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**Year 8 Science**

**Term 2: Chemistry**

***Year 8 Chemistry Learning Outcomes***

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| /5 | **1.** List the five points of the Particle model of matter   * **All matter is made up of very tiny invisible particles.** * **Particles have kinetic energy and are always moving** * **Spaces exist between particles and the size of the space depends on the state** * **As temperature increases, the kinetic energy (movement) of particles increases.** * **Particles are held to each other by forces of attraction. The strength of these forces (along with the temperature) determine the state of the matter (solid, liquid, gas). Solids have strong forces of attraction so are held tightly together. Gases have very weak forces of attraction so particles move freely** |
| /4 | **2.** Use the points of the particle model to explain the following  **a)** Solids have a fixed shape but liquids and gases can change shape depending on the container they are in.  **Solids have strong forces of attraction so the particles are held tightly together and they cannot move to change shape. In Liquids and gases the particles can move so liquids and gases can change their shape.**  **b)** Gases are easily compressed, but solids and liquids are not.  **Gases have a lot of spaces between the particles, so when compressed the particles can easily move closer together. In liquids and solids there is not a lot of space between the particles so the particles cannot move closer together when compressed.**  **c)** Gases and liquids can flow and can be poured, but solids cannot.  **Similar answer to a). The particles in liquids and gases are NOT held tightly together, so the particles can move easily and flow over each other when they are poured. In solids, the particles are locked in placed so they cannot flow over each other when poured.**  **d)** When you heat a solid it will eventually change into a liquid.  **When the particles are heated the move faster. The particles can move fast enough to break the forces of attraction between them and move apart. This makes the particles act more like a liquid rather than a solid – the solid melts.** |
| /10 | **3.** Complete the following Particle model diagram with the following words – liquid, gas, solid, evaporation, freezing, melting, boiling, condensing, sublimation, heating (twice), cooling (twice).  **Melting (heating) Boiling / evaporation (heating)**  **SOLID LIQUID GAS**  **Sublimation**  **Freezing (cooling) condensation (cooling)** |