

Properties of Matter and Materials

Matter : **Matter** is everything around you.

Matter is defined as anything that has mass and takes up space

Material: Material is the substance of which a thing is made.

Properties of Matter

Matter exists mainly in one of the three states. Solid, Liquid & Gas.

(A) Properties of solids:

- i. In solid, particles are tightly packed.
- ii. The gaps between particles are tiny.
- iii. Solid has fixed shape and volume.
- iv. They are hard to compress.
- v. It is rigid in nature.

Eg: Ice, rock,
Wood.

Examples of Solids

- ICE
- CHEESE
- BRICKS
- WOOD
- WATCH
- DIAMOND
- GLASS



(B) Properties of liquids:

- (i) The molecules of liquid are loosely packed.
- (ii) Liquids have fixed volume but do not have definite shape .
- (iii) They can be compressed.
- (iv) They take up the shape of the container (they can change its shape).
- (v) They are fluid and thus can flow like water.

Eg: Water, milk, juice

Examples of Liquids

- **JUICE**
- **WATER**
- **OIL**
- **MILK**
- **SOFT DRINKS**
- **VINEGAR**



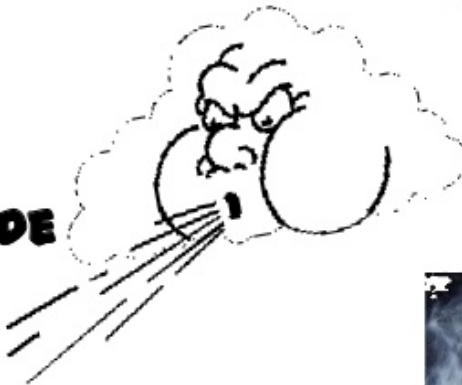
(C) Properties of gas:

- (i) The molecules of gas are very loosely packed.
- (ii) Gases neither have definite shape nor have fixed volume.
- (iii) They can be compressed much more easily than liquid or solid.
- (iii) They can take any shape.
- (iv) They are neither rigid nor fluids.

Eg: Vapour, Air, smoke

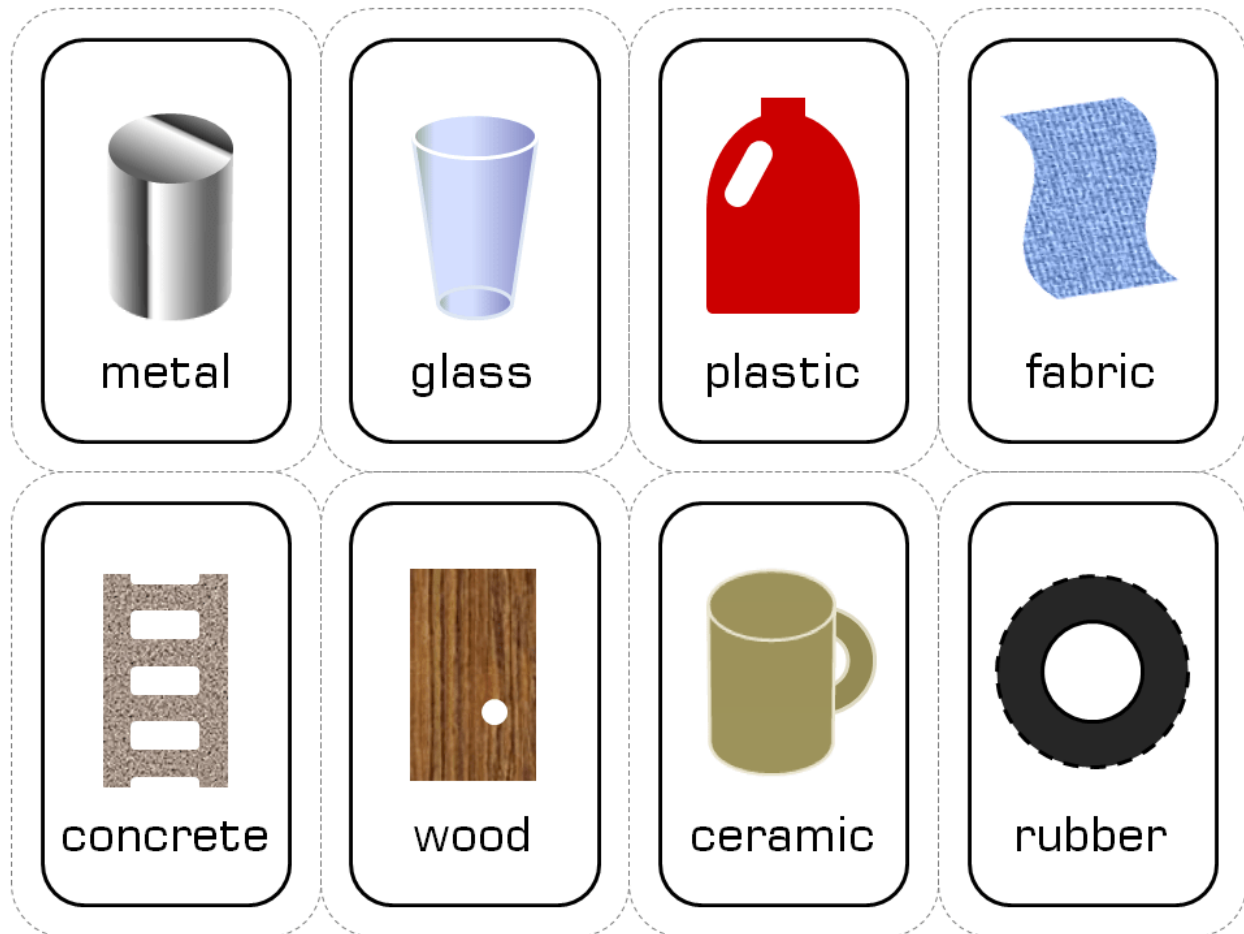
Examples of Gases

- **STEAM**
- **SMOG**
- **OXYGEN**
- **CARBON DIOXIDE**
- **TEAR GAS**
- **HELIUM**



Materials: Material is the substance of which a thing is made.

Types of material



Properties of material

Different materials have different features and ways of behaving. These are called properties. For example, steel is hard. Wool is soft.

Other properties include how strong, stretchy, or flexible (bendy) a material is. What color is it? Is it see-through? Does it float? Does it burn easily? Does it feel warm or cold to touch? Does it conduct (carry) electricity.

Chart on Properties of Material

	Plastic	Glass	Metal	Wood	Fabric	Rubber
Hard/soft	Hard/ Soft	Hard	Hard	Hard	Soft	Hard/Soft
Stretchy/ rigid	Stretchy/ Rigid	Rigid	Rigid	Rigid	Stretchy/ Rigid	Stretchy
Brittle (breakable)/ Tough	Tough/ Brittle	Brittle	Tough	Tough	Brittle / Tough	Brittle / Tough
Transparent/ Opaque	Transparent/ Opaque	Transparen t	Opaque	Opaque	Opaque	Opaque
Absorbent/ Waterproof	Water Proof	Water Proof	Water Proof	Water Proof	Absorbent	Water Proof
Float/sink	Float/Sink	Sink	Sink	Float	Sink	Sink
Conductor/n on-conductor	Non Conductor	Non Conductor	Conducto r	Non Conducto r	Non Conductor	Non Conductor