

# Magnetism... an attractive force

Magnetism is an invisible force caused by the unique properties of some materials.

We can use this force to make things move from a distance, without even touching it!

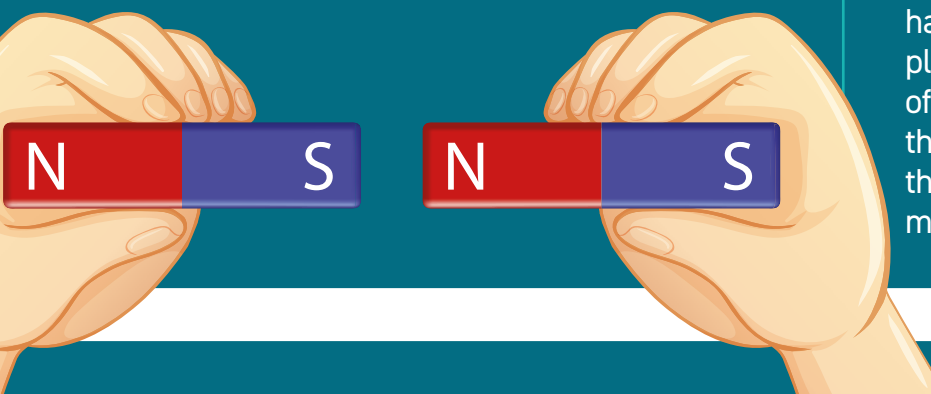
Grab a magnet and let's investigate magnetism.

## Attract or repel

- If you have two magnets, try holding them close to each other. Do they stick together? Or push apart?



- Turn one of the magnets around – does the same thing happen?



Magnets have two ends, called poles: north and south.

Putting two matching poles together (north to north or south to south) will make them attract or repel.

Putting two opposite poles together (north to south) will make them attract or stick together.

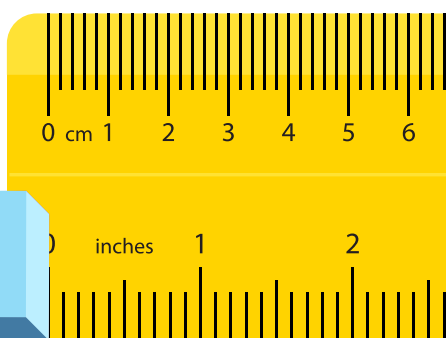
Different shaped magnets will have their poles in different places. If you have magnets of different shapes, see how they behave next to magnets that are the same shape, and magnets that are different.

# Testing magnet strength

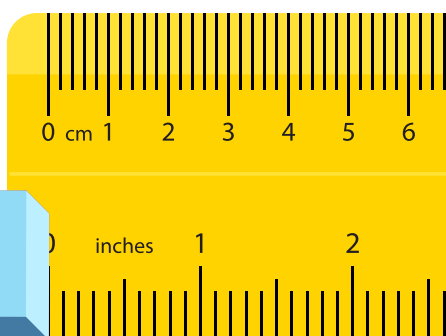
You've seen that magnets can attract objects when they touch but how far can a magnet be to still attract these objects?



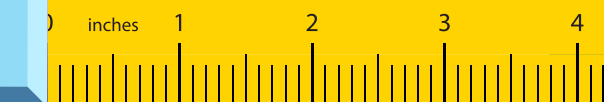
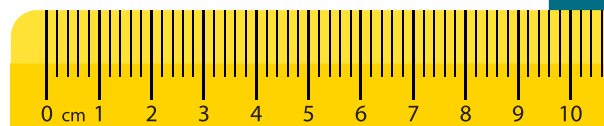
- 1 Put your magnet on a flat surface at one end of a ruler.



- 2 Hold a magnetic object 1cm away from the magnet. Is it attracted to the magnet?



- 3 Hold the magnetic object 2cm away from the magnet. Is it still attracted?



**Keep going, holding the object 1cm farther away each time until it is no longer attracted to the magnet.**

## Magnet-friendly materials

- Gather some small objects made of different materials: plastic, fabric, wood, metal, etc.
- Test each object by holding a magnet against it. What kind of materials are attracted to the magnet?

Magnets attract metal – but not all metal. An object needs to contain iron, steel, nickel or cobalt to be attracted to a magnet.

If your magnet attracted something that doesn't look like metal, it means there must be some hidden inside.



Let us know how you got on - tag us [@ScienceAtLife](https://twitter.com/ScienceAtLife). For more activities you can do at home, go to [life.org.uk/life-goes-online](https://life.org.uk/life-goes-online)

