



# Explain how shadows form

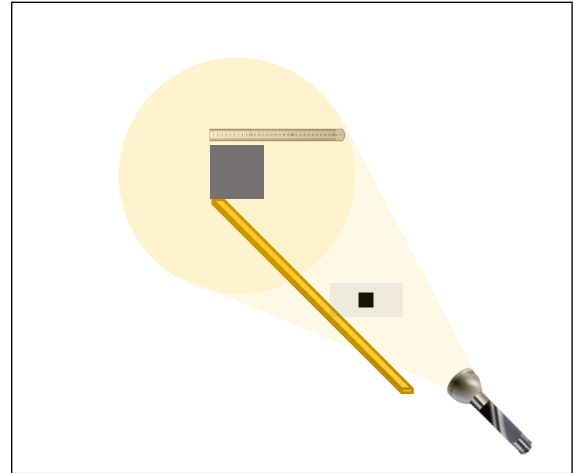
You are going to investigate how the distance an object is from a wall affects the size of the shadow cast.

## Method

This experiment should be in a dark room.

1. Fix a torch in position at least 1m away from a wall. Shine the torch directly at the wall.
2. Place the acetate slide 20cm away from the wall, so that it casts a shadow.
3. Measure the width of the shadow and record this in the table.
4. Repeat this with the acetate back to 40, 60, 80, 100cm away in turn.

Measuring the width of the shadow each time.



Distance of slide from wall (cm)	Width of shadow (cm)
20	
40	
60	
80	
100	

Describe how the shadow changes as the acetate moves further away from the wall.

---



---



---

Which part of the shadow is darkest. Suggest why it is darkest.

---



---



---

## Equipment

- Metre ruler
- 30cm ruler
- Torch
- Acetate with 1cm x 1cm black square

## Stretch:

Describe how the torch beam would change if the torch moved closer to the wall.

## Challenge:

Explain why a square is a better shape than a circle to use in this investigation.



# Explain how shadows form

Print this sheet onto acetate. Then cut out a strip for each pair of students.

