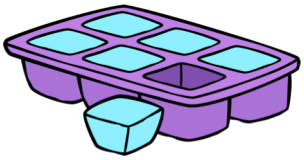

Don't Melt the Ice! Science Experiment

This is a fun science experiment that can be done with materials from around the house.

Problem: Which material provides the best insulation to keep an ice cube from melting?

Procedure: Create an insulated container for an ice cube. Start with a plastic food container with a lid. Add something to provide insulation. Suggestions: felt, stuffing (fiber fill for crafts), bubble wrap, Styrofoam, packing peanuts, craft foam, straw or wood shavings, cotton balls, etc. You can create more than one test container if you'd like.
Then create a control, or an ice cube that won't have any insulation.

Put the lids on your containers. Place your containers indoors in a spot that does not have direct sunlight or any other heat source that might affect the experiment. Check on your cubes every 10 minutes and record how much they have melted.

Which material was the best at providing insulation? How long did your ice cubes last? Did the insulation keep your ice solid for a longer time than the control? How much longer did it last?

Be careful not to handle your ice cubes too much or check on them too often. That will speed up the melting process.

Parents and Teachers: Discuss how heat is transferred from one object to another. Heat energy can be lost or transferred through conduction (one object touching another), convection (groups of molecules moving, such as a warm current of air rising), or radiation (electromagnetic waves).
This experiment is also a great opportunity to discuss what materials conduct head and which materials do not. Styrofoam is a good insulator because it is mostly air, which does not conduct heat nearly as well as metal, for example.

The recording sheet has a chart with 3 columns. Students can record results for a control and two different types of materials.

Help students consider possible sources of error such as handling the ice cubes too much, opening the container too often, etc.

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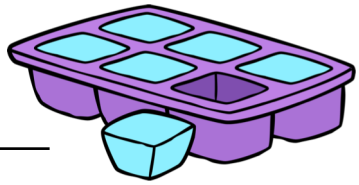
Don't Melt the Ice!

This science investigation is designed to test how well different materials do at providing insulation to keep something cold. You will design an insulated box that can keep a cube of ice from melting for the longest possible time.

What materials do you think will provide the best insulation?



_____

_____

Time Elapsed/ Materials Used			
10 minutes			
20 min.			
30 min.			
40 min.			
50 min.			
1 hour			
1 hour and 10 min.			
1 hour and 20 min.			
1 hour and 30 min.			
1 hour and 40 min.			
1 hour and 50 min.			
2 hours			
Final Time			

How long did it take the ice cube to melt completely with your best insulation?

Are there any other factors (besides the materials used for insulation) that could have affected how quickly the ice melted?

Which material provided the best insulation? Why?

How could a person use knowledge about insulation to create products in the real world? What kind of products could they develop?