# LIGHT

## How do we see things around us?

Y6

## What you should already know...

-Light is a <u>form of energy</u> that makes it possible to see.

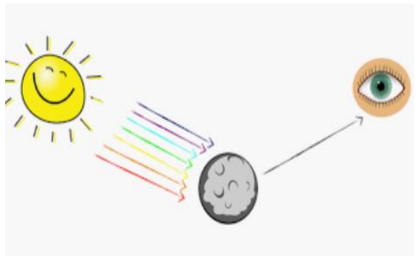
Light is <u>given off some objects</u> (for example the Sun). Darkness is the absence of light.

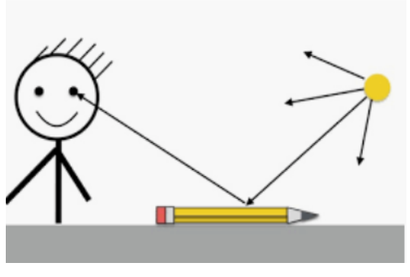
-Light can <u>reflect</u> off surfaces (e.g. mirrors). Light is <u>absorbed</u> by other materials.

-Objects can be labelled as <u>transparent, translucent, or opaque</u>, depending on the amount of light that they let through.

-<u>Shadows</u> are formed when light is blocked by an opaque object.

## How We See Things





-We see things because...

a.) they are a <u>light source</u>, sending light into our eyes, or

b.) light is <u>reflected from a light source</u> off them and into our eyes.

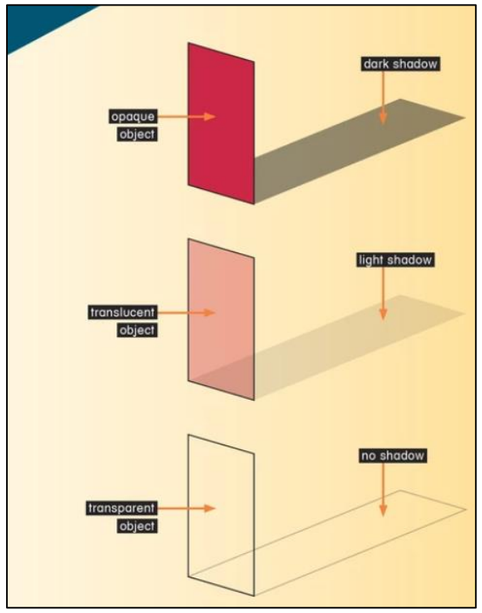
When the light <u>enters our eyes</u>, we see the object!

-For example, we see The Sun because it is a light source, sending light into our eyes.

-However, The Moon is not <u>luminous</u> (does not produce its own light). We see it because light from The Sun reflects off it into our eyes.

- After light reflects off objects, it continues to travel in a <u>straight line, but in a new direction</u>.

## How Light Travels




-<u>Light originates from light sources</u>.

-Light sources can be <u>natural</u> (e.g. The Sun, the stars) or <u>man-made</u> (e.g. street lamp, Christmas tree lights, glow stick, mobile phone, TV).

-Light travels in a straight line from light sources.

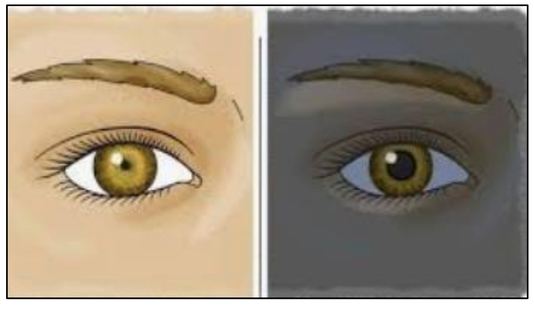
-We can see that light travels in <u>straight lines</u> when we shine a torch in a dark room, or when a ray of light comes through a window.

-When an object passes in front of a ray of light, the light can be blocked, <u>creating a shadow.</u>

-Opaque objects let no light through (creating the darkest shadows), translucent objects let some light through (creating fainter shadows), transparent objects let all light through (no shadow).

## Our Eyes

Our eyes have a small window at the front called a <u>pupil</u>, through which light can enter. The pupil looks as though it is black because it is dark inside our eyes.



-<u>When it is dark, our pupils go larger</u>, in order to let more light in so that we can see better. In bright lights, our pupils go smaller.

-At the back of our eye is a sensitive sheet of nerves called a retina. They can detect light when it comes in through the pupil, and send messages to the brain about what we can see.

## Light Spectrum

Red | Orange | Yellow | Green | Blue | Indigo | Violet