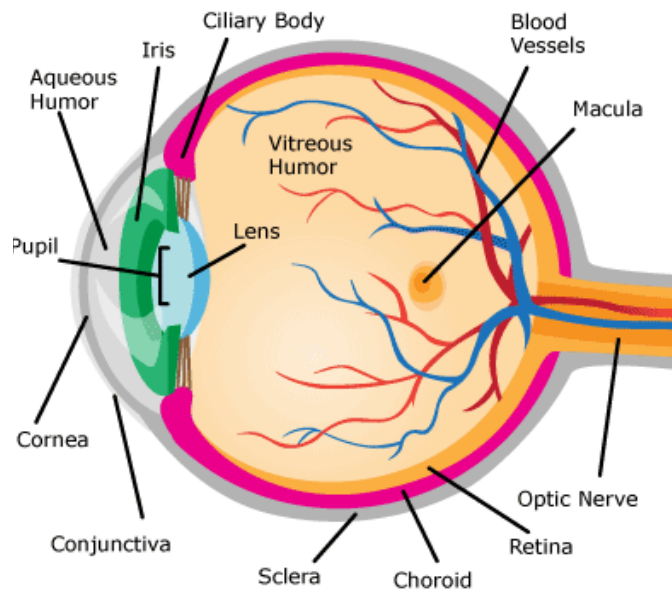


Year 6: Light

THE EYE:



We see things because light travels from light sources to our eyes, or from light sources to objects and then to our eyes.

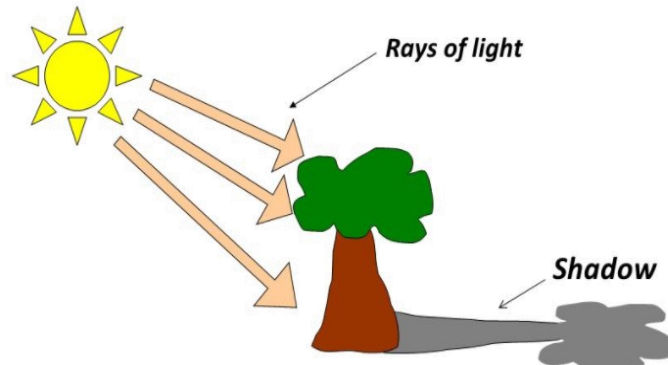
The main parts of the eye that you need to understand are the iris, lens and retina.

The iris closes or opens to let more or less light in.

The lens allows us to see things in focus. The muscles in the eye change the shape of the lens to allow this to happen.

The retina takes light and turns it into signals that our brains can interpret and sends them through the optic nerve to our brains.

SHADOWS:



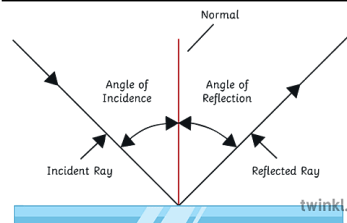
Shadows are formed in the shape of the object which is blocking the light.

Opaque objects block the light from passing through.

Translucent objects allow some light to pass through.

As some light passes through, it changes direction so the object seen will not be clearly defined.

ANGLES:

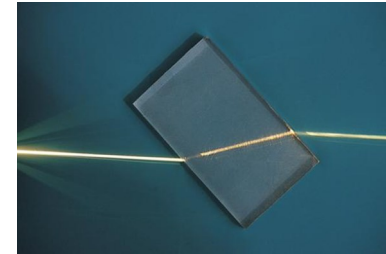


When light reflects off an object, the angle of incidence is equal to the angle of reflection.

This allows us to clearly see the object.

A periscope takes advantage of the predictable angles of incidence and reflection to allow an image to be shown to a viewer.

REFRACTION:



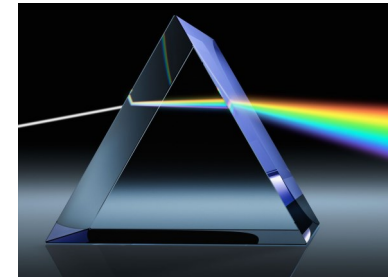
When light passes from one medium to another, it changes direction; this is called refraction.

This happens because light travels at different speeds through objects.

White light is made up of all the colours of light.

White light refracted by two surfaces in a prism will spread out to show all the colours.

This array of colours is called the spectrum.



The different colours of light travel at different speeds.

Rainbows are created when light travels through water vapour in the air and is refracted into its full spectrum of colour.

KEY VOCABULARY:



ANGLE OF INCIDENCE: the angles at which light hits a surface



LENS: the transparent, elastic structure behind the iris which focuses light on the retina so we can see clearly



PERISCOPE: an apparatus consisting of a tube attached to a set of mirrors or prism.



REFRACTION: light changing direction after being deflected as it passes through a substance



SPECTRUM: a band of colours, as seen in a rainbow, produced by separating the components of light.



IRIS: the flat coloured ring around our pupil in the eye



MEDIUM: the intervening substance through which light can pass



REFLECTED: sent back from the surface and not pass through it



RETINA: a layer at the back of the eyeball that contains cells which are sensitive to light



TRANSLUCENT: some light can pass through it