Ice Preservation

In school, the children have investigated variables which affect how quickly an ice cube will melt. In this activity you and your child will investigate material as a variable that affects ice preservation and the transfer of heat energy.

WHAT YOU NEED:
- 3 ice cubes
- one styrofoam cup
- one plastic cold cup
- one paper cup
- plastic wrap

WHAT TO DO:

1. Place one ice cube in a styrofoam cup, a plastic cup and a paper cup.

2. Cover each cup with plastic wrap.

3. Ask your child to predict in which cup the ice will last the longest. Discuss why he/she chose that cup.

4. Set all three cups in the same location.

5. Record the time at the beginning of the experiment on the chart.

6. Observe the cups. Record the time when no ice can be seen in each cup. Calculate how long it took for the ice to melt in each cup.
(End Time-Beginning Time=Total Time)
Record information on the chart.

7. Discuss reasons why the ice lasted longer in one cup than another. Compare the results with your child's prediction.

Ice Preservation Recording Chart

Cup	Beginning Time	End Time	*Total Time
Styrofoam			
Plastic			
Paper			

SUMMARY: Certain materials prevent the transfer of energy. These materials are called insulators. They are used in many areas of daily life to help conserve valuable energy.

EXTENSIONS:

Further Investigation:
- What other materials make good insulators. Try working with other insulators such as : plastic wrap, newspaper, paper towel, aluminum foil, etc.
- Set up an experiment to see if one ice cube melts faster than three? Remember to use cups of the same material. Only change the number of cubes. What would you predict? What did you discover?
- How can you get an ice cube to melt the fastest? Experiment with different sizes and shapes.
- Compare how different materials melt. Put a lump of chocolate, butter, wax from a candle and an ice cube (all about the same size) on a plate. Leave them in a warm place. What do you notice? Now, place the tray in the freezer to reverse the changes.

Literary Connections:

- Atwater, Mary et al. *Forms and Uses of Energy.* McMillan, McGraw Hill School Pub. Co., 1993.
- Challener, Jack. *Energy.* Darling Kindersley Eyewitness Books, 2000.
- Christiansen, Candace. *The Ice Horse*. Dial Books.
- Gibson, Gary. *Making Things Change.* Copper Beech Books, 1995.
- Wood, Robert W. *Physics For Kids: 49 Easy Experiments with Heat.* Tab Books.

Related Web Site:
http://www.eecs.umich.edu/~coalitn/sciedoutreach/funexperiments/agesubject/lessons/other/una2.html