nustem

MAKE A MAGNET MAZE

Use a magnet to move an object around a maze without touching it!

Overview

Do you want to move an object around a maze without touching it? All you need is a magnet, a metal paper clip or washer, a piece of card or a paper plate and your imagination!

Printable version

This page will print, but looks a little funky. Click the button for a PDF version which looks a bit better.

What to do

Step 1

Test your materials! You need to make sure that your paper clip, washer or other object you are using is attracted (sticks) to your magnet.

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What you'll need

- A small magnet such as magnetic letter or fridge magnet
- A paper clip, washer or other magnetic (made of iron or steel) object
- A piece of card or paper plate
- Small piece of paper or card to draw your moving object on
- Felt tip pens, crayons or pencils
- Scissors
- Glue, Velcro, sticky tape or glue dots if you are using something other than a paper clip

Step 2

Next, make sure that your magnet is strong enough to attract your paper clip or washer through your plate or card. Put the paper clip or washer on top of the card or plate and hold the magnet underneath. Move the magnet around to check that your object moves too.

Step 3

Decide on the picture you would like to move around your maze and draw this on your small piece of paper or card. You could draw around a 2p coin or your washer to get a good shape and size for your object.

Step 4

Glue or tape your paper clip, washer or other magnetic object to the back of your picture.

Step 5

Decide on your magnet maze design. You will need to use your imagination. You may want to lead a bee to a flower, a rabbit down a burrow or a space ship to it's home planet. Younger children may need support with this.

Duration

20 minutes or so.

Suitable for...

Age 4 and up.

Safety notes

You know your children better than anyone, and you should judge whether they're ready for this activity. You might want to think in particular about:

- Supervision: the activity involves small parts, so there's a choke hazard.

Careers link – MRI scanner technician

Magnetic resonance imaging (MRI) technicians operate MRI scanners. These scanners use magnetic fields to produce images that a doctor can use to diagnose medical problems.

Attributes:
collaborative, patient and organised.

Things to discuss

Can you move your object around your maze using your magnet?

How do you think this works?

What's the furthest distance away that your magnet can attract your object?

If you have more than one magnet, how could you tell which one is a stronger magnet?

How it works

A magnet is a piece of metal that creates a magnetic field around itself and can pull metal objects within this magnetic field towards it. The magnet does not need to touch the object to be able to pull it. This means you can pull your metal object without touching it by using your magnet through your plate or card,

Magnetic materials are always metal, but not all metals are magnetic. Only iron, nickle and cobalt are magnetic. Steel contains iron so is also magnetic. Gold, silver, aluminium, copper and brass are examples of metals that are not magnetic.

Other things to try

Make a more complex maze

This design your own maze website will give you clear instructions to design a more complicated maze. It also has an online tool for designing mazes as well as ways to design hexagonal, unicursal (the path forms the whole maze) and even real life large scale mazes.