Worksheet for Exploration 33.2: Looking at Curved Mirrors



What is the difference between a real and a virtual image? What does your eye see when it looks into a mirror **(position is given in meters and angle is given in degrees)**? <u>Restart</u>.

a. Drag the object back and forth. In this animation, when the image is on the left of the mirror it is a real image, but when it is on the right it is a virtual image. Why?

b. Place the object so that the image is to the right of the mirror (a virtual image). If your eye is where the eye is in the diagram, where does your eye/brain think the light is coming from? Because you think light travels in a straight line, when light diverges from a point, your brain assumes that the point it diverges from (the image point) is where the light originated. So, for a virtual image like this, your eye/brain sees an image and thinks it is behind the mirror.

c. What about a real image? Place the object at some point so that the image forms somewhere in front of the eye. Where does the eye think the light comes from? What does the eye see? (Is the image upright or inverted, bigger or smaller than the object?) What if the image point is beyond the eye? What would that look like? (Notice that for this case, the light doesn't seem to have a convergence point so you'd see a blurry image.)

d. In which case is the light actually traveling through the image point? For real images, the light actually travels through the image point. If you put up a screen at the point that the rays cross, then a real image can be formed on the screen, whereas if you put up a screen at the point of a virtual image, you won't see anything on the screen (the screen is behind the mirror).