



# LITTERA PUBLIC SCHOOL

## CLASS IV

## CHAPTER 10

## SCIENCE

### Solids, Liquids and Gases

Matter- Anything that occupies mass and takes up space is called matter.

Mass- Mass is the measure of material that the substance contains.

Molecules - Tiny particles that make up matter are called molecules.

Matter has three states- solid, liquid, gas.

Solids- Substances with molecules packed closely together. They are arranged in a tight, regular pattern with very little movement. This is why

- they have a definite shape.
- They have a fixed volume.
- They have a fixed shape but if we apply force we can bend or break it.

Examples- Table, Chair, Pencil, Book

Liquids- Substances where molecules move comparatively freely than solids. The molecules remain close to one another though not in a definite arrangement. This pattern allows the liquid to change its shape.

- They do not have a fixed or definite shape but a fixed volume.
- They occupy the shape of the container.
- They can be poured and can flow.

Example – Milk in a glass takes the shape of the glass.

Gases- Substances with particles packed loosely. They are wide apart from each other. They move rapidly and maintain large spaces between each other. They move rapidly and maintain large spaces between each other. They spread out to fill the available space. Gases can be compressed easily and made to flow in particular direction.

- Gases have fixed shape.
- Gases have no fixed volume
- Gases fill the space of the vessels
- Gases flow more easily than liquids.

Solute- The solid part or the part that is to be dissolved in the solvent.

Solvent- The liquid part or the part that dissolves the solute.

Solution- The new substance, produced from the mixture of the solute and solvent is called solution.

Example- Sugar(Solute) + Water

(Solvent) = Sweet Water( Solution).

Soluble substances-

The substances that dissolve completely in water are called soluble substances.

Example- Sugar, turmeric

Insoluble substances- The substances that do not dissolve in water are called insoluble substances.

Example- Stone, chalk powder, sand .

Miscible liquids- Some liquids such as juice, water , milk etc. that easily dissolve in water are called miscible liquids.

Immiscible liquids- Liquids such as oil and petroleum do not dissolve in water. They are lighter than water and hence float on water. Such liquids are called immiscible liquids.

Melting- The process of changing solid into a liquid state is called melting.

Example when an ice cube is kept in the open it melts into water.

Condensation- The process of changing a gas into its liquid form is called condensation.

Example- Water vapour when cooled down it changes into water.

Evaporation- The process of changing liquid into its gaseous form is called evaporation.

Example- Water when gets heated it changes into water vapour.

Physical change- A change that affects the size, shape and the state of the matter and does not form any new substance is called temporary or physical change.

Example- A candle is heated, the solid wax breaks apart and the molecules move apart . Solid wax becomes a liquid but no new Substance was formed.

Chemical change- During heating and cooling when a new substance is formed. The substances undergoes for a permanent or chemical changes .

Example- On burning a block of woos, a charcoal is formed . Wood undergoes a chemical change to form a new substance called charcoal. This we can say chemical change has taken place.