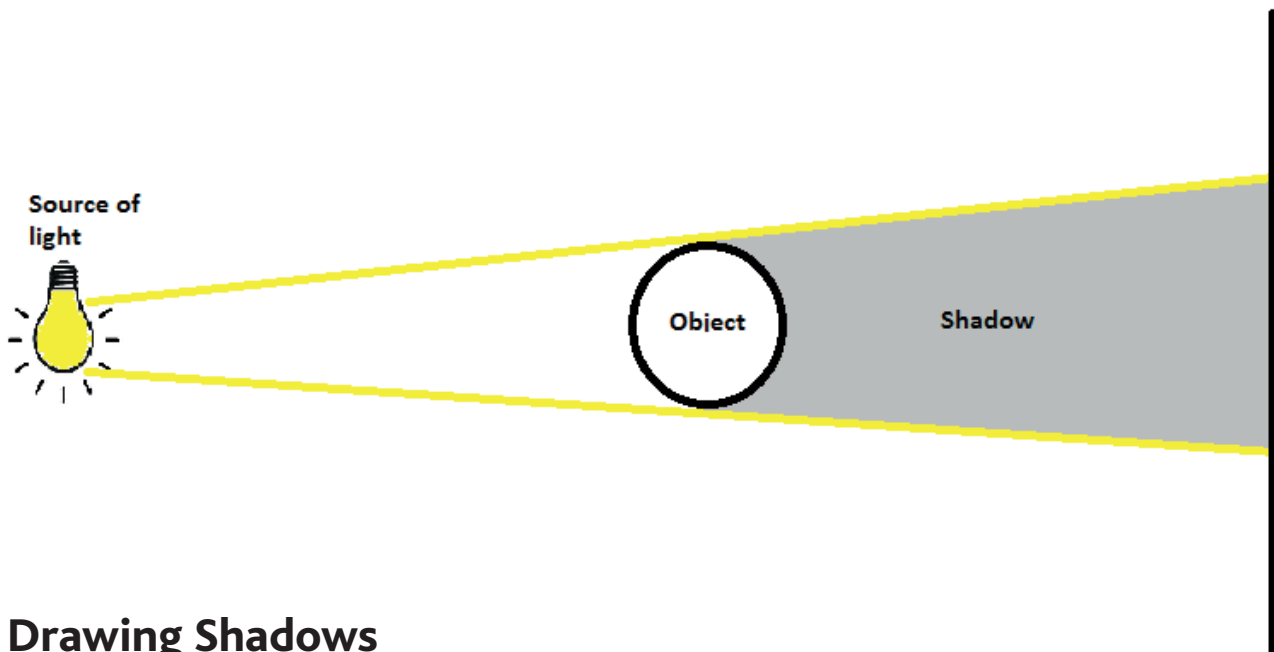


# Shadows

All opaque and translucent objects have a shadow.

Shadows are made by blocking light. That might be light from the sun or anything with a lightbulb. When light hits something, everything that is facing the light is bright and lit up. But the object stops the light, which means the area behind the object will be in darkness.

Let's do some fun experiments using shadows.



## Drawing Shadows

Find some objects: toy animals often make good shadows. Place your items down on a piece of paper. Can you see the shadows? The shadows might be big or small or have an unusual shape.

Grab a pencil and draw around the shadows. Do the drawings look anything like your objects? Sometimes the position of the light makes the shadows change shape or size.

## **Tin Foil Shadows**

For this activity grab some tin foil. If you don't have tinfoil, then an old newspaper or even playdoh will work.

Can you twist and scrunch your tin foil into a shape?

Maybe make a person and put all the body parts into unusual shapes. Shine a torch at your tin foil shadow. If you move your torch slowly around you will notice that the shadow moves and changes position too.

## **My own shadows**

For this activity you will need an extra person and some chalk.

Go outside and move your body into a fun unusual shape and then stay very still. The extra person needs to now find your shadow and then draw around the outline with chalk.

Maybe take turns and do a few of these all making different shapes. You could then colour and decorate these shapes with your chalks.

## **Changing Shadows**

Shadows can change and move.

A good way to experiment with this is outdoors on a nice bright day.

Find an object, something larger, like a plant pot. You first need to put it down on the floor and draw around its shadow. Then leave it.

You can make this experiment last as long or short as you like. Every hour revisit your object and draw round its shadow using a different colour chalk.



TWCMS : C10530. Floating sundial. Made by F Robson and Co of Newcastle.

## Have you noticed that the shadow has started to move?

This is because the earth is spinning around. It makes a full circle every 24 hours. This makes it look like the sun is moving across the sky.

For an outside shadow, the light source comes from the sun. Have you ever noticed any sun dials on buildings or in museums?

They are outside clocks, mostly used a long time ago. They use the sun, just as you have, to help tell the time.