

Sithney C.P. School Knowledge Organisers

Science. Physics: Light



What you should already know:

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.

Key learning:

Recognise that light appears to travel in straight lines

Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye

Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes

Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Key Vocabulary:

Emit: To emit light means to produce it.

Light: A brightness that lets you see things.

Light Source: Something that emits its own light.

Opaque: If something is opaque you cannot see through it

Reflect: When a light ray is sent back from a surface and does not pass through it.

Refraction: When a wave or light ray moves from one medium to another its speed changes.

Shadows: a dark shape on a surface that is made when something stands between a light and the surface

Surface: The flat top part of something or the outside of it

Transparent: If something is transparent you can see through it

Translucent: If something is translucent, some light can pass through it.

How we see light:

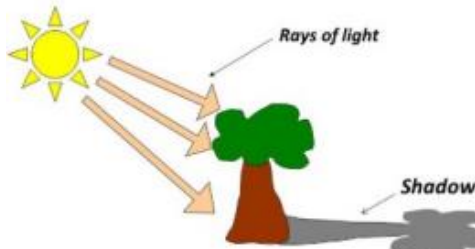


Light travels in a straight line and hits the apple.



The ray of light is reflected off the apple and travels in a straight line to the eye allowing it to see the apple.

SHADOWS - Light travels in straight lines. Shadows are formed when an opaque object blocks the light.



These shadows have the same shape as the objects that cast them

The size of a shadow changes as the light source moves.

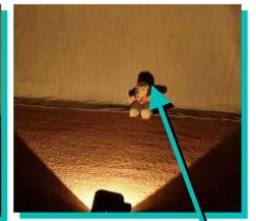
Size of shadows



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

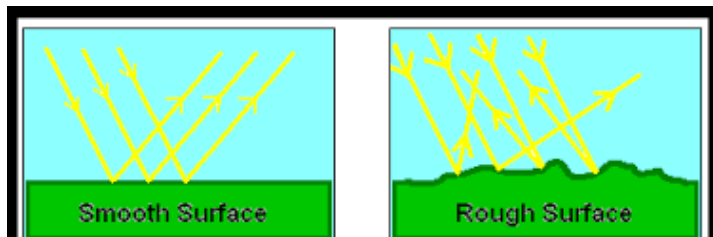


SMALLER SHADOW when the toy is **further** from the light



TINY SHADOW when the toy is a **long way** from the light

REFLECTION - When light from an object is reflected by a surface, it changes direction. It bounces off at the same angle it hits it. Smooth, shiny surfaces such as mirrors and polished metals reflect light well. Dull/rough surfaces such do not reflect light well.



Reflections From the Surface of Water



Periscope:

