



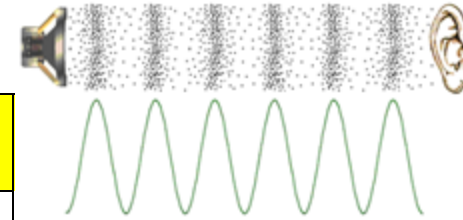
Light and Sound

SOUND

Sound is a type of energy. Sounds are created by vibrations and the louder the sound, the bigger the vibration.

Sound can travel through solids, liquids and gases. It travels as a wave, vibrating the particles in the medium it is travelling in. Sound cannot travel through a vacuum.

Sound energy can travel from particle to particle far easier in a solid because the vibrating particles are closer together than in other states of matter.



Vibrations create sound waves and these are detected by the ear. Changing the shape of your mouth changes the speed of the vibrations, making different sounds.

Useful Vocabulary Light

Illumination - shine light

Shadows - Shapes produced by an object blocking rays of light travelling to a surface.

Light sources - Objects that produce their own light (e.g. sun, fire).

Reflect - When light hits a surface and 'bounces' off.

Opaque - An object which does not allow light to pass through it (e.g. wood).

Translucent - An object which allows some light to pass through it. It may be possible to see some unclear images through the object (e.g. tissue paper).

Transparent - An object which allows light to pass through it so that objects behind it can be easily seen (e.g. glass).

Spectrum - A range of colours caused when white light is refracted. A rainbow shows a spectrum of colours.

LIGHT

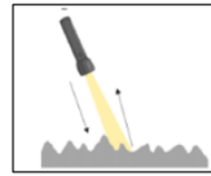
Darkness is the absence of light. Light sources, such as the sun, illuminate light. This light can be reflected off of surfaces. As light travels in straight lines, the reflection will be dependent on the type of surface it hits. If the surface is not smooth, it can refract.

Shadows are caused when rays of light are blocked by opaque or translucent matter. A shadow can change shape and size depending on how close to the light source it is.

The sun can be dangerous and we should always take precautions to protect ourselves.



Left: Light travelling and reflecting off a smooth surface



Right: Light travelling and reflecting off a rough surface

Useful Vocabulary Sound

Vibrations- Sounds are made when objects *vibrate*. The *vibrations* enter your ear and you hear them as sound.

Medium - Material.

Volume - How loud something is.

Ear - The organ of the human body that detects vibrations and turns these into sound.

Matter—Another word for the stuff that things are made from. Everything around us is matter.

Pitch - How high or low the sound is. High pitched sounds vibrate faster, low pitch sounds have slow vibration.

Vacuum - A vacuum is **a space with nothing in it**—not even air. Sound cannot travel through a vacuum as there is no energy or matter for it to vibrate.