



# Shadows that grow and shrink

Shadows change their size as they move closer to or farther from the source of light.

If you look behind anything that blocks out light, you will find a much dimmer area. This is called a shadow. Everything inside the shadow is darker than the surroundings.

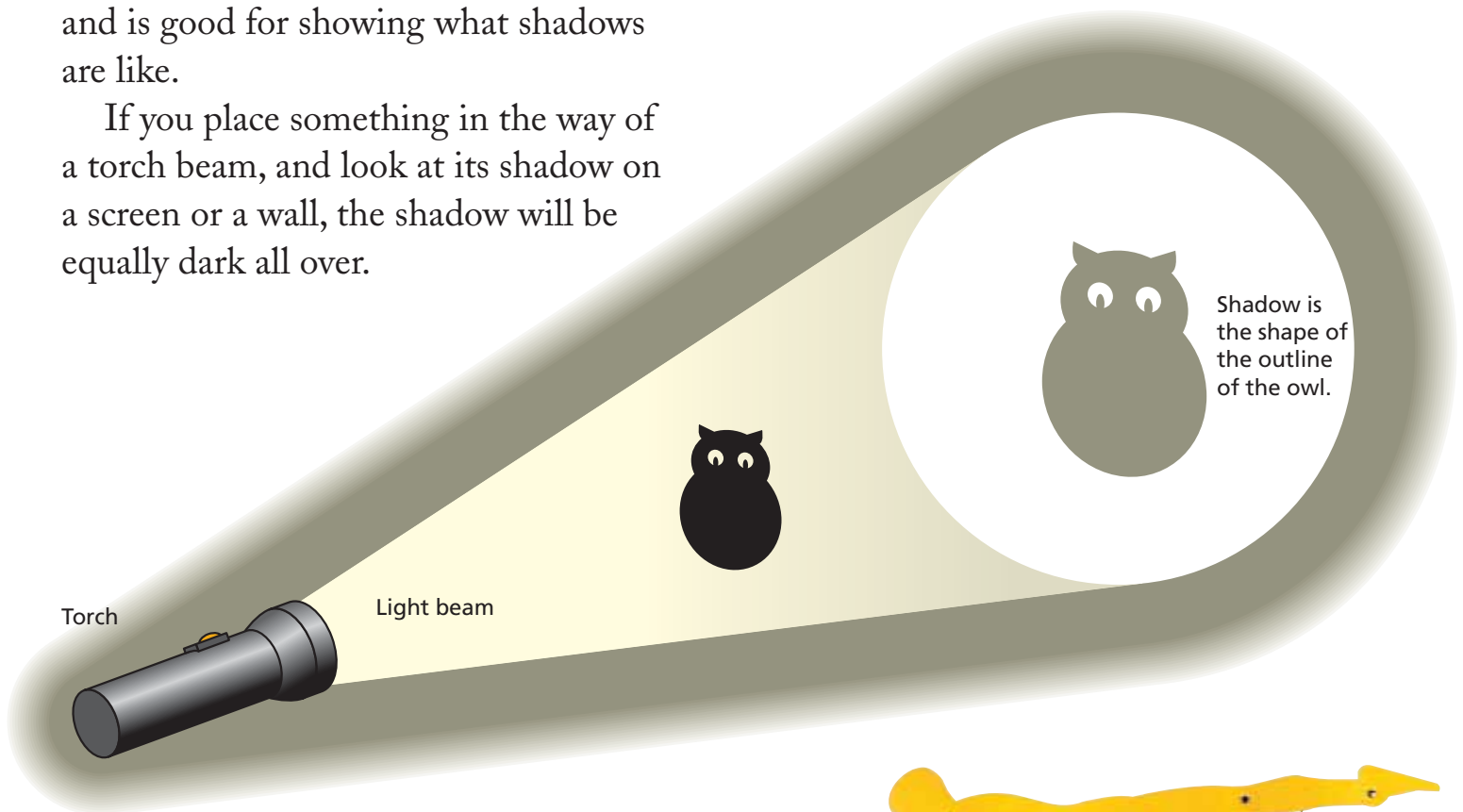
## Shadows from a beam of light

A torch makes a narrow beam of light and is good for showing what shadows are like.

If you place something in the way of a torch beam, and look at its shadow on a screen or a wall, the shadow will be equally dark all over.

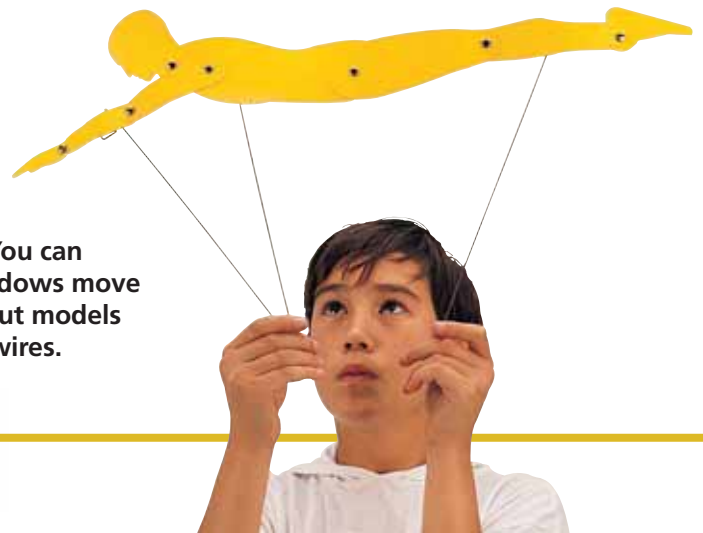
In Picture 1, a cardboard owl has been used to make a shadow. The shadow is a dark area on the wall. Notice that the shadow is the same shape as the owl and that it has a very sharp edge to it.

The way to make shadows move, as in shadow plays, is shown in Picture 2.

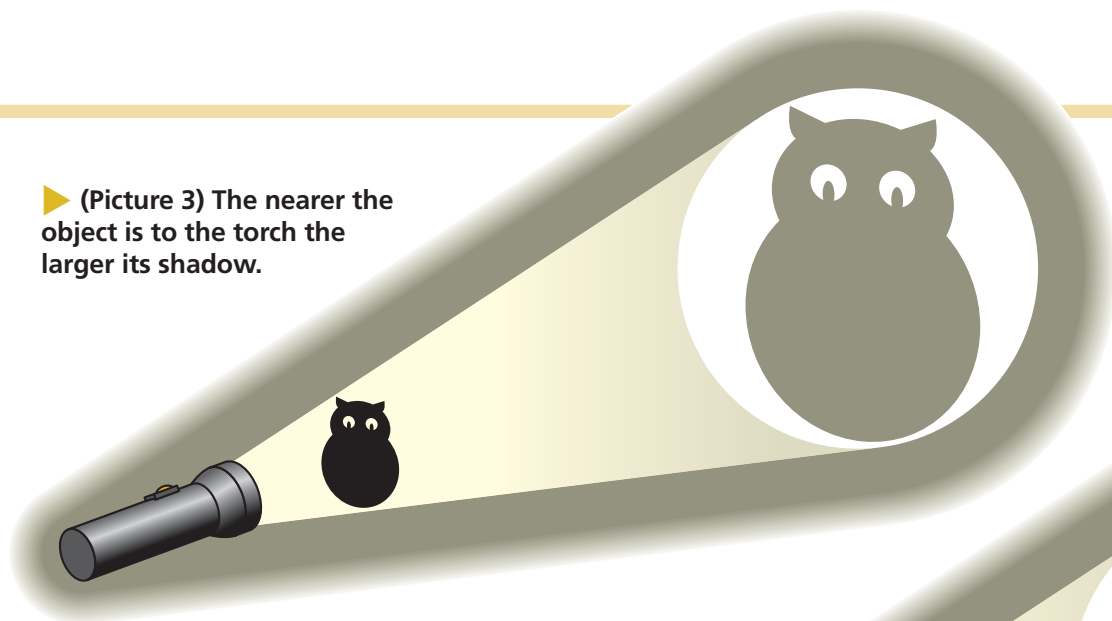


▲ (Picture 1) The shadow is the dark area behind the object.

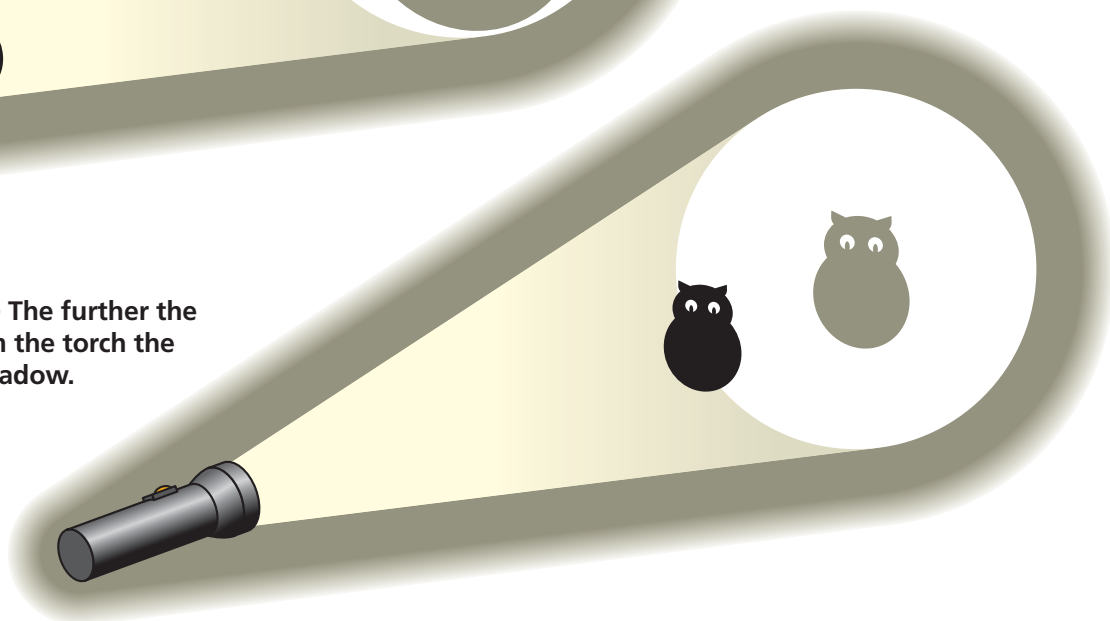
► (Picture 2) You can make your shadows move if you use cutout models supported by wires.



► (Picture 3) The nearer the object is to the torch the larger its shadow.



► (Picture 4) The further the object is from the torch the smaller its shadow.

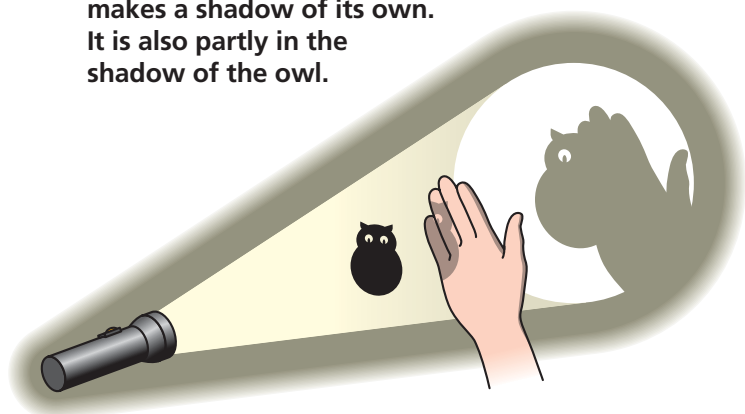


## The size of a shadow

In Picture 3, the owl is close to the torch and the shadow is very large.

In Picture 4 the owl has been moved further away from the torch. The shadow is now only a little larger than the owl.

▼ (Picture 5) The hand makes a shadow of its own. It is also partly in the shadow of the owl.



## Where is the shadow?

A shadow is the place behind an object where the light has been blocked out.

If you put your hand anywhere behind the owl, then you can watch your hand pass through the torchlight and into the darkness of the shadow of the owl (Picture 5).

### Summary

- A shadow is the dark area behind an object.
- Shadows are equally dark all over.
- Shadows change size as the object is moved.