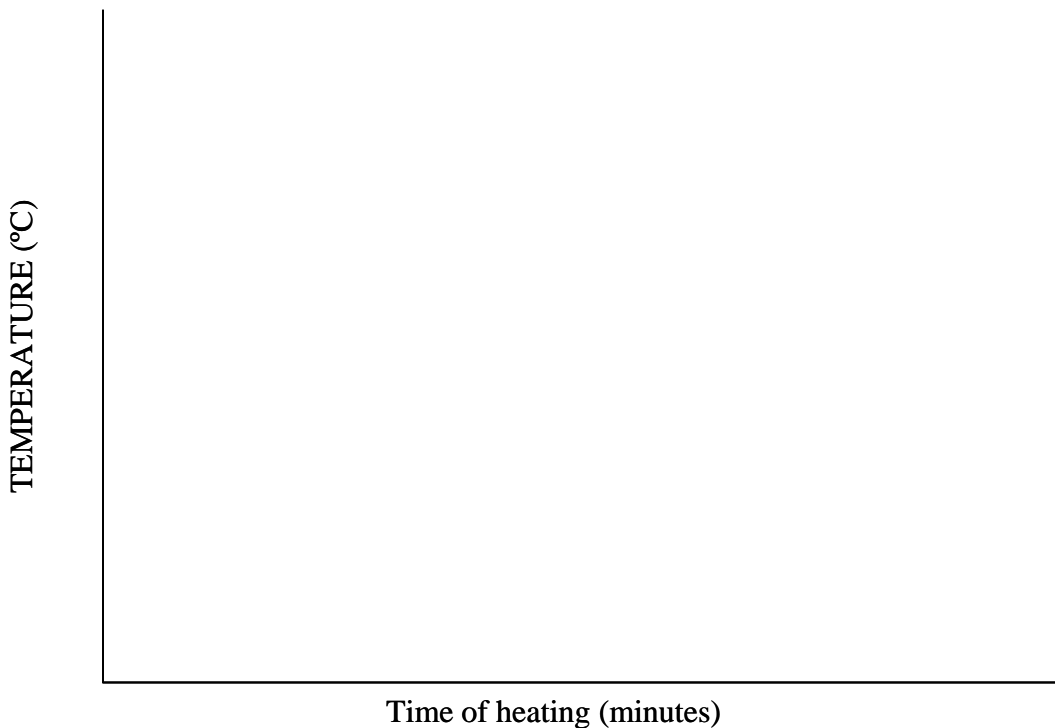


## ICY HOT LAB

In the following chart sketch your prediction of what will happen to the temperature of the system as you start heating it. Include any relevant temperatures.

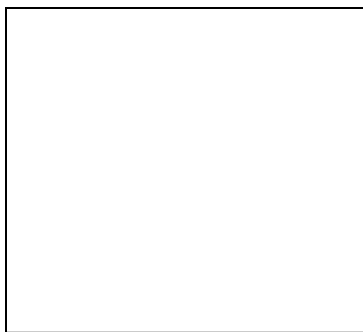


Explain your reasoning behind your prediction:

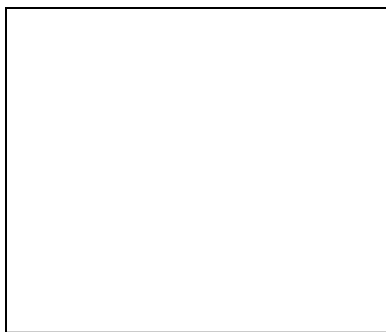
The following questions will guide you through the investigation. As the experiment progresses you should write down your observations and think about and answer the questions below.

- 1) Start heating the beaker. As you heat the beaker with a gentle flame, while stirring constantly, what is happening to the temperature of the system?
- 2) What phase(s) are present in the beaker?

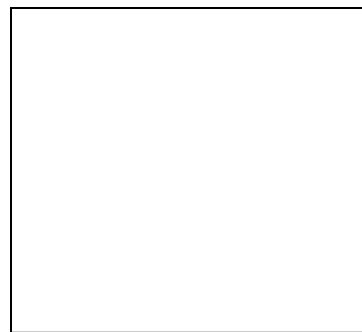
3) Using the boxes below, draw at the particle level the changes occurring as the ice melts



Ice and a little water  
Temperature =  
Time =



Half ice – half water  
Temperature =  
Time =



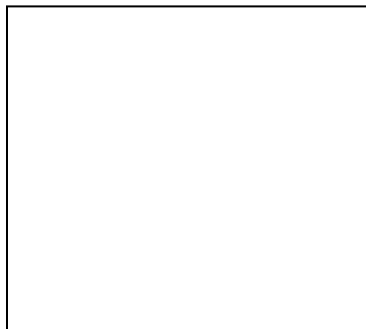
All water  
Temperature =  
Time =

4) What happens to the kinetic energy of the system as the ice is melting? Why?

5) When all the ice has melted, what happens to the temperature of the system?

6) What phase(s) is (are) present in the beaker?

7) Using the boxes below, draw at the particle level the changes occurring as the water heats up



Ice just melted  
Temperature =  
Time =



Water at room temperature  
Temperature =  
Time =



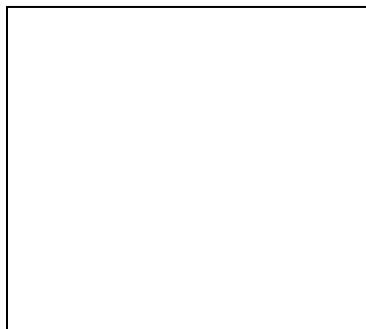
Hot water  
Temperature =  
Time =

8) What happens to the kinetic energy of the system as the water is heating? Why?

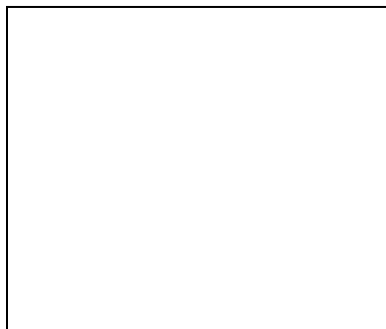
9) When the water starts boiling, what happens to the temperature of the system?

10) What phase(s) is (are) present in the beaker?

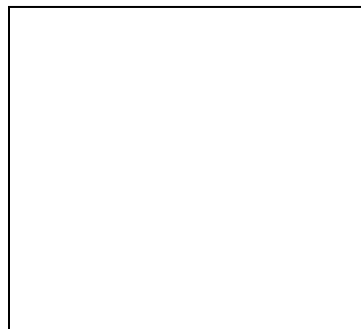
11) Using the boxes below, draw at the particle level the changes occurring as the water boils



Water starts boiling  
Temperature =  
Time =



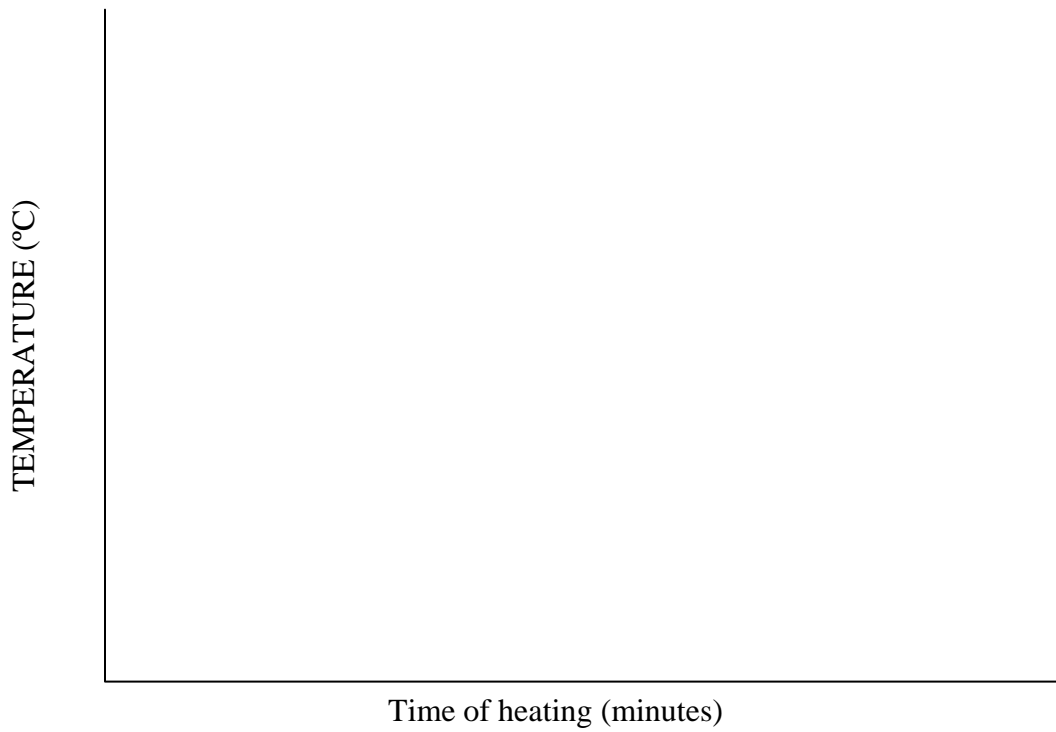
Water boiling  
Temperature =  
Time =



More water boiling  
Temperature =  
Time =

12) What happens to the kinetic energy of the system as the water is boiling? Why?

Sketch the graph that you obtained as you collected data.



How is the curve you obtained different from your prediction?

Divide your heating curve into three sections. For each section, state what phases were present.

- A) a low temperature plateau
- B) an area of temperature change
- C) a high temperature plateau