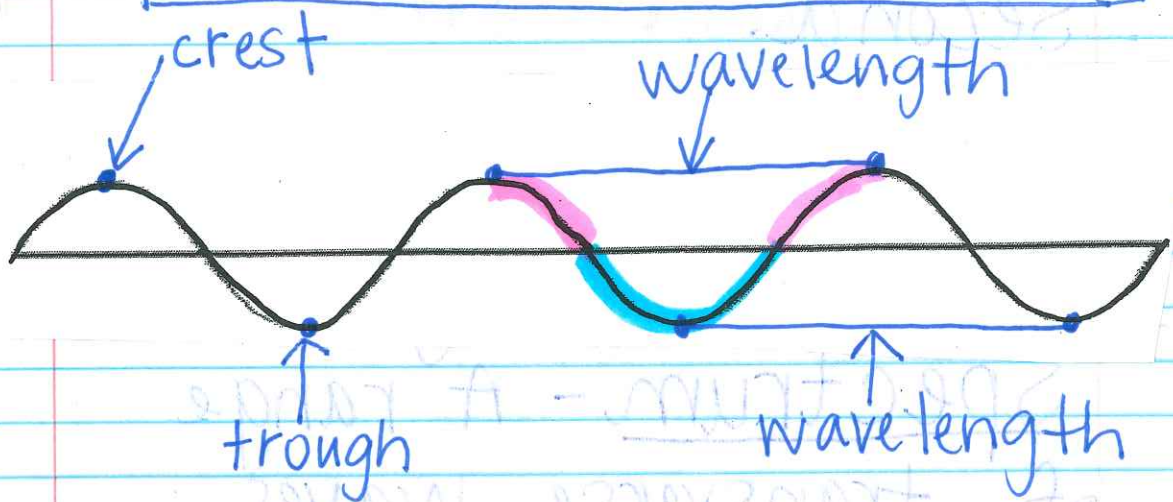


Light



- ★ Light is energy.
- ★ Light does not need matter to travel.
- ★ Light travels in waves called Transverse Waves.

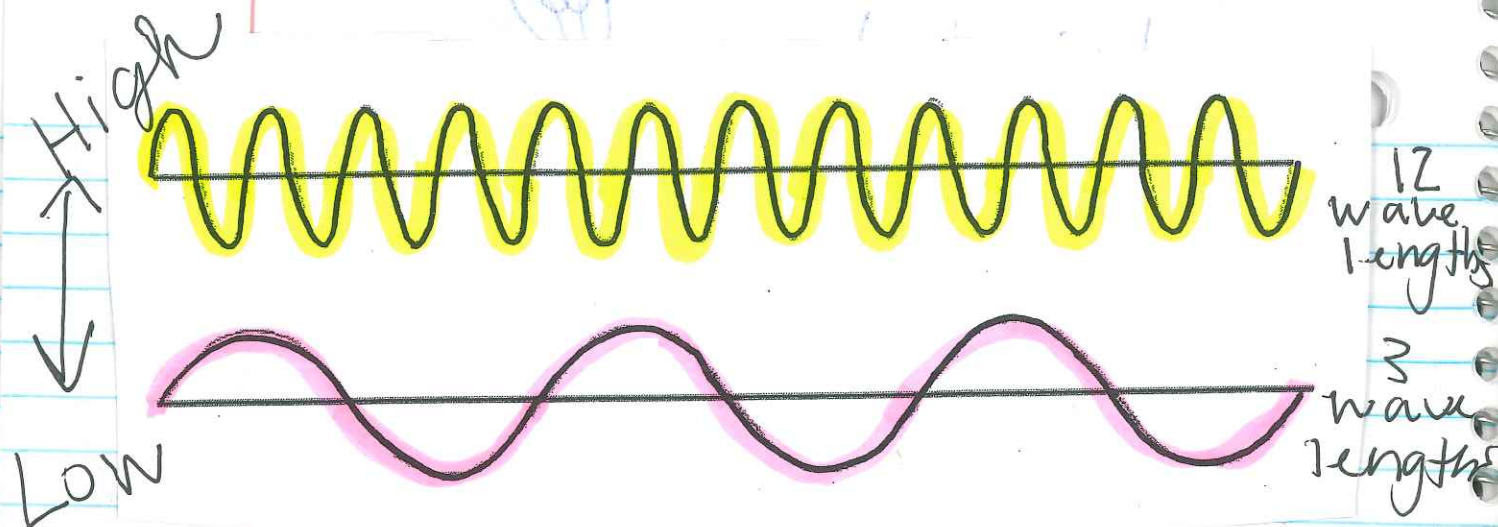
TRANSVERSE WAVE



crest - top of a wave

trough - bottom of a wave

wavelength - one whole wave

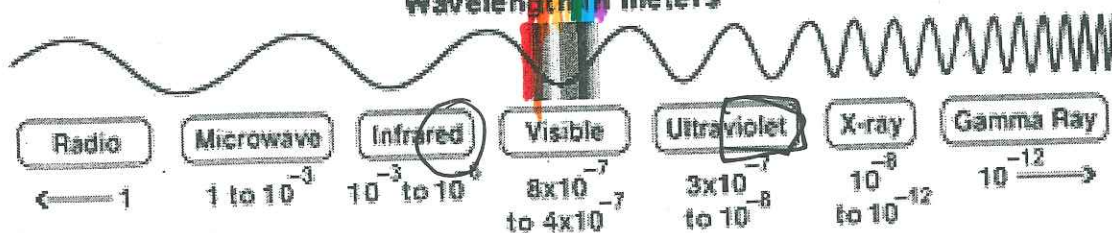


Frequency - how many waves per second.

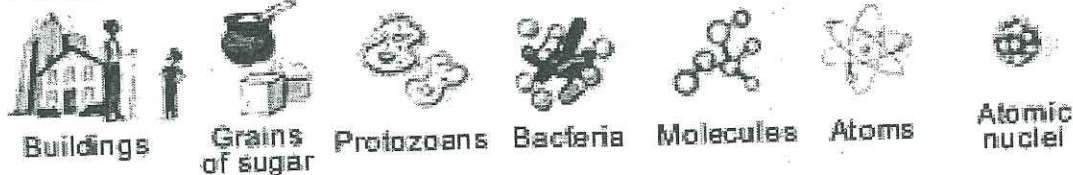
The Electromagnetic Spectrum - A range of transverse waves that begin with radio and go to gamma. In the middle is visible light.

The Electromagnetic Spectrum

Wavelength in meters



About the size of:



Red has the lowest frequency

Violet has the highest frequency

ROY G BIV

long wavelength

RED

ORANGE

YELLOW

GREEN

BLUE

INDIGO

VIOLET

short wavelength

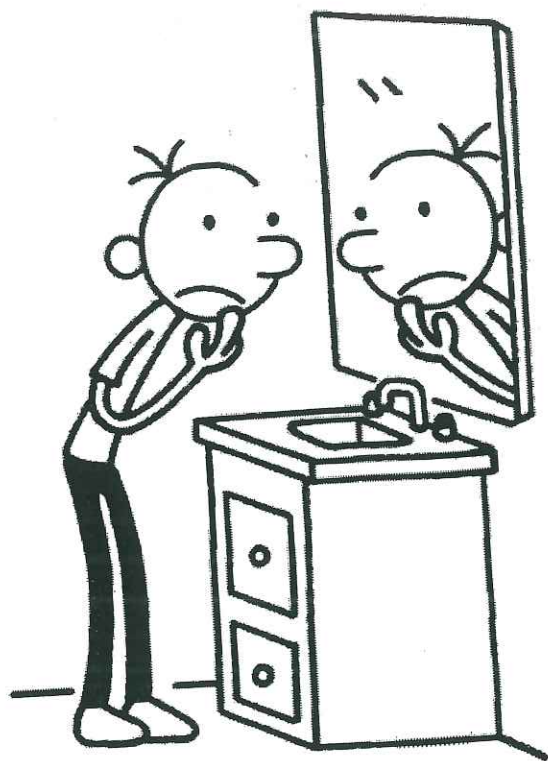
Red - longest wavelength
Violet - shortest wavelength

ROY G BIV

Black → absorbs all colors of light.

White → reflects all colors of light.

REFLECTION



• Reflection is light bouncing back

• Light reflects best off of shiny surfaces.

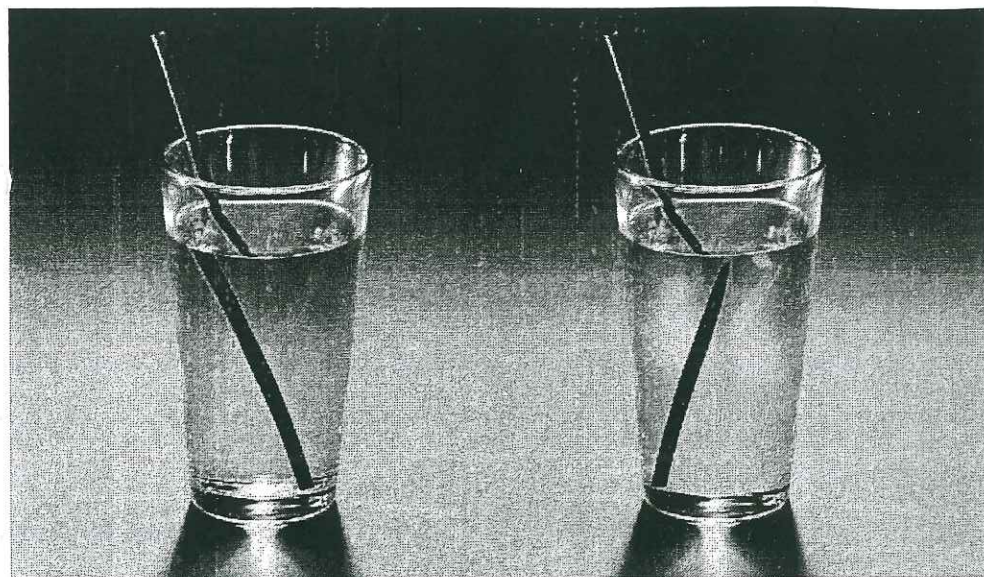
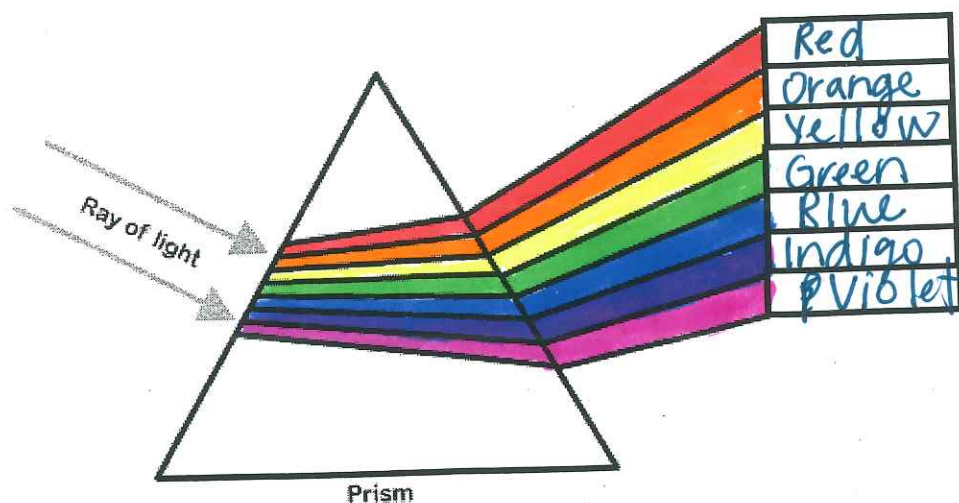
ex. mirror, car, sunglasses.

When we see a color it's because the

frequency of light is reflected back. All others are absorbed. 29

Refraction

The bending of light.



Transmission of Light through Materials

① TRANSPARENT → light passes through clearly.

ex. Regular window, clear plastic box, test tube, reg. glasses.

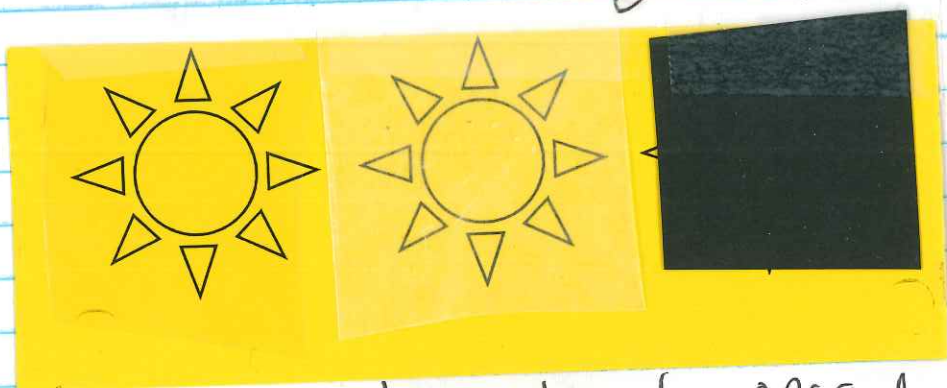
② TRANSLUCENT → allows some light to pass through.

ex. sunglasses, stained glass, foggy window, muddy water

(oh-pake)
③ Opaque → allows no light through.

ex. brick, stapler

wax paper



transparent translucent opaque

How a Rainbow is formed!

① Tiny water drops are in the sky after it rains.

② Light enters the drops and refracts.

③ Light reflects off the back of the drop. This causes a rainbow! ☁☁☁