

Key Vocabulary

Angle - the direction from which you look at something object

Artificial light - light from a man-made object (torch, lamp)

Chemical reactions - a process that involves changes in the structure of something

Dark - the absence of light

Dim - light that is not bright

Energy - a supply of power

Emits - to produce a light or sound

Light - a type of energy. We can see objects because our eyes can sense light

Light source - an object that produces its own light (sun, fire)

Mirror - a shiny surface that reflects light in a regular way

Opaque - a material that does not allow light to pass through it (e.g. wood)

Prism - a solid 3D shape where two end faces are similar and parallel

Rainbow - an arch of colour caused by the refraction of light on water droplets in the air, usually rain. (red, orange, yellow, green, blue, indigo, violet)

Reflection - when light hits a surface and 'bounces' off

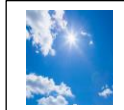
Refraction - when light passes through a different object and its direction changes

Shadow - a dark area or shape caused by the blockage of light

Spectrum - a range of colours caused when white light is refracted. A rainbow shows a spectrum of colours

Translucent - a material which allows some light to pass through it. It may be possible to see unclear images through the object (e.g. tissue paper)

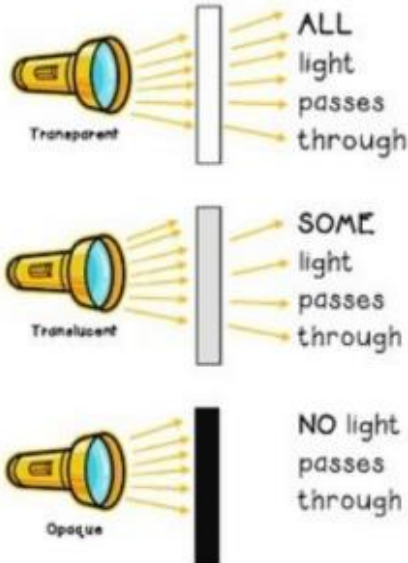
Transparent - a material which allows light to pass through it so that objects on the other side of it can be easily seen



Light Year 3 & 4

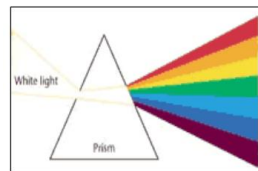
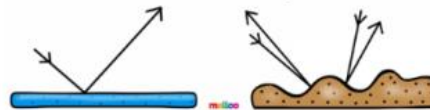


Translucent, Transparent & Opaque



Reflection

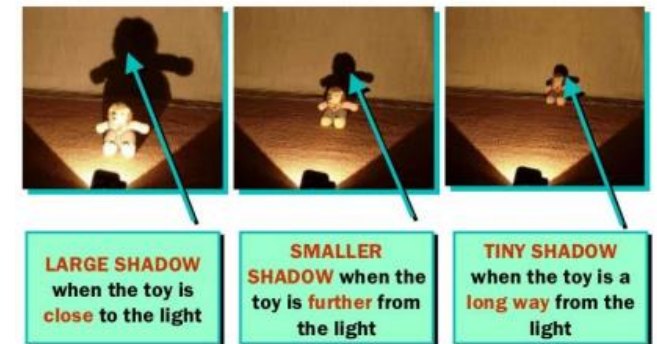
When a beam of light is reflected from a surface, it changes direction. Smooth, shiny surfaces such as polished metals reflect light well. Rough and dark surfaces do not reflect light well.



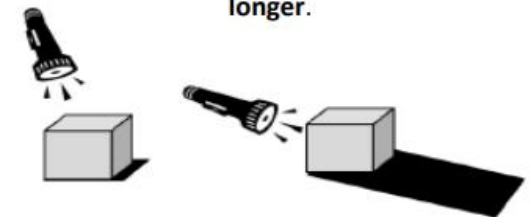
When white light passes through a glass prism, it is refracted. The light changes direction and is then dispersed (spread out) as it exits the prism. Depending on the shape of the prism and the angle of the light, we can often see the spectrum of colours.

Key Facts

1. Light travels in a straight line and it also travels faster than sound.
2. Light can come from natural or man-made sources.
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 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 sunlight.
7. Ultraviolet (UV) light is a type of radiation which you can't see but can be dangerous. UV rays come from the sun.



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**.



Scientific Skills

- ask relevant questions and use different types of scientific enquiries to answer them
- set up simple practical enquiries, comparative and fair tests
- make systematic and careful observations and where appropriate take accurate measurements using standard units
- gather, record, classify and present data in a variety of ways to help in answering questions
- record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- identify differences, similarities or changes related to simple scientific ideas and processes

At the end of this unit I will know:

- that I need light in order to see things and that dark is the absence of light
- that light is reflected from surfaces
- that light from the sun can be dangerous and that there are ways to protect my eyes
- that shadows are formed when the light from a light source is blocked by an opaque object
- that I can find patterns in the way that the size of shadows change.