

Mind-bending tricks!

Seeing isn't always believing – create some awesome illusions that will fool your friends and family... and your own eyes.

Optical illusions are trick images that fool people into seeing something that isn't there. This type of illusion takes the internet by storm, baffling and delighting millions of people every day.

Illusions are nothing new – they date back to the times of the ancient Greeks. A famous Greek philosopher called Aristotle noticed that if you look at a waterfall for a long time, the rocks on either side

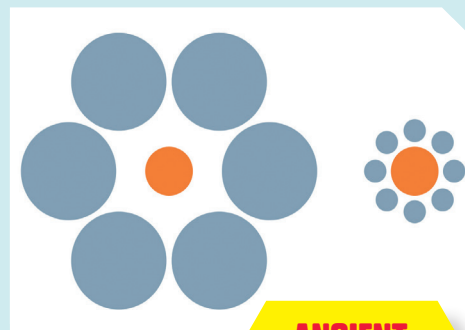
appear to be moving upwards. Try this for yourself the next time you are beside running water.

The so-called motion aftereffect is created by your brain reducing the constant stimulation from the eyes that moving things cause. As your brain gets used to the movement, it starts to see stationary rocks moving in the opposite direction.

Small or far away?

Our own eyes sometimes deceive our minds. Our brains are used to judging how close or far away an object is, by comparing it with other nearby objects. Some optical illusions have fun playing with this sense of perspective.

Have a look at the image below. Are the orange dots the same size? The orange dot surrounded by smaller blue dots appears to be bigger than the one surrounded by large blue dots. Use a ruler to check and you'll find that they are exactly the same size. The larger circles confuse the brain, making the orange dot appear smaller than it really is.



ANCIENT ADVICE

In 350BC, a famous Greek philosopher called Aristotle said, "Our senses can be trusted but they can be easily fooled."

Handy 3D art

Draw an image of your hand that seems to pop out from the page.

What you need

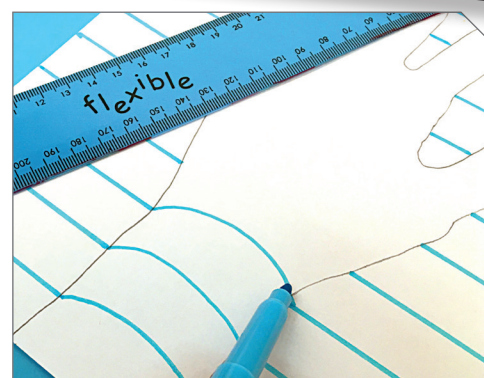
- Your hand
- A pencil
- Paper
- A ruler
- Coloured pens

How does it work?

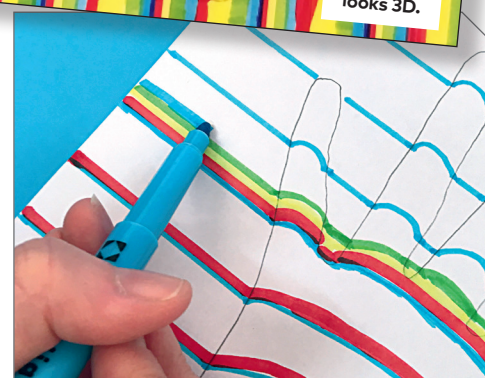
The contrast between the straight and curved lines tricks your brain into thinking that the hand is 3D. This is because your brain is used to seeing curved lines around solid objects and assumes the image must also be solid.



1 Draw around your hand on a piece of white paper.



2 Use a ruler to draw a straight line across the page with a coloured pen. Inside the hand outline draw upward-curving arches.



3 Repeat over and over again until you have a colourful 3D hand. Go around the hand outline again with a pencil to improve the 3D effect.

The hand looks 3D.

Magic dragon

This devious dragon looks as if it turns its head to watch you as you walk past. You will need to download and print the Dewi the Dragon template from urdjuret.com/Optical/Illusions.html

What you need

- Scissors
- Dragon template
- Glue stick

How does it work?

This dragon is an example of the hollow-face illusion. It works because humans are not very good at telling the difference between convex (curving outward) and concave (curving inward) shapes. Your brain is so used to faces with features that poke out that when it sees a hollow face, it overrides information coming in from your eyes. Once fooled, your poor brain then tries to make sense of the changing perspective as you walk past the dragon, tricking you into thinking that its head is moving.

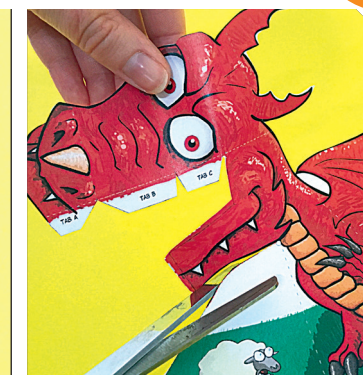
MASTER OF ILLUSION

The creator of the magic dragon illusion was a magician named Jerry Andrus. Look at another one of his amazing illusions at tinyurl.com/JSN-boxillusion



ILLUSION IN ACTION

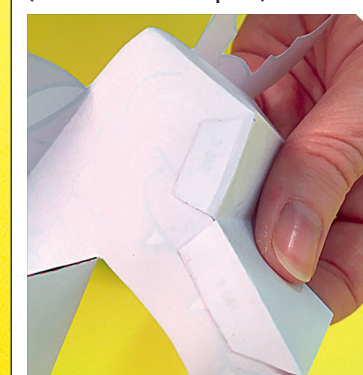
Watch a video of this illusion in action at tinyurl.com/JSN-illusion



1 Cut out your dragon template very carefully along the black line.



2 Fold along all of the dashed lines using mountain or valley folds (indicated on the template).



3 Glue tabs A, B, and C behind the mouth.



4 Insert tabs into correct slots (slots are labelled with the tab number).

5 Stand your finished model on a table and walk around it – the dragon's head will appear to turn.