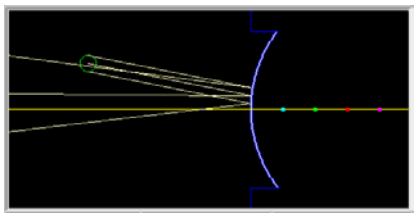
Worksheet for Exploration 33.5: Convex Mirrors, Focal Point, and Radius of Curvature



You can add a parallel beam source, a point source and an object **(position is given in meters and angle is given in degrees)**. How do you find the focal point of a convex mirror? Restart.

a. First, add a parallel beam source. Move it around so that one of the beams leaves the mirror parallel to the axis. This beam acts as if it came from the focal point. Why? So, to find the focal point, you need to extend the original path of this beam to the right side of the mirror. The easiest way is to use the "protractor" to click-drag an angle measure. You can move the protractor around as well as click-dragging to change the angle. If the mirror were not there, where would the original beam hit: the blue, green, red or pink dot?

b. Now, move the parallel beam source until one of the beams bounces back on itself. This time where does an extension of the incoming beam originate from: the blue, green, red, or pink dot? This is the radius of curvature of the mirror (radius of the circle that the lens would make). The radius of curvature should be twice the focal length.

c. Add a point source. How would you devise a method to determine the focal point of the mirror with a point source? Describe your method.

d. Finally, add an object and develop a method to determine the focal point with an object source.