

Name: _____ Date: _____

The Big Melt

How does land ice affect sea level?

Observe: Warmer temperatures in the Arctic are melting land ice.

Ask a Research Question: What happens to sea levels as ice floes melt?

Form a Prediction Based on This Question: How will melting ice affect the water level in a model of the ocean?

Materials: large glass container or plastic tub • desk lamp • ice block (fill a 16-24 ounce plastic deli food container with water and freeze for 24 hours) • ruler • modeling clay (like Play-Doh) • lukewarm water • paper and pencil

Procedure:

1. Place the large glass container or plastic tub on a flat surface where the lamp can shine on it.
2. Form a handful of clay into a mound in one corner of the large container or tub. The mound should be about as tall as the sides of the container. The clay represents a landmass, such as an island like Greenland.
3. Place the ice block in the container on or close to the island. This represents land ice. Now fill the container a little more than halfway with lukewarm water. Make sure the top of the landmass is above the water. (Optional: Place a small figure on top to represent how people and animals are affected.)
4. Use the ruler to measure the height of the water in the container. Record this height.
5. Position the lamp so it will shine directly on the water in the container. Turn on the lamp. The heat from the lamp represents the heat from the sun.
6. After 30 minutes, record the water level again. Look at the ice block and the landmass and record your observations about how they've changed. Continue to record the water level and make observations every 30 minutes until the ice has completely melted.

Results: How did the water level change over time? Display your results in a data table.

Conclusions/Questions to Consider:

1. How did the melting ice affect the water level in the container? Why do you think that is?
2. Say a person or animal lived on your landmass. Based on what you observed, how might melting land ice change its habitat?