Your teacher may watch to see if you can:

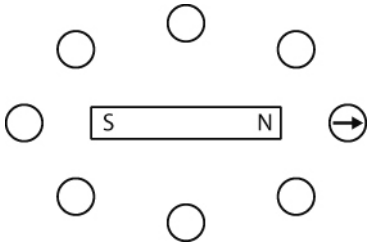
- make careful observations
- record observations in a clear way.

Introduction

A magnetic field is the space around a magnet where it has an effect. The magnetic field will make compass needles point in different directions.

Prediction

1 Copy this diagram, and draw in the directions that you predict the compass needles will point. One has been done for you.



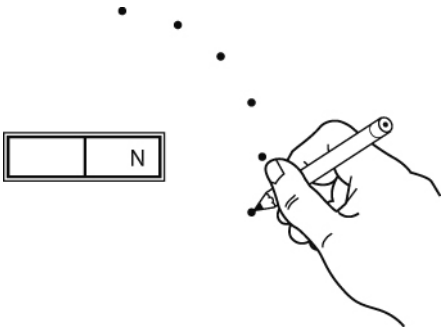
Now test your prediction by plotting the magnetic field.

Apparatus

- bar magnet
- plotting compass
- sheet of paper
- pencil

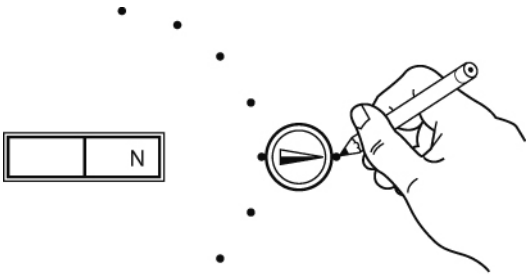
Method

A Put a bar magnet in the middle of the piece of paper and draw around it. Draw nine dots around the north end of the magnet, like this:



B Do not move the magnet while you are doing this practical work.

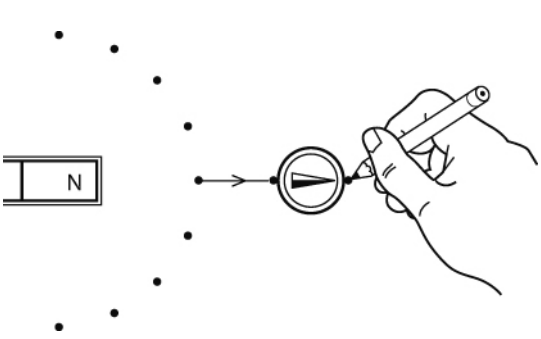
Put a plotting compass on the paper so that its tail is over one of the dots. Draw a dot on the paper near to the point of the compass.



C Join the two dots and mark the line with an arrow. Then move the compass so that its tail is over your new dot. Make another dot next to the point.

D Repeat step **C** until you come to the edge of the paper.

E Now repeat steps **B** to **D** for the other dots that you drew around one end of the magnet. The arrows on your lines show which way the north pole of a compass would point. They point away from the north pole of the magnet. The magnetic field goes from north to south.



I can…

- use a plotting compass to find the shape of a magnetic field.