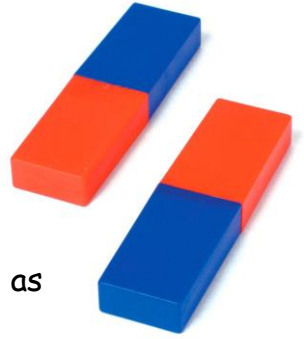


Magnetic Fields

Magnetic Materials

Iron, Nickel, Cobalt are elements that are magnetic
Steel is an alloy that contains iron so is also magnetic



Magnets

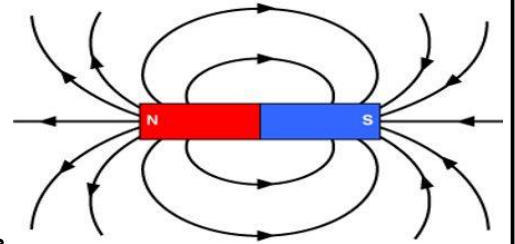
Bar magnets are permanent magnets. This means that their magnetism is there all the time and cannot be turned on or off as it can with electromagnets.

Magnets have two ends a North and a South pole.

Two like poles will always repel each other

Two opposite poles will always attract each other

Magnets are the strongest at the poles where the lines are the closest

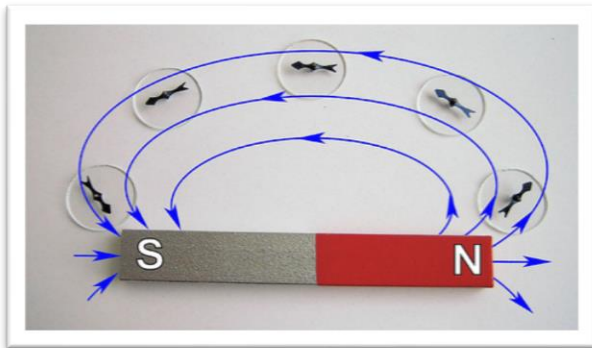


What are magnetic fields?

Magnets create magnetic fields. These magnetic fields cannot be seen. They fill the space around a magnet where the magnetic forces work, and where they can attract or repel magnetic materials

How do we see them?

Although we cannot see magnetic fields, we can detect them using iron filings or a compass.

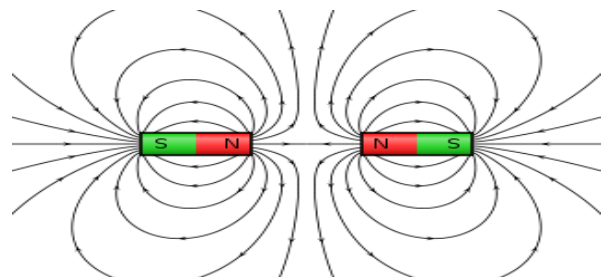
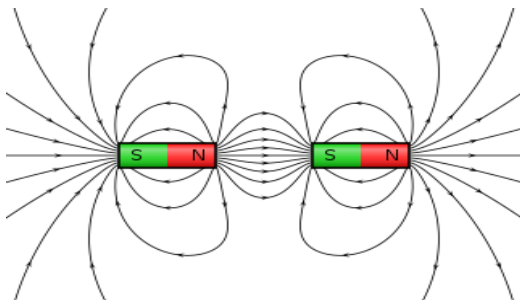


What do they look like?

- the field lines have arrows on them
- the field lines come out of N (north pole) and go into S (south pole)
- the field lines are more concentrated at the poles.



Attraction and Repulsion



What about two magnets?

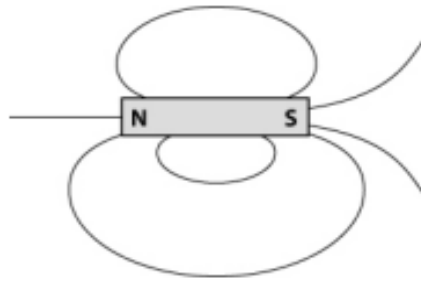
The magnetic field pattern when two magnets are used is shown above.

You can see different patterns when two like poles are used and two opposing poles are used.

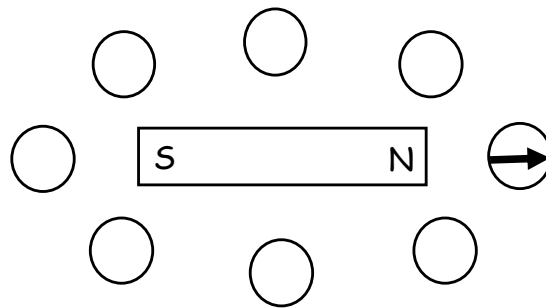
Magnetic Fields

LO: To understand how to show magnetic fields

Task 1: Fill in the missing lines on the diagram (you need to add 6 more lines)



Task 2: Fill in the missing compass points around the magnet



Task 3: Fill in the missing words in the paragraph

1. A north pole will a south pole
2. A magnet will attract iron, steel, and cobalt
3. A south pole will always another south pole
4. A magnetic material can be made into a by stroking it in one direction with the pole of a magnet
5. A is a magnetic device used to help find directions
6. The of a magnet are the strongest parts because the field lines are very close together

Nickel	repel	compass	poles	attracts	magnet
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Task 4: Describe how you can use iron filings to show a magnetic field

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