



Blue Ice Cube Melt

materials

Per team of 2:

- 2 (same size) ice cubes made with blue food coloring
- 1 sheet of wax paper
- 2 rubber finger pads (found at an office supply store)

background

This experiment will demonstrate one way a glacier moves. A glacier is a large mass of ice that acts like a river, flowing downhill under the influence of gravity. When the pressure builds up on the bottom layer, it melts and becomes soft and pliable. The melting of the ice due to pressure and its refreezing is called regelation. As long as snow continues to fall, the height of the glacier remains constant and fingers of ice move out from the bottom of the mountain of ice. The snow layers continue to compress and add weight and pressure to the layers below which cause continuing reflation, and therefore movement. Why blue ice? Blue ice occurs in the Polar Regions in older ice. The color comes from old, compressed ice that has less oxygen.

activity time:
20 minutes



directions

1. Place 2 ice cubes several inches apart on the wax paper.
2. Leave one of the ice cubes alone, making it the control in the experiment.
3. Take turns pushing down on the other ice cube with an index finger for about 5 minutes.
4. Observe what happens to both ice cubes.
5. Ask students to try not to move the ice cube around while they are pressing on it.
6. At completion, discard the ice and ask students to dry the wax paper with a paper towel. Students can hold up their wax paper to compare impressions of their ice cube melt water.



discussion

- Which ice cube melted faster?
- What happened to the ice cube that you pushed on?
- Where did the dent in the cube come from? (Your finger)
- Why is there so much water around the one that you pushed on?



extension

Students could measure the widest part of their meltwater impression and the class could graph their results.



related activities

"Glacier Movement"

alignment to national science standards

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

alignment to kansas science standards

Science as Inquiry: K-2: 1.1.1, 1.1.3, 1.1.4, 1.1.5; 3-4: 1.1.1, 1.1.3, 1.1.4; 5-7: 1.1.1, 1.1.3, 1.1.4, 1.3.1

Physical Science: K-2: 2.1.2, 2.1.3; 3-4: 2.1.2, 2.1.3, 2.1.4, 2.2.1; 5-7: 2.1.1, 2.3.1, 2.4.1, 2.4.3

Earth Science: 3-4: 4.1.1; 5-7: 4.1.1, 4.1.2, 4.2.1

Science and Tech: 3-4: 5.2.3

History and Nature of Science: K-2: 7.1.1; 3-4: 7.1.1