Introduction to Curved Mirrors

Lesson Notes

Learning Outcomes

- What are curved mirrors?
- What are the terms used to describe a curved mirror?
- How does light reflect off a curved mirror?

Two Types of Spherical Mirrors

Spherical Mirrors have the shape of a 3-D sphere. They can be thought of as a portion of a sphere. We will discuss two types of spherical mirrors - **concave mirrors** and **convex mirrors**.

Curved Mirror Anatomy

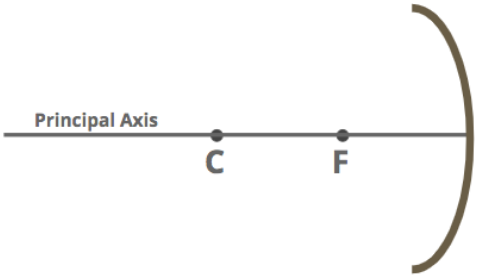
Center of Curvature (C): the center of the sphere from which the mirror is *cut*.

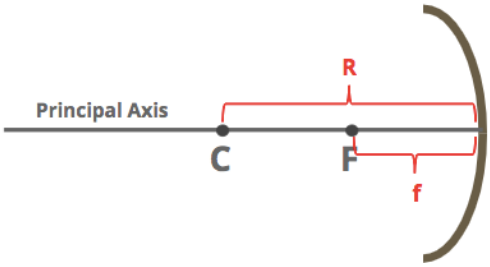
Radius of Curvature (R): the radius of the sphere from which the mirror is *cut.*

Principal Axis: imaginary line that extends from the surface of the mirror through the center of the sphere from which the mirror is *cut.*

Focal Point (F): midpoint between the center of curvature (C) and the mirror.

Focal length (f): distance from the mirror to the focal point.

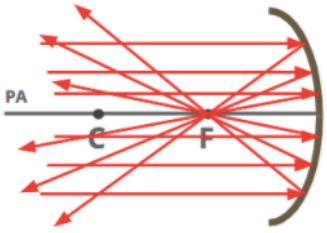




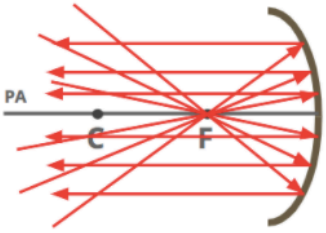
Remember the five "geometric" terms:
Two points - focal point (F) and center of curvature (C).
Two distances - focal length (f) and radius of curvature (R).
One line - principal axis.

Two Rules of Reflection for Curved Mirrors

Light traveling || to the PA reflects and passes through F.



Light passing through F reflects and travels || to the PA.



F = Focal Point

PA = Principal Axis

Meaning of Focal Point

Focal Point - the location along the principal axis (PA) where light traveling || to PA comes together or intersects