

**SCIENCE**

## Light, Shadows and Reflection

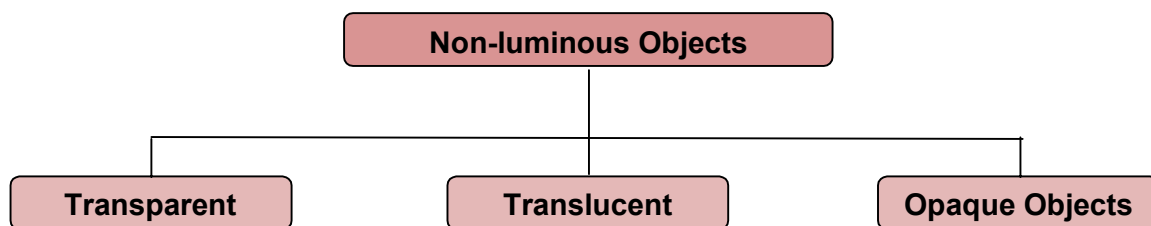
### Light

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- Light is defined as radiation which is visible to the human eye.
- It helps us see different colourful objects around us.
- The natural source of light is the Sun.
- Sunlight allows us to see objects during the day. It also plays an important role in the growth of plants and in processes such as photosynthesis.
- Luminous objects are objects which emit light of their own.  
Example: Sun
- Non-luminous objects are objects which reflect light.  
Examples: Moon, mirrors

### Types of Non-Luminous Objects

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#### Transparent Objects

- These objects allow light to pass through them.
- Examples: A clear empty glass, a window pane and eyeglasses.

#### Translucent Objects

- These objects allow only some of the light to pass through them and the other light rays are scattered.
- Examples: Thin tissue paper, frosted glass, tinted car windows and waxed paper.

#### Opaque Objects

- These objects do not allow light to pass through them.
- Example: Cardboard, bricks, wood, buildings and eyelids.

## Shadows

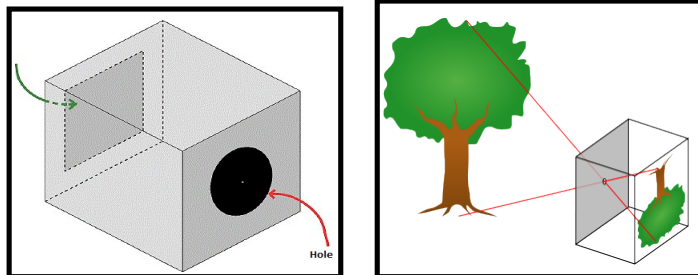
- A shadow is created when an opaque object blocks light.
- The objects must be opaque or translucent to form a shadow.
- Light travels in a straight line. So, when it is blocked, a shadow is formed.
- Transparent objects will not produce any shadow as light will pass through them.
- The shape of the shadow may not be identical to the shape of the object because the shadow's shape depends on the position of the source of light and the place where the shadow falls.



- If an object is moved closer to the light source, then the shadow gets bigger.
- If an object is moved further away from the light source, then the shadow gets smaller.

## A Pinhole Camera

- A pinhole camera is a simple camera without a lens and with a single small hole or an opening through which the light passes.



- Light from a scene passes through this single hole and projects an inverted image on the opposite side of the box.
- The human eye in bright light is similar to a pinhole camera.

## Mirrors and Reflection

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### Mirror

- A mirror is an object which reflects light.
- When we look into the mirror, we see the reflection of our face in the mirror.
- A mirror changes the direction of light that falls on it.

### Reflection

- Reflection is light which travels along a straight line and gets **reflected** from the mirror.

