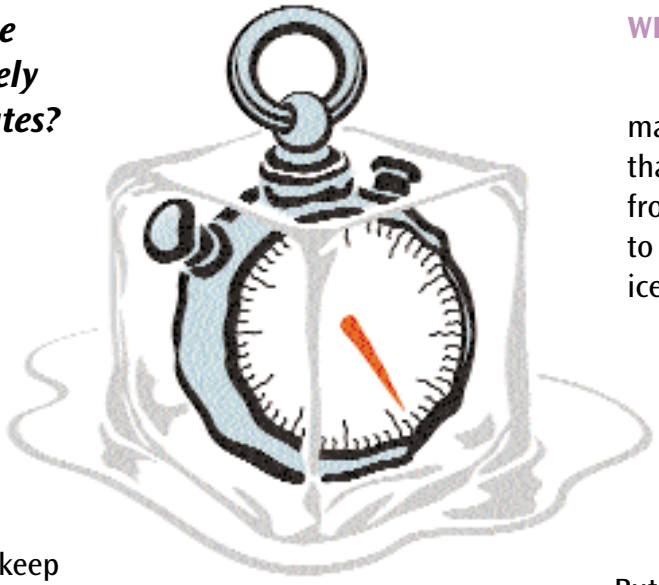
KEEP-A-CUBE

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



GRADE LEVEL

K-6

DISCUSSION

Engineers design ways to solve problems. In this activity students will engineer a way to keep an ice cube from melting for 30 minutes.

Ask students what makes ice melt? Heat! Lead class discussion to conclude that the air around the ice cube is warmer than the ice, so they need to keep the warm air away from the ice cube. Insulation is a material that slows heat energy from passing through it.

MATERIALS (per class or team)

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

WHAT TO DO

Use the materials to make a KEEP-A-CUBE box that will keep an ice cube from melting. Remind class to think about what makes ice melt as they design their box. Using one cube, they can wrap up the ice cube, cover the box, or do anything else they can think of.

Put the second ice cube on a plate. This is the control cube. Don't make any changes to this ice cube.

Wait 30 minutes. Compare the ice cube in the KEEP-A-CUBE box to the ice cube on the plate. Which ice cube is bigger? Why?

ZOOMon

Have the kids brainstorm other designs. How could they change the container so the ice cube melts more slowly? If there's time, you might want to encourage the students to repeat the activity with other insulating materials such as foam packing peanuts or cotton balls, or a different size box. Choose one thing to change (the variable) and make a prediction (hypothesis). Then re-test.