

# 3 States of Matter

Everything around us is made of matter. Matter is anything that has mass and takes up space. Matter exists in three main states: solid, liquid, and gas. Sometimes, under special conditions, matter can also exist as plasma, but most of what we see every day is solid, liquid, or gas.

## **1. Solids:**

Solids have a fixed shape and volume. This means they do not change shape unless you cut, break, or melt them. Examples of solids include wood, rocks, ice, and metal. The particles in solids are tightly packed and can only vibrate in place, which is why solids keep their shape.

## **2. Liquids:**

Liquids have a fixed volume but no fixed shape. They take the shape of the container they are in. Examples include water, milk, and juice. The particles in liquids are close together but can move around freely, which allows liquids to flow and pour.

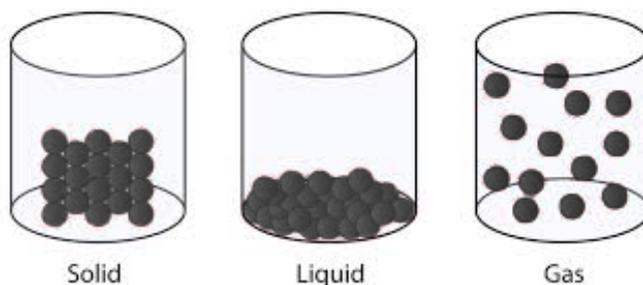
## **3. Gases:**

Gases have no fixed shape or volume. They expand to fill the entire space available. Examples include air, oxygen, and carbon dioxide. The particles in gases are far apart and move very quickly, which is why gases can spread out easily and are often invisible.

## **Changes in States:**

Matter can change from one state to another. When a solid melts, it becomes a liquid. When a liquid evaporates, it becomes a gas. When a gas cools, it can condense into a liquid. Freezing changes liquids into solids, and sublimation is when solids change directly into gas. These changes happen because of temperature changes.

Understanding states of matter is important in science because it explains why things behave the way they do and helps us in daily life, from cooking to storing food and even understanding weather.



## A. Multiple Choice (Choose the correct answer):

Which state of matter has a fixed shape and volume?

- a) Solid
- b) Liquid
- c) Gas
- d) Plasma

Which state of matter takes the shape of its container but keeps its volume?

- a) Solid
- b) Liquid
- c) Gas
- d) Plasma

Which of these is a gas?

- a) Ice
- b) Water
- c) Air
- d) Rock

What is it called when a solid changes directly into a gas?

- a) Condensation
- b) Sublimation
- c) Evaporation
- d) Freezing

B. True or False:

5. The particles in a solid are tightly packed and only vibrate in place. \_\_\_\_\_
6. Liquids can flow because their particles move freely. \_\_\_\_\_
7. Gases have a fixed volume. \_\_\_\_\_

**8. Give two examples of solids, liquids, and gases.**

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**9. What happens to a liquid when it evaporates?**

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**10. How does freezing change the state of matter?**

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**11. Why do gases spread out to fill a container?**

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**12. Name one way understanding states of matter is useful in daily life.**

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