**Simple Reflecting Telescope**

Use a simple spherical mirror to produce a telescope that will form an image of a distant light source.

* Using the neon tube as a light source, use the telescope to form an image on a white card
* Measure the distance from the center of the mirror to the image on the white card. This distance is the “focal length” of the telescope (the distance from the mirror to the focus).
* Use a string to measure the radius of curvature of the mirror (at what distance from the mirror will a string of fixed length just touch all points on the mirror?)
* What is the ratio of the focal length to the radius of curvature?
* Sketch your telescope in the box on the left below, indicating the positions of the focus and the center of curvature and the distances you measured.

A telescope that brings light to focus using a single mirror is called a “prime focus” telescope. Viewing the image from a prime focus is difficult, since your head is “in the beam” and blocks the light from the source. In the box on the right, sketch an alternate optical configuration that would be easier to use with the naked eye.