

Quick Quiz

1. How could this person stop themselves from slipping?

2. When can friction be useful?

3. How did we ensure our friction investigation was a fair test?



Quick Quiz - Answers

1. How could this person stop themselves from slipping?

Increase friction between his shoe and the ice.

2. When can friction be useful?

Brakes, tread on shoes, goalies gloves grip a ball, tyres on the road.....

3. How did we ensure our friction investigation was a fair test?

We kept everything the same except for 1 variable.



Lesson 3

LO: To explore magnetism

- *Understand how a magnet works*
- *Know which poles attract and repel*
- *Investigate magnetic fields.*

What is magnetism?



Magnetism | The Dr. Binocs Show | Educational Videos For Kids

<https://www.youtube.com/watch?v=yXCeuSiTOug&t=12s>

Recap the video:

- *What is a magnetic field?*
- *What is a magnetic object?*
- *What are the 2 poles called?*
- *What happens if 2 poles the same are brought near to each other?*

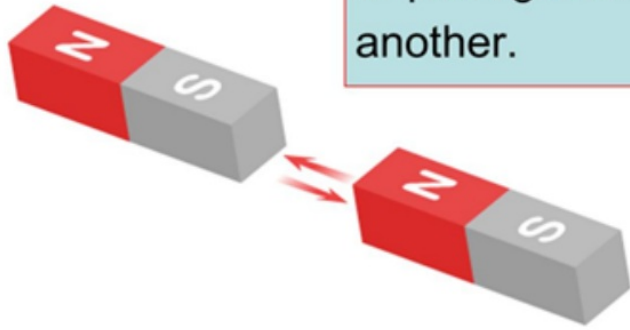
Timed Pair Share



How do the poles on a magnet work?

Attract

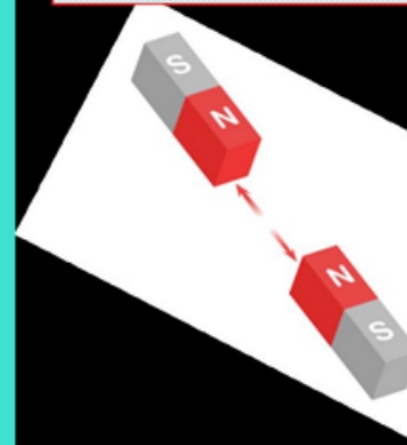
When two magnets are close, they create pushing or pulling **forces** on one another.



These forces are strongest at the ends of the magnets. The two ends of a magnet are known as the **north pole** and the **south pole**.

Repel

If you try to put two magnets together with the same poles pointing towards one another, the magnets will push away from each other. We say they repel each other.



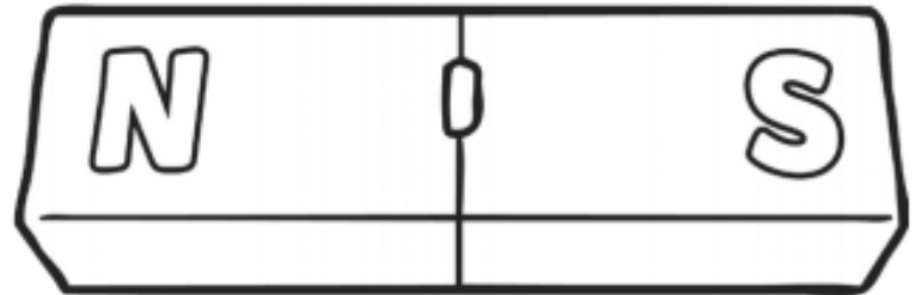
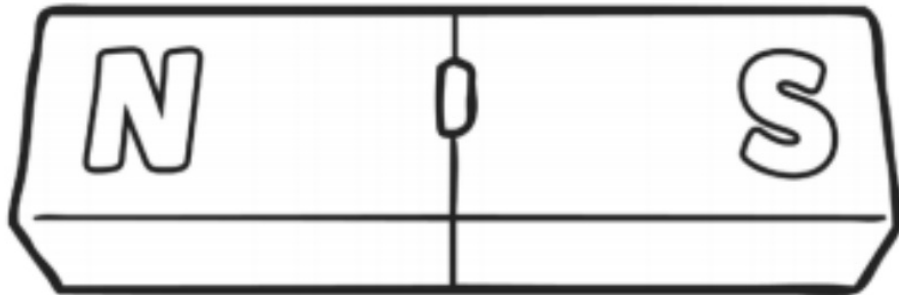
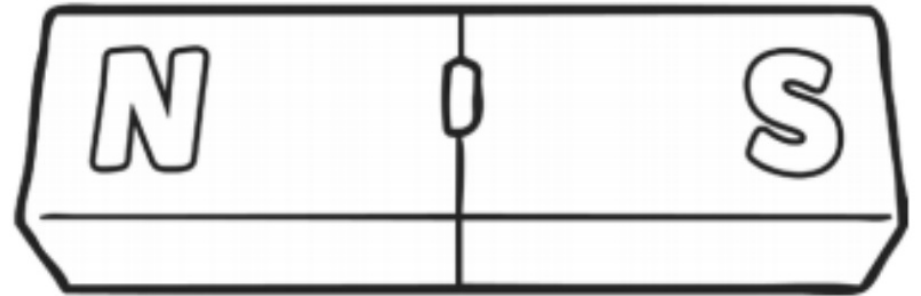
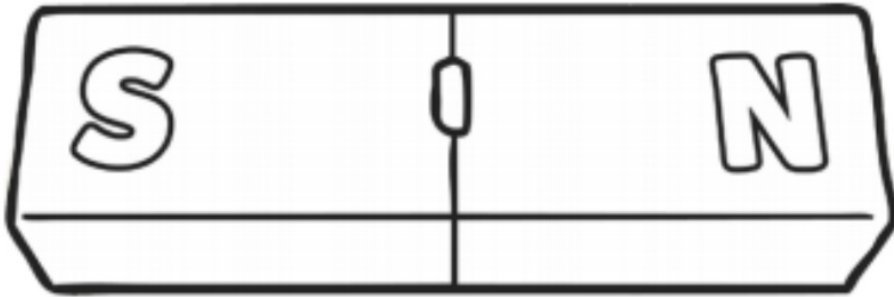
In this picture two north poles are pushing away from each other (repelling each other).

Have a go yourselves with the magnets on your tables.

In your book I want you to draw a magnet and label:

- north pole*
- south pole*
- magnetic field*

Now label these magnets with arrows to show if they attract or repel.



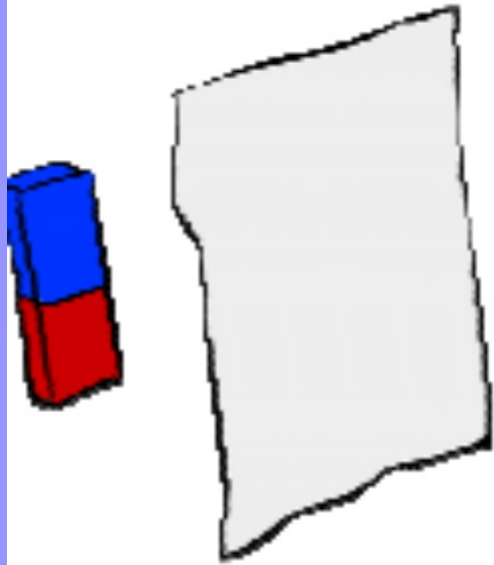
Now we are going to investigate the strength of a magnet by exploring how well they work at a distance

You will need:

- a magnet - have you got a fridge magnet or a toy with a magnet in it?*
- a selection of objects e.g. paper, card, towel, a book, door etc*
- some paperclips or other small metal objects that are magnetic.*
(If you haven't got paperclips you could do it with a radiator or the fridge door.)

Scientific Play

Play with a magnet and a paperclip. Is the paperclip still attracted to the magnet if you place a piece of paper in the way? What about your hand?



This would be the fridge door/radiator
if you haven't got paperclips

Scientific Question:

Which materials prevent a paperclip from being attracted to a magnet?

Write the question as a title in your books then write a prediction:

I think materials will stop the paperclip from being attracted because.....

This is the method we are going to follow:

Method

Place the magnet on one side of the object and the paperclip on the other. Does the paperclip fall off? Make a prediction before you measure and record your results in the table. Place a tick or a cross in each box.

If you are using a fridge/radiator you are looking to see if the magnet sticks or not.

Fair Testing

What will we keep the same?

What is our variable?



Name of object	Main material (if known)	Is the paperclip still attracted to the magnet?	
		Predict	Measure

Draw this table in your book

You need to choose at least 5 different materials to test.

Remember to make a prediction before testing.

Results

How accurate were your predictions?

Which result surprised you the most?

If someone else repeated the test using the same objects do you think they would get the same results? Why?

In your books:

Conclusion

I discovered that.....

My prediction was/was not correct because.....

CHALLENGE: Can you explain why your prediction was/wasn't correct?