

Waves – Electromagnetic Radiation

Study Guide: Chapter 11, *Conceptual Physical Science*, 4th edition

Objectives: When you finish these chapters you should be able to:

- Describe an electromagnetic wave.
- List the different types of electromagnetic radiation in order of frequency and wavelength.
- State the speed of light in a vacuum and the wavelength range of visible light.
- Explain the concepts of transparency and opacity from an electron resonance point of view.
- Explain what color is and list the primary colors of light and the primary pigments.
- Be able to use the color wheel to answer questions about the color appearance for various combinations of lights and pigments.
- Describe why the sky is blue, sunsets are red and clouds are white.
- Explain and give examples of the interference, reflection, refraction, dispersion, and polarization of light.

Activities:

- Read chapter 11.
- Answer mentally as many of the Review Questions as possible.
- Answer Exercises 1-11, 13, 28, 29, 30, 32, 33, 38, 46. Work Problems 2, 3, 4.
- Practice pages 69, 75, 79 (4th edition)
- Demonstrations: UV beads, Sky Blue - Sunsets Red, Polarized Light, Bubbles