**Electromagnetic Spectrum and Waves**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_

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| I can… |
| *Relate behaviors and parameters of waves to the electromagnetic spectrum.* |

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| ***EMS and Waves – Review Packet*** |
| Bell work: On your own, fill in as many parts of the spectrum as you can. **applications** |

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| 1. ***Using the electromagnetic spectrum, answer the questions below independently and get Ms. Perry’s initials when you’ve completed them.***
* The highest frequency wavelength on the spectrum would be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rays.
* Our eyes are tuned to about 400-700 nanometers, which represents the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ region of the spectrum.
* A large type of wave that is often utilized for communication purposes is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ wave.
* A common heat lamp that can be used to heat food uses waves just outside of the visible light region called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* In moderation, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rays can help the body absorb vitamin D, but in excess can cause skin damage and cancer.
* With its small wavelength, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is especially useful in medicine to create images of our bodies beneath our skin.
* A useful device to heat food, as well as your phones, use \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

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| 1. Let’s play with some lasers.
* https://i.ytimg.com/vi/YxI-lr89-6M/hqdefault.jpgUsing the electromagnetic spectrum, which has a HIGHER frequency, the red or green laser? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Which has a LONGER wavelength? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Which has HIGHER energy? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
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| 1. ***Predict – what do you think will happen when we shine a laser through this jug? Write your prediction then compare with a neighbor.***

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| 1. ***Observe – watch what happens, then record your observations. Discuss with a neighbor.***
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| 1. ***Explain -*** This is happening due to a specific behavior of a wave. Anyone remember what it is?
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| 1. What are the other behaviors of waves we discussed?
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| 1. Let’s start reviewing the rest of the waves unit. Try using “FPS – Wave notes”, “FPS – Waves Notes 2” and “FPS – Sound and Light notes”. When you’re done, text in on the board!
* Define a wave.
* What is a medium? Give several specific examples.
* What are two types of mechanical waves?
* How are these two types different?
* Draw and label the parts of a wave.
* Describe the relationship between energy, frequency, and wavelength.
* What is the frequency of a wave?
* What is the period of a wave?
* What is the speed of a wave?
* How can we find the speed of a wave?
* If a wave has a wavelength of 1.2 m and a frequency of 0.9 Hz, what is its speed?
* If a wave has a wavelength of 0.99m and a speed of 62 m/s, what is its frequency?
* If a LIGHT wave travels at the speed of light at a frequency of 1,114,000 Hz, what is its wavelength?
* What happens to sound as you increase the amplitude?
* What happens to sound as you increase the frequency?
* Describe the Doppler Effect in a scenario using sound waves.
* Describe the Doppler Effect in a scenario using light waves.
* Text in on the board!
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