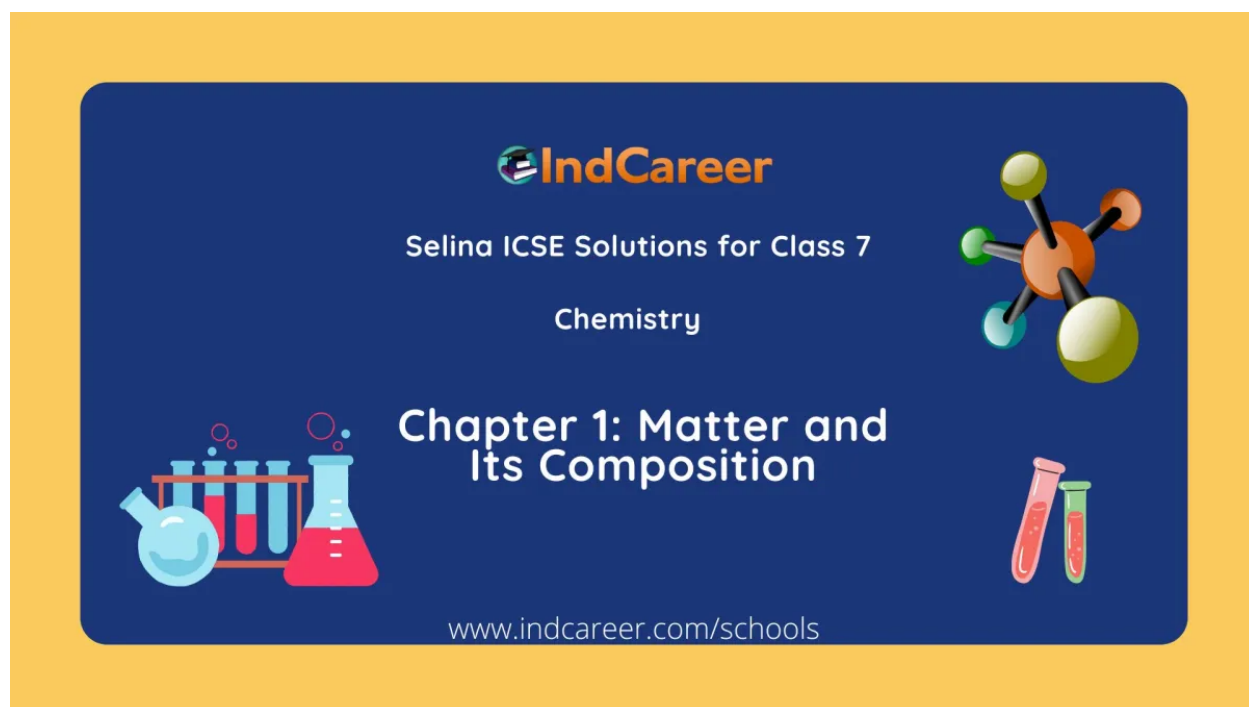


# Selina Class 7 ICSE Solutions Chemistry :

## Chapter 1- Matter and Its Composition



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# Selina Class 7 ICSE Solutions Chemistry :

## Chapter 1- Matter and Its Composition

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### Selina Class 7 ICSE Solutions Chemistry : Chapter 1- Matter and Its Composition

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#### EXERCISE

##### Question 1.

Define matter.

**Answer:**

Anything that has mass and occupies space is called matter.

##### Question 2.

What is the difference between mass and weight.

**Answer:**

Mass is the “quantity of matter” and weight is “the force with which the earth pulls a body towards itself”. The mass of a body does not change but its weight changes from place to place.

##### Question 3.

If an object weighs 6 N on earth what will be its weight on moon. What will be the change in its mass?

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**Answer:**

Weight of body on moon = 16th of its weight on earth.

∴ Body will weigh 16 of 6 =  $16 \times 6 = 1 \text{ N}$  on moon

Mass of a body does not change with change in gravity. So mass of a body will remain the same on moon.

**Question 4.**

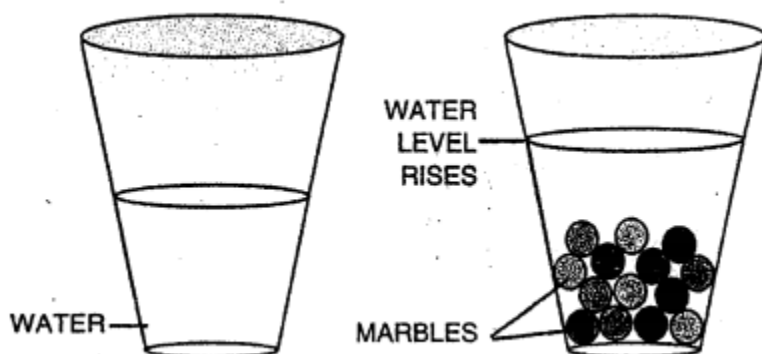
Write your observation and conclusion for the following:

(a) When few marbles are put in a glass half filled with water.

(b) Ice is kept at room temperature.

**Answer:**

(a) Take some marbles and put them into the water of glass tumbler one by one. After some time you will notice that water level crosses the mark and rises. This is because the marbles occupy space. Again weigh the glass with the marbles. You will find that the second mass is greater than the first one. This proves that, marbles have mass.



This proves that, matter has mass and occupies space.

(b) Ice when kept at room temperature again changes back into liquid water.

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**Question 5.**

State three main characteristics of the particles of matter.

**Answer:**

Characteristics of Matter

1. It can neither be created nor destroyed.
2. It is composed of a particular material which can either be Homogeneous or Heterogeneous.
3. Matter has, volume, mass and weight as per their state.

**Question 6.**

Differentiate between an atom and a molecule.

**Answer:**

| Atom                                                                           | Molecule                                                                |
|--------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| It is the smallest part of an element. It does not have independent existence. | It is the smallest part of a compound. It has an independent existence. |

**Question 7.**

Define :

- (a) Solid
- (b) Liquid
- (c) Gas

**Answer:**

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Giving two examples of each type.

**(a) Solid :** A solid is that state of matter which has a fixed shape, mass and volume. It suffers very small changes in volume by changing the temperature. It can not be compressed,

**e.g.** – Sand, Wood, Copper, Ice, etc.

**(b) Liquid :** It has a definite mass and volume but lacks a shape of its own. It takes up the shape of the containing vessels. It can be compressed to an extents,

**e.g.** – Milk, water, ink, etc.

**(c) Gas :** It is a state of matter which has only definite mass but no definite shape and volume. It takes up the shape of the container

**e.g.** – Carbon dioxide, oxygen, etc.

#### **Question 8.**

Why are liquids and gases called as fluids.

**Answer:**

The particles are free to move in any direction i.e. they can flow because all substances that can flow are called fluids.

Liquids and gases are fluids.

#### **Question 9.**

(a) Define interconversion of states of matter.

(b) Why do solids, liquids and gases differ in their physical state?

(c) Under what conditions do solids, liquids and gases change their state.

**Answer:**

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(a) The process by which matter changes from one state to another and back to original state, without any change in its chemical composition.

(b) Intermolecular force of attraction.

Intermolecular spaces are two important properties of matter that account for the different states of matter.

(c) Matter can change from one state to another on changing temperature and pressure.

### Question 10.

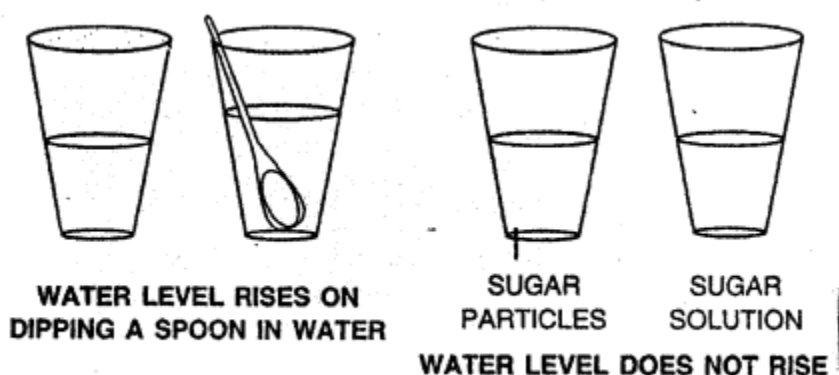
Give reasons :

(a) When a stone is dipped in a glass containing some water the level of water rises but when a spoon of sugar is added to it and stirred, the water level does not rise?

(b) A drop of ink added to water in a glass turns whole water blue.

**Answer:**

(a) Take half a glass of water. Dip a spoon in it. What do you observe? The water level rises, indicating that spoon occupies space.



Now remove the spoon, water comes down to its original level. Now add a spoon of sugar to it and stir well. The sugar disappears but the level of water in the glass does

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not rise, that means the volume of water has not increased. But where did the sugar particles disappear?

The sugar particles being smaller get adjusted between the water molecules. This shows that there are intermolecular space in water.

(b) This is because the water as well as ink particles (molecules) are in continuous random motion. Due to motion, the blue coloured particles of the ink spread all over and give blue colour to the water.

#### Question 11.

Fill in the blanks :

- (a) Air is a matter because it has **weight, mass** and **space** and it can be **compressed**.
- (b) The molecules are made up of **atoms**.
- (c) The quantity of matter in an object is called its **mass**.
- (d) The state of matter with definite volume and definite shape is called **solid**.
- (e) The substances which can flow are called **fluids**.

#### Question 12.

Name the terms for the following :

- (a) The change of a solid into liquid.
- (b) The force of attraction between the molecules of matter.
- (c) The particles of matter which may or may not have independent existence.
- (d) The process due to which a solid directly changes into its vapours.
- (e) The change of vapour into a liquid.

**Answer:**

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- (a) Melting.
- (b) Intermolecular force of attraction.
- (c) Solid.
- (d) Sublimation.
- (e) Condensation.

**Question 13.**

Classify the following into solid, liquid and gas :

Coal, kerosene, wood, oxygen, sugar, blood, water vapour, milk, wax.

**Answer:**

**Solids**

Coal  
Wood  
Wax  
Sugar

**Liquids**

Kerosene  
Milk  
Blood

**Gases**

Oxygen  
Water vapour



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- Chapter 2- Physical and Chemical Changes
- Chapter 3- Elements, Compounds and Mixtures
- Chapter 4- Atoms, Molecules and Radicals
- Chapter 5- Language of Chemistry
- Chapter 6- Metals and Non-metals
- Chapter 7- Air and Atmosphere

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