



Time Needed

1.5 to 2 hours

Materials

- Glass baking dish (7 x 11 inches).
- Piece of plywood, to fit partially inside the container at an angle (see picture), such as a 4.5-by-10-inch piece.
- Ruler.
- Ice cubes.
- Water.
- Small container of playdough or modeling clay.
- Permanent marker or dry erase marker.
- Blue food coloring.
- Masking tape (optional).

In this FACTivity, you will explore the idea of sea-level rise. This FACTivity has been adapted from the Digital Library for Earth Systems (DLESE) and the Deep Earth Academy at the Consortium for Ocean Leadership. For more information about similar activities and extensions, please visit <http://www.teachingboxes.org/sealevel/lessons/lesson2.jsp> and http://oceandrilling.coe.tamu.edu/curriculum/Sea_Level/Ice_Volume/teachers_notes.html.

All the world's ice can be divided into two types: sea ice (icebergs) and sheet ice (ice on land). Although both types of ice are at risk of melting if the average global temperature of the Earth increases, they have very different effects on the global sea level. In this activity, you will investigate what effect land ice will have on sea level.





Visit <http://www.teachingboxes.org/sealevel/lessons/lesson2.jsp>

to find an activity that illustrates what happens when icebergs melt. Students can then compare and contrast these two activities and observe how each type of melting may or may not affect the amount that sea level will rise.

In addition, an excellent short video simulates these two activities can be found at http://oceandrilling.coe.tamu.edu/curriculum/sea_level/ice_volume/activity.html. The video reinforces concepts learned after the students complete the FACTivity.

Methods

1. Use the ruler to mark measurements every 2 millimeters from the bottom to the top of the glass dish so that you can measure any change in water elevation. You may do this on masking tape and then put the tape on the outside of the container or you may also try dry eraser markers on the outside of the dish.
2. Place the wood at an angle in the dish (see picture, opposite page).
3. Fill the dish with enough water to cover the bottom of the dish. Mark down this measurement under the "Start" box in the table provided.
4. Put about 3 drops of blue food coloring in the water.
5. Place playdough or modeling clay in a line just before the water. This line of playdough will keep the ice from sliding down as it melts. Make sure there are small open spaces in between each ball of playdough so the water can move through (see picture).
6. Place the bowl out into the sunlight.
7. Fill the board with ice cubes (see picture).
8. Re-check and record the water level and the amount of ice remaining every 20 minutes throughout the session.

Results and Discussion

Record your observations of the water level in the table below:

	Start	20 minutes	40 minutes	60 minutes	80 minutes	100 minutes	120 minutes
Water level							

1. How did the water level in the bowl change as the ice melted?
2. How can you explain your observation in question 1?