**Change of State Notes Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class \_\_\_**

Changes of state are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes in matter. They are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes that do not involve matter’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ makeup or chemical \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Use Figure 1.2 to fill in the diagram**

LIQUID

SOLID

GAS

**Energy, Temperature, and Changes of State**

Energy is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ involved in changes of state. Matter either \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy when it changes from one state to another.

**Changes Between Liquids and Solids**

The process in which a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is called **freezing**. The temperature at which a liquid changes to a solid is its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The process in which a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is called **melting**. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the temperature at which a solid changes to a liquid.

For a given type of matter the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ point is the \_\_\_\_\_\_\_\_\_\_\_\_\_ as the \_\_\_\_\_\_\_\_\_\_\_\_\_ point.

**What is the melting point and freezing point of water?**

**Changes Between Liquids and Gases**

The process in which a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ boils and changes to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is called **vaporization.** The temperature at which a liquid boils is its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can change to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ without boiling. This is called **evaporation.**

The process in which a gas changes to a liquid is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. A gas condensed when it is cooled below its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Changes Between Solids and Gases**

The process in which a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ changes directly to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is called **Sublimation.**

**In the example of snow going through sublimation, what gas does the solid snow become?**

The opposite of sublimation is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This is the process in which a gas changes directly to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ without going through the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ state.

**Questions (Answer in complete sentences)**

1. Identify the processes involved in changes of state between liquids and solids.
2. Define vaporization and evaporation. State how the two processes differ.
3. Cliff opened the oven door to check on the cake he was baking. As hot, moist air rushed out the oven, his eyeglasses steamed up. Explain why.
4. Explain the role of energy in changes of state.
5. Form a hypothesis to explain why the melting points of different solids vary.