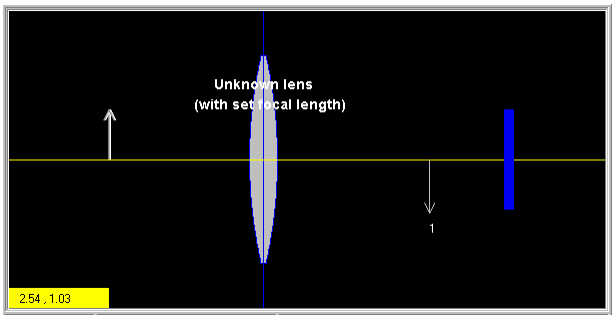
Worksheet for Exploration 35.3: Moving a Lens



In this animation, the lens is movable, but the object is not **(position is given in meters)**. Initially, you have a lens of an unknown focal length (that you cannot adjust using the slider). Restart.

a. What are the object and image distances for the lens? Find the focal length of the lens.

d_o =_____

d_i =_____

f = _____

b. There is another spot where you can put the lens that will give an image at the same position (on the blue screen). Move the lens until an image appears at the same spot (on the blue screen). What are the object and image distances this time?

d_o =_____

d_i =_____

c. For a given distance between an object and a screen, develop an equation for the two spots where you can place a lens to get a clear image on the screen. Verify your expression for a lens with an adjustable focal length (use the slider to change the focal length). Note that when you click or drag this lens, the focal length (f.l.) appears on the screen.