

Doppler Effect

May 20, 2016 1:03 PM

<https://www.youtube.com/watch?v=h4OnBYrbCjY>

Sound waves

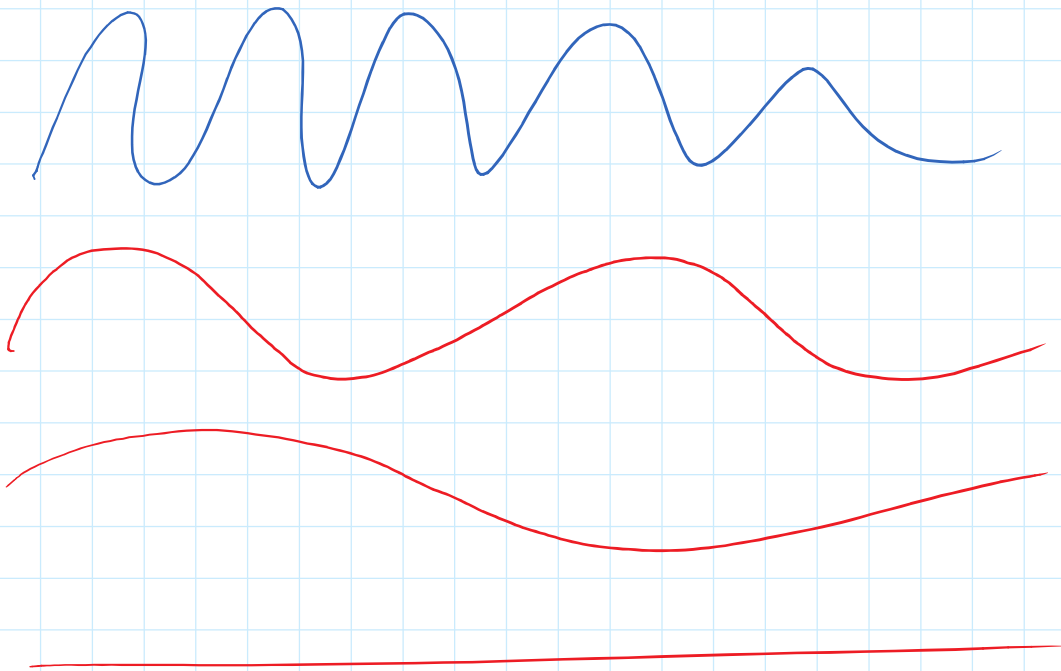
High frequency $\Rightarrow$ High Pitch

Low frequency $\Rightarrow$ Low Pitch

Light Waves

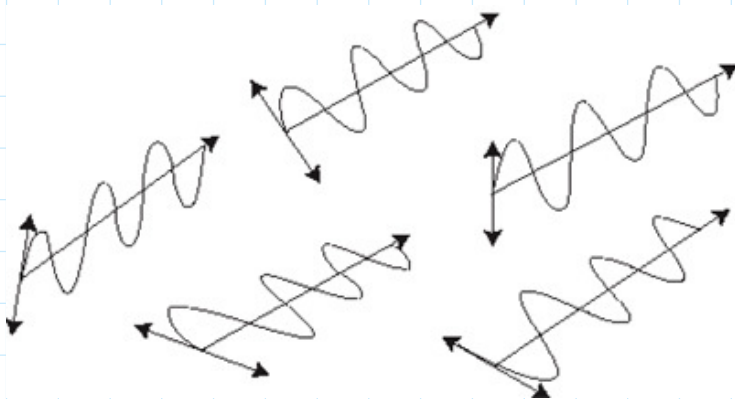
High frequency $\Rightarrow$ Blue Light

Low frequency $\Rightarrow$ Red Light

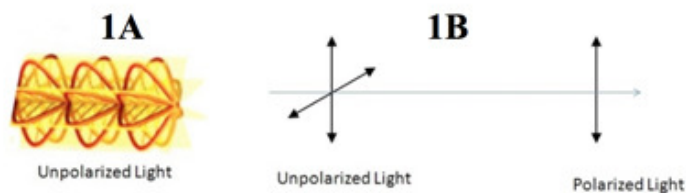


Polarization: The orientation or phase of the light waves

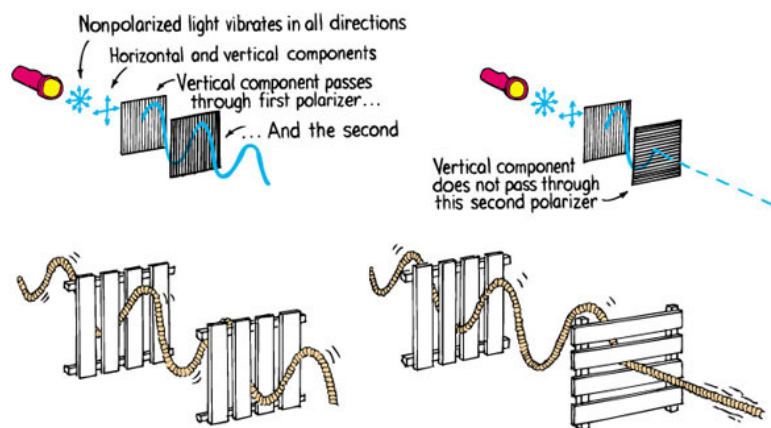
Imagine rotating that normal sine wave around the principal axis as seen below. This phase of the wave determines the waves polarization.



Light from the sun comes to us unpolarised. This means that the light rays all have random phases which gives us a mixture of all polarizations.



In many experiments or applications we want our light to be polarized. Polarizers act like a picket fence which only allows specific phases of light to pass through.



Hewlett, *Conceptual Physics*, Ninth Edition.
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The most common application of this is with polarized sunglasses. These are useful mainly for water sports, because the light that comes off the water tends to be all polarized in one phase. The sunglasses block out this glare.

