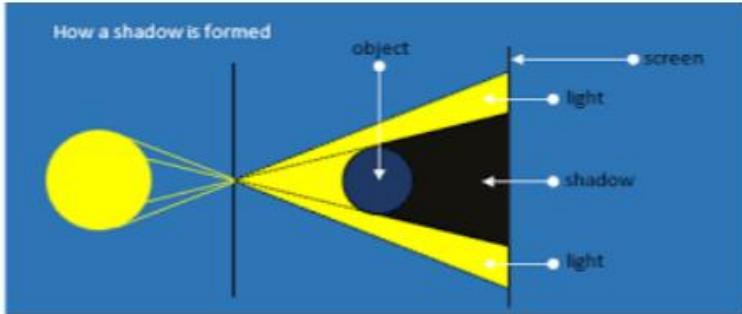


**What we already know:**

Certain things produce light (usually by burning or electricity)  
 Shiny materials do not make light but do reflect it.  
 Shadows are caused when certain materials block light.

**What's next?**

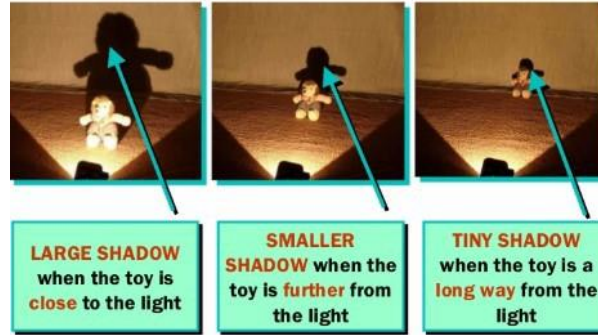
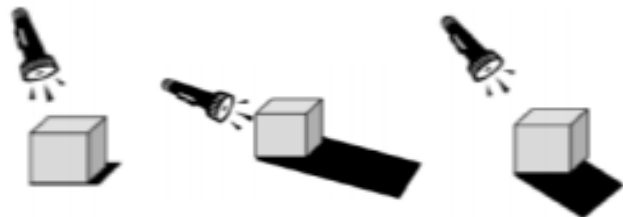
In KS3, children will look at the similarities and differences between light waves and waves in matter. Light waves travelling through a vacuum; speed of light. The transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface Science. Use of ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative); the human eye. Light transferring energy from source to absorber leading to chemical and electrical effects; photo-sensitive material in the retina and in cameras. Light colours and the different frequencies of light, white light and prisms, differential colour effects in absorption and diffuse reflection.



The shadows shape will be the same as the object which has blocked the light.



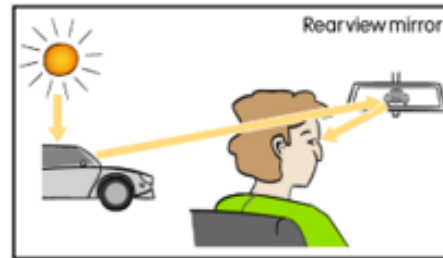
The angle of the light source also makes a difference to the size of the shadow.



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

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

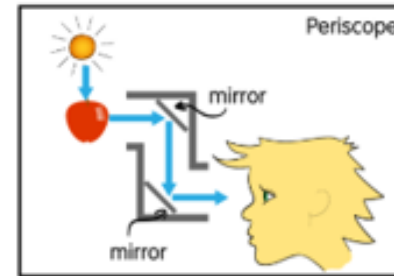
**TINY SHADOW** when the toy is a long way from the light



Know how the movement of light from source to object to eye can be explained.

**LIGHT AND DARK** - We need light so that we are able to see.  
 Dark is the absence of light.  
 A light source can emit light by burning, electricity or chemical reactions, some examples include:

- Burning** – sun, flames from a fire, stars.
- Electricity** – lamps, car headlights, street lights.
- Chemical Reactions** – light is a product of the reaction e.g. glow sticks.



Example: light travelling and reflecting from a smooth surface.



Example: light travelling and reflecting from a rough surface.



**Vocab**

**Tier One**

- Reflect
- Light
- Shadow
- Dark
- Burning
- Angles
- Mirrors

**Tier Two**

- Emits
- Opaque
- Transparent

**Tier Three**

- Periscope