

The Big Questions

What can you see when there is
absolutely no light?

What if we didn't have mirrors?

Core Knowledge



- Light comes from different light sources and we need light to be able to see.
- Light travels in a straight line.
- Light reflects off different surfaces but some surfaces are better reflectors than others.
- Light needs to bounce (reflect) off an object for us to be able to see it.
- Our eyes allow us to take in light from all around us and our brain interprets what we are seeing.
- The eye is made up of different parts, each of which has an important role to help us to see well.
- The light from the sun can be very dangerous and damage our eyes but there are ways that we can protect our eyes.
- Shadows are formed when the light from a light source is blocked by a solid object.
- Shadows change shape when the distance between the light source and the object changes.

Core Knowledge

- Different objects have different properties—Some objects are opaque, some are translucent and some are transparent.



transparent



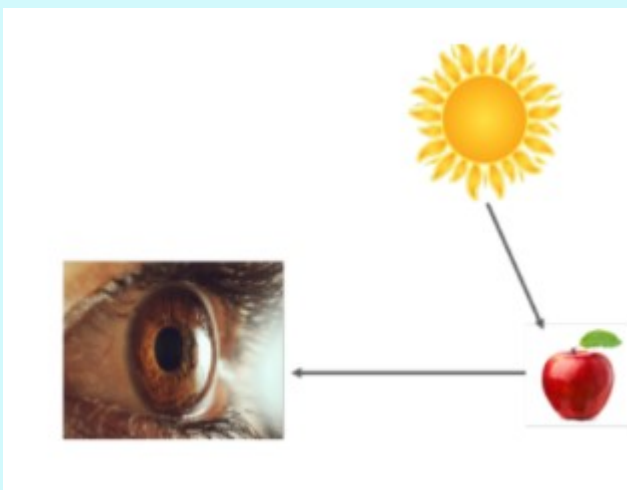
translucent



opaque

<https://maggiesscienceconnection.weebly.com/reflection-absorption>

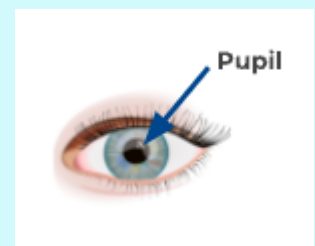
How we see things



1. The light source emits light
2. Light travels in a straight line to the object.
3. Light is reflected off the object.
4. Light travels in a straight line to the eye.

<https://teachers.thenational.academy/lessons/how-can-we-see-objects-6ct6ct>

The pupil is an opening in the centre the eye that allows light to enter the eye. It changes size depending on how light or how dark it is.



Key vocabulary

Light—a source of illumination that may be natural or artificial.

Dark— the absence of light.

Light source— anything that makes light (for example -the sun, a torch)

See— perceive (distinguish) with the eyes.

Reflect— to bounce light back without absorbing it.

Absorb—to take in or soak in.

Shadow—a dark area or shape caused by an object coming between rays of light and a surface.

Natural—existing or made in nature (not human made).

Opaque—cannot be seen through.

Translucent—allows light but not detailed shapes to pass through.

Transparent—allows light to pass through so that objects behind can be clearly seen.

Pupil— the black part of the eye—a hole that allows light to enter.

Retina—nerve tissue at the back of the eye receives light and enables vision.

Vision—the state of being able to see

As scientists we will

Recognise that we 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.

Observe that shadows are formed when the light from a light source is blocked by an opaque object.

Look for and find patterns in the way that the size of shadows change.

