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

**Science 8 Notes Package (2.3.3 Changes of State)**

A **change of state** is when matter transforms from one state to another. Examples:

* Liquid water becoming solid water (ice)
* Solid gold becoming liquid gold

*Complete the diagram below using the word bank. Use colour to show increases and decreases in energy.*

Word Bank:

Sublimation; Deposition; Vaporization; Condensation; Freezing; Melting; Gas; Solid; Liquid

**Temperature** is a measure of the average \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of particles in a substance.

* Kinetic energy: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* If you add kinetic energy to matter, its temperature will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* If you remove kinetic energy from matter, its temperature will \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Change of state:**

* *Warming*: heat energy converted to kinetic energy and makes particles move faster.
* *Phase change*: heat energy used to overcome attraction forces between particles

**Science 8 Notes Package (2.3.4 The Kinetic Molecular Theory Explains Physical Changes and Properties)**

What is **dissolving** (e.g. when sugar dissolves in water and ‘disappears’)?

What is **diffusion**?

Solids, liquids, and gases \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when heated, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when cooled.

**Thermal expansion**: the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Practice Questions:**

Use the KMT to explain why a balloon in a hot car will expand and may eventually pop.

Use the KMT to explain what happens when salt dissolves in water.