

How do we represent light?

1. Light moves in straight lines. We call them light rays and indicate them with an arrow.
2. There are infinitely many light rays from a single point on an object.
3. Light rays travel in all directions.
4. Light rays cannot get through an opaque barrier.

VOCABULARY WORDS

TRANSPARENT: all light can get through

TRANSLUSCENT: some light can get through and some is blocked

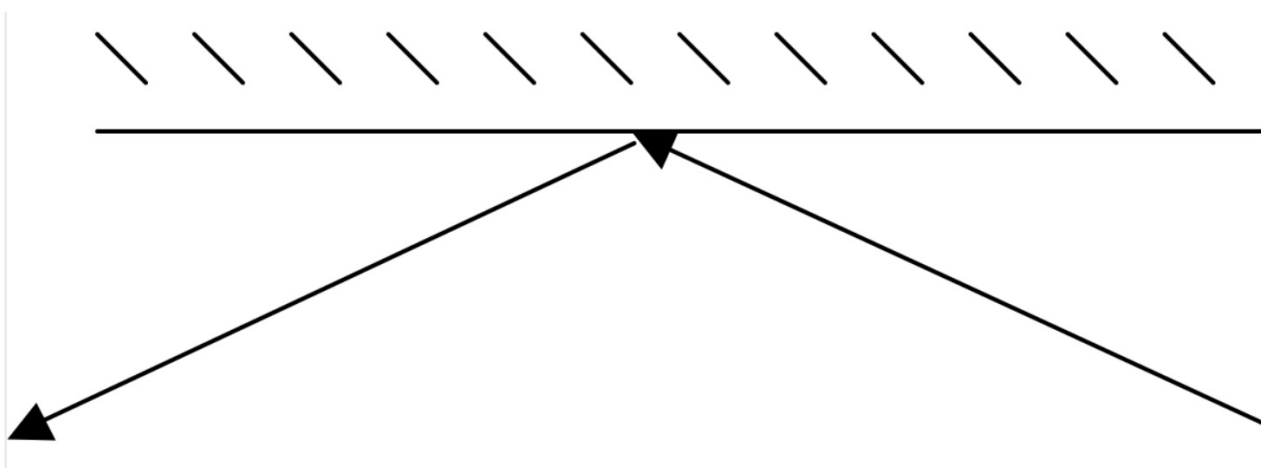
OPAQUE: no light can get through

OBJECT: The thing or person in front of the mirror, made of matter.

IMAGE: What we see in the mirror, not made of matter, but does exist.

REFLECTION: Light rays reflect off surfaces at the same angle as the incident ray on the opposite side.

Label the incident and reflected rays. Draw in the normal and label θ_i and θ_r .



MIRRORS – we see images in mirrors because all the rays reflect uniformly because the surface of the mirror is very smooth.

There are three main types of mirrors PLANE, CONCAVE and CONVEX.

PLANE mirrors are flat mirrors

IMAGES form when light rays reflected from the same object cross each other.

Light rays can either CONVERGE (move together) or DIVERGE (move apart).

REAL IMAGES form at the point where two or more light rays CONVERGE.

VIRTUAL IMAGES form when light rays DIVERGE.

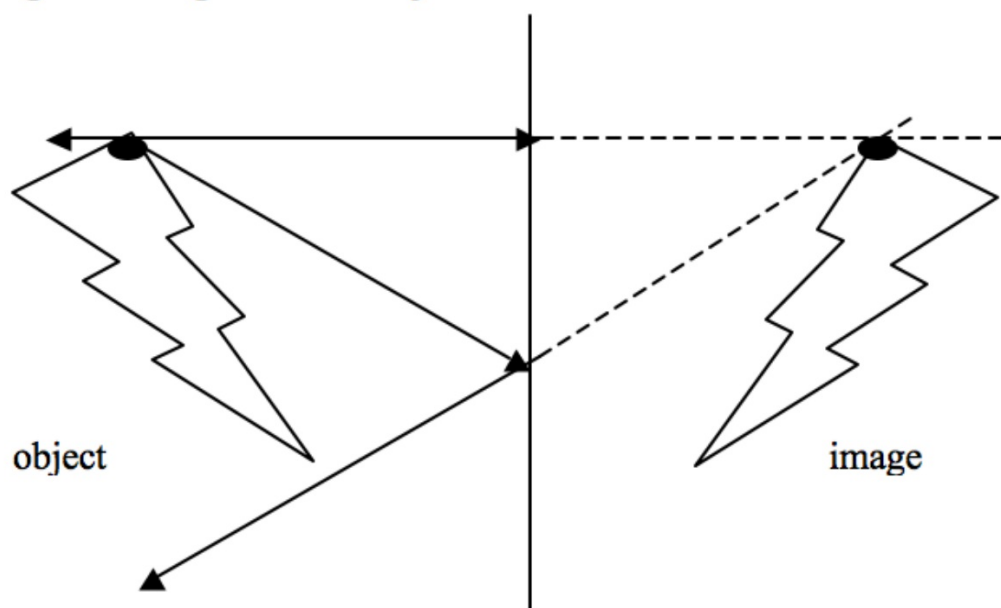
Since these light rays don't actually cross, on our ray diagrams, we extend the lines back until they do.

In order to locate an image, we need to draw at least 2 light rays.

RAY DIAGRAMS are drawn in order to locate the image of the object. In order to draw a ray diagram,

1. Pick a point on your object.
2. Draw one incident ray from this point to the mirror.
3. Measure and draw the corresponding reflected ray.
4. Draw a second set of incident and reflected rays from the point you chose.
5. Determine where the reflected rays cross. This is the point where the image will form.

Practice drawing the image of this object.



The image formed in a plane mirror is VIRTUAL because the reflected rays DIVERGE.