

Title: Changing Phases

Purpose: What happens to temperature while a substance changes phases?

Materials: 250 mL beaker, Bunsen burner, ring, ring stand, wire gauze, striker, Thermometer, water, ice, cover goggles, apron, and stirring rod, Computer.

Procedure:

1. Put on your cover goggles and apron.
2. Be Sure Logger Pro is open . Under file choose “Open”, then “Physical Science” and finally choose lab “ 02 **Boiling Temperature of Water**”.
3. Set up your equipment as shown in figure 1. **Caution: Handle the thermometer with care so that you do not burn the cord. Make sure it is out of the way.** Do not stir with the thermometer. Use stirring rod.
4. Fill the beaker about 2/3 full of ice. Get temperature probe in ice.
5. Add enough water to the beaker to cover the end of the thermometer. Press “**Collect**” on program.
6. Stir the ice water mixture very gently, using the stirring rod (not the thermometer).
7. When the temperature has *stayed* at 0 degrees Celsius for 3-4 minutes, light the burner.(you may have to ask instructor) Caution: Keep clothes, hair, and paper away from the flame. Goggles ON!!
8. Heat the beaker with a steady, low flame. Continue to collect! Stir gently to distribute heat evenly.
9. In your notebook, record the temperature at which the ice has completely melted. Continue to heat the water until it is at a **rolling** boil.
10. When boiling water, remember that steam and hot water can cause burns. *Continue* collecting for 3 minutes after rolling boiling begins.
11. “Stop” Collecting data. Label melting point and boiling point with text annotation, and Title graph. Ask to Print Graph.

Copy questions in notebook: Analysis and Conclusions:

1. What happened to the temperature of the water while the ice was melting? Explain in latent heat.(What is this? Ask!!)
2. What happened to the temperature of the water while it was boiling? Explain in terms of latent heat.

Conclusion:

Be sure to write an acceptable conclusion.

Fig 1.

