Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_\_

**REVIEW STATION 2: States of Matter**

1. Ask your teacher to fill your 800 mL beaker full of ice to about the 500 mL mark.
2. Place the beaker onto the hotplate and adjust the thermometer so it is held about halfway into the ice. Record the initial temperature in the table below:

|  |  |  |  |
| --- | --- | --- | --- |
| **Time (minutes)** | **Temperature (Celcius)** | **Time (Minutes)** | **Temperature (Celcius)** |
| Initial (O minutes) |  | 7 minutes |  |
| 1 minute |  | 8 minutes |  |
| 2 minutes |  | 9 minutes |  |
| 3 minutes |  | 10 minutes |  |
| 4 minutes |  | 11 minutes |  |
| 5 minutes |  | 12 minutes |  |
| 6 minutes |  | 13 minutes |  |

1. Set the timer for 1 minute and answer the questions below while you wait. After each minute, record the temperature in the box above. Continue answering the questions as you wait.

**Box A Box B Box C**

1. Which box:
	1. Has a fixed volume but not a fixed shape and

takes the shape of its container? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* 1. Has a fixed volume and fixed shape? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. Does not have a fixed volume nor fixed shape? \_\_\_\_\_\_\_\_\_\_\_\_\_\_
1. Which phase of matter does each box represent?

 Box A: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Box B: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Box C: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Rank the motion of the particles from **fastest** to **slowest** in boxes A, B, and C.
2. Describe the motion of the particles in the three common states of matter using at least 1 sentence for each.
3. Complete the venn diagram comparing the F. Fill in the phase changes in the

three states of matter: diagram below:

**Gas**

**SOLID**

**LIQUID**

**GAS**

**Liquid**

**Solid**

1. Give an example of each of the following phase changes:
	1. Melting \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. Freezing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. Vaporization \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	4. Condensation \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	5. Sublimation \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	6. Deposition \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What is the definition of an **exothermic** reaction?
3. Which of the phase changes above are exothermic?
4. What is the definition of an **endothermic** reaction?
5. Which of the phase changes above are endothermic?



K. In what part of the curve would substance X have a definite shape and definite volume?

L. In what part of the curve would substance X have a definite volume but no definite shape?

M. In what part of the curve would substance X have no definite shape or volume?

Temp (oC)

N. What part of the curve represents a mixed solid/liquid phase of substance X?

O. What part of the curve represents a mixed liquid/gas phase of substance X?

P. What is the melting temperature of substance X?

Q. What is the boiling temperature of substance X?

R. What part of the curve would have the largest kinetic energy?

S. What part of the curve would have the lowest kinetic energy?

T. In what part of the curve would the molecules of the substance bet he farthest apart?

**\*\*\*POST LAB:** What do you notice about the temperature of the ice/water over time? How does this compare to the graph above?