newcopyrightName Date Class

challenge

**LESSON 2**

**Challenge**

***Research Radiation Types***

Research to find information that is necessary to complete the chart below. Be sure to  
record your sources of information. Find three versions of the EM spectrum and see if each  
one gives the same wavelength range for each type of electromagnetic radiation. Then use  
the information from your research to answer the questions below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Type of EM Radiation** | **Does it pass through Earth’s atmosphere?** | **Level of Danger It Poses to Living Organisms** | **Wavelength Range per First Source Web Site:** | **Wavelength Range per Second Source Web Site:** | **Wavelength Range per Third Source Web Site:** |
| Gamma rays |  |  |  |  |  |
| X-rays |  |  |  |  |  |
| Ultraviolet |  |  |  |  |  |
| Light waves |  |  |  |  |  |
| Infrared |  |  |  |  |  |
| Microwaves |  |  |  |  |  |
| Radio waves |  |  |  |  |  |

**1.** Is all radiation harmful? If not, what are some good forms of radiation?

**2.** How does Earth’s atmosphere protect living organisms?

**3.** Compare the kinds of electromagnetic radiation. Did your three sources agree on any  
of the wavelength ranges?

**4.** Based on the results of your research, does it appear that the wavelength ranges for  
each part of the electromagnetic spectrum have precise value, or do different scientists  
use different definitions for each region? Justify your response.

**5.** If you were doing a report on a type of electromagnetic radiation, would you feel  
comfortable using a single source for your information? Why or why not?

**38** Electromagnetic Waves