



## SfS Away from the Classroom!

### ES18: Modeling the Mantle (Recommended for Grades 3-8)

Please use the following resources to learn about the earth's asthenosphere.

#### Watch these Videos:

[https://www.youtube.com/watch?v=oEW\\_Qwj6ZCE](https://www.youtube.com/watch?v=oEW_Qwj6ZCE) and <https://www.youtube.com/watch?v=2Kku4lfc17w>

#### Answer these questions:

- What layer is on top of the mantle?
- What is the mantle made of?
- What is the temperature of the mantle?
- Where can we see the mantle come through the crust?

**Activities:** Follow these instructions to investigate how some materials can act like a liquid under certain circumstances and a solid under others just like the Earth's mantle.

You will need:

<ul style="list-style-type: none"><li>• Silly putty</li><li>• Cornstarch</li></ul>	<ul style="list-style-type: none"><li>• Water</li><li>• Tablespoon</li></ul>	<ul style="list-style-type: none"><li>• Science notebook, paper</li><li>• Pencil</li></ul>
--	--	--

#### Part A

1. Roll the Silly Putty® into a ball and bounce it off the table. Pull it, stretch it, mash it. Describe what happens in your science notebook. Is it behaving like a solid or a liquid?
2. Place Silly Putty® on the floor and pound it with your fist. Record your observations.
3. Roll the Silly Putty® into a ball and leave it alone for 20–30 minutes. How has the shape changed during that time? Record your observations.



#### Part B

1. Mix 2 tbsp cornstarch with 1 tbsp water.
2. Roll the mixture around in your hands. What are the characteristics of this substance? When does it act more like a solid? When does it act more like a liquid?
3. Roll the mixture into a ball and then break the ball apart. Let each piece of the ball sit in your hand. Describe its behavior.

## **Make observations & use Claims, Evidence, and Reasoning!**

1. **Claim:** Some materials can act like a solid and a liquid.

- **Evidence:**

- **Reasoning:**

2. **Claim:** On the crust of the earth, we can observe the mantle acting like a solid and a liquid.

- **Evidence:**

- **Reasoning:**