Inquiry on Sea Level Change

materials

Per 2 students:

- 2 ice cubes
- 2 clear cups
- 2 popsicle sticks
- Warm water
- 1 piece of clay or playdough
- 1 paper towel
- 1 marker

background

There are two kinds of ice in the Polar Regions, sea ice and land ice. Sea ice forms from ocean water and is about 1 meter thick after a cold winter. Some of the sea ice melts each summer. Land ice forms on land from precipitation that falls and accumulates on the ground. Layers of snow build up, causing pressure on the snow crystals beneath and the air is pushed out. Eventually the snow is compacted from the weight above into layers of ice. This ice becomes a glacier that acts like a river, flowing downhill. Once the glaciers meet the ocean, they break off and become floating icebergs. This activity helps students understand which ice is causing the sea level to rise.

activity time:
30 minutes

directions

1. Mark one cup "land ice" and the other "sea ice".
2. Show pictures of sea ice and land (glacier) ice.
3. Design an experiment that shows what happens to sea level when the glaciers on land melt and when floating sea ice melt.
4. Before doing the experiment, write a prediction of what will happen in each cup.
5. Set up the experiment and do it.
6. Record your observations.
7. Write a conclusion that states what happens to sea level with land and sea ice melt.
8. Report your results to class.

discussion

- How did you design your experiment?
- Was there a difference in your sea level between the 2 cups?
- Which should scientists be more concerned with, land ice or sea ice?
- Why?

extension

For an interactive world map of sea level rise visit:
www.cresis.ku.edu/research/data/sea_level_rise/index.html

related activities

"Ice and Sea Level Change"

vocabulary

Displace - to replace a volume of fluid with a floating object, forcing the original fluid to move elsewhere (an ice cube in water)
Glacier - an enduring accumulation of ice, snow, water, rock, and sediment that moves under the influence of gravity

alignment to national science standards

Unifying Concepts and Processes, Standards A, B, E, F, G

alignment to kansas science standards

Science as Inquiry: 3-4: 1.1.1, 1.1.2,1.1.3, 1.1.4; 5-7: 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.3.1,2.1.1
Physical Science: 3-4: 2.1.1, 2.1.4, 2.2.2
Science and Personal/Social Perspectives: 5-7: 6.3.2
History and Nature of Science: 3-4: 7.1.1