



# Big Question: Can we change our shadows?



## Key Vocabulary

Light Source: *An object that makes its own light*

Light: *A form of energy that travels in a wave from a source*

Dark: *Dark is the absence of light*

Reflect: *To bounce off*

Reflective: *Something which reflects light well*

Ray: *Waves of light are called light rays. They can also be called beams.*

Shadow: *An area of darkness where light has been blocked*

Transparent: *Describes objects that let light travel through them easily*

Translucent: *Describes objects that let some light through but scatters the light so we can't see through them properly*

Opaque: *Describes objects that do not let any light pass through them*

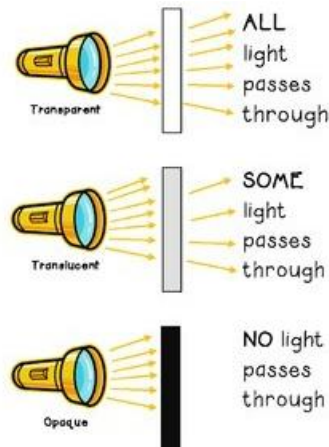
## Science knowledge from previous years that will help me on my journey:

### In Y1, we learned that:

- Eyes are used to see

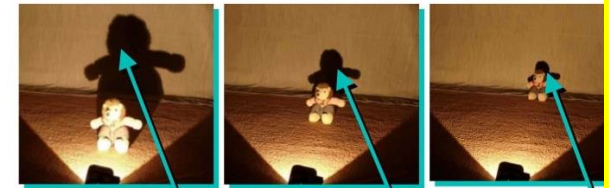
## Science knowledge that will help me on my journey:

- Opaque objects create shadows because they block the passage of light.
- Transparent objects do not create shadows because they allow light to pass through.



## Science knowledge that will help me on my journey:

- A shadow appears when an opaque object blocks a passage of light. Shadows are the same shape as the object.
- The further away from the light source the object is, the smaller the shadow.
- A shadow is larger when it is closer to the light source. This is because it blocks more of the light.



**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

- When a light source is directly above the object, the shadow will be directly underneath.
- When a light source is to one side of the object, the shadow will appear on the opposite side. The shadow will also be longer.



midday



sunset

## Science knowledge that will help me on my journey:

- We need light to be able to see things. Dark is the absence of light.
- Light travels in straight lines.
- When light hits an object, it is reflected (bounces off). If the reflected light hits our eyes, we can see the object.
- The surfaces that reflect light best are smooth, shiny surfaces like mirrors.
- Surfaces that are rough and uneven or dark and dull, like some fabrics, do not reflect light well.

<b>As an scientist, by the end of our topic, I will know that:</b>	<b>Date</b>
Light can be reflected from different surfaces. Some surfaces are poor reflectors, such as some fabrics, while other surfaces are good reflectors, such as mirrors.	
Dark is the absence of light and we need light to be able to see.	
A shadow is formed when light from a light source, such as the Sun, is blocked by an opaque object. Transparent objects allow light to pass through them and do not create shadows.	
Shadows change shape and size when the light source moves. For example, when the light source is high above the object, the shadow is short and when the light source is low down, the object's shadow is long.	
An observation involves looking closely at objects, materials and living things, which can be compared and grouped according to their features.	
Data can be recorded and displayed in different ways, including tables, charts, graphs and labelled diagrams. Data can be used to provide evidence to answer questions.	