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| **Subject Area** | Physics |
| **Age or Grade** | High School  |
| **Estimated Length** | 45 minutes  |
| **Prerequisite knowledge/skills** | The students should know about the basic properties of waves.  |
| **Description of New Content** | Students will use the internet to explore the wavelength and uses of three different kinds of electromagnetic (EM) waves.  |
| **Goals** | * Students will be comfortable using a NASA website to research three EM waves of their choice.
* Students will begin pre-writing for a five-paragraph essay to be completed on a different day.
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| **Materials Needed** | * Computers with internet connection (or printed handouts)
* Research planning for Electromagnetic Spectrum Essay handout
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| **Procedure**    | **Opener –** Go over some of the basic properties of EM waves to include in the introduction including* Unlike sound waves, EM waves are able to travel through a vacuum.
* EM waves can have a wide variety of frequencies, wavelengths, and energies.
* All EM waves travel at the same speed.

**Development -**. Students will use the NASA website (<http://science.hq.nasa.gov/kids/imagers/ems/index.html>). They will choose three types of EM waves to research. For each wave, they will note the wavelength and uses of the wave.**Closure -**. Help students compute the approximate frequency of the types of waves they have chosen and decide whether this is a high, medium, or low energy wave. |
| **Evaluation** |  Students will later write a five-paragraph essay using the information they have gathered. |
| **Extensions** |  Attached handout. |
| **References** |   |