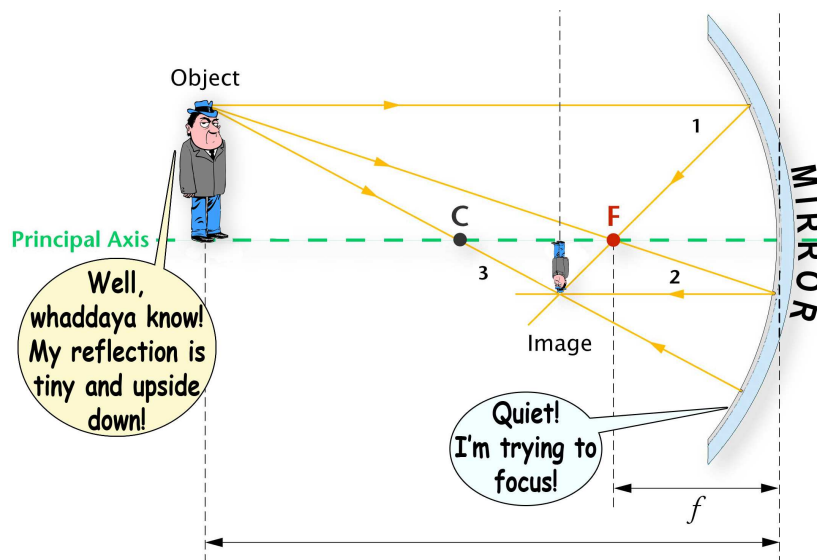


Concave Mirrors

You move your face close to a mirror. Your face looks huge. Every pore is visible. You touch the surface of the mirror. It feels slightly curved, not flat, perhaps a bit caved in. A mirror that is curved inward is a concave mirror. It causes light rays to come together or converge. Concave mirrors can be used as magnifying mirrors, but they also form other types of images depending on the location of the object relative to the mirror.

A straight line drawn perpendicular to the center of the mirror is called the optical axis or **principal axis**. Light rays that travel parallel to the principal axis and strike the mirror converge on a single point on the principal axis called the **focal point**. The distance from the center of the mirror to the focal point is the **focal length**. The image that forms from a concave mirror depends on the position of the object relative to the focal point. If an object is further from the mirror than the focal length, the image that forms is upside down, in front of the mirror, real, and the size of the image decreases as the object moves further away. If an object is closer to the mirror than the focal length, the image that forms is upright, behind the mirror, virtual, and the size of the image decreases as the object moves closer. If a source of light is placed at the focal point, a focused beam of light is formed as in a flashlight or headlights.



Answer the questions below based on the reading above, and on your knowledge of physics.

- How is a concave mirror different from a plane mirror? _____

- What are each of the following:
 - Principal axis? _____
 - Focal point? _____
 - Focal length? _____
- What kind of image forms from a concave mirror when an object is :
 - further from the mirror than the focal length? _____
 - closer to the mirror than the focal length? _____
- Is the focal length of a magnifying mirror long or short? _____