

STUDENT HANDOUT

Student Name: _____

Geometrical Optics is the study of light as photons that are seen as rays. Light can also be described in terms of wavelength, with different colors having different wavelengths. They move in a straight line unless interrupted in some way.

- 1 The farther you are from a light source, the dimmer the light is.
- 2 The angle a light reflects after hitting a mirror is the same angle that it hit it.
- 3 Concave prisms or lenses cause light beams to diverge. (Concave shapes go in, like a cave. Diverge means to spread out.)
- 4 Convex prisms or lenses cause light beams to converge. This creates a magnifying affect. (Convex shapes come out, like a water droplet on a table. Converge means to meet.)
- 5 A lens is a curved material that light can pass through.
- 6 White light is made up of all colors.
- 7 Rainbows occur because light passes through air and then into another element, which differs in density, usually moisture from rain. This moisture acts as a lens. The change in density causes the light speed to change, and each component of that white light, having a different frequency, responds by bending (or refracting) at its own pace. Blue light has the highest frequency, so it bends the most. On the other end is the red light with the lowest frequency, so it bends the least. This is why a rainbow always puts the colors in the same order: ROYGBIV (Red, Orange, Yellow, Green, Blue, Indigo, Violet)

Answer the questions asked in class on a separate sheet of paper.

