar cube	Candle	Test tube clamp
Foil	Hand lens	Goggles

Procedure:

1. Examine the sugar cube with the hand lens. How is the sugar cube like a sedimentary rock?

2. Crush the sugar cube into a powder. What part of the rock cycle does this represent?

- a. What are limitations to this part of the model?

3. Make a boat with your foil. Pour the crushed sugar into the foil boat. What part of the rock cycle does this represent?

- a. What are limitations to this part of the model?

4. Use the test tube clamp to hold the foil boat over the candle flame. Observe as the sugar begins to melt. What part of the rock cycle does this represent?

- a. What are limitations to this part of the model?

5. Set the foil boat to the side and let the sugar cool and harden. What part of the rock cycle does this represent?

- a. What are limitations to this part of the model?

6. Break the cooled and hardened sugar into pieces. What part of the rock cycle does this represent?

- a. What are limitations to this part of the model?

Conclusion – analyze and predict the sequence of events in the rock cycle by completing the graphic organizer:

