

# Mirror Mirror

## Introduction

Light has many interesting aspects. An example is **reflection**. Reflection occurs when light bounces off a surface. Think about what happens when you look in a mirror. Whether you realize it or not, you are reflecting light. This light travels to the mirror, then bounces back to your eyes. This is how you see your reflection.

A guideline to working with mirrors is the **Law of Reflection**: The angle light hits a mirror will be the same angle light leaves the mirror.

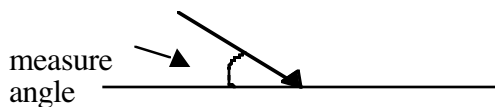
In this lab you will investigate the Law of Reflection.

## Materials

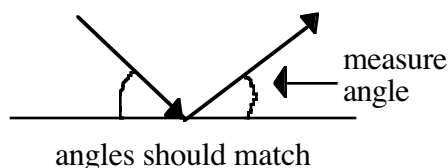
Laser pointer  
Binder clip  
Flat mirror  
White paper (8.5X11")  
Protractor  
Front-silvered mirror

## Procedure

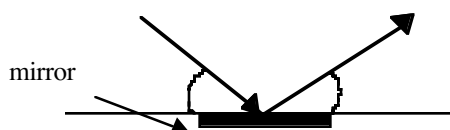
1. Draw a straight line on your paper.
2. Using the protractor, draw an incoming angle to your straight line. You may choose any angle.



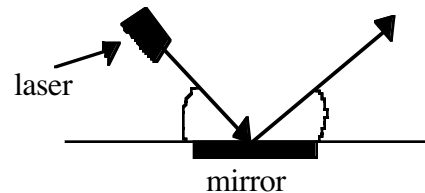
3. Draw the same angle leaving the straight line.



4. Place the flat mirror so the front of the mirror is along the straight line.



5. Turn the laser on. **Never look directly at the laser beam or allow it to shine in someone's eyes.** Use the binder clip to maintain the laser pointer in the ON position.



6. If you need help seeing the laser beam, ask your teacher for assistance. Check to see if the laser beam is along the line you drew for the angle leaving the straight line. In a Data Table, record your observations. Turn the laser off.

7. Now place the front silvered mirror so the front of the mirror is along the straight line. Ask your teacher how to correctly position the mirror vertically. Front-silvered mirrors are easily damaged. **Do not touch the front of the mirror.**

8. Turn the laser on. Place the laser pointer along the incoming angle line.

9. Check to see if the laser beam is along the line you drew for the angle leaving the straight line. In a Data Table, record your observations.

## Questions

1. Was the law of reflection shown with the flat mirror? Explain.
2. Was the law of reflection shown with the front-silvered mirror? Explain.
3. How could you set up the mirrors to obtain identical results?
4. Why would choosing one type of mirror or the other be important?

## Conclusion

Do all mirrors comply with the Law of Reflection? Use evidence from your lab to backup your claim.