

Chapter Six

The Solar System And Pressure:

- The solar system is the name given to the sun and all the planets.
- The solar system is circular in shape and at its centre can be found the sun.
- The planets move round the sun in orbits or paths.
- Each planet has its path or orbit in which it moves.

Stars:

- A star is a heavenly body which can produce its own heat and light.
- Because the sun is a heavenly body which produces its own heat and light, then it is a star.
- The solar system forms part of a galaxy called the Milky Way galaxy.
- A galaxy is the name given to a group of stars.

The planets:

- These are heavenly bodies which move round the sun.
- There are nine planets and each of them moves round the sun in a circular path called its orbit.
- These nine planets are Mercury, Venus, Earth, Mars, Saturn, Uranus, Neptune and Pluto.
- With the exception of Pluto, all the other planets are surrounded by a layer of gases called atmosphere.
- The atmosphere is therefore the name given to the layer of gases which surrounds a planet.
- A planet may make a complete movement round the sun, and such a movement is called a revolution.
- The earth takes a year or $365\frac{1}{4}$ days to revolve or move round the sun.
- Apart from this movement, the earth spins or moves round on its own and this movement is called its rotation.
- The earth takes 24 hours to make one complete rotation, and it is this rotation which causes day and night.
- Among all the planets, it is only the earth which has oxygen.
- Living things can therefore live on the earth because they can get the oxygen that they need for living.
- Because the other planets do not have oxygen, living things do not live on them.
- For this reason, people cannot live on the moon.

Moon:

- A moon is a heavenly body which moves round a planet.
- While some planets have one or more moons, others have none.

- Our earth has only one moon which has no oxygen.

The sun:

- This is a star around which the planets move.
- The sun is very important because its energy is used in drying food and wet clothes.
- The sun also makes our atmosphere warm and provides the light we need for seeing.

Meteoroids:

- These are small heavenly bodies which sometimes fall from space to the earth.
- While they are falling through the atmosphere, they are called meteors.
- But if they reach the surface of the earth, they are called meteorites.

Space travel:

- Space refers to all the region or area which is above the atmosphere of the earth.
- The moon, the sun and all the planets are located or can be found in space.
- The spaceship or the rocket is the only vehicle that can be used to travel to space.
- People who travel to space are called astronauts.

Satellite:

- A satellite is a heavenly body which moves round a planet.
- There are two types and these are natural satellites and artificial satellites.
- While natural satellites are not made by man, artificial satellites are made by man.
- Since the moon moves round the earth, then it is a satellite.
- The moon is an example of a natural satellite.

Some uses or importance of artificial satellites:

- They can be used for communication purposes, such as the sending of telephone and television messages from one country to another.
- They can be used to study the weather.

Pressure:

- If we used our hands to press against the surface of a table, then we are applying pressure or force to the table's surface.
- Pressure is defined as the force that acts per unit area.
i.e. $\text{Pressure} = \frac{\text{Force}}{\text{Area}}$.
- From this formula, we notice that when the force is divided by the area, we get the pressure.

(Q1) The surface of a block placed on a table is 5m^2 . If it exerts a force of 20N, find the pressure the block will exert on the table.

Soln:

Area = 5m^2 and force = 20N.

$$\text{Pressure} = \frac{\text{Force}}{\text{Area}}$$

$$\Rightarrow \text{Pressure} = \frac{20}{5} = 4 \text{ pascals.}$$

(Q2) The area of an object is 10m^2 . If it exerts a force of 90N , calculate the pressure which it can exert on the ground.

Soln:

The area = 10m^2 and the force = 90N .

$$\text{Pressure} = \frac{\text{Force}}{\text{Area}}$$

$$\Rightarrow \text{Pressure} = \frac{90}{10} = 9 \text{ Pascals.}$$

Atmospheric pressure:

- This is also known as air pressure and it is the pressure exerted by the atmosphere.
- The atmosphere refers to the layer of gases which surrounds the earth.
- It is the pressure exerted by these gases, which is referred to as the atmospheric pressure.
- This pressure acts on the surface of the earth and on any object found on the earth's surface.

The pressure inside a liquid:

- Liquids also exert pressure and the pressure within a liquid, increases as we move deep down the liquid.
- We therefore say that the pressure within a liquid increases with depth.
- Apart from that, the pressure within a liquid acts in all direction.