

Light

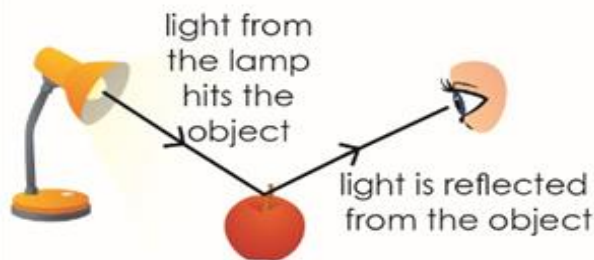


NATURAL

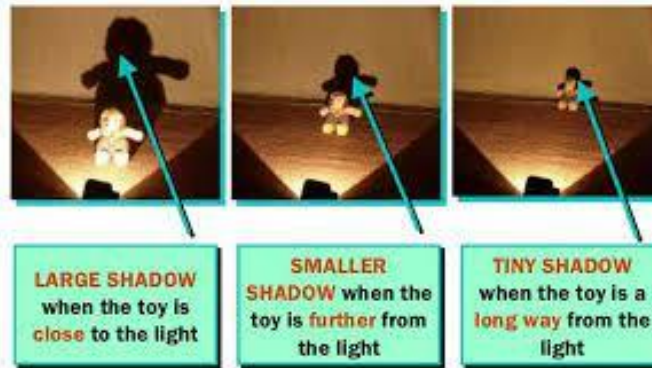


ARTIFICIAL

- Without **light**, we wouldn't be able to see anything.
- A **light source** is something that gives **light**.
- Light travels in straight lines** it cannot naturally bend around corners or objects.
- Some light sources are **natural**—for example, the Sun, a flame, and a firefly. Other light sources are **artificial**—for example, lamps, bulbs, and torches.
- Our main source of natural light on Earth comes from the **Sun** (which emits light in all directions).
- Earth's Moon is not a light source. We can see the Moon because sunlight **reflects** back to us from its surface.



Working together to be the best that we can be



We see an object because light bounces off it and into our eyes. This process is called **reflection**. Different coloured objects reflect different frequencies of light; this is why we see objects as coloured. The **pupils** in our eyes are small gaps that let in the light. The pupils in our eyes get larger when it is dark to allow more light in, and reduce in size when in brighter light to limit the amount of light entering the eye.

- Transparent** light passes through transparent material, such as glass.
- Materials such as wood, stone, and metals are **opaque**—they block light from traveling through them.
- Materials like frosted glass and some plastics are called **translucent** only some of the light passes through.

Shadows



Whenever light is not able to go through an object, it creates a dark area behind the object. This is called **shadow**. The **closer** an object is to the source of light, the **bigger** the shadow.

Shadows take the outline shape of the object, but the size of the shadow is usually different to the size of the object. This is caused by the height of the light source to the object, as well as the distance from the light source to the object. For example, at **midday**, the **Sun** is directly overhead and shadows are **shorter**. In the morning and afternoon, shadows are longer as the Sun appears at a lower angle in the sky. Shadows formed from sunlight can be used to tell the time using a **sundial**—the shadow points to the hours of the day like the hands of a clock face.

- Opaque** objects create clear, dark shadows.
- Transparent** objects create no shadows as the light passes through them completely.
- Translucent** objects create a shadow that is fainter, because it allows some light to pass through it.