

DAY 1

TOPIC: PARTICLES

Aim : Use the kinetic theory model to explain the expansion of solids, liquids and gases on heating.

Activity 1:

Watch video V.15: Expansion of solids.

Answer the following questions, in your exercise book.

1. Does the ball go through the ring before it is heated?
2. After heating the ball for 5 minutes, can the ball still go through the ring?
3. What has the heat done to the ball?
4. A solid _____ when it heated and _____ when it is cooled.

Activity 2:

Watch video V.16 : "Expansion of liquids and gases."

Answer the following questions, in your exercise book.

Gases

The small clear bottle is filled with air (gas) and the red drop of oil is placed inside the straw to indicate the volume or space occupied by the air, inside the small bottle.

1. Describe what happens to the red drop of oil when the bottle is placed in: a) hot water b) cold water.
2. Explain why the drop of oil moves: a) up b) down.
3. This experiment proves that gases _____ when heated and _____ when cooled.

Liquids

1. Describe what happens to the red coloured water, when the small bottle is placed in hot water.
2. Explain what is happening to the volume of the coloured water when it is placed in hot water.
3. This shows that liquids _____ when they are heated.
4. Describe what happens to the coloured water when the bottle is placed in cold water.
5. Explain what is happening to the volume of the coloured water, when it is placed in cold water.
6. This shows that liquids _____ when they are cooled.

Activity 3:

When heated under the same conditions, gases expand more than liquids which expand more than solids. Complete the table below to show the difference in the expansions of a solid, a liquid and a gas.

State	Expansion (large, moderate, small)	Reason (use kinetic theory of particles)
Solid	Small	Very strong force holding the particles together. Particles do not move far apart, they only vibrate, thus expanding the solid a little, then move back to their original positions.
Liquid		
Gas		