

Cooling Butter Lab

How do molten objects cool?

Name: _____

Period: ____ Date: _____

Purpose: To investigate how a planetary body might cool.

Materials:

For each group: molten butter, shot glass, spoon, waste/dump cup, small piece of blue tape to label shot glass.

Shared by the whole class: microwave or hot plate to melt butter, freezer for cooling.

Procedure:

1. Use a small piece of blue tape to label the side of the shot glass with your table #.
2. Send one person to fill the shot glass with 2-3 tablespoons of molten butter. Show your group.
3. Drop off the shot of butter on top of the freezer (the teacher will put all of the shots in at the same time).
4. The butter will cool for about 12 minutes. Work on the Box A below while you wait.

Instructions for Box A: Predict

Draw and label the glass-butter system (side view recommended) and what you think will happen.

Specifically: Draw & label what you predict will happen to the **matter** (butter & glass).

Draw & label what you predict will happen to the **energy** (heat).

→ *You will then move on to Box B once the butter has cooled.*

Box A	Box B
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Instructions for Box B: Notice

How exactly did the molten butter cool? Record your observations. Specifically...

1. Use the spoon to gently tap on the surface until small cracks appear and you can see beneath the surface. Draw and label what you observe.
2. Make a bigger crack in the surface with the spoon, then pour the molten butter into the waste/dump cup. Examine the inside of the glass. Draw and label what you observe.

Instructions for Box C: Wonder



List a couple of questions you are wondering about related to this activity.

Box C

Instructions for Box D: Relate It to the Cooling Earth

How does this activity relate to the early earth?
Use our Model Tracking Sheet (Earth's Formation) to help you.
Write several complete sentences.

Box D

Instructions for Box E: Model Statement

What should we add to our Model Tracking Sheet on Earth's Formation after today's activity? Write out your draft model statement in Box E. Include WHY "lava earth" began to cool, and HOW it would cool.

Box E