

Light and Reflection

Name: _____ **Date:** _____

LEARNING OBJECTIVE

The student will measure the angle of incidence and angle of reflection to verify the law of reflection.

MATERIALS NEEDED

- a small flashlight
- a flat mirror
- a protractor
- paper
- pencil
- ruler

HANDS-ON ACTIVITY

1. On a piece of paper, draw a straight horizontal line to represent the mirror's surface, and set the mirror upright along that line.
2. Draw a dotted vertical line perpendicular to the mirror line at its midpoint — this is the 'normal' line.
3. In a dim room, shine the flashlight at the mirror at an angle so the beam is visible hitting the mirror at the midpoint, and have a partner (or you, carefully) trace the incoming beam's path and the reflected beam's path on the paper.
4. Using the protractor, measure the angle between the incoming beam and the normal line (angle of incidence), and the angle between the reflected beam and the normal line (angle of reflection).
5. Repeat the test at 2 more different angles, recording all 3 pairs of measurements in a data table.

QUESTIONS

1. **Record your 3 pairs of angle of incidence and angle of reflection measurements.**

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2. **What pattern did you notice between the angle of incidence and the angle of reflection across all 3 trials?**
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3. State the law of reflection in your own words.

4. Why is the 'normal' line important when measuring angles of reflection, instead of measuring from the mirror's surface itself?
