Plane Mirror Image Formation

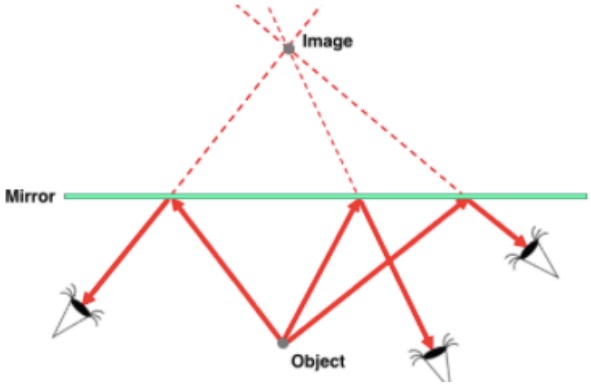
Lesson Notes

Learning Outcomes

- What is an image?
- How and why is an image formed by a plane mirror?

A REVIEW: Line of Sight

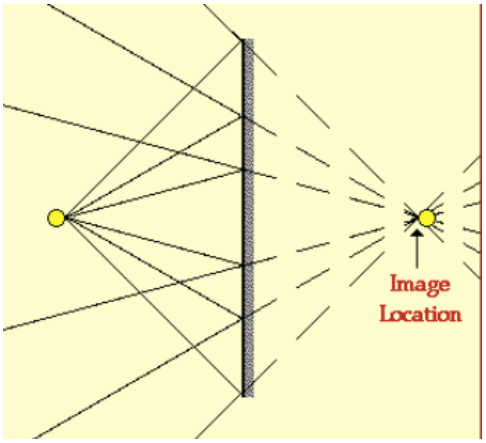
- To view an image in the mirror, you must sight along a line at the image.
- When you do, light from the object will reflect off the mirror according to the law of reflection and travel along the line of sight to your eye.



The image is located at the one location in space where it seems to every observer that the light is coming from.

What is an Image?

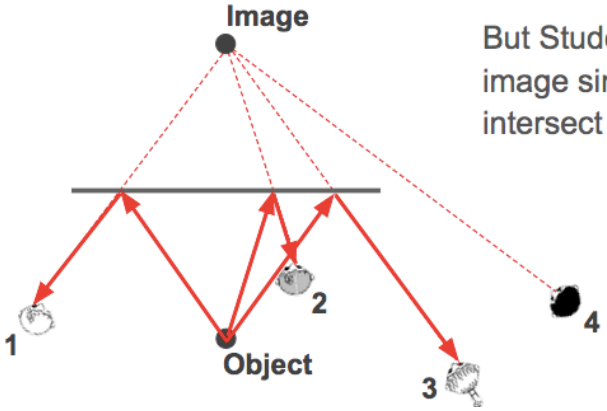
An image is a replica, representation, or likeness of an object that is located at the one location in space where it seems to every observer as though light is coming from.



Each observer looks along a different line of sight at the same image location. For **plane mirrors**, that image location is behind the mirror.

Who Can See and Image?

To see an image you must sight along a line at it. When you do, light will travel from the object to the mirror, and then along the line of sight to your eye. Students 1, 2, and 3 will be able to view the image.



But Student 4 is not able to view the image since the line of sight does not intersect the mirror.

Why an Image is Formed

An image is formed because ...

- Light emanates from an object in a variety of directions.
- The light that reaches the mirror reflects off the mirror according to the law of reflection.
- Each ray can be extended backwards behind the mirror where they intersect at a point.
- Any person positioned along the line of a reflected ray can sight along the line and view the image.