

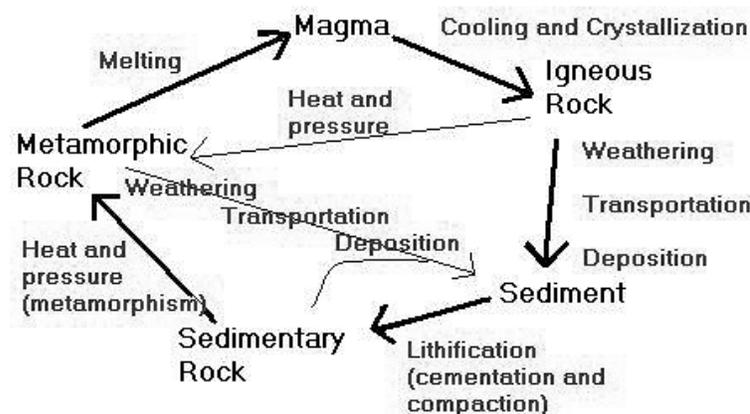
Name \_\_\_\_\_

## 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?

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

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

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

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

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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?

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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?

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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?

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

