

task card 1

Creeping Crust

Where do volcanoes form? Model how tectonic plates move to find out.

Materials

- ★ plastic spoon
- ★ whipped cream
- ★ wax paper
- ★ half a graham cracker
- ★ "Creeping Crust" data sheet

1. Put a heaping tablespoon of whipped cream on a sheet of wax paper. Use your spoon to spread the whipped cream into a square the size of a half graham cracker. **This is a model of the earth's mantle. The whipped cream is the melted rock, or magma.**

2. Your half graham cracker is your solid rock crust. Carefully break the cracker along the line.

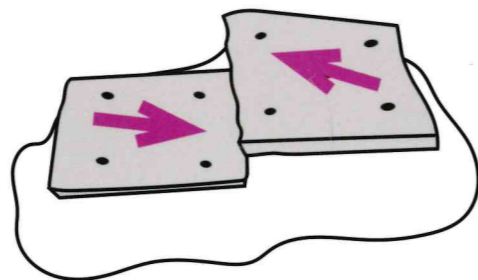
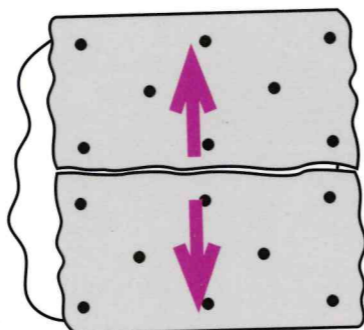
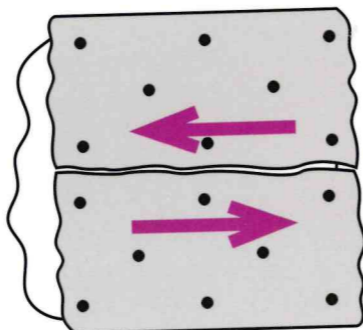
3. Place the two pieces next to each other on top of the whipped cream. Their broken edges should touch. **Each piece is a tectonic plate. The place where the two broken pieces match up is a boundary. The plates don't stay still. They move slowly.** You will model three ways they can move.

4. **Transform boundary:** Slide the crackers past one another, like trains passing on opposite tracks. Can you feel them rubbing together? How much magma (whipped cream) do you see between them?

5. **Divergent boundary:** Carefully move the crackers back into place. Then slowly push the crackers away from one another. **This creates a rift, a separation of plates.** How much magma do you see between the crackers? Real magma would harden into new crust.

6. **Convergent boundary:** Put the crackers side by side again. Push them toward one another. Let one cracker slide underneath the other. How much magma do you see between the crackers? **When Earth's plates do this, the lower plate melts into the hot mantle. It becomes new magma.**

7. **Think:** Volcanoes can form where magma rises through the crust. You just modeled three different ways that can happen at boundaries. Think about which ones brought magma close to the surface. Which kinds of boundaries seem best for making volcanoes?



Name: _____ Date: _____

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1. Do Steps 1–6 of the Task Card. Model the three ways plates can move. Record your observations in the chart below.

Types of boundary	How much magma do you see between the crackers?
Transform boundary	
Divergent boundary	
Convergent boundary	

2. **Think:** Volcanoes can form where magma rises through the crust. Which kinds of boundaries brought magma close to the surface? Which seem best for making volcanoes?
