

Light & Sound Terminology

<u>Terms</u>	<u>Definitions</u>
sound wave	<i>a longitudinal wave caused by vibrations</i>
medium	<i>What a mechanical wave travel through. (example water, air)</i>
outer ear	<i>The part of the ear that collects sound (ear, ear canal)</i>
middle ear	<i>the part of the ear that amplifies sound (eardrum, three bones, cochlea)</i>
inner ear	<i>transfers vibrations to brain</i>
pitch	<i>how high or low a sound is (different from loudness)</i>
loudness	<i>amount of energy in a sound wave</i>
doppler effect	<i>Change how something sounds as it moves towards or away from you</i>
decibel	<i>Unit for measuring loudness</i>
echo	<i>A reflected sound wave (helloooooo helloooo helloooo)</i>
echolocation	<i>Using reflected sound waves to find objects (bats, dolphins)</i>
interference	<i>when two or more waves interact</i>

sonic boom	<i>the explosive loud sound from a shock wave. Created when something goes faster than the speed of sound.</i>
electromagnetic wave	<i>a wave that does not require a medium (ex: light, radio, microwave)</i>
radiation	<i>energy traveling by electromagnetic waves.</i>
speed of light	<i>the speed at which light travels (when no particles interfere)</i>
reflection	<i>When a wave hits an object and bounces back (ex: light-->mirror)</i>
absorption	<i>When matter absorbs light waves</i>
scattering	<i>When matter "scatters" light waves</i>
transmission	<i>Light passing through matter</i>
transparent	<i>A material that allows both light and images through (ex: clear window)</i>
translucent	<i>A material that allows light through but not images (ex: frosted window)</i>
opaque	<i>a material that doesn't allow light or images to pass through (ex: brick)</i>
pigment	<i>a chemical that absorbs light to producing color</i>
near sighted	<i>sees closer objects better</i>
far sighted	<i>sees far objects better</i>
hammer, anvil, stirrip	<i>three tiny bones of the middle ear</i>
vibrations	<i>how sound waves get information to your brain</i>

cochlea

liquid filled cavity in the inner ear.

low pitch=_____ frequency

low

high pitch=_____ frequency

high

process of hearing

Sound waves vibrations go through ear and ear canal-->ear drum drum and bones amplify vibrations in the middle ear-->cochlea vibrates in inner ear-->vibrating hairs on cochlea send nerve signals to the brain

lumionous objects

emit light (ex: sun or lamp)

illuminated objects

reflect light (ex: light colored walls)

primary colors

blue, red, green

secondary colors

overlapping primary colors

**White light is made up of
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colors

process of seeing

light waves pass through the cornea and are refracted-->the pupil controls the amount of light by contracting or dilating--> the lens focuses the light wave on the retina in the back of the eye--->cone (color sensitive)and rod (light sensitive) cells in the retina absorb different wavelengths-->images are transmitted to the brain through the optic nerve