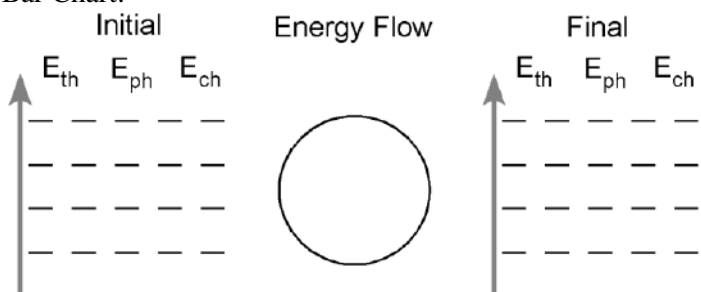


## Unit 3 - Worksheet 2 – Energy Bar Chart Extensions

- A. For each of the situations described below, draw a Temperature-Time graph for the situation.  
 B. Then use an energy bar chart to represent the ways that energy is stored in the system and flows into or out of the system.  
 C. Beneath the diagram, describe how the **motion** and/or **arrangement** of the particles is **changing** in the given situation.
1. A pan of water ( $25^{\circ}\text{C}$ ) is heated to water's boiling point and some of the water is boiled away. Do **separate** energy bar charts below for each stage of the process.

A. Temp/Energy Graph:

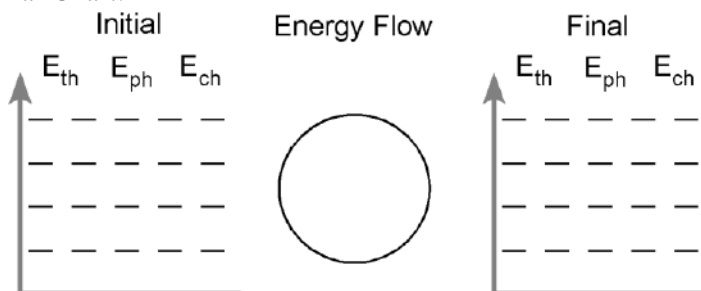
B. Bar Chart:



C. Molecule Description:

A. Temp/Energy Graph:

B. Bar Chart:

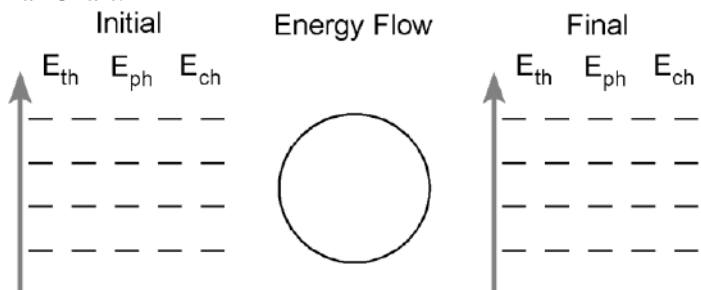


C. Molecule Description:

2. You spill water on your shirt and some of it evaporates.

A. Temp/Energy Graph:

B. Bar Chart:

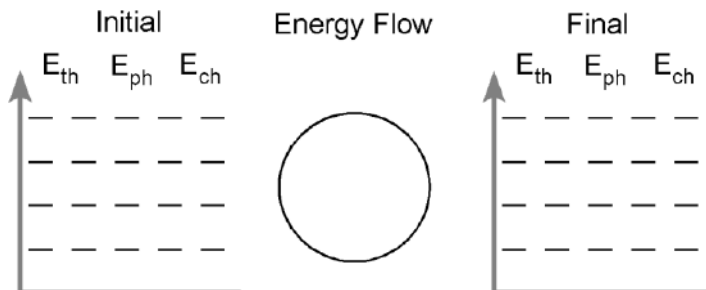


C. Molecule Description:

3. Water vapor in the room condenses on a cold surface

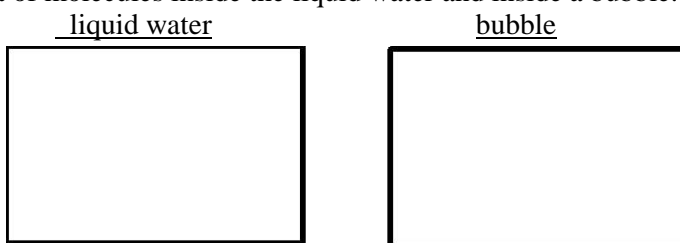
A. Temp/Energy Graph:

B. Bar Chart:



C. Molecule Description:

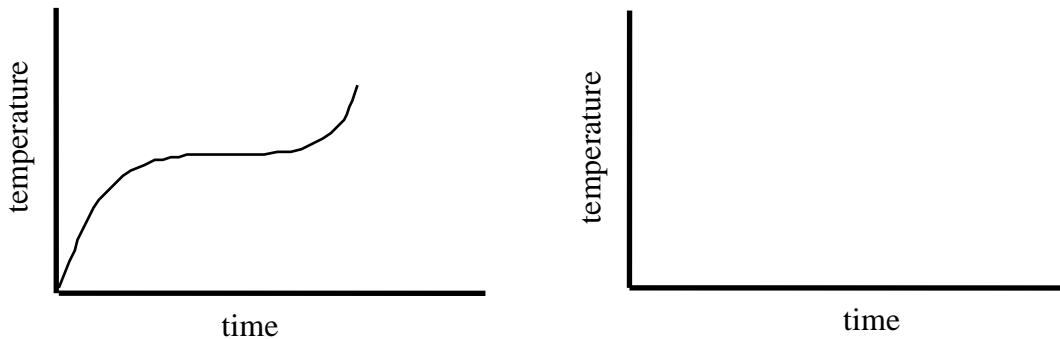
4. During the boiling in the icy hot lab, bubbles appeared in the liquid water. In the boxes below represent the arrangement of molecules inside the liquid water and inside a bubble.



What is inside the bubble? Why do you think so?

5. Suppose the burner under the pan of boiling water is turned to a higher setting. How will this affect the temperature of the water in the pan? Explain.

6. The graph below left represents the heating curve for a liquid heated from room temperature to a temperature above its boiling point.



- Sketch the heating curve for a larger sample of the same liquid.
- Label which phase (or phases) of the substance is present in each of the three portions of the heating curve.
- Describe how the **arrangement** and **motion** of the molecules changes during each portion of the graph: