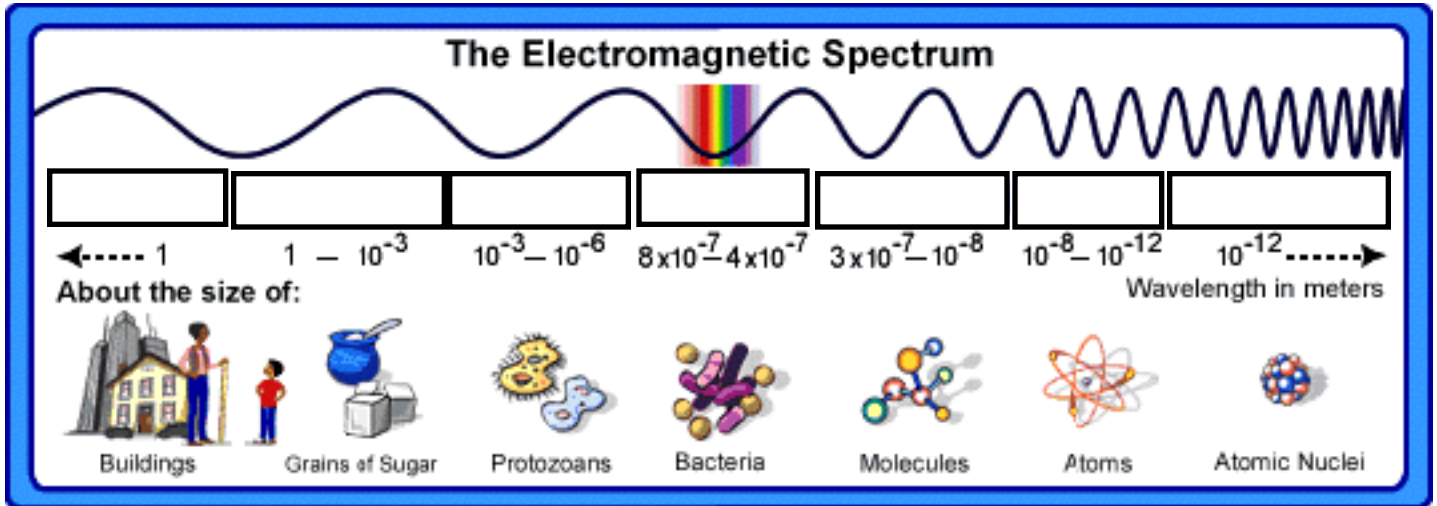


Light Research Guide

A. Electromagnetic Wave Spectrum – _____



Short Wavelengths are 10^{-12} meters long (0.000000000001 meter) and long wavelength are 10 meters

B. How does light act like a particle? _____

How does light act like a wave? _____

Photon – _____

Speed of Light in a vacuum – _____

C. 4 Ways To Produce Light

Incandescence – _____

Fluorescent – _____

Passing Electricity Through a Gas (ie Neon) – _____

Chemical Reactions – _____

D. Draw pictures of the things light can do when it hits a material

transmission	Refraction	diffusion	reflection	absorption

E. Three Types of Material - (and what they do to light when light hits them)

Transparent – _____

Translucent – _____

Opaque – _____

F. Seven Colors of the Rainbow– called the Visible Light Spectrum

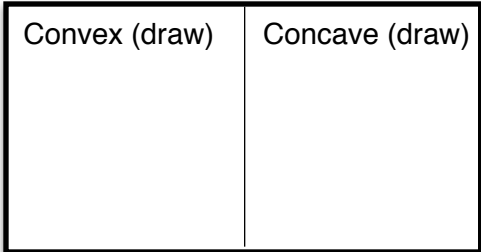
List the colors on the line below from shortest wavelength to longest wavelengths

Short Wavelength –(.0000004 meters) High Frequency – (800,000,000,000,000 hz)

What happens when we see white?
What happens when we see black?
What happens when we see a particular color?

G. Three Devices that Change Light

Lens –
Mirror –
LASER stands for



L A S E R

3 things that make LASER light special

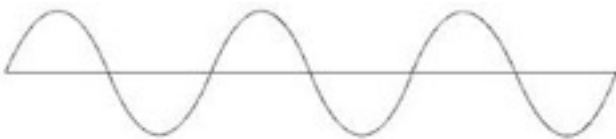
Monochromatic-
Coherent –
Travels in a Plane Wave Front –

Waves and Sound (use the internet for some of these)

Two kinds of waves: Transverse waves:
Longitudinal (compression waves):

Use the internet to label the diagram with the words in the box:

crest trough
wavelength amplitude



Speed of sound in air:
Pitch:
Amplitude:
Reverberation:
Uses for sound waves: