

Inquiry Investigation: Reflecting Light off a Plane Mirror

CRITERION C: PROCESSING & EVALUATING

PURPOSE: To measure the relationship between the angle of incidence and the angle of reflection off a plane mirror.

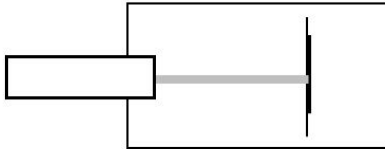
HYPOTHESIS: “If the angle of incidence increases, then the angle of reflection will increase in exactly the same way, because the law of reflection states that when reflecting light off of a plane mirror, the angle of incidence will equal the angle of reflection.”

METHOD:

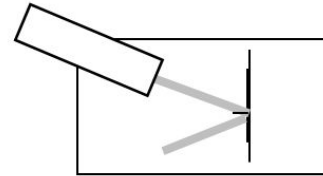
1. Collect materials
2. On the back of this page, place the mirror along the straight line labeled “MIRROR”. Using a ray box, aim a single light ray straight at the little cross in the middle of the line (**point of incidence**) so that the beam of light reflects right back on itself. Trace the light ray, then **label the line as “Normal”**.
3. Move the ray box to shine the beam of light at the same point of incidence **from an angle**. Trace the incident ray and the reflected ray using a different colour & **a ruler**
4. Repeat step 3 three more times, but shine the light at the point of incidence **from a different angle each time**. Use a different colour each time as well.
5. Put your materials away.
6. Use a protractor to measure the angles of incidence & reflection for each of the 4 light rays. Record your data in the table under “observations” on the lab google doc.

SET-UP: (Birds’ Eye View)

Step 2:



Step 3:



VARIABLES:

Independent Variable: _____

Manipulated _____ times by:
(how many)

(how it is being changed)

Dependent Variable: _____

Measured in _____ Using a
(units)

(equipment/tool)

Controlled Variables:

MIRROR

