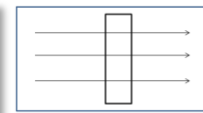


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**BIG IDEA: LIGHT AND SOUND**  
**TOPIC: LIGHT**

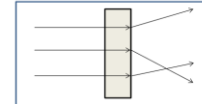
Key Word	Definition
<b>Luminous</b>	An object that emits (gives out) light.
<b>Non-luminous</b>	An object that does not emit light but can reflect it.
<b>The law of reflection</b>	When a ray of light bounces off a surface, the angle of reflection is always equal to the angle of incidence.
<b>Incident ray</b>	The incoming ray.
<b>Reflected ray</b>	The outgoing ray.
<b>Normal</b>	The line from which angles are measured, at right angles to the surface.
<b>Angle of incidence</b>	The angle between the normal and the incident ray.
<b>Angle of reflection</b>	The angle between the normal and the reflected ray.
<b>Refraction</b>	Change in the direction of light when going from one material into another.
<b>Absorption</b>	When energy is transferred from light to a material.
<b>Scattering</b>	When light reflects off an object in all directions.
<b>Transparent</b>	A material that allows all light to pass through it. A clear image can be seen through it.
<b>Translucent</b>	A material that allows light to pass through it, but scatters it. An unclear image can be seen through it.
<b>Opaque</b>	A material that allows no light to pass through it. Nothing can be seen through it.

The path that light takes can be represented using a **ray diagram**. This shows where light comes from and in what direction it goes. Light always travels in **straight lines**. It can change direction when it meets a reflective surface. In this case, it changes direction according to the **law of reflection**.



**Transparent** – these are materials which let all of the light straight through.

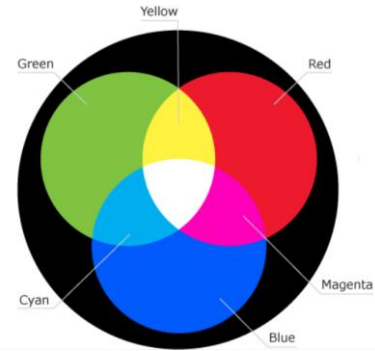
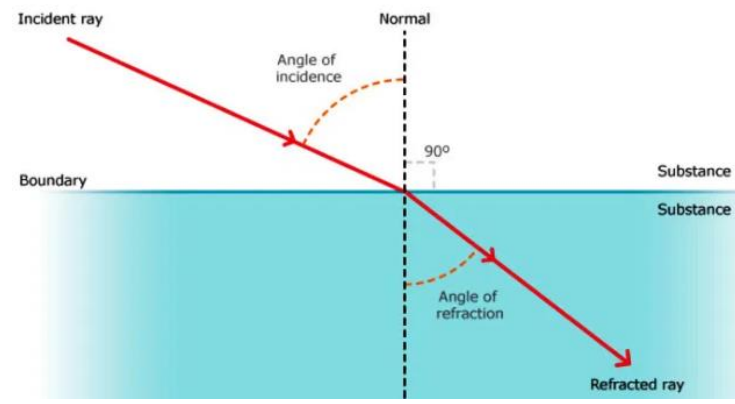
**Translucent** – these materials let light through but it is randomly scattered.



**Opaque** – these materials let no light through.

Because light is a wave, it can have different **wavelengths**. We perceive different wavelengths of light as different colours. However, light of different wavelengths can be **combined** to make other colours. For example, red and green light combined makes yellow light. **White light** is all the colours combined.

Light can also change direction when it enters a different **medium** (substance) at an angle – e.g. when light travels from air to water. The light changes speed at the **boundary** and this causes the light to change direction. This is called **refraction**.



Humans can only see wavelengths of light in the **visible light** range. Infrared and ultraviolet light cannot be seen by humans but can be detected by some other animals.

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