



TESTING WHICH INSULATORS KEEP ICE CREAM COLD LONGEST

Question: Which insulator will keep ice cream frozen (or coldest) for the longest amount of time?



WHAT YOU NEED

- 4 identical cups or containers with lids
- Ice cream (4 equal scoops)
- Aluminum foil
- Bubble wrap
- Towel or cloth
- Cardboard or construction paper
- Rubber bands or tape
- Thermometer (food or digital)
- Timer or clock
- Pen or pencil
- Data table (on this sheet)
- Freezer



BACKGROUND

Insulators are materials that slow down the transfer of heat. They help keep cold things cold by keeping warm air out and cold air in. In this experiment, you will test different materials to see which one keeps ice cream cold the longest.

Hypothesis: Which material do you think will keep the ice cream cold the longest? Why?



PROCEDURE

1. Place 4 equal scoops of ice cream into the 4 cups.
2. Put lids on all cups.
3. Wrap each cup with a different material:
 - Cup 1: Aluminum foil
 - Cup 2: Bubble wrap
 - Cup 3: Towel or cloth
 - Cup 4: Cardboard or construction paper
4. Secure the materials with tape or rubber bands so they stay in place.
5. Place all 4 cups on the table at room temperature (away from sunlight and heat sources).
6. Start the timer.
7. Every 15 minutes, open each cup quickly and measure the temperature of the ice cream.
8. Record the temperature in the data table.
9. Continue for at least 2 hours or until the ice cream in one or more cups is fully melted.
10. Compare the results to see which insulator kept the ice cream coldest the longest.



DATA TABLE

Record the temperature (°F or °C) of the ice cream.
If it melts, write "MELTED".

Time (minutes)	Aluminum Foil (Cup 1)	Bubble Wrap (Cup 2)	Towel or Cloth (Cup 3)	Cardboard (Cup 4)
0 (start)				
15				
30				
45				
60				
75				
90				
105				
120				



ANALYSIS

1. Which insulator kept the ice cream coldest for the longest time? _____
2. Which insulator melted the fastest? _____
3. What do your results tell you about insulation? _____
4. If you were packing ice cream for a picnic, which material would you use? Why? _____



THINK LIKE A SCIENTIST!



Keep variables the same:

- ✓ Same amount of ice cream
- ✓ Same size cups
- ✓ Same lids
- ✓ Same room temperature

Change only the insulator.

