

**Revision Notes**  
**CHAPTER – 11**  
**Light, Shadows and Reflections**

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**Light:** Light is the natural agent that stimulates sight and makes things visible.

- Its path is only visible when it is scattered by dust particles present in the atmosphere.
  - Light is a form of invisible energy.
  - Light itself is not visible.
  - It makes other objects visible.
  - Light and the eyes both are necessary to see the things.
  - The sensation which helps us to see things is called **sight** or the **vision**.
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**SOURCES OF LIGHT**

- Sun,
  - stars
  - electric torch,
  - candle flame
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**Light is classified into two:**

(i) **Emission of light:** Classifying objects on the basis of emission of light.

**LUMINOUS OBJECT** :- objects which emit their own light are called luminous objects. Ex. A candle, electric torch.

**NON-LUMINOUS OBJECTS** :- Objects which do not have their own light and are seen by the light scattered by them are called non-luminous objects.. Example: moon, chair, table, etc.

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- **Optical media** :- Any substance which allows light to pass through it either partially or wholly is called an optical media.
- **Transparent:** All substances that allow light to pass freely through them and through

which objects can clearly be seen are called transparent substances. Example: glass, water, air, etc.

- **Translucent:** A substance that allows light to pass through it only partially is called a translucent medium or substance.. Example: butter paper, tissue paper, etc.
  - **Opaque:** Objects that do not allow light to pass through them. Example: book, brick, etc.
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**Shadow:** A shadow is the 'region of absence of light'. Light from a source is cut off by an obstacle and shadow is formed.

- Opaque object cast a dark shadow.
  - Translucent objects produce a weak shadow.
  - Transparent objects do not cast a shadow at all.
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**Types of shadow:**

**The kind of shadow depends upon the size of the source of light.**

**Due to smaller (point) light source:** Only one dark shadow is formed and this is known as **umbra**.

**Due to larger(extended) light source:** Two shadows are formed-a dark one in the centre and a light one on the outside. Dark shadow is called **umbra** and the faint or lighter shadow is called **penumbra**.

- The size of umbra decreases and penumbra increases as the screen is moved away from the object.

**Colour of shadow :-** Whatever be the colour of the opaque object, the shadow formed is always of the same colour, that is, black.

**LENGTH OF THE SHADOW :-** The length of the shadow differs depends upon the angle at which light falls on a body.

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- **Eclipse:** A shadow formed in space that makes the sun or the moon invisible for some time. Eclipse is the overshadowing of a bright object.

- **Solar eclipse:** The moon comes between the sun and the earth, so that the earth (in the shadow) darkens during the day.
  - **The solar eclips occurs only on a 'NEW MOON DAY' .**
  - **Lunar eclipse:** The moon and the sun are in a straight line such that the earth is in the between the sun and the moon, the shadow of the earth falls on moon and the moon cannot be seen.
  - **The lunar eclips occurs on a 'FULL MOON ' NIGHT.**
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(ii) **Reflection of light:** The process of sending back the light rays whichafall on the surface of an object. Silver metal is one of the best reflector of light.