

Pye Bank CE Primary DSAT Knowledge Organiser

YEAR 6

Physics: How do we see?

SCIENCE

KEY VOCABULARY

Cornea: the eye's protective, transparent covering.

Iris: the coloured part of the eye.

Lens: the clear tissue found just behind the iris in an eyeball. The lens bends light and focuses it onto the retina.

Pupil: the round hole in the centre of the eye.

Retina: the thin layer of tissue found at the back of the eyeball. The retina contains receptor cells that detect light.

Reflection: when a light ray hits a surface and bounces off.

Refraction: the bending of a light ray when it passes at an angle from one medium into another.

Prism: a transparent object, which can be used to refract (bend) white light to produce a spectrum.

Shadow: a dark shape made when something blocks light from a light source like the sun, a flashlight or campfire.

Visible spectrum: the range of colours that make up white light: **red, orange, yellow, green, blue, indigo and violet.**

Visible light: a visible form of energy that enables us to see. We see light all around us in many different forms. It can be produced by the Sun, a light bulb, a fire, or by some animals – for example, fireflies.

KEY CONCEPT – Light sources

Natural Light Source



Artificial Light Source

A light source is anything that gives out or emits light. Light sources can be divided into natural sources and artificial sources.

STICKY KNOWLEDGE

1. Light can travel through transparent (see-through) objects.
2. Light can travel through most translucent (partially see-through) objects.
3. Light cannot travel through opaque (not see-through) objects.



Transparent



Translucent



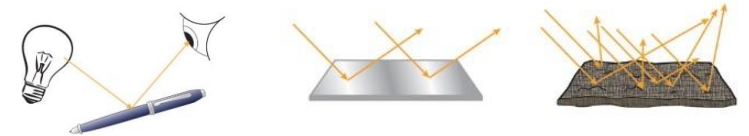
Opaque

4. The closer an object is to the source of the light, the bigger the shadow.



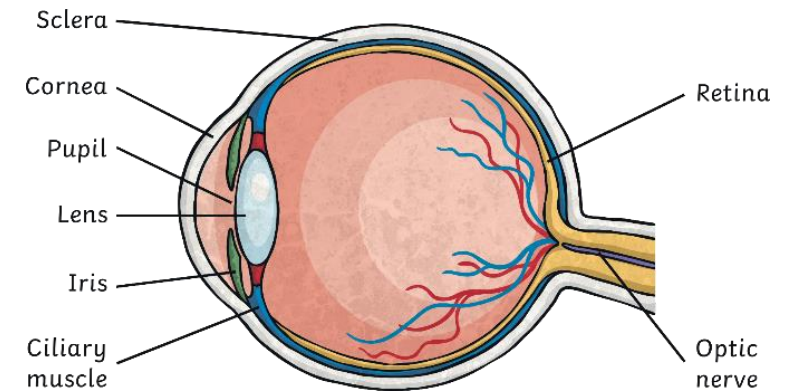
KEY CONCEPT – Reflection

We are able to see things because light rays bounce off objects and into our eyes. Light that bounces off a surface is called reflected light. Light that is not reflected by objects is absorbed. Some objects, like mirrors, reflect lots of light and appear bright or shiny, while rough surfaces scatter light in all directions, and appear dull. Rough surfaces disperse the reflected light in many different directions and look dull. Coloured materials reflect some wavelengths of the light and absorb others. White materials reflect all the colours of the light. Black materials absorb all the colour of the light.



KEY CONCEPT – The Eye

The diagram shows parts of the eye:



Prisms

White light is light that appears colourless to the eye. It is produced by natural light sources like the Sun and artificial light sources such as light bulbs. White light is made up of a spectrum of colours with different wavelengths: red, orange, yellow, green, blue, indigo and violet.