
LAB 3

The Electromagnetic Spectrum

Purpose

The purpose of this lab is to have you become familiar with the different forms of electromagnetic radiation within the electromagnetic spectrum, and to identify the relationship between wavelength and energy within the electromagnetic spectrum.

Materials

graph paper

colored pencils

Procedure

Using the data provided in Table 3–1, create a multiple line chart that displays the relative wavelength of seven portions of the electromagnetic spectrum. The x -axis of your chart will be labeled “Relative Wavelength” and should be numbered from 1–35. The y -axis of your chart will be labeled “Relative Wave Height” and should be numbered from 1–30. Plot each relative wavelength and wave height data point on your graph for each portion of the electromagnetic spectrum in a different colored pencil. Connect the data points and label each portion of the electromagnetic spectrum using a colored pencil.

TABLE 3-1 Wavelengths and the Electromagnetic Spectrum Graph

Relative Wave-length	Gamma Rays	Relative Wave Height			Infra-Red	Micro-waves	Radio Waves
		X-Rays	Ultra-violet	Visible Light			
1	26	22	18	14	10	6	2
2	29						
3	26	25					
4	29		21				
5	26	22		17			
6	29				13		
7	26	25	18			9	
8	29						5
9	26	22		14			
10	29		21				
11	26	25			10		
12	29						
13	26	22	18	17		6	
14	29						
15	26	25					2
16	29		21		13		
17	26	22		14			
18	29						
19	26	25	18			9	
20	29						
21	26	22		17	10		
22	29		21				5
23	26	25					
24	29						
25	26	22	18	14		6	
26	29				13		
27	26	25					
28	29		21				
29	26	22		17			2
30	29						
31	26	25	18		10	9	
32	29						
33	26	22		14			
34	29		21				
35	26	25					

X-axis = "Relative wavelength" (1-35)

Y-axis = "Relative wave height" (1-30)

Conclusions

1. Describe the relationship between wavelength and energy within the electromagnetic spectrum.
2. What portion of the electromagnetic spectrum has the shortest wavelength?
3. Which portion of the electromagnetic spectrum has the longest wavelength?
4. List the seven colors of the visible light portion of the electromagnetic spectrum from shortest to longest wavelength.