

Science Knowledge Organiser

Year 4 ★ Light and Dark ★

Key Vocabulary

Light - Something that makes things visible.

Light source - An object that emits light.

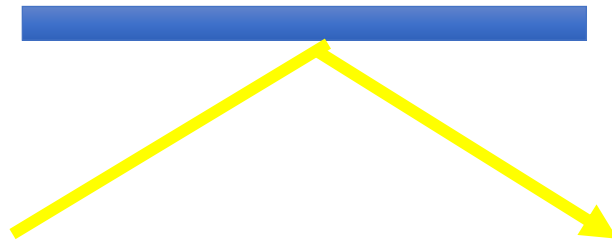
Transparent - Used to describe materials that let light through so that you can see things behind it.

Translucent - Used to describe materials that only let some light through so you can only see a blurred image.

Opaque - Used to describe materials that you can't see through.

Reflective - Used to describe materials that reflect light.

Reflection - when light bounces off of a surface without being absorbed.



Light reflects off a mirror like a ball hitting a hard surface.

Refraction

When light travels through transparent materials, the light rays bend. This is called refraction.



Refraction occurs because light travels at a different speed through the water. This makes the pencil appear bent as it enters the water.

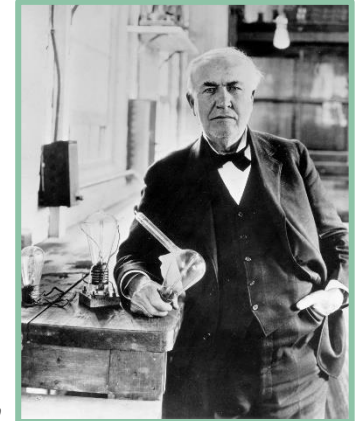
Significant person

Thomas Edison

(1847 - 1931)

Who are they?

Thomas Edison was an American inventor and scientist. In 1878 he started the Edison Electric Light Company, and came up with a system for electric lights in cities. His best-known inventions are the first *working* lightbulb*, the phonograph (used for sound recording), and the kinetoscope, a moving-image projector which helped to start the age of movies.

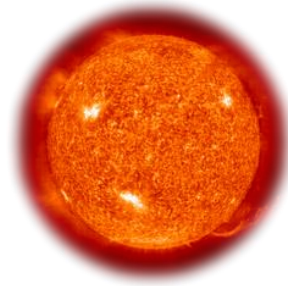


*Although Edison is credited with the invention of the lightbulb, he wasn't the first. Other inventors and scientists such as Alessandro Volta, Humphrey Davy and Joseph Swan played a critical role in the development of this technology. Edison improved upon their research to create a long-lasting and commercially available lightbulb. This allowed for the electric lightbulb to be used across cities.

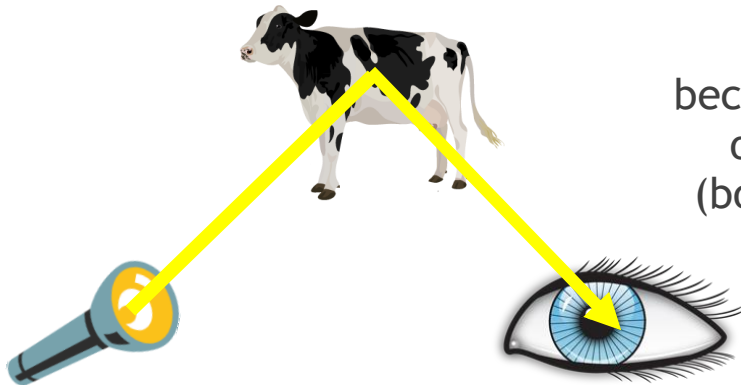
↻ Prior Learning

Light sources- There are many different sources of light. Some are natural and some are man-made.

- Light is a form of energy. It usually comes from hot objects but not always.
- The sun is a natural source of light. The energy from the sun powers all life on Earth.



We can see objects because when light hits an object it is reflected (bounces off) and enters our eyes.



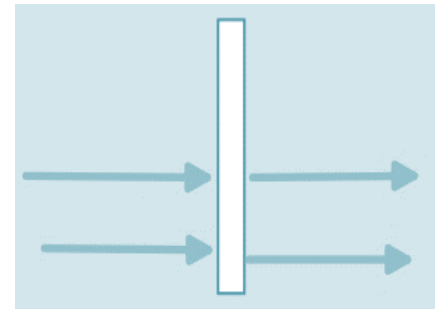
Shadows

Reflective and opaque objects block light and will form a darker shadow.

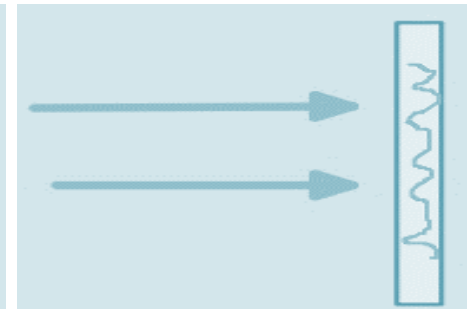


Translucent and transparent objects let light through and will form either no shadow, or lighter shadows.

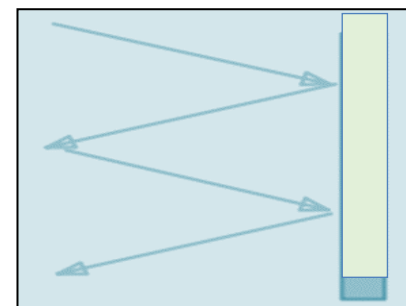
Transparent objects let most of the light through.



Translucent objects let some light through.



Shiny and light objects reflect



Opaque objects absorb light.

