

Ice Cream Glacier

Glaciers form in areas where, year after year, more snow piles up than melts away. Over time, the layers of snow squish together, compressing into thick, heavy ice. Some glaciers form on mountains. Other glaciers, called ice sheets, form across huge areas of land. Almost the entire continent of Antarctica is covered in glacial ice sheets.

Though it may be hard to imagine, glaciers are constantly on the move! Their weight and gravity force the huge masses of ice to shift, slide, and break apart. Since they are so massive, glaciers significantly impact the land they move through. Glaciers are so powerful that they can carve new valleys and even sculpt mountains.

In this experiment, the ice cream represents a moving glacier. The ice cream moves downward as a result of gravity as well as the sheer weight of the ice cream layers, just like a real glacier! As it moves, the ice cream collects rocks (graham crackers) and shifts the land around it (cookies and sprinkles). Unlike a real glacier, however, ice cream glaciers are best eaten after the science learning is over!

Materials needed:

- Graham crackers
- Baking sheet
- Crushed cookies, sprinkles, or other treats
- Books
- Ice cream

Step-by-step instructions:

1. Crumble 6 graham crackers across the baking sheet. Be sure to include some large and some small pieces.
2. Sprinkle crushed cookies or sprinkles along the long sides of the baking sheet.
3. Elevate one side of the baking sheet using 2 or 3 books.
4. Spoon 1 large scoop of ice cream at the top of the baking sheet.
5. After 10 minutes, spoon more ice cream on top of the existing ice cream.
6. Repeat Step 5 2 or 3 more times, each 10 minutes apart.
7. Observe the ice cream glacier as it travels downwards.



Additional explorations:

- Let your ice cream glacier sit for 30 to 60 minutes. Observe as the ice cream layers as they begin to melt. How does the glacier's movement change? How does this compare to a real melting glacier?

Discussion questions:

- Did the ice cream glacier move quickly or slowly?
- When did the glacier move the most?
- Did any materials get stuck in the glacier?
- Did the glacier shift the graham crackers or did it flow over them?