

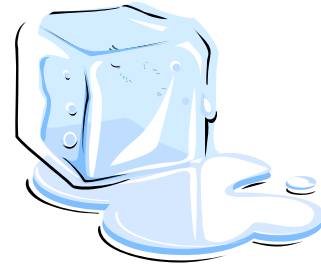
Land Ice vs. Sea Ice

What Do I Need?

- 2 clear plastic cups with water
- small screen, gauze or cheese cloth
- permanent marker
- ice cubes

What Do I Do?

1. First, we need two cups. Label one sea ice and the other land ice.
2. Add water to each of the cups.
3. Add an ice cube/iceberg to the cup labeled sea ice. Mark the top of the water level on the outside of the cup with a permanent marker.
4. Place a small screen or cheese cloth on top of your second cup labeled land ice and place the ice cube on top. Mark the top of the water level with the permanent marker.
5. What happens once the ice melts?



What's Going On?

Earth's Polar Regions consist largely of ice, and exhibit dramatic changes in ice coverage in response to seasonal changes in temperature. An increase in temperature resulting from global warming could drastically affect the extent of polar ice. Whether those changes would cause sea level to rise depends on whether the ice is continental land ice or floating sea ice.

Continental (land) ice (such as glaciers and ice sheets) raises sea level as it melts. This happens because when ice on land melts, it adds water into the ocean that was not there before. This extra water raises sea level. For example, if the West Antarctic ice sheet melted, sea level would rise by at least 5 meters. That is a significant amount; even a rise of just one meter would displace roughly 100 million people along coastlines.

Floating sea ice (such as ice shelves and icebergs) would not have much effect on sea level. According to a physical concept known as Archimedes' principle, a floating object displaces an amount of water equal to its weight. In other words, floating ice displaces a volume of water approximately equal to the volume of water it would contribute as it melts. Therefore, when floating ice melts, there is very little change in sea level.