

Name: _____

Date: _____

HOW LIGHT TRAVELS



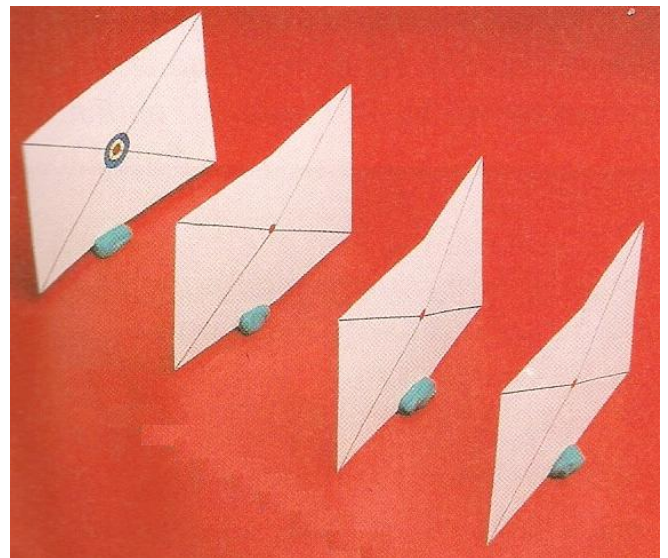
When we look at a spotlight we can see that the light is travelling in a straight path. However, for most light sources the path is difficult to see. This is because most light sources are so bright that you can not see a single **ray** of light. Today's investigation is designed to show that light does indeed travel in a straight line.

Equipment:

- 4 index cards
- Play clay
- Ruler
- Straw

Procedure:

1. Draw diagonal lines on 4 index cards, connecting the opposite corners.
2. Draw a bull's-eye in the exact center (at the point where the two diagonal lines meet) on one of the cards.
3. Poke a hole in the exact center of the other three index cards.
4. Place 4 lumps of play clay in a line, with about 15 cm between each lump, and place the index cards on the clay as shown in the picture.
5. With the lights out, shine a light source at the first card and see if you can hit the bull's-eye with the light.
6. Adjust the cards if you did not succeed the first time.



Observations:

Draw a picture of your setup when you hit the bull's-eye with a ray of light. Use a sharp pencil to draw the light as it passes through the index cards.

Discussion:

1. How must the cards be placed so that the light shines through the holes?

2. What property of light does this demonstrate?

3. How can a shadow help show that light travels in a straight line? Draw a picture to support your answer.
