

Mirror magic

Trick your friends with a mind-blowing illusion that will leave them reflecting for hours.

What you need

- Small photo frame with glass removed
- Large sheet of coloured paper
- Desk lamp or torch
- Pencil
- Ruler
- Scissors
- Two identical sets of objects
- Camera or smartphone

How does it work?

Your brain needs lots of clues to work out what it's seeing. When you see objects mirrored in a frame, you naturally assume you are seeing a reflection because of two things. First, the chance of seeing random identical objects laid out in a mirror image seems unlikely. A much more likely explanation is that a mirror is creating the duplicated objects with that arrangement. Second, you're used to seeing a frame with either a mirror or picture in it. These two assumptions make the trick work and allow you to blow someone's mind when you reveal the secret.

LARGEST MIRROR

Salar de Uyuni, in Chile, is the world's largest salt flat (a flat area topped by minerals). It reflects light when rain falls on it, turning into the biggest mirror on Earth.



MIRROR, MIRROR

The earliest mirrors were made from obsidian – a glassy black volcanic rock that can be polished to reflect light.

Boost your magical powers

There are several ways to make this trick even more astonishing, although it will require quite a bit of preparation. The easiest upgrade is to move your lamp or torch and shine it brightly from one side of the frame to the other. This adds strong shadows, reinforcing the impression that the objects are reflections rather than different things.

If you have more time, try writing a word to stick in front of your "mirror". To make the illusion work, you will have to write an upside-down version of the same word on an identical bit of paper that can be placed inside the frame.

Finally, experiment with a different shaped mirror. What do you need to do in order to create a round fake mirror?



1 Place the photo frame in the middle of the paper. Move the lamp or torch until you get the frame's shadow to fit on the paper, with the shadow from the top of the frame falling along the paper's edge.



2 Mark out the shadows cast by the frame using a pencil and ruler. Draw your lines down the middle of the bar of shadow. Then draw straight lines from the frame to the sides of the paper.



3 Carefully cut along your pencil lines with the scissors. The exact shape of the wedge will depend upon where you placed the light source at the start.



TOP TIP

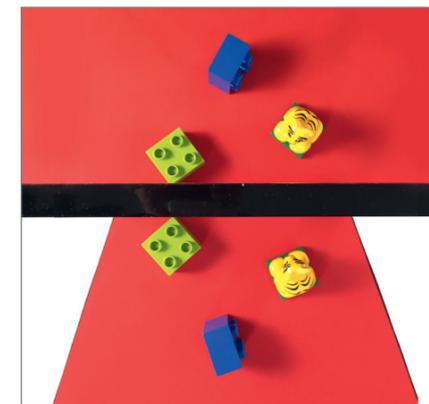
Shoot a video instead of taking a photo, and shock your friends by sticking your hand through the fake "mirror".

WARNING!

Ask a grown-up to help remove the inserts of the photo frame – it may contain glass.



4 Put the frame back in the middle of the paper. Now, stand at the source of the light. The edges of the paper should be hidden behind the sides of the frame. It should look like a mirror.



5 Gather your two identical sets of objects and arrange them in a mirror image on either side of the frame. Looking down from the top, like this, gives you a good idea of how to match them.



6 Take a photo from the same point that you put the light, making sure that paper fills the frame. Your illusion is complete, and your friends and family will be shocked when you move an object.