Light

Objectives

Recognise that they need light in order to see things and that dark is the absence of light.

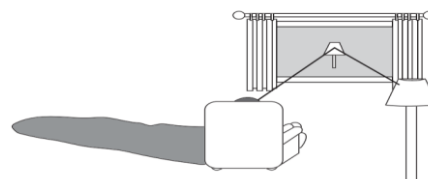Notice that light is reflected from surfaces.

Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.

Recognise that shadows are formed when the light from a light source is blocked by an opaque object.

Find patterns in the way that the **size of shadows change.**

Scientist Albert Einstein (1879-1955)

The speed of light
Einstein's Special Theory of Relativity, published in 1905, established that light travels at a constant speed, regardless of the observer's motion.

Which moves faster, Sound or Light?

Speed
Light travels at around 186,000 miles per second, while sound travels at around 770 miles per

How Do We See The Moon?

Light travels into our eyes.

Remember: We need light to enter the eye and the Moon is NOT a light source!

Light is reflected off the Moon.

Light is emitted by the Sun.

Scientific Terminology

dark - the absence of light

light source - is something that produces light and can be natural (lightening or the sun) or artificial (light bulb or a glow stick).

light beam - a group of light rays

opaque - an object does not allow light to pass through it

reflect - bounces off or changes direction

transparent- an object allows light to pass through it clearly, so you can see through it.

translucent - something allows some light to pass through it, but **not** all, and objects on the other side are not clearly visible.
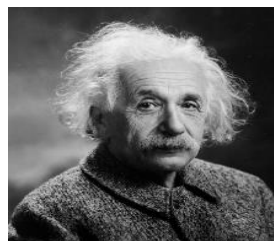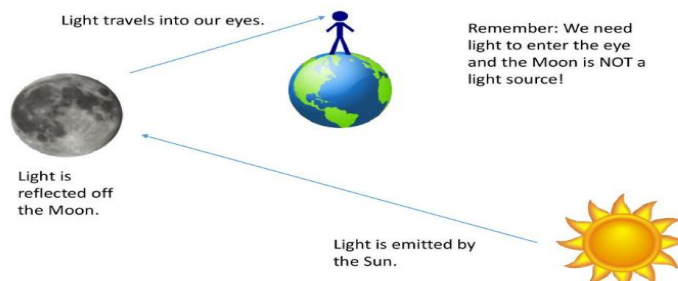
Questions

1) Which of these are sources of light? the Sun, torch, moon, mirror and fire?
2) Define darkness. Darkness is the _____ of _____.
3) How can you protect yourself from the Sun?
4) Define translucent, transparent and opaque.
5) How can we change the length of a shadow?

8) Draw two arrowheads on the lines in the picture above to show how light travels to let Sara see the reflection of the lamp.

6) Complete the sentence (shortest or longest) The Sun casts the _____ shadows at midday when the Sun is highest in the sky.
7) Child A moves the light source away from the opaque object. Will the shadow get smaller or bigger?

TRANSPARENT, TRANSLUCENT & OPAQUE

ALL light passes through transparent objects	SOME light passes through translucent objects	NO light passes through opaque objects
TRANSPARENT	TRANSLUCENT	OPAQUE