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Science Experiences That Come To You

Sugar Cube Igloo

Supplies:

- Cardboard or Heavy cardstock paper
- Aluminum foil
- Sugar cubes – 1 box
- White glue

Optional Supplies:

- Circular plastic lid/ plate (at least 5-inch circumference)
- Pen
- Plastic cup
- Pictures polar bears
- White frosting
- Glitter

Instructions:

In this activity, you will make a model igloo from sugar cubes. Just like the Inuit people, your igloo will be a circular dome.

1. Wrap your cardboard / cardstock with aluminum foil.
2. Trace the plastic lid on your cardboard / cardstock.
3. Build the first circular ring of sugar cubes. This will be the foundation.
 - Using white glue, carefully glue the sugar cubes onto the cardboard. Follow the traced ring.
4. Build the second ring of sugar cubes on top of the foundation.
 - These cubes need to be slightly moved inward. This ring will be slightly smaller than the foundation ring.
5. Let the foundation dry overnight.
 - The glue needs to dry completely overnight. This will make a stronger igloo structure.
6. Build the third ring of sugar cubes.
 - This ring will be smaller. Notice that the igloo walls are beginning to curve inward.
7. Build the fourth ring of sugar cubes.
8. Let the igloo dry overnight.
9. Depending on the size of your igloo, continue to build layers.
10. Once the walls have formed a dome, leave an open space at the very top.



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11. Now that your igloo is built, you can add Arctic animals and glitter.
12. Use white frosting to pack onto the outside of the igloo. This will act like the snow that the Inuit people pack around their igloos.

The Science Behind It:

The Arctic is one of the coldest environments on Earth. Winters are long with few hours of daylight. The Inuit people must adapt to this extreme climate. They need thick, warm clothing made from animal skins and furs. They make boots, hats and warm jackets called anoraks. The Inuit people build sturdy shelters to protect themselves from the harsh winds and bitter cold. The Inuit word for home is “**igloo**.” During the summer, the igloos are made from a wooden frame with animal skins and whale bones. During the winter, however, igloos are made from blocks of ice!

Inuit are the native people that live in the Arctic. You may know the term “Eskimo” for those that live in the Arctic. “Eskimo” is the Native American word for “eater of raw meat.” However, the Arctic people are officially known as **Inuit**, which means “people.” (*Inuit* is plural. *Inuk* is singular. Therefore, one person who lives here is called an Inuk.)

Inuit people carve large blocks of dry, hard snow. First, they place a circular ring of blocks on level ground. The second row of blocks are tilted slightly inward. As each row is stacked, the walls grow taller, and the blocks begin to **arch** together. The structure is a **dome**. Finally, a **key** block is placed on the top. The builders cut a hole in this key block for ventilation. This hole allows air and smoke from a fire to escape.

The entrance into the igloo is a tunnel. This prevents warm air from escaping and cold air from entering the structure. The doorway is small, and one must crawl inside.

The blocks of ice act as **insulators**. The structure traps body heat inside. There is gradual thawing on the inner walls. But, when the people leave the igloo to go hunting during the day, the hardened snow refreezes into ice. This thawing and refreezing actually strengthens the blocks.

Have fun building your igloo from sugar cubes!

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