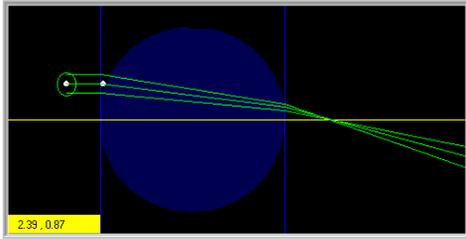


Worksheet for Exploration 34.5: Index of Refraction and Wavelength



Light rays from a beam source, initially in air, are shown incident on a sphere of water. You can change the wavelength of light by moving the slider. [Restart](#).

- a. Move the slider to change the color of the light (by changing the frequency). As you move the slider to the right, does the frequency of light increase or decrease (look up the frequencies of different colors in your book if you need to)?

- b. Where does the red light converge?

Where does the blue light converge?

- c. If the index of refraction of the circular blue region was 1, where would the point of convergence be?

Therefore, explain why a higher index of refraction means a convergence point closer to the sphere.

- d. For which color light, then, is the index of refraction higher? For which color is it lower?