

## Science

## Light

## Year 3

## Summer 1

### Key Knowledge

Light sources	An object that makes its own light. Places from which light is emitted: e.g. Sun, candles, torches, fire.
Light rays	Waves of light are called light rays. Light travels in straight lines.
Seeing an object	When light reaches an object, it can be absorbed, it can pass through the object or it can be reflected. Light can be scattered in all directions. Light colours reflect more light than darker colours. White objects reflect nearly all light. Black reflects very little light.
Materials	Light passes through some materials and not others. Light passes through transparent materials (objects are not 'see through' – light passes through the material). Some light passes through translucent materials but the light source is not clear. No light passes through opaque materials.
Shadows	Light is reflected off an object. The area that the light is therefore unable to reach is called a shadow. When a light source is directly above the object, the shadow will be directly underneath. When a light source is to one side of an object, the shadow will appear on the opposite side, the shadow will also be longer.

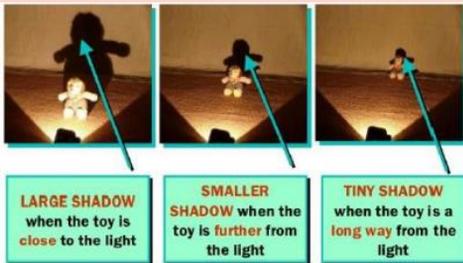
### Statutory requirements

- 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.

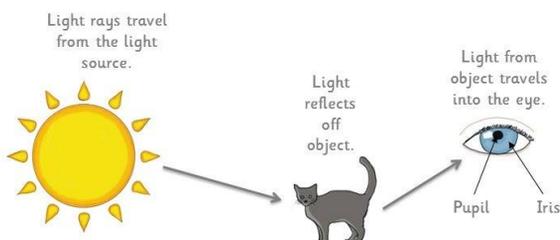
### Key Vocabulary

Shadow	Shadows are formed when opaque objects block a source of light.
Transparent	A material that allows light to pass through in straight lines so that objects behind can be distinctly seen. (e.g. glass)
Translucent	A material that allows some light to pass through, but it scatters the light in all directions so you cannot see clearly. (e.g. tissue paper)
Opaque	A material that blocks all light so it is not able to be seen through. (e.g. wood)
Reflection	When light from an object is reflected by a surface, it changes direction. It bounces off the surface at the same angle as it hits it.
Reflective	A word to describe something that reflects light well.

### Diagrams



iris gets bigger to let in as much light as possible. If there is no light at all, we cannot see anything.



### Possible Experiences

- Make shadow puppets – try using different colours of paper or card, not just black to challenge misconceptions about shadows. Does blue paper cast a blue shadow? Try using other materials that are transparent but have a colour (like cellophane wrappers), translucent (like tissue paper or wipe oil over paper) or opaque (like card).
- Explore how you can change the size and shape of shadows by using the same object.
- Make a periscope to see over walls or round corners. This works because rays of light hit the mirror of the periscope and are reflected twice. The beam of light is reflected through 90 degrees, because the mirrors are at a 45 degree angle to the path of the light ray.