

WATER-LEVEL INVESTIGATION

Part 1

Question: Does the water level change as ice floating in a beaker begins to melt? **Make a prediction.**

Materials: water, ice, 250 ml beaker, cake pan

Investigate:

1. Put two ice cubes in a 250ml beaker. Add room temperature water to make the beaker as full as possible without overflowing. Make observations as the ice melts. How did the results compare with your prediction? Explain what happened.
2. After the ice has completely melted, carefully add another ice cube to the glass. What happens? Does the water level in the glass with ice change over time?
3. Is ice more or less dense than liquid water? Explain

Part 2

Question: Does a volume of water expand when heated? **Make a prediction.**

Materials: hot plate, 250 ml beaker, small metal cake pan, water.

Investigate:

1. Follow your teacher's safety instructions when using a hot plate. Wear your safety goggles.
2. Place the cake pan on the hot plate (cool, no heat). Set the beaker in the cake pan. Fill the beaker **as full as possible** with **very cold** water (without spilling).
3. Turn the heat to the lowest setting. As the water warms, observe the water in the container carefully. Closely monitor and record all observations. How did the results compare with your prediction? Explain.

Extension:

1. Compare air temperature data (morning, noon, and evening) for a coastal area with that of an area approximately 50 to 75 miles inland. Use a local weather site (such as a television station) or a national weather site to obtain temperature readings for several different dates. What did you find? Do you think that ocean temperatures affect climate? In what way?