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Student Exploration: Ray Tracing (Mirrors)

Vocabulary: concave mirror, convex mirror, focal point, magnification, real image, reflect, virtual image

Prior Knowledge Questions (Do these BEFORE using the Gizmo.)
For these questions, it would be helpful to have a metal spoon on hand. If you don't have one, try to imagine looking at yourself in a spoon.

Look at yourself in the front of the spoon (the side where the food sits). What do you see?

My reflection, but upside down

The front of a spoon is an example of a concave mirror.

What do you see when you look at yourself in the back of a spoon?My reflection, but a bit distorted.

The back of a spoon is an example of a convex mirror.

Gizmo Warm-up

The Ray Tracing (Mirrors) Gizmo shows a side view of a light bulb positioned to the left of a mirror. Light rays passing from the light bulb to the mirror are shown.

To begin, select the Concave mirror. Turn on Colorize lines. Under Show lines, turn off the Central line and the Line through focal point so that only the Parallel line is showing.



 The blue dot in front of the mirror is the **focal point** of the mirror. Move the light bulb on the left around. What is always true about the ray that is **reflected** from the parallel ray?

The ray reflected from the parallel ray goes through the focal point after reflecting from the mirror

2. Turn off the Parallel line and turn on the Line through focal point. Move the light bulb around, What do you notice about the reflected ray in this situation?

The ray reflected is parallel to the principal axis.

Activity A:	Get the Gizmo ready:	
Real and virtual	 Check that the Concave mirror is selected. Turn on the Parallel line, Central line, and Line 	

Answers For Gizmo Ray Tracing Mirrors

Anthony S. Fauci

Answers For Gizmo Ray Tracing Mirrors:

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