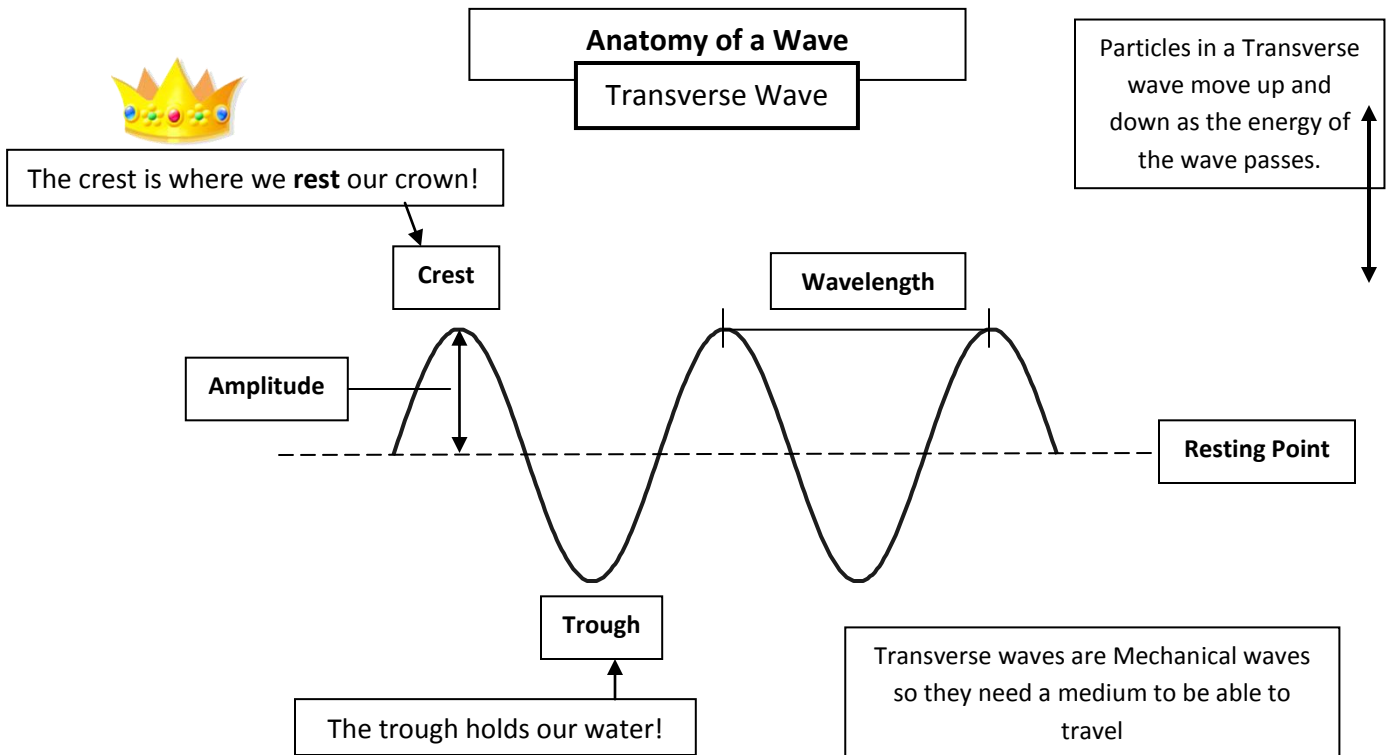
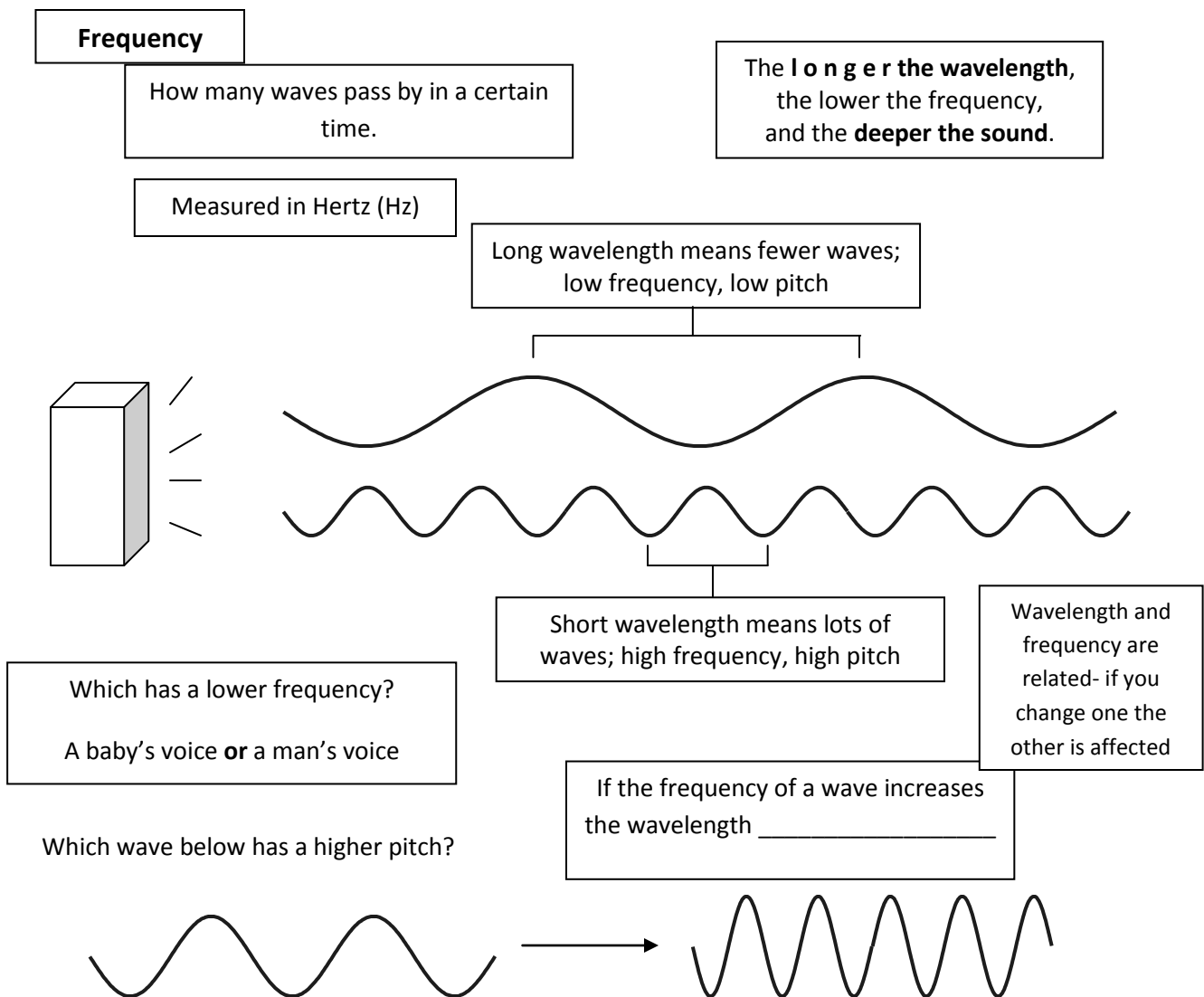
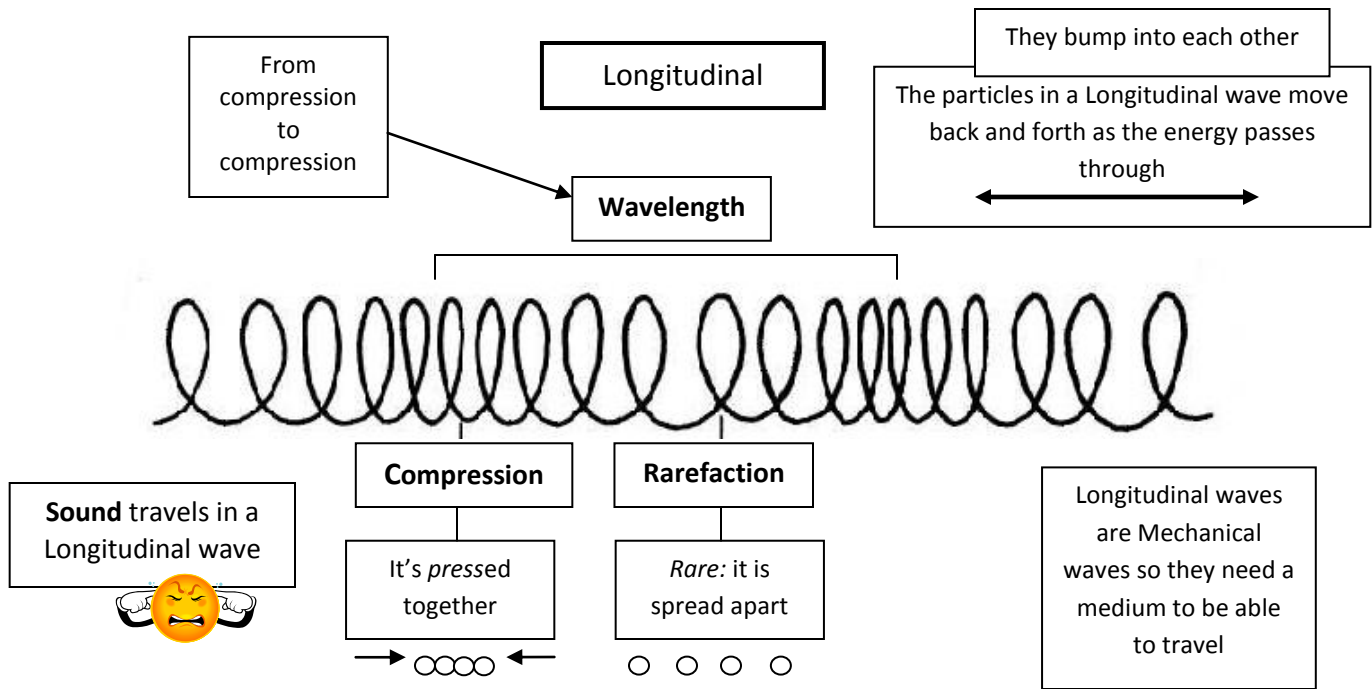


Which type of wave travels the fastest? _____

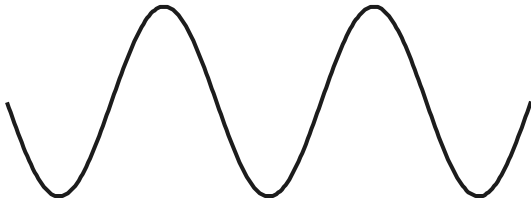
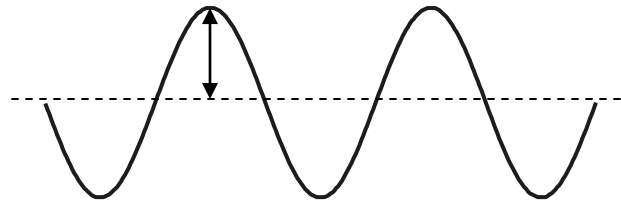




Amplitude

The _____ of a wave

Larger amplitude = more energy



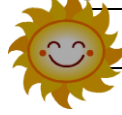
A tall **sound** wave will be **LOUD**



A tall **light** wave will be **BRIGHT**



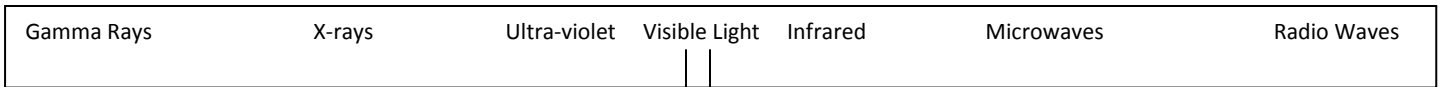
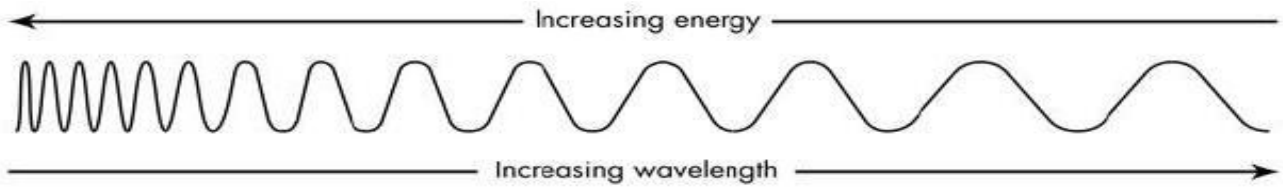
A short **sound** wave will be **QUIET**



A short **light** wave will be **DIM**

Electromagnetic waves

-- waves with changing electric and magnetic fields



High energy
High Frequency
Short wavelength

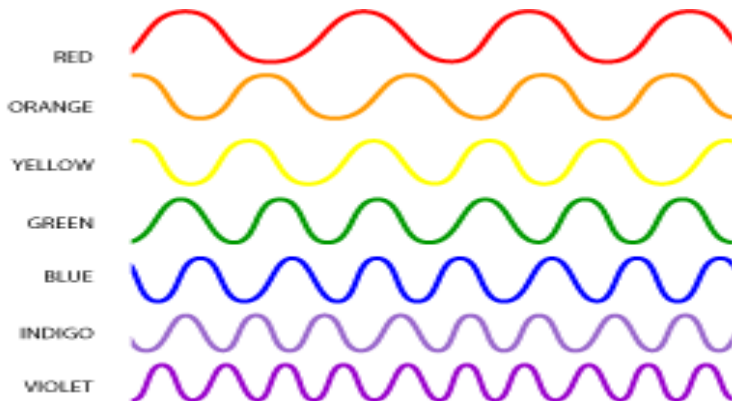
Low energy
Low Frequency
Low wavelength

ROYGBIV

What we can see

Light waves are unique because they are **visible**. We can see them

EM waves don't need a medium.



Red light has a **l o n g** wavelength.

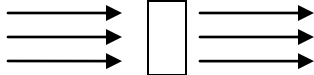
Each color has a different wavelength



White light contains **ALL** colors
Roy G. Biv

Violet light has a **short** wavelength.


Transparent:
Something that is transparent lets all the light through.
Example: _____



Clear


Transmit

If something can transmit light it means that it _____



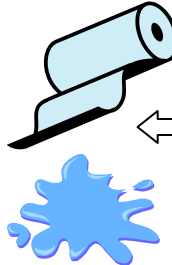
You can see through a window because it transmits light well

Translucent:
Something that is translucent lets some of the light through.
Example: _____

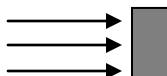


Absorb

If something absorbs light it means that it _____



The paper towel will soak up or absorb your spill



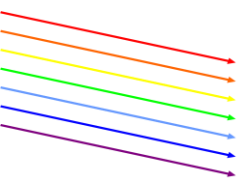
Opaque:
Something that is opaque doesn't let any light through.
Example: _____

Black absorbs all colors of light.

Hint: don't wear black in the summer!

White reflects all colors of light.


Reflection

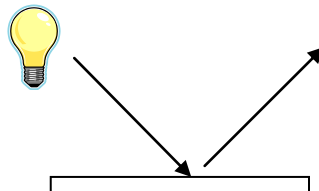


Occurs when light or any other waves bounces off an object

The wave will bounce off at the same angle that it hit

A red rose reflects red light and absorbs all other colors.

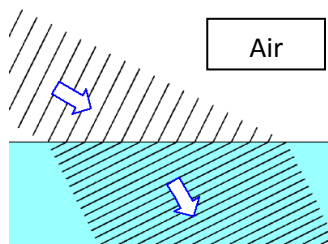




Refraction

Waves bend when they change mediums

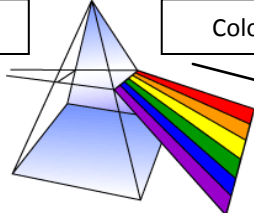
Changing medium makes the wave change speed.



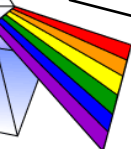
Air

Water

White light in



Colors out

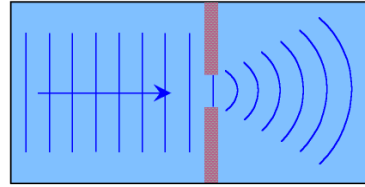


White light can be refracted through a prism to separate into different colors

Diffraction

Waves bend to get around something
– or to go through an opening.

Diffraction allows you to hear sounds
around a corner

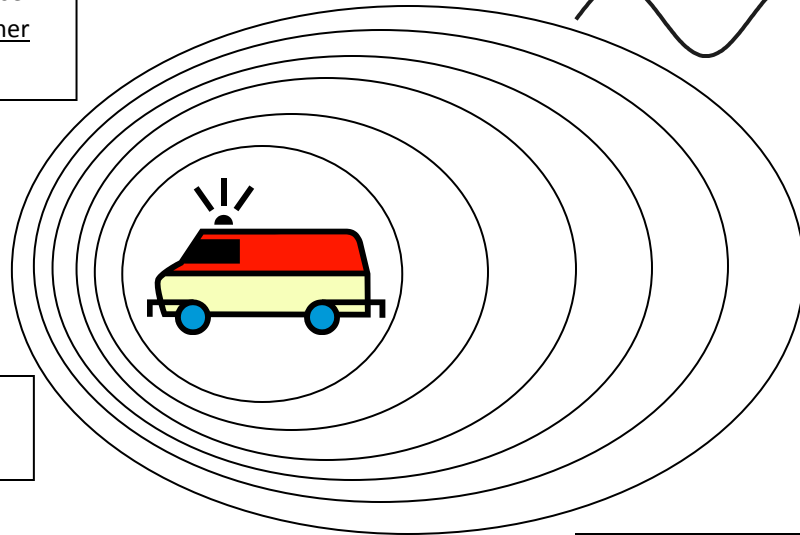
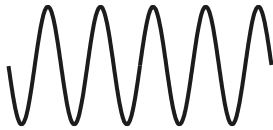


Doppler Effect

When the source of a sound is
moving the sound appears to change

The ambulance moves away from
the sound waves behind it,
causing the waves to be farther
apart and to have a lower
frequency

The ambulance moves towards
the sound waves in front of it,
causing the waves to be closer
together and to have a higher
frequency



A listener in front of the
ambulance hears a high pitch

A listener in behind the
ambulance hears a lower pitch

Put these three in order
from slowest to fastest:

Light waves ____
Sound waves ____
Water waves. ____

Put these in order from
shortest wavelength to
longest:

Radio waves ____
Ultraviolet ____
X-rays ____
Visible ____
Microwaves ____

1. Transverse wave
2. Longitudinal wave
3. Crest
4. Trough
5. Wavelength

Matching

- A. A wave where the particles move perpendicular to the motion of the wave.
- B. The bottom of a wave.
- C. The top of a wave.
- D. A wave where the particles move in the same direction (parallel) as the motion.
- E. The length of one wave cycle.

