UNIT 11: LIGHT -- GETTING BENT INTO SHAPE

Upon completion of this unit, the student should be able to:

1. Define refraction and index of refraction. Use to explain certain optical phenomena, such as: sunrise/sunset, object underwater, and dark windows.

2. Apply Snell's Law to find:
   a. angles of refraction or indices of refraction for an interface.
   b. the critical angle for an interface.

3. Explain a light pipe (fiber optic conductor) in terms of total internal reflection.

4. Describe the dispersion of light by a prism and how it's caused.

5. Explain how rainbows and mirages are formed and the conditions necessary to view them.

6. Extend the properties of a prism to those of a converging and diverging lens.

7. Explain the Pulfrich 3D effect.

8. Given an object and a converging or diverging lens, find the location, size, and type of image by using a ray diagram and the proper formula.

9. Explain how the eye sees and types of lenses used to correct vision deficiencies.

Reference: Holt Physics (Serway/Faughn), Chapter 14

Homework: The Bending of Light (handout)
Let There Be Light/Hocus Focus (handout)

Labs: Snell's Law, Refraction, Lenses