

## Revision Notes

### Class - 8 Science

#### Chapter 16 - Light

- Light is the natural agent that allows things to be visible to us. Light is being reflected from all surfaces and is a form of energy.
- Objects which illuminate light on their own are known as luminous objects. Objects which does not give light on their own are said to be non-luminous objects. They reflect the light falling on them. When light is reflected from by an object enters our eyes, and the object becomes visible to us.
- Reflection of Light is the phenomenon of bouncing back of light after striking a shiny or polished surface, kept in the same medium.

#### Types of Reflection:

1. Regular Reflection: When a parallel beam of light rays incidents either on a smooth or on plane surface, the reflected rays will also be parallel. This is termed regular reflection. The reflection by a plane mirror is an instance of regular reflection.
  2. Diffused or Irregular Reflection: When the light ray incidents on a rough or uneven surface, it gets reflected in many directions because of the irregularities on that surface.
- If the reflected light ray is reflected back again after the incident on another surface, then it is known to be multiple reflections. Multiple reflections is the principle on which periscopes work. Periscopes are mainly used in submarines, war tanks, and by soldiers in bunkers to see distant objects which are not visible directly. In a kaleidoscope, the same principle works as a result beautiful patterns are formed due to multiple reflections.
  - Laws of reflection
    1. The angle of incidence is equal to the angle of reflection.

2. The incident ray, reflected ray, and the normal drawn at the point of incidence to the reflecting surface, lie in the same plane.
3. Lateral inversion is the effect made by a plane mirror in reversing images from left to right. For instance, our left hand will appear as right in the mirror and vice versa.
  - The characteristics of the image formed by a plane mirror:
    1. Is the same size as that of the object
    2. Left-right inverted
    3. Erect and virtual
    4. Formed behind the mirror at the same distance as that of the object placed in front of the mirror.
  - Two mirrors when inclined to each other give multiple images.
  - Sunlight, also known as white light, is made up of seven colors. The splitting of light into its constituent colors is termed as dispersion. A normal eye is capable of seeing nearby and distant objects clearly.
  - People that are blind can read and write by using Braille system. They develop their other senses in order to improve their interaction with their environment.
- **Human eye and its parts**
  1. The front part of the eye is covered with a transparent spherical membrane known as the cornea. Light enters the eye by cornea.
  2. Space present just behind the cornea contains a fluid known as aqueous humour.
  3. Just behind the cornea is a muscular diaphragm, which is dark coloured and is known as the iris which has a small circular opening in the middle called the pupil. The black colour of the pupil is due to no light being reflected from it.

4. The iris is responsible for controlling the amount of light entering the eye by adjusting the size of the pupil.
5. The lens of our eyes is a convex lens made of a transparent jelly-like proteinaceous material. The eye lens is hard in the middle and becomes soft towards the outer edges.
6. The ciliary muscles hold the eye lens in its position. The ciliary muscles are responsible for changing the curvature and focal length of the eye lens.
7. The inner back surface of the eyeball is the retina. It is a semi-transparent membrane that is light sensitive and behaves as the screen of a camera. The light-sensitive receptors present in the retina are rods and cone cells.
8. The space between the retina and eye lens is filled with vitreous humour.

