



Watts On Your Mind?

Solar energy educational activities for schools

Activity Overview

Grade Level: 3-5

Activity: UE-8

General Description

Students will design a system to prevent an ice cube from melting.

Learning Outcome

Students will cooperatively make decisions; design an insulation system to prevent an ice cube from melting; and analyze and evaluate effectiveness of various materials used for insulating

Subjects

Science, math

Process Skills

Observing, following directions

Duration

1 class period

Key Vocabulary

Insulation

Curriculum Standards

Texas (TEKS):

112.6.a.2, 112.6.b.4.11

Louisiana (LSCS):

ESS-E-B5, PS-M-C2, PS-M-C3

Arkansas (ASCF):

3.1.4

National (AAAS Project 2016):

The Designed World – 5th

Ice Cube Race

Materials

- Ice cube(s) for each group
- One container for each group
- Cup or spoon to measure water from melted ice
- Insulating materials supplied by teacher and students
- Styrofoam
- Cloth of various textures and colors
- Packing peanuts
- Aluminum foil
- Construction paper
- Tape
- Newspaper
- Bubble paper
- Paper towel

Method

Preparation

1. Discuss appropriate safety issues.
2. Provide each group with one or two ice cubes, making sure that they have the same amount and the cubes are the same size.
3. Provide each group with identical containers. (cup, glass, bowl, can, etc.)
4. Allow students to use materials of their choice to insulate the containers against heat.
5. Place insulated containers with ice cube(s) in sun.
6. After allotted time, students will measure the amount of water that has melted. The winning team will have the smallest amount of water.

Procedure

1. Place your ice cube in the container.
2. Insulate the container with your choice of materials.



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3. Record the materials you used to insulate your ice cube.
4. Place your container in the designated place.
5. Wait the designated amount of time.
6. Unwrap the container and pour out, measure, and record the amount of water from the melted ice cube.

Questions

1. What materials did you use to insulate your ice cube?

2. How did you use the materials?

3. How much water did you have in your container at the end of the designated time?

Sources of energy are all around us and come in a variety of different forms. Energy for a person is different than energy for an automobile. In this activity, the teacher demonstrates several different types of energy and assigns a research report topic for small groups of students.

Assessments

Students problem solve cooperatively. Students communicate information.