Light Study Guide

| What is light ? | Light is fast moving electromagnetic radiation that travels in straight paths and is made of tiny photons . |
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| How is the size of a light wave measured ? | Trough Trough The size of a light wave is determined by its wavelength. |
| What are transverse waves ? | Waves that oscillate (move up and down) in a way that is opposite to the direction of energy travel. |
| How does the frequency of a wave affect the amount of energy it has? | Frequency is the # of waves passing a given point each second . High frequency light has high energy and low frequency light has low energy. |
| Sort the following from most energy to least energy (see electromagnetic spectrum): Infrared, Visible light, Radio waves, X-ray, Gamma ray | Gamma, X-ray, Visible light, Infrared, Radio |
| <i>Sort the colors</i> of visible light in order from least energy to most energy . | Red, Orange, Yellow, Blue, Violet (ROYGBV) |
| What are the parts of a transverse wave ? | Crest Crest Trough |
| What is the electromagnetic spectrum ? | Its shows the entire range of electromagnetic radiation from high energy to low energy. |
| Are black and white spectral colors? | No. Black is when a material absorbs all visible light and white is a reflection of all visible light. |

| What is reflection of light? | Reflection is when light bounces off the surface it encounters. Reflection off mirrors means the angle of incidence=angle of reflection. |
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| What is refraction of light? | Refraction is when a light wave is bent resulting from a change in velocity as it moves from one area to another (air to water) |
| The <i>amount</i> of bending of light (refraction) depends on which 3 things ? | The density of the material it enters, the wavelength of the light wave , and the angle at which the original light wave enters . |
| What is dispersion of light waves? | When light is separated into a display of colors (<i>light entering a prism</i>) |
| How are transparent/translucent/opaque materials <i>different</i> from one another? | Transparent- light passes through easily (clear glass) Translucent- light passes through partially (frosted glass) Opaque- light doesn't pass through at all (brick) |
| What is a concave lens? | A lens that curves inward and causes a beam of light to spread out. |
| What is a convex lens? | A lens that curves outward and <i>causes a</i> beam of light to meet at a focal point. |