

Waves

2. Light

CONCEPT 1

WHAT IS LIGHT?

NOTES

Light is a type of wave that transfers energy from one place to another. It does not need a material to travel in so can even travel through completely empty space, called a vacuum.

We see objects either because they give out light (luminous) or because they bounce the light given out by other objects (non-luminous).

We can see objects around us because our eyes have a layer of photosensitive cells at the back called the retina. Light from a luminous object like a light-bulb enters our eye directly and is absorbed by our retina. Light is bounced off (reflected by) non-luminous objects, like a book, and the light that is reflected is absorbed by our retina. Light spreads out, just like sound, which is why we see light all around us when there is a luminous object present.

Light can travel through some objects. When you look through a window, light travels through the glass and into your eye. We say that the glass transmits the light. When light travels through materials such as glass, perspex or shallow water most of the light is transmitted but a small amount is absorbed. Objects that transmit most of their light are called transparent and we can see through them.

Materials like frosted glass or tissue paper are translucent. Light can travel through them but it is scattered so that you cannot see clearly.

Materials that do not transmit light at all are opaque. Opaque materials completely absorb light and produce shadows. The size and shape of shadows can be predicted because light travels in straight lines.

