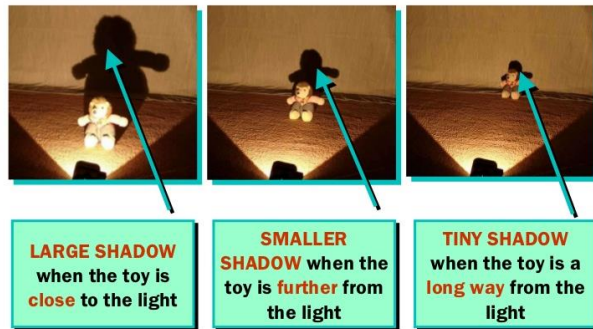# Our Lady's Catholic Primary School – Knowledge Organiser

Science	Year Group 3	Topic Light & Shadow

Vocabulary	Definition
Light Source	An object that produces its own light (e.g. sun, fire).
Reflection	When a light hits a surface and 'bounces' off.
Refraction	When light passes through a different object and its direction changes.
Opaque	An object which **does not allow** light to pass through it (e.g. wood).
Translucent	An object which **allows some** light to pass through it. It may be possible to see some unclear images through the object (e.g. tissue paper).
Transparent	An object which **allows** light to pass through it so that objects behind it can be easily seen (e.g. glass).
Spectrum	A range of colours caused when white light is refracted. A rainbow shows a spectrum of colours.
Rainbow	An arch of colour caused by the refraction of light on water droplets in the air, usually rain (**R**ed, **O**range, **Y**ellow, **G**reen, **B**lue, **I**ndigo, **V**iolet).
Prism	A solid 3D shape where two end faces are similar and parallel.
Shadow	A dark area or shape caused by the blockage of light.

|	Key facts
1	Light travels in a straight lines
2	Light travels faster than sound.
3	A light year is a unit of measurement for distance. It is the distance light can travel in a year.
4	The size and shape of a shadow changes based on the distance and the angle compared to the light source.
5	Darkness is caused by the absence of light.
6	The moon does **not** emit its own light – it reflects the light of the sun.
7	Ultraviolet (UV) light is a type of radiation which you can't see but can be dangerous. UV rays can come from the sun.

Translucent, Transparent & Opaque

Transparent — ALL light passes through

Translucent — SOME light passes through

Opaque — NO light passes through

LARGE SHADOW when the toy is **close** to the light

SMALLER SHADOW when the toy is **further** from the light

TINY SHADOW when the toy is a **long way** from the light
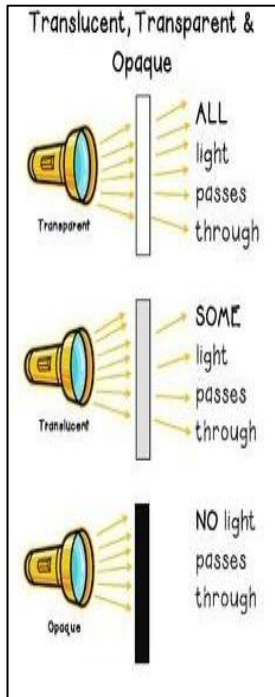
As the **light source** moves **higher** in relation to the **object**, the **shadow** gets shorter. As the **light source** moves **lower** the **shadow** gets longer.
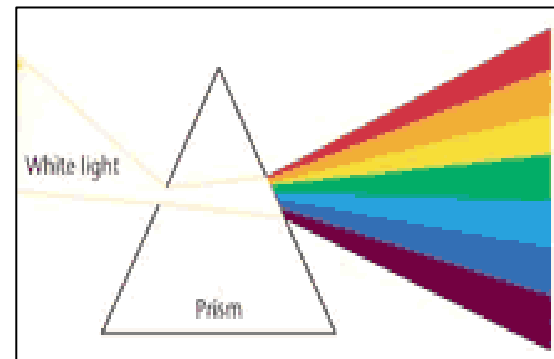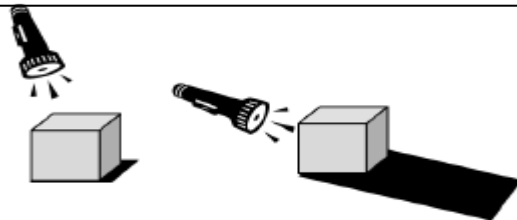
White light — Prism

When white light passes through a glass prism, it is **refracted**. The light changes direction and is then dispersed (spread out) as it exits the **prism**. Depending on the shape of the prism and the angle of the light, we can often see the spectrum of colours.
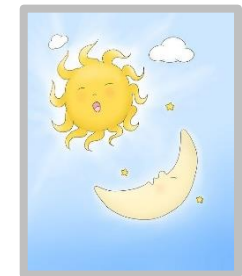
Light reflecting off a smooth surface.