

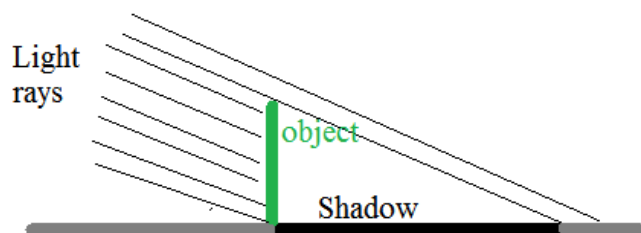
What should I already know?

Children should have:

- observed changes across the four seasons
- observed and described the weather associated with the seasons and how day length varies
- identified and named a variety of everyday materials, including wood, plastic, glass, metal, water, and rock
- described the simple physical properties of a variety of everyday materials
- compared and grouped together a variety of everyday materials on the basis of their simple physical properties

Children may:

- have some knowledge of where light comes from
- have seen their shadows and know they appear when it is sunny
- understand they need light to be able to see things



**SCIENTIFIC LEARNING
Learning Activities or Experience**

Identify, Group and Classify

How would you organise these light sources into natural and artificial sources?

Comparative Test

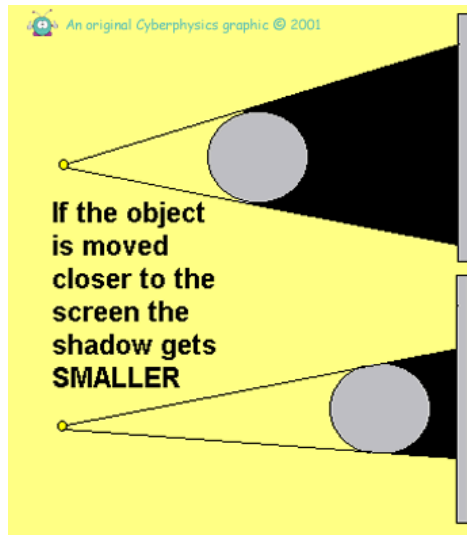
Which materials can you see light through?
Which materials reflect light the best?

Pattern seeking

How does the shadow change if you move the light source?

Observation over Time

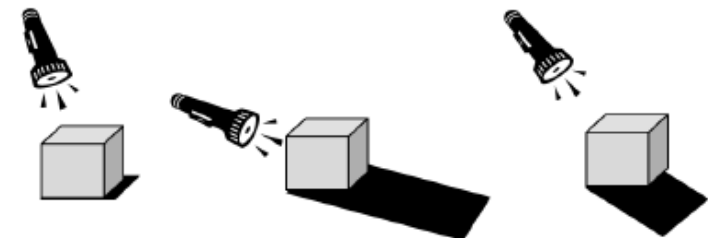
How does the time of day affect the length and position of a given object's shadow?



National Curriculum 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 a solid object
- Find patterns in the way that the sizes of shadows change

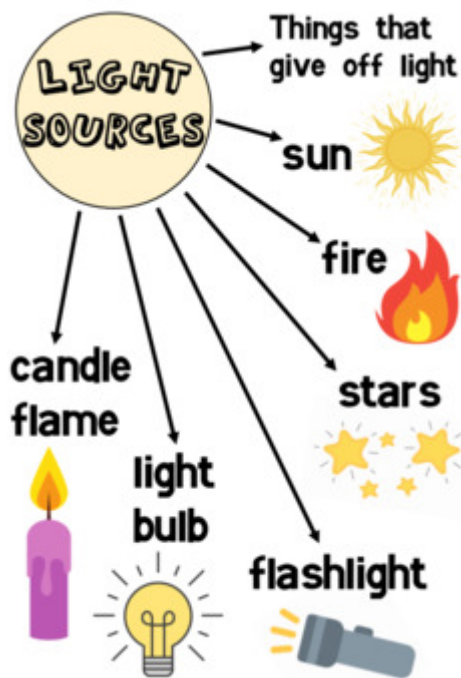
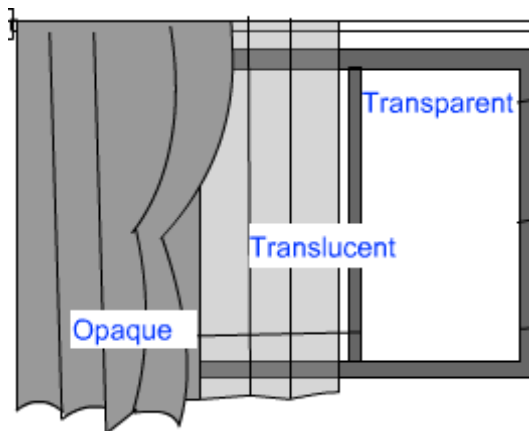
EXAMPLES OF LIGHT SOURCES	
Natural	Man-made (artificial)
Sun	Torches
Stars	Lightbulbs
Fire	Headlights
Lightning	Computer screen
Lava	Phone screen



The shape and position of the shadow depends on the position and distance away of the light source

What will I know by the end of the unit?

- There must be light for us to see. Without light it is dark
- We need light to see things - even shiny things
- Light comes from a source. This can be natural or man-made
- The sun is the major natural source of light
- The moon is not a light source. It reflects the light from the sun
- Light 'rays' travel in straight lines
- We see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes
- Transparent materials let light travel through them and give a clear view of objects the other side whilst opaque materials do not let light through
- Translucent materials let some light travel through them- they are not transparent but do let some light travel through
- Shadows are formed when light rays are blocked by an opaque object
- The shape of a shadow changes depending on the distance away of the light source
- Light bounces off some materials (reflection)
- Shiny (reflective) materials reflect light rays better than non-shiny materials
- Reflective surfaces can be very useful e.g. mirrors, cats' eyes or reflective clothing



Vocabulary

artificial	<i>made or produced by human beings rather than occurring naturally</i>
dark	<i>with little or no light</i>
light ray	<i>the light traveling in any one direction in a straight line is called a ray of light. A group of light rays given out from a source is called a beam of light</i>
light source	<i>a light source is anything that makes light, whether natural and artificial. Natural light sources include the Sun and stars.</i>
natural	<i>existing in or formed by nature</i>
opaque	<i>not able to be seen through; blocking the passage of light</i>
reflection	<i>the return of light (heat, sound or energy) from a surface</i>
reflective	<i>able to reflect light</i>
shadow	<i>a dark area or shape produced by a body coming between rays of light and a surface</i>
translucent	<i>allowing light to pass through but not enough to allow anything on the opposite side to be clearly visible</i>
transparent	<i>allowing light to pass through so that objects behind can be distinctly seen</i>
visible	<i>able to be seen</i>