Properties of Light

i. Light Travels in a Straight Line

- Light moves in a straight line in the form of rays.
- It travels extremely fast at a speed of 3,00,000 km per second.
- Light does not bend; it can only be blocked by objects.
- Light continues its straight path until it encounters an obstacle.
- The formation of shadows is evidence that light travels in a straight line.

ii. Reflection of Light

- When light rays hit a surface, they bounce back. This phenomenon is called reflection.
- Objects are visible because reflected light enters our eyes.
- Types of Reflection:
- Rough Surface: Scatters light in all directions.
- Smooth & Polished Surface: Reflects light in a single direction, making mirrors excellent reflectors.
- Sunlight takes 8 minutes to reach Earth, meaning the light we see is slightly delayed.

iii. Refraction of Light

Light usually travels in a straight line, but when it moves from one material to another, it bends. This bending is called refraction.

Example:

A straw appears bent when placed in a glass of water. This happens because light changes direction as it moves between air and water.

Refraction occurs due to the change in the speed of light as it passes through different mediums.

Key Takeaways:

- Light moves in straight lines unless reflected or refracted.
- Shadows form when an object blocks light.
- Reflection allows us to see objects.
- Refraction bends light when passing through different materials.