

LIGHT WORKSHEET, WAVELENGTH, FREQUENCY AND ENERGY

Name _____ Date _____ Period _____

Useful Information You May Need:

Red	700 – 650 nm
Orange	649 – 580 nm
Yellow	579 – 575 nm
Green	574 – 490 nm
Blue	489 – 455 nm
Indigo	454 – 425 nm
Violet	424 – 400 nm

- _____ 1. Which has the greater λ blue or indigo light? (blue)
- _____ 2. Which has the greater ν red or yellow light? (yellow)
- _____ 3. Which has the greater energy, a photon of yellow light or a photon of green light? (green)

_____ 4. Which has the longer wavelength, light with a frequency of 7.32×10^{14} Hz or light with a frequency of 6.0×10^{14} Hz? (6.0×10^{14} Hz; it has lower frequency; wavelength and frequency vary inversely)

_____ 5. Which has higher energy, λ of 674 nm or λ of 480 nm? (480 nm)

_____ 6. Which has a higher frequency, orange light or indigo light? (indigo)

_____ 7. A certain red light has a wavelength of 725 nm and another red light has a frequency of 4.28×10^{14} /sec. Which would have higher energy per photon? (4.28×10^{14} /sec; it is shorter)

_____ 8. Find the color of light whose frequency is 5.21×10^{14} cycles/sec. (yellow)

_____ 9. What is the frequency of light if its wavelength is 5.4×10^{-5} cm? (5.6×10^{14} Hz)

The Electromagnetic Spectrum

