

Ice Lab

Purpose: To investigate the phase changes in water.

Materials:

- Hotplate
- Temperature probe and LabQuest
- USB key
- Overflow can with ice and thermometer already prepared
- Graduated cylinder

Procedure:

1. Set up the LabQuest with the temperature probe for timed event with 30 s data collection.
2. Obtain a prepared overflow can with ice and thermometer.
3. Record the initial temperature of the ice and place on the hotplate.
4. Turn the hotplate on the medium high setting.
5. Record the temperature every 30 seconds until the water has been boiling for 2 minutes.
6. Once it is possible, add the temperature probe and press run. Transfer data to a USB key.
7. Allow the can to cool.
8. Measure the volume of water using a graduated cylinder for the mass.
9. Return all equipment.

Analysis:

1. Plot the graph of temperature and time using both the temperature probe and thermometer on one set of axis. (Use Excel)
2. Calculate the change in energy per minute for the linear portion of each curve.
3. Label each section of the graph.