Keep-a-Cube

Can you keep an ice cube from completely melting in 30 minutes?

1. Use the materials to make a Keep-a-Cube box that will keep an ice cube from melting. Think about what makes ice melt as you design your box. You can wrap up the ice cube, cover the box, or do anything else you can think of.

2. Put a second ice cube on a plate. This is your “control” cube. Don’t make any changes to this ice cube.

3. Wait 30 minutes.

4. Compare the ice cube in your Keep-a-Cube box to the ice cube on the plate. Which ice cube is bigger? Why?

Sent in by Becky R. of Greenfield, WI, and Billy M. of Reno, NV

What You Need
- 2 ice cubes
- cardboard box
- wax paper
- masking tape
- newspaper
- aluminum foil
- rubber bands
- paper plate

Engineering Scoop
Engineers design ways to solve problems. In this activity you designed a way to keep an ice cube from melting in 30 minutes. What makes ice melt? Heat! The air around the ice cube is warmer than the ice. So you need to keep the warm air away from the ice cube. To do this, you use insulation, a material that slows heat energy from passing through it. When we tried this on ZOOM, Caroline and Frances wrapped their ice cube in wax paper and sealed the box to keep warm air out. Eric and Rachel covered their box with aluminum foil to keep the warm air out. How did you keep your ice cube from melting?
Have you ever been in a room that’s too hot or too cold? Imagine if you could control the temperature so that it’s just right for you. Engineers are designing homes for the future called "smart" houses. When you enter a room, sensors will detect who you are. Then a computer will make the room temperature warmer or colder, depending on what you like. Engineers like you could design new kinds of "smart" houses.