

# I'm Melting!

## Water Changes States

As you probably know, if you put ice in a drink, it cools the drink down. At the same time that the ice is cooling down the drink, it is being melted by the liquid it is in. Do you think that if you put an ice cube in hot water, it will melt at a different rate than if you put it in colder water? During this activity, you will investigate how ice melts in water.

### OBJECTIVES

In this activity, you will

- Observe the melting of ice cubes over a period of time.
- Learn about the properties of solid water and liquid water.

### MATERIALS

computer with Logger Lite software installed  
Go!Temp temperature probe  
2 cups  
ice  
room-temperature water

### PROCEDURE

1. Write a hypothesis about what will happen to the ice and the temperature of the water when you put an ice cube in room temperature water.

Hypothesis:

If I put an ice cube in water, it will \_\_\_\_\_




\_\_\_\_\_

and the temperature of the water will \_\_\_\_\_

\_\_\_\_\_

## Activity 8

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2. Make sure the Go!Temp temperature probe is connected to the computer.
3. Start Logger Lite on your computer.
4. Open the file for this activity by doing the following:
  - a. Click the Open button, .
  - b. Open the folder called "Investigating Temperature."
  - c. Open the file called "Act 08 I'm Melting."
5. Fill one of your cups about half full with room-temperature water provided by your teacher and place it in front of you on the table.
6. Put two whole ice cubes in your other cup.
7. Place the temperature probe in the water. Make sure it won't tip the cup over.
8. You will now collect data and make observations about the melting ice and the temperature of the water. You may want have one person be in charge of adding ice cubes and another to write down your observations. Someone should also be responsible for stirring the water with the temperature probe for the entire time that data are being collected.
  - a. When everything is ready, start collecting data by clicking the Collect button, .
  - b. Add one ice cube to the water. Gently stir the water with the temperature probe.
  - c. Watch the temperature on the computer screen. In the space provided on the Observations Sheet, write a few observations about the ice cube and the temperature of the water. An example has been started for you.
  - d. When the ice cube has melted completely, immediately add another ice cube, and continue stirring with the temperature probe. Write down your observations.
  - e. When the second ice cube has melted completely, click the Stop button, .
9. Dispose of your materials as directed by your teacher.



Observations Sheet

When I put the first ice cube in the water, it \_\_\_\_\_

\_\_\_\_\_. The temperature of the water \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

### ANALYZE YOUR DATA

1. Was your hypothesis correct? \_\_\_\_\_ Why or why not? \_\_\_\_\_  
\_\_\_\_\_

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2. What temperature was the water when you put in the first ice cube? Record this value in the Data Table as the "Starting temperature" for ice cube number 1. Remember, you can click the Examine button, , to find exact values of the data points.

3. What was the temperature of the water when the first ice cube had melted completely? Record this value in the Data Table as the "Ending temperature" for ice cube number 1.

4. Record the values of the starting and ending temperatures for ice cube number 2.

5. Subtract the starting and ending temperatures for the two ice cubes to find out how much the temperature decreased while each ice cube melted. Write your answers in the last column of the Data Table.

| Data Table      |                      |                    |                       |
|-----------------|----------------------|--------------------|-----------------------|
| Ice cube number | Starting temperature | Ending temperature | Change in temperature |
| 1               | °C                   | °C                 | °C                    |
| 2               | °C                   | °C                 | °C                    |

6. Look at the graph that was made during data collection. Which ice cube melted the fastest? \_\_\_\_\_

7. Why did it take longer for one of the ice cubes to melt? \_\_\_\_\_  
\_\_\_\_\_

Good job!!