

## Curved Mirrors Lab Activity - Laws of Reflection

In this activity you will use a single ray of light from a ray box to see if the Laws of Reflection for plane mirrors apply to spherical mirrors. Do you think they do?

### Problem:

How do concave and convex mirror reflect parallel incident rays?

### Materials:

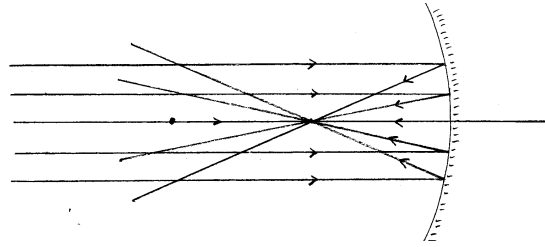
- ray box plus accessories kit
- circular protractor ideal for measuring angles from zero!
- concave mirror
- convex mirror
- pencil
- ruler

### Procedure:

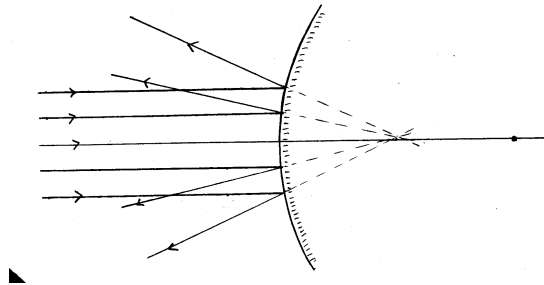
1. Do you think the Laws of Reflection for plane mirrors apply to curved mirrors? **Write a prediction at the top of your report page.**
2. Set up the ray box, protractor, and **CONCAVE MIRROR** in a manner similar to the method used for reflection from a plane mirror. Perform your observations on top of the circular paper protractor that is provided. You will need to carefully place the mirror so that the mirror meets the protractor at the origin of the protractor and is "parallel" to the surface of the mirror through the 90° line. Only a ray directed at the origin of the protractor will give you a valid observation.
3. **Record five sets of observations in the table provided.** Use different locations on the mirror for your observations **BUT** be sure to re-orientate the protractor for each measurement. The protractor must be "parallel" to the mirror surface and only the origin of the protractor works!
4. Repeat steps #2 and #3 for a **CONCAVE MIRROR**. **Record five sets of observations in the table provided.**

5. On the back of the report page draw two diagrams.

I Using five parallel rays on the concave surface of the mirror



II Using five parallel rays on the convex surface of the mirror



6. Please put everything back the way you found it or even better than the way you found it!

7. Write a conclusion on the report page and hand in.

Name: \_\_\_\_\_

**Curved Mirrors Lab Activity - Laws of Reflection**  
**Report Page**

**Prediction:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Observation Tables:**

<b>Concave Mirror</b>	<b>Incident Ray Angle</b>	<b>Reflected Ray Angle</b>
Trial 1		
Trial 2		
Trial 3		
Trial 4		
Trial 5		

<b>Convex Mirror</b>	<b>Incident Ray Angle</b>	<b>Reflected Ray Angle</b>
Trial 1		
Trial 2		
Trial 3		
Trial 4		
Trial 5		

**Conclusion:** \_\_\_\_\_

\_\_\_\_\_

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