

The Heat is On



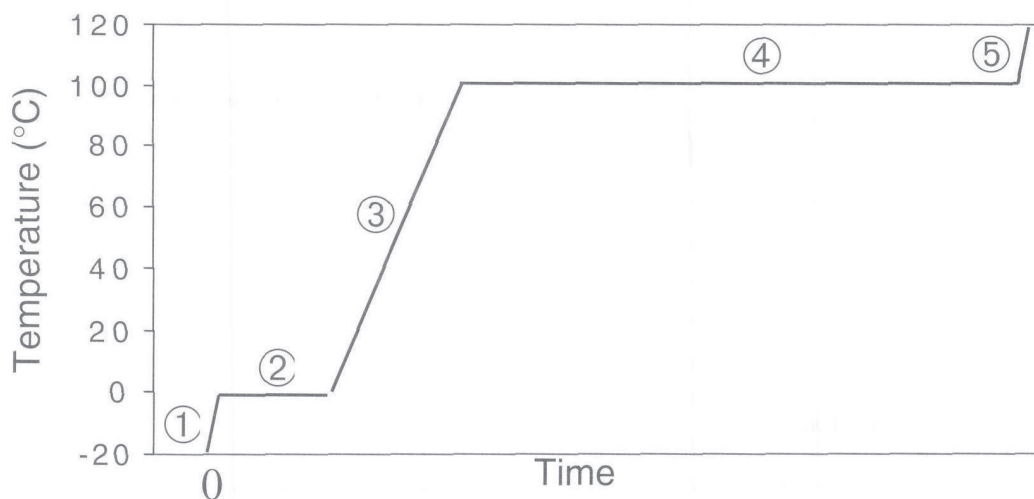
Name: _____

Period: _____ Date: _____

Purpose: This lesson processes the heating curve of water in greater detail, examining what is happening at each stage.

Heating curve of water

A graph of the heating curve for water is shown below. The graph is not to scale but it is drawn to emphasize differences in the amount of time required for each of the 5 steps.



Refer to the drawing to answer the following questions.

- For each of the five stages shown on the graph, list what phase or phases are present:

Stage One:	Stage Four:
Stage Two:	Stage Five:
Stage Three:	
- Label where each of the following is happening on the graph: melting, boiling, heating.
- Describe what is happening at Steps 2 and 4 on the graph where the temperature does not change for a period of time.
- What is happening when the line is slanted?
- At what point on the graph is all of the ice gone?
- At what point on the graph is all of the liquid gone?

7. If you have more than one phase of water present what does it tell you about the temperature of the water?
8. If you have only one phase of water present what do you know about the temperature of the water?
9. What patterns do you see in the heating curve?
10. Do you think other heating other substances and plotting temperature vs. time would result in a similar pattern or heating curve? Why or why not?
11. Look at the graph from the previous class. For the same amount of water, does it take more heat to melt ice, or to boil water completely. Explain your thinking.

Making sense question

Explain in your own words what you think the difference is between heat and temperature.

If you finish early:

Look at the graph from the previous class. Does it takes more *time* to increase the temperature of 10 grams of ice or 10 grams of liquid water by 10° . Explain your answer.