



Glacial Movement

materials

- A square cake or a loaf pan
- Water
- A freezer
- A wire rack
- A brick or a heavy object

background

This experiment will demonstrate how a glacier moves around an obstacle and refreezes. 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. As ice passes over a rise (a bedrock bump), the pressure rises and lowers the melting point even more. On the downside of the rise, the pressure lowers and the water refreezes, producing regelation ice.

activity time:
20 minutes



directions

1. Fill the cake pan with water and place in the freezer until the water is frozen.
2. Remove the ice from the pan by running water over the underside of the pan.
3. Look at the ice block from all angles.
4. Set the ice block back in the freezer on a wire rack.
5. Lay a brick or something heavy on top of the ice block.
6. After several hours, take the ice block out and observe what happened.



discussion

- What happened to the shape of the ice?
- Where did the ice change, on the top or on the bottom?
- Why did the shape at the bottom of the ice change? (The ice melts due to the pressure of the weight of the brick. The ice shape looks like what is on the bottom, similar to a glacier on bedrock.)



vocabulary

Glacier - large masses of ice that move due to gravity, friction and melting
Relegation - the melting of the ice due to pressure and its refreezing



related activities

“Blue Ice Cube Melt”
“Can You Melt a Glacier by Applying Pressure?”

alignment to national science standards

Unifying Concepts and Processes, Standards B, D, 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, 1.2.2

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

Earth Science: 5-7: 4.1.1, 4.1.2

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