



# SPECTROMETER PRE-LAB

## ELECTROMAGNETIC SPECTRUM

**Read chapter 10 in your textbook and review your notes from the waves PowerPoint.**  
**Please copy each question onto your own paper and answer each question with complete sentences.**

1. Define electromagnetic spectrum.
2. What is the speed of light?
  - a. What is the symbol for the speed of light?
3. Define Frequency.
  - a. What is the symbol for frequency?
4. Define wavelength.
  - a. What is the symbol for wavelength?
5. Using a ruler and colored pencils, neatly sketch the electromagnetic spectrum. Include the common name for each form of radiation, the wavelengths, and the frequencies found in the spectrum.
6. Neatly sketch a series of similar waves. Indicate three different wavelengths in your sketch and label them a, b, and c. Include a marker in your sketch that would determine the frequency of your wave series.
7. Explain in words on your paper the size of a nanometer as if you were explaining it to someone who was not familiar with the metric system.
8. How long would a wavelength of red light be in meters?
9. How does a prism work?
10. When observed with the naked eye, what color is seen from a Hydrogen gas tube?
11. Using colored pencils, add the hydrogen line-emission spectrum to your sketch in question number 5.
12. Why do we see one color when observing a hydrogen gas tube?