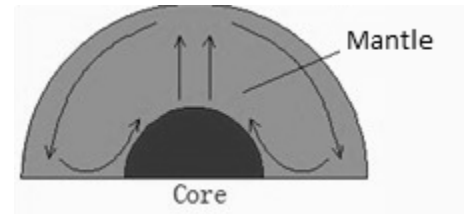


Name _____



The Mantle in Motion

Purpose: To explore the mechanism that moves the mantle.

Background Information: The asthenosphere is the layer in Earth's mantle between the lithosphere (above) and the upper mantle (below). The rock in the asthenosphere is softer and has unique properties. It is plastic-like, and much less rigidity than the lithosphere above it. This property is caused by the interaction of temperature and pressure. This interaction allows the asthenosphere to be pushed and deformed in response to the heat and pressure of the Earth. These rocks actually flow like a very thick liquid, moving in response to the stresses placed upon them by the churning motions of the deep interior of the Earth. The flowing asthenosphere carries the lithosphere of the Earth, including the continents.

Use a highlighter to mark the key ideas in the background information.

Materials:

Cornstarch	Water	Beaker	Spoon	Graduated cylinder
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Procedure:

1. Put on your ***goggles***.
2. Make a mixture of cornstarch and water in your beaker.
 - a. Add a little water to the cornstarch. Stir.
 - b. Continue adding water and stirring until the mixture is thick and goeey. Be careful not to add too much water at once.
3. Stick your finger into the mixture very slowly. Record your observations.
4. Stick your finger into the mixture very quickly. Record your observations.
5. Use the spoon to stir the mixture slowly, then quickly record your observations,
6. Scoop a little of the mixture out of the beaker. Roll it in a ball. Record your observations.
7. Explore the properties of the mixture as you apply different amounts of pressure to it. Record your observations.

Data:

	Observations

Think about it:

1. What does the mixture represent? _____
2. Why is this a good model? _____

3. What are limitations of this model? _____

4. Re-read the background information. How does the mixture model the rock in the asthenosphere?
Use the word *pressure* in your answer.
