Introduction of Light

Introduction

In this world, we usually see a variety of objects. Sometimes, we are unable to see anything in a dark room but on lighting up the room, we are able to see the things in the room. Since, it is an obvious question arising that what makes thing visible.

So, its answer is light. Light is a form of energy which enables us to see objects from where it comes or reflected. We can detect light with our eyes.

Sources of Light

An object which emits light is called a **source of light**.

1. Natural sources of light

- The Sun is the most important and natural source of light for our planet.
- The stars are other natural sources of light.
- Insects like glow worms and fireflies emit light in darkness.
- There are some fishes which emit light.

2. Artificial sources of light

- Candles, oil lamps, lanterns, electric bulbs, fluorescent tubes, etc. are some of the man-made artificial sources of light.
- Objects/ bodies are visible only by the light they send to our eyes.
- They maybe either luminous or non-luminous.

Introduction of Light

a) **Luminous sources:** Those sources of light which give out light of their own are called luminous sources of light. Examples are- Sun, lamp, burning candle, electric bulb, etc.

b) **Non-luminous sources:** Objects/bodies that do not emit light of their own, but they reflect the light falling on them and hence become visible are called non-luminous sources of light.

- Bodies like the moon and plants, metals, stones, trees, furniture are non-luminous body.
- Those materials which allow all the light rays falling on them to pass through them are called **transparent materials**. For example, air and glass.
- Whereas materials which allow only some light to pass through them are **translucent materials**. Example, butter paper.
- Those materials which do not allow light to pass through them are called **opaque materials**. Example, wall.

Rays and Beams of Light

The path along which light energy travels in a given direction is called **ray of light**.

- A ray of light is represented as a straight line.
- The arrow head on it gives the direction of light.

A collection of rays of light is called **beam of light**. However, if the number of rays is too small then such a collection of rays is called **pencil of light.**

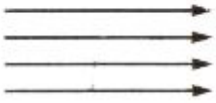
Introduction of Light

There are three different types of beams of light.

1. Parallel beam of light: When the rays of light travel parallel to each other then the collection of such rays is called **parallel beam of light**. For example, sun rays and ring into a room through a ventilator constitute a parallel beam.

2. Divergent beam of light: A beam of light consisting of rays diverging from a point source is called **divergent beam of light**. For example beams of light coming from a lighthouse.

3. Convergent beam of light: A beam of light consisting of rays coming closer to each other ultimately to meet at point is called **convergent beam of light**. The beam of light from a nearby large source is convergent beam of light.



Parallel beam of light

Divergent beam of light

Convergent beam of light