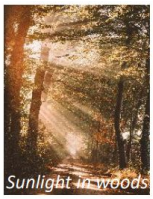
Science Knowledge Organiser
Year 6 Spring (i)
How does light travel?

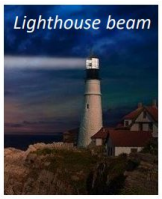
Substantive Knowledge – What will we learn?

To know that light appears to travel in straight lines

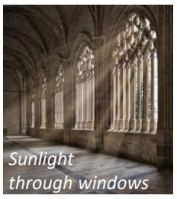
We see things because **light** travels from a **light source** into our eyes.

Light travels in **straight lines**.


Sunlight in woods


Lighthouse beam

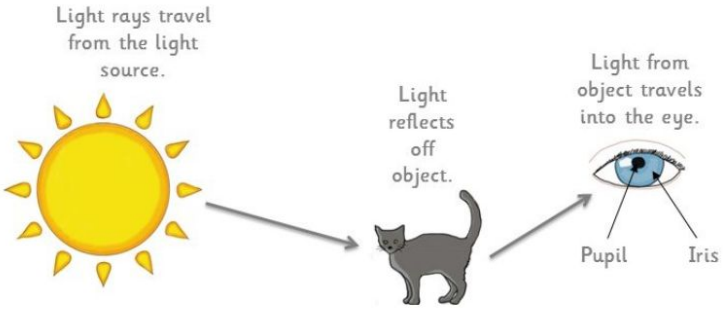

Shadows of trees


Sunlight through windows

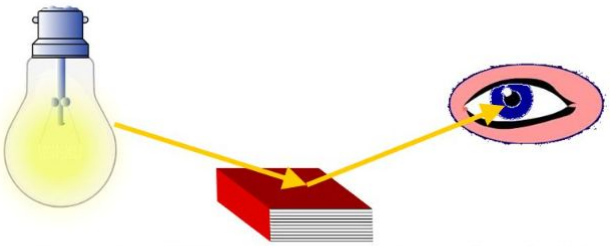

Laser light show


Sunlight through the clouds

To use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.



How does your eye see **non-luminous** objects such as a book?



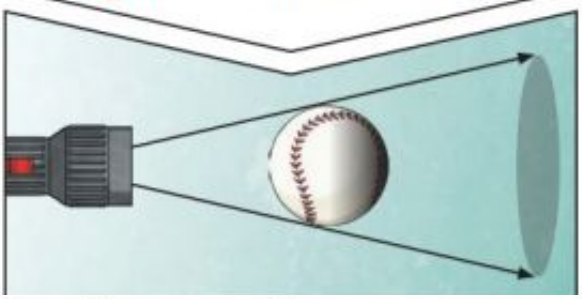
Light from the light source strikes the book and some of the light is reflected into your eye.

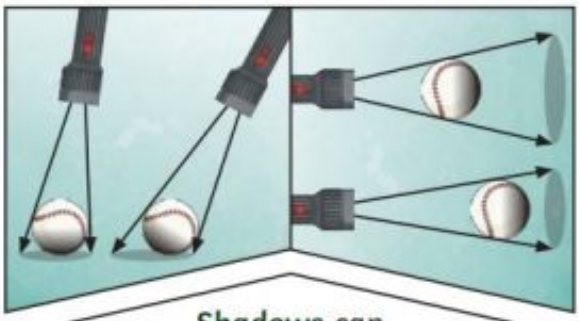
Disciplinary Knowledge – How will we learn?

- **Describe and compare**
- **Identify structure and function**
- **Identify similarities and differences**
- **Observe changes**

To use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

A **shadow** is always the same shape as the object that casts it. This is because when an opaque object is in the path of light travelling from a light source, it will block the light rays that hit it, while the rest of the light can continue travelling.





Shadows can also be elongated or shortened depending on the angle of the light source. A **shadow** is also larger when the object is closer to the light source. This is because it blocks more of the light.

Core Vocabulary

refraction - happens **when light changes direction, or bends, when it moves from one material to another**.

wave dispersion - the idea that the frequency of a wave influences its speed

absence of light - darkness, the physical condition of absence of light

artificial - made, produced, or performed by human beings often following a natural model or process