REVISION WORKSHEET 3:

Sub-strand 2.1 States of Matter

Day One

Achievement Indicator:

- Describe and illustrate the change in state of matter when adding and removing energy using the particle model.

Question:

1. Particles in a solid are

   A. far apart and able to move.
   B. close together and able to move.
   C. far apart and vibrating in one place.
   D. close together and vibrating in one place.

2. When water changes from liquid to solid (ice), how can this be explained using the particle model of matter?

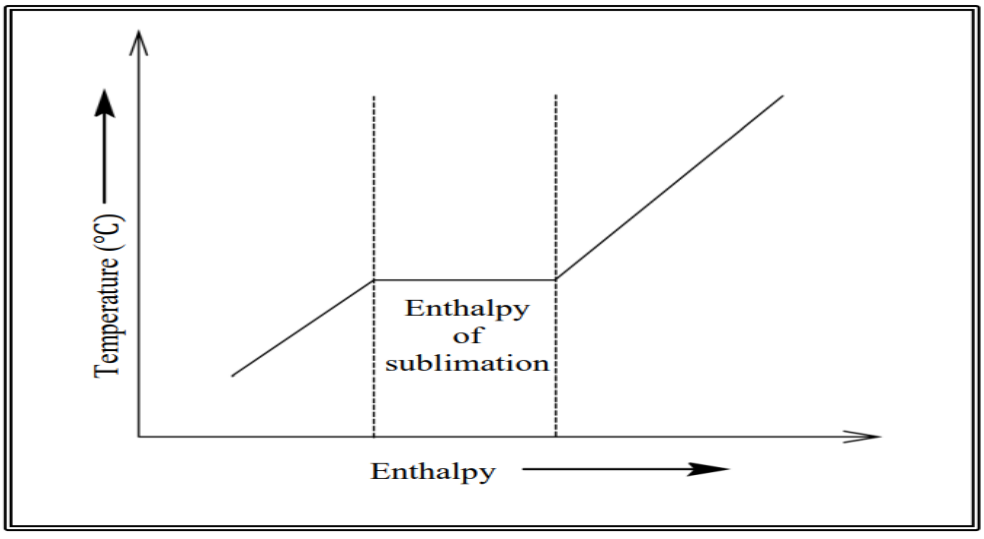
Day Two

Achievement Indicator:

- Formulate and explain the heating and cooling curves of ice (water vapour) and naphthalene.

Question.

The graph below shows change in temperature and state of naphthalene as heat energy (enthalpy) is applied. Study the graph carefully and use it to answer the questions that follow.



i) Write a suitable title for the graph shown above.

ii) Describe the change in state that is happening.

Day Three

Achievement Indicator:

- Measure and compare the densities of solids, liquids and solutions.

Questions

1. A rock has a mass of 210 g and occupies a volume of 70 cm3. What is its density?

2. A rock has a density of 4 g cm-3 and a mass of 16 g. What volume does this rock occupy?

3. Pure water has a density of 1.0 g cm-3 and ocean water has a density of 1.025 g cm-3. Why are the densities different?

Day Four

Achievement Indicator:

- Compare and explain the relationship between temperature and density of liquids and solutions.
- Evaluate and discuss the relationship between density and concentration of solutions.

Question:

1. Explain the effect of temperature on the density of a substance.

2. Explain the effect of concentration on the density of a substance

Day Five

Achievement Indicator:

- State and describe the diffusion of gas using gas particles behaviour.
- Show and explain gas pressure using the particle model when temperature or pressure changes.

Questions:

1. Gas pressure is caused by:

   A. The weight (mass) of the molecules of gas.
   B. The repulsion between gas molecules.
   C. The collision of the molecules with the walls of the container.
   D. The kinetic energy of the gas molecules.

2. Name a quantity that needs to be kept constant when studying the relationship between pressure and volume of a fixed mass of gas.

3. Using kinetic theory of gases, explain how a dented, uncracked table tennis ball can be brought back into its original shape.