Electromagnetic Spectrum Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Per: \_\_\_\_\_\_\_\_

Go to this website to complete the following questions: <http://missionscience.nasa.gov/ems/01_intro.html>

1:  How does Electromagnetic Energy Travel?

2:  What is the Electromagnetic Spectrum?

3:  What is the source of energy across the entire Spectrum?

4:  Why and how does our atmosphere protect us from the Spectrum?

Go to this website to complete the following questions: <http://missionscience.nasa.gov/ems/02_anatomy.html>

5:  How are Electromagnetic waves different from all other waves (mechanical waves)?   
               (Hint:  there is something they do not need)

6:  After looking at the diagrams on this page, Electromagnetic waves are formed by the vibrations of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ fields.  
7:  Complete the chart on the next page by filling out the information for each type of wave.  
8:  After going [here](http://missionscience.nasa.gov/ems/13_radiationbudget.html), read the text and explain what the Earth's Energy Budget is and how it works..

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Type of Wave** | **Wavelength** | **Frequency** | **What can we compare it too?** | **Where do humans use this type of wave?** |
| **Radio Waves**  [**Link**](http://missionscience.nasa.gov/ems/05_radiowaves.html) |  |  |  |  |
| **Microwaves**  [**Link**](http://missionscience.nasa.gov/ems/06_microwaves.html) |  |  |  |  |
| **Infrared Light**  [**Link**](http://missionscience.nasa.gov/ems/07_infraredwaves.html) |  |  |  |  |
| **Visible Light**  [**Link**](http://missionscience.nasa.gov/ems/09_visiblelight.html) |  |  |  |  |
| **UV Rays**  [**Link**](http://missionscience.nasa.gov/ems/10_ultravioletwaves.html) |  |  |  |  |
| **X-Rays**  [**Link**](http://missionscience.nasa.gov/ems/10_ultravioletwaves.html) |  |  |  |  |
| **Gamma Waves**  [**Link**](http://missionscience.nasa.gov/ems/12_gammarays.html) |  |  |  |  |