

Optical aberrations correspond to the blurring and mis-formation of images formed by lenses and mirrors. Aberrations can be broken into two general classifications: chromatic and monochromatic.

Prisms:

Use equilateral prism and a single ray from a ray box to produce the spectrum. Which colors bend the most?

The bending of the different “colors” of light by varying degrees is known as **Dispersion**. Dispersion is a general term for the separation of the colors by some means. A diffraction grating also produces dispersion as does scattering. However, I digress. What is the implication of the dispersion of white light by the prism?

Consider a converging lens and a point source. Given your answer to the first question and the lens maker’s equation, what is the impact on the focal length of the lens with wavelength of light? Be specific about how you answer this question.

Try forming images using the point source, the rail and the converging lens. Look closely at the images formed and record your observations.

This is known as chromatic aberration.