

Phase Change Lab

Materials: Beaker, Ice, Thermometer, hot plate

Task: Observe and record data on the phase change of ice to water to steam

Predictions:

- 1) What will happen to the water? To the ice?
- 2) Are you adding or subtracting energy during this experiment?

Procedure:

- 1) Fill a 300 mL beaker with crushed ice.
- 2) Put a thermometer in the ice.
- 3) Record the temperature of the ice every 30 seconds. Continue to record the temperature for 10 minutes.
- 4) Once the ice melts, turns to water begins to increase in temperature, place the water on the hot plate.
- 5) Turn the hot plate up to 7.
- 6) Continue to record the temperature of the water for 20 more minutes.
- 7) Use the back of this paper to prepare a line graph comparing time versus temperature.

Answer the following questions:

- a) What was the initial temperature of the water? _____ Celsius
- b) What was the highest temperature that the water reached? _____ Celsius
- c) What was the temperature of the water as the ice was melting? _____ Celsius
- d) What were the phase changes that you were observing? (liquid to gas, liquid to solid, solid to liquid, gas to liquid, etc.)

- e) Can you explain the temperature change (or lack of temperature change) as the ice was melting? As the water was heating up?

- f) Describe the physical changes you observed and the energy associated with those changes.

Data Table

Time	Temperature of Water	Time	Temperature of Water	Time	Temperature of Water	Time	Temperature of Water	Time	Temperature of Water
:30		6:30		12:30		18:30		24:30	
1:00		7:00		13:00		19:00		25:00	
1:30		7:30		13:30		19:30		25:30	
2:00		8:00		14:00		20:00		26:00	
2:30		8:30		14:30		20:30		26:30	
3:00		9:00		15:00		21:00		27:00	
3:30		9:30		15:30		21:30		27:30	
4:00		10:00		16:00		22:00		28:00	
4:30		10:30		16:30		22:30		28:30	
5:00		11:00		17:00		23:00		29:00	
5:30		11:30		17:30		23:30		29:30	
6:00		12:00		18:00		24:00		30:00	

Graph

Temperature (Celcius)

Time (minutes)