

Bouncing Beam

Procedure

- 1. Collaborate** Stand a few feet from a partner and bounce a ball back and forth. Observe the angle at which the ball strikes the floor and the angle at which it bounces up. Record your observations on the lines below.

- 2. Experiment** Change the distance between partners several times. Repeat step 1 at each new distance. Record your observations below.

- 3. Experiment** Inside the box, center the mirror on one end and tape it in place. Position the penlight so that it faces the center of the mirror.

- 4. Observe** In a darkened classroom, turn on the penlight and observe the angle at which the light strikes the mirror and the angle at which it bounces off. Record your observations below.

- 5. Experiment** Tilt the penlight slightly to change the angle at which the light strikes the mirror. Observe the path of the beam as it bounces off the mirror. Change the tilt of the penlight several times and record your observations below.

Conclusion

Write the answers to the questions below.

- 1. Analyze Data** Compare the way that the ball bounced and the way that the beam behaved.

- 2. Infer** Based on your data, make an inference about the angle at which light bounces, or reflects, off a flat mirror.

Investigate More!

Design an Experiment How might a curved mirror affect the path of a light beam striking its surface? Experiment with a curved mirror to find out. You may design a curved mirror from aluminum foil.

