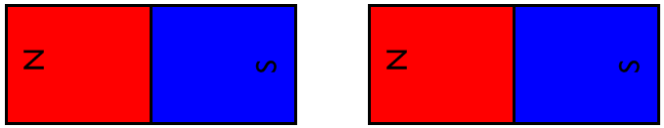
Lesson 2

Resources	Context
Per group of 2 students: Bar magnet, iron filings in shakers, mini plotting compass and A4 card Magnetic Field w/s	To create magnetic field lines.

Starter – Magnetic Fields

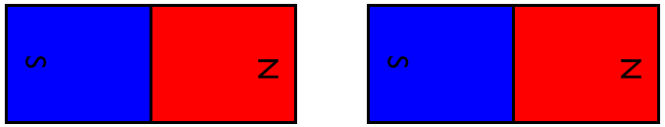
All	Will these magnets attract or repel? Draw and label in your book.

1.



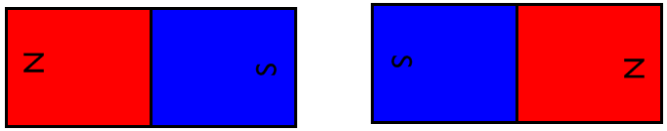
Attract

3.



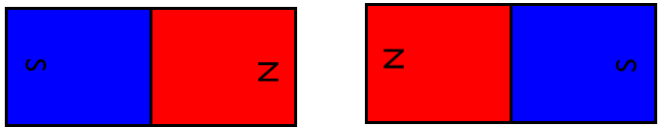
Attract

2.



Repel

4.



Repel

Title: Magnetic Fields

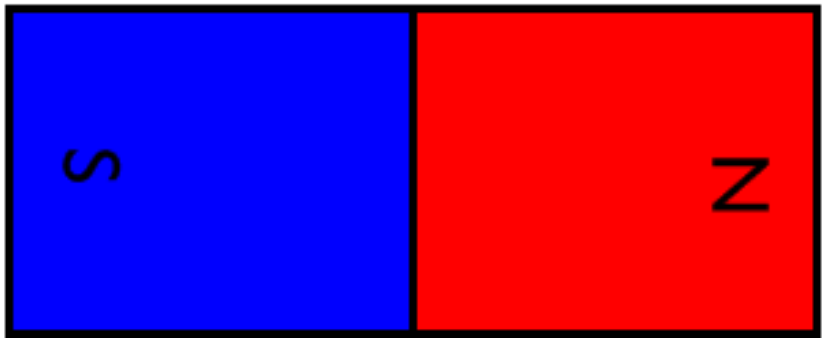
Homework: Write a story about what would happen if you became magnetic!

Level	Learning Objectives	Key Words	SPAG
All	**Know** that magnets create a magnetic field.	Field Compass Magnetism	• To use accurate terminology when explaining ideas.
Most	**Describe** the magnetic field lines around a permanent magnet.		
Some	**Explain** how to find these field lines using a compass.		

Lesson Focus: Connections

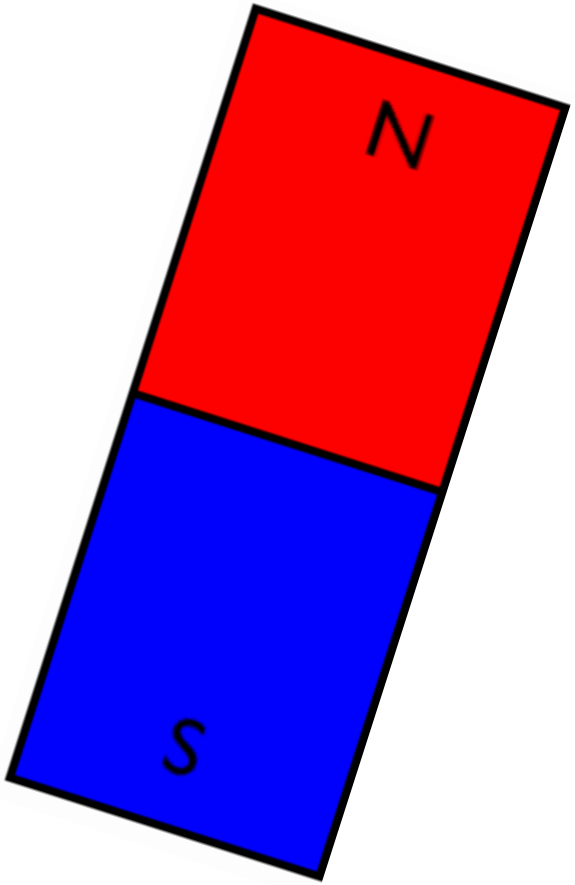
Main Activity - Modelling

The force caused by a magnet is caused by a <u>magnetic field</u> around the magnet.



All	**Know that magnets create a magnetic field.**

Main Activity - Modelling



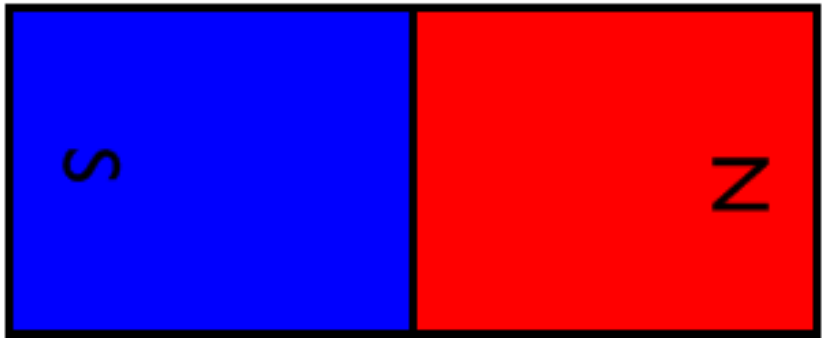
Think	How could we see the magnetic field around a magnet?
Pair	Discuss your ideas and why you think this.
Share	Share your ideas with the class.

Main Activity - Activity

We are going to use iron filings to see the field.

Place your magnet beneath a piece of paper, sprinkle the iron filings slowly over the paper.

Sketch in you book the pattern they form.

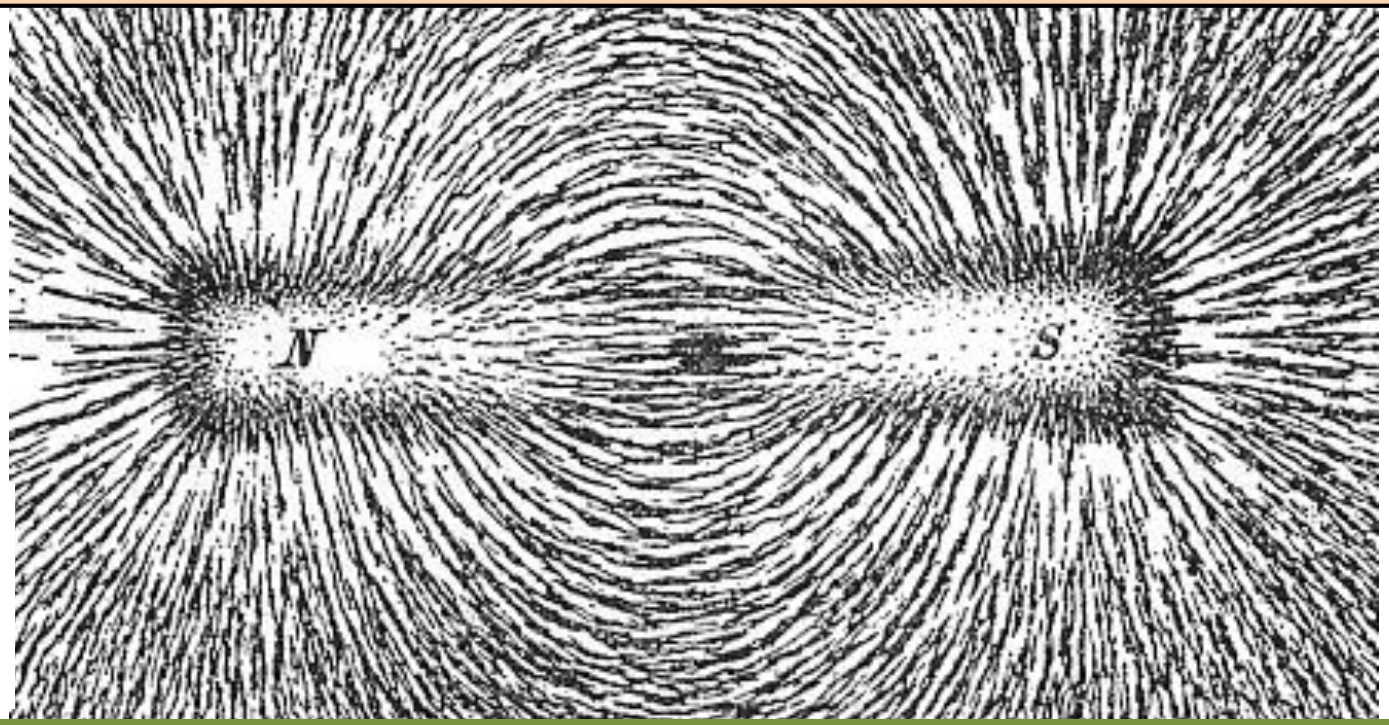


Main Activity - Task

The iron filing gather along the field lines.

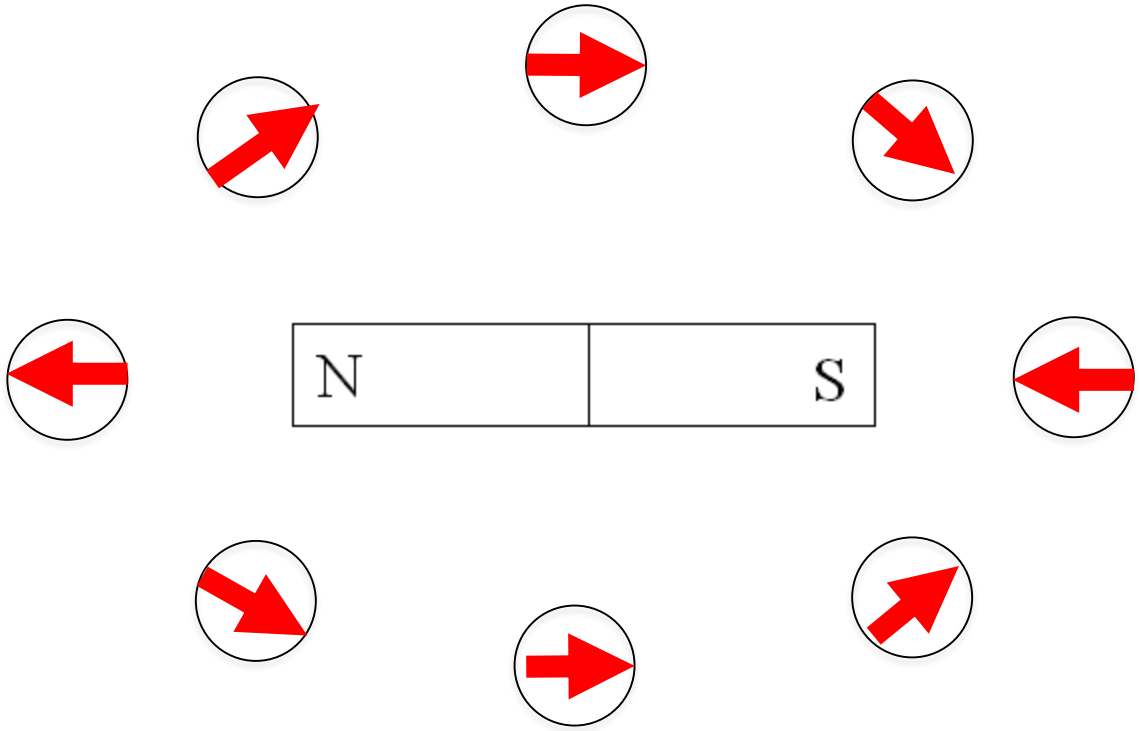
Where the magnetic field is strongest, lots of filing gathers.
Where it is weak, less gathers.

The field is strongest where the field lines are closest together.



Main Activity - Modelling

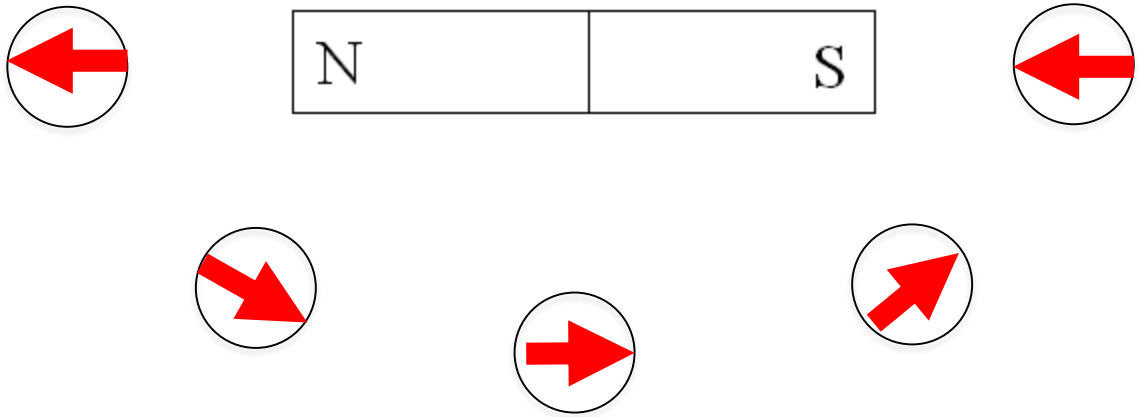
Place mini-compasses in the positions shown below and draw the arrows on the sheet as they appear.



Main Activity - Modelling

Place mini-compasses in the positions shown below and draw the arrows on the sheet as they appear.

Some	**Explain how to find these field lines using a compass.** 



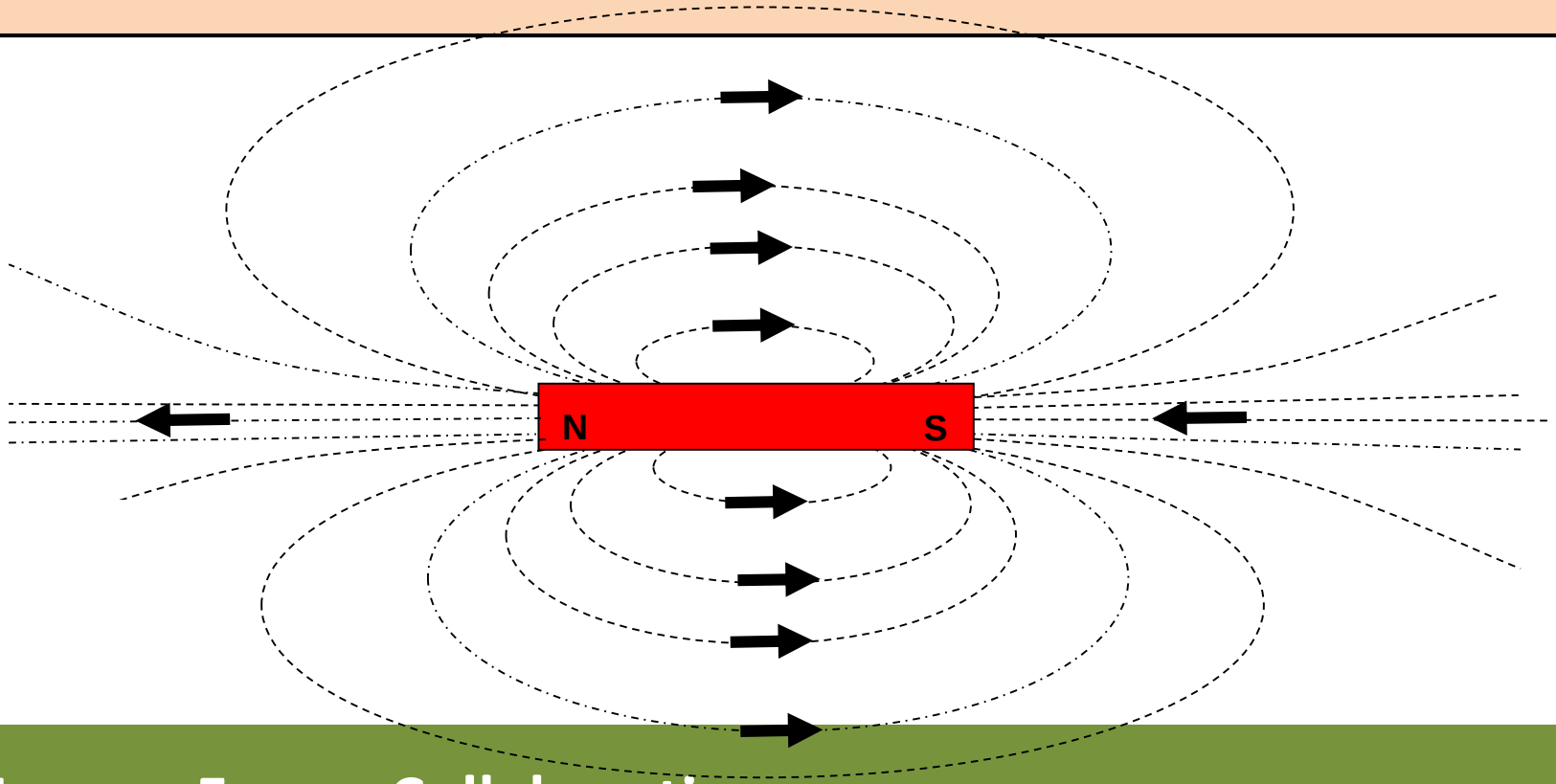
Main Activity - Task

We simplify the field lines like this.

The field is strongest where the field lines are closest together.

Field lines must have arrows which go from North to South.

Field lines NEVER Cross.



Main Activity - Task

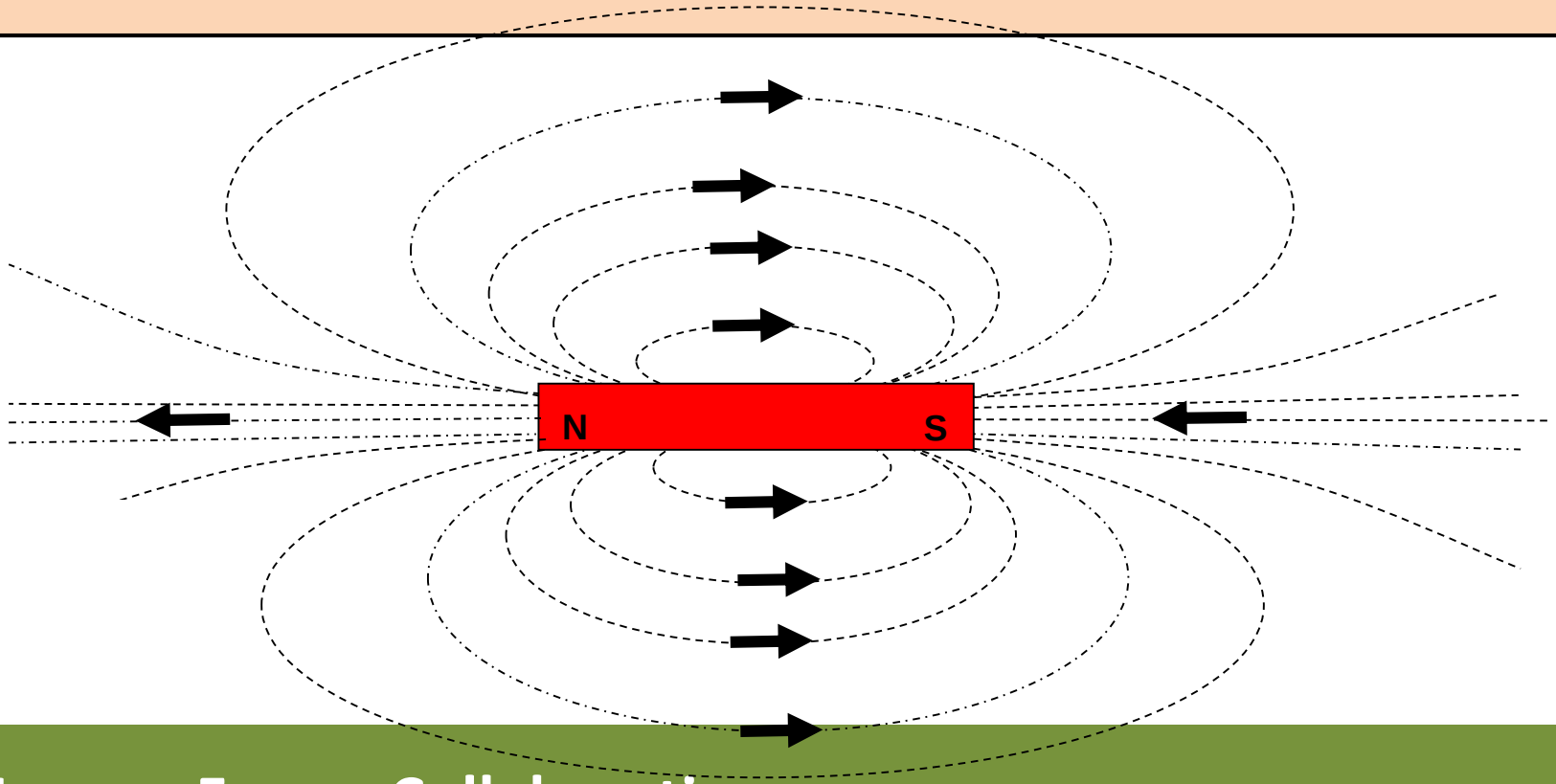
We simplify the field lines like this.

The field is str

Field lines mus

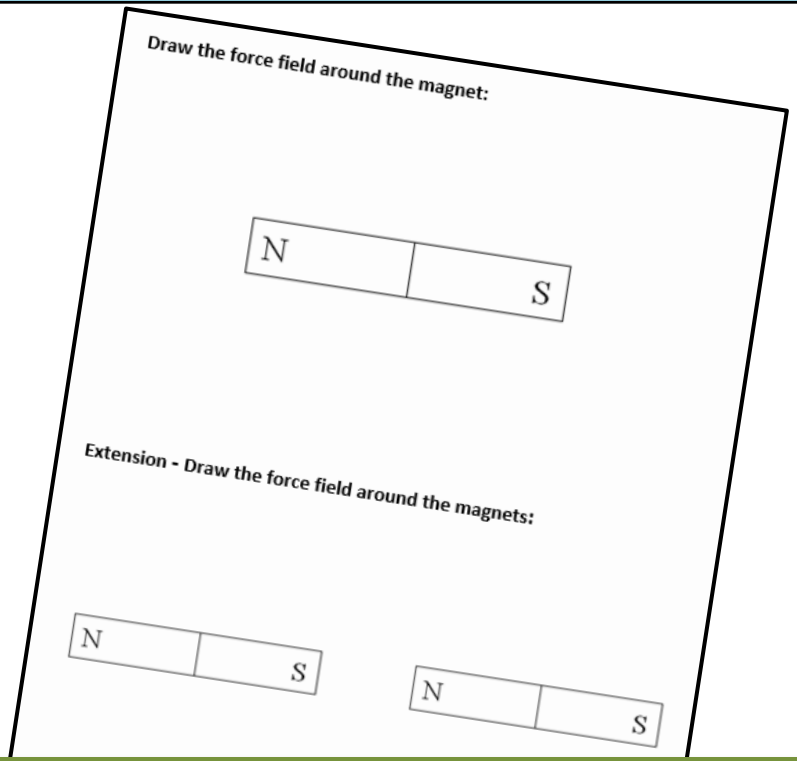
Field lines NEVER Cross.

Most	**Describe the magnetic field lines around a permanent magnet.**

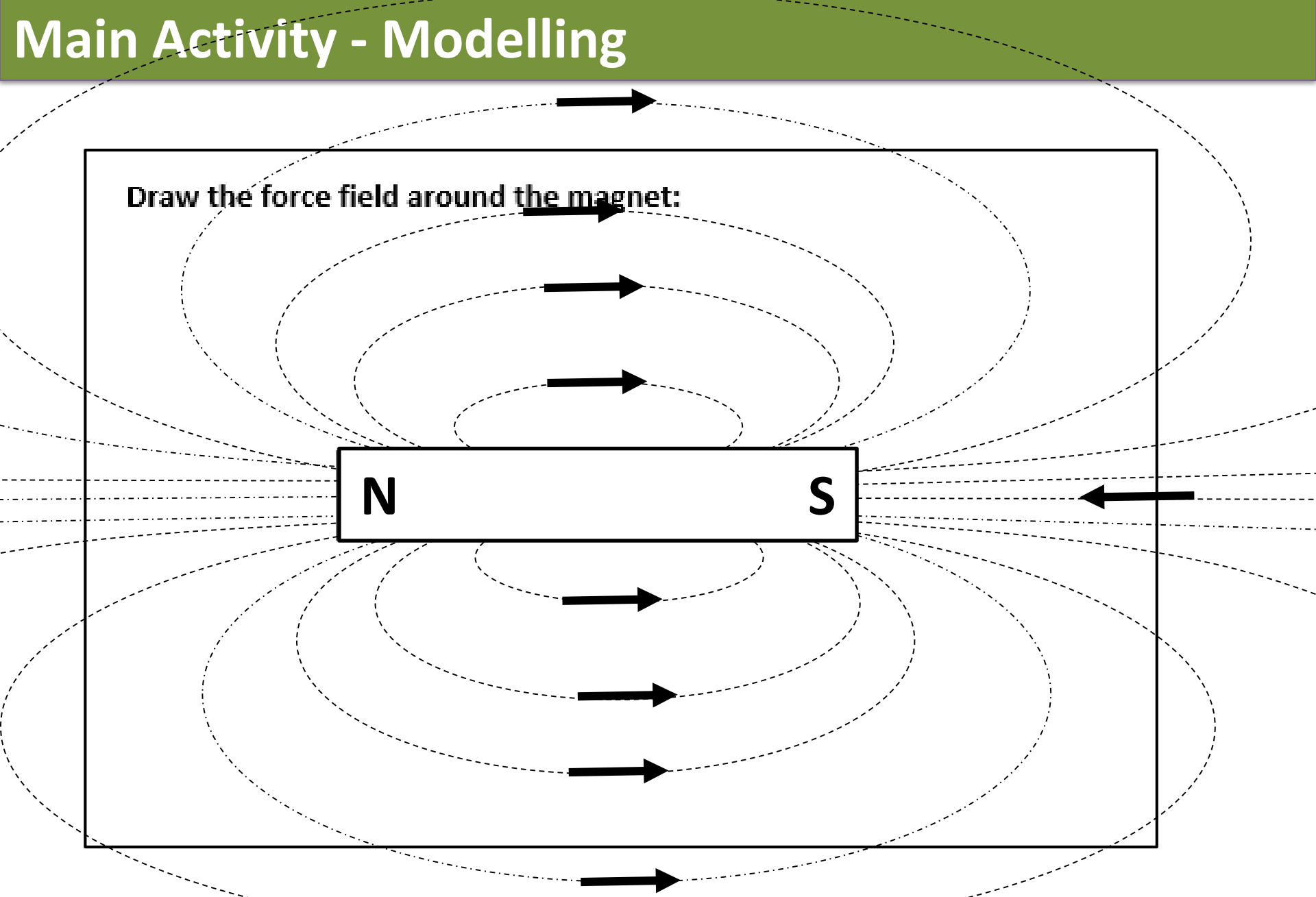


Main Activity - Modelling

All	Draw the field lines around the magnet on the top of the sheet.
+	Investigate and draw the field lines on the extension set ups.

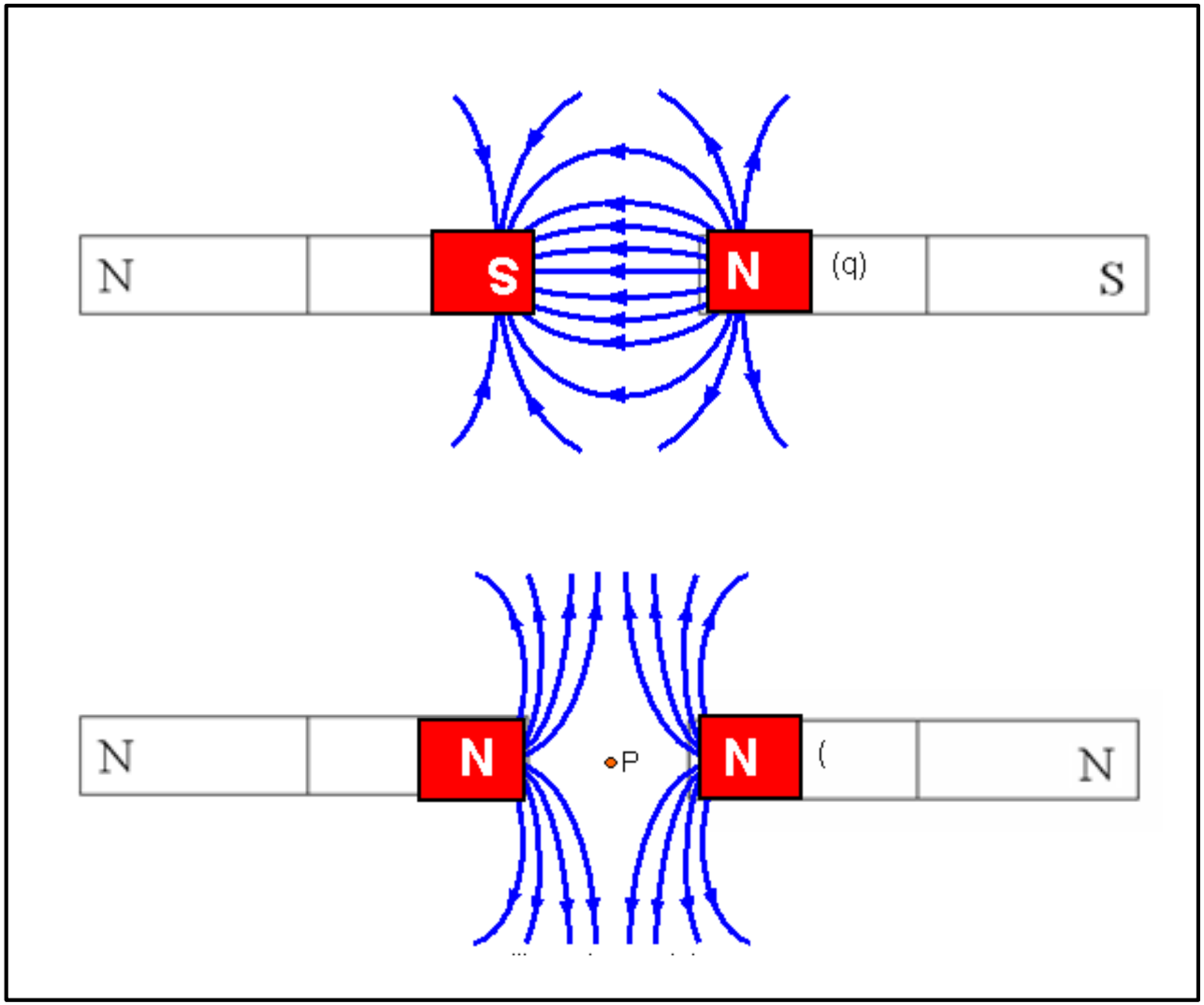


Main Activity - Modelling



Lesson Focus: Collaboration

Main Activity - Modelling



Thumbs Up/ Down

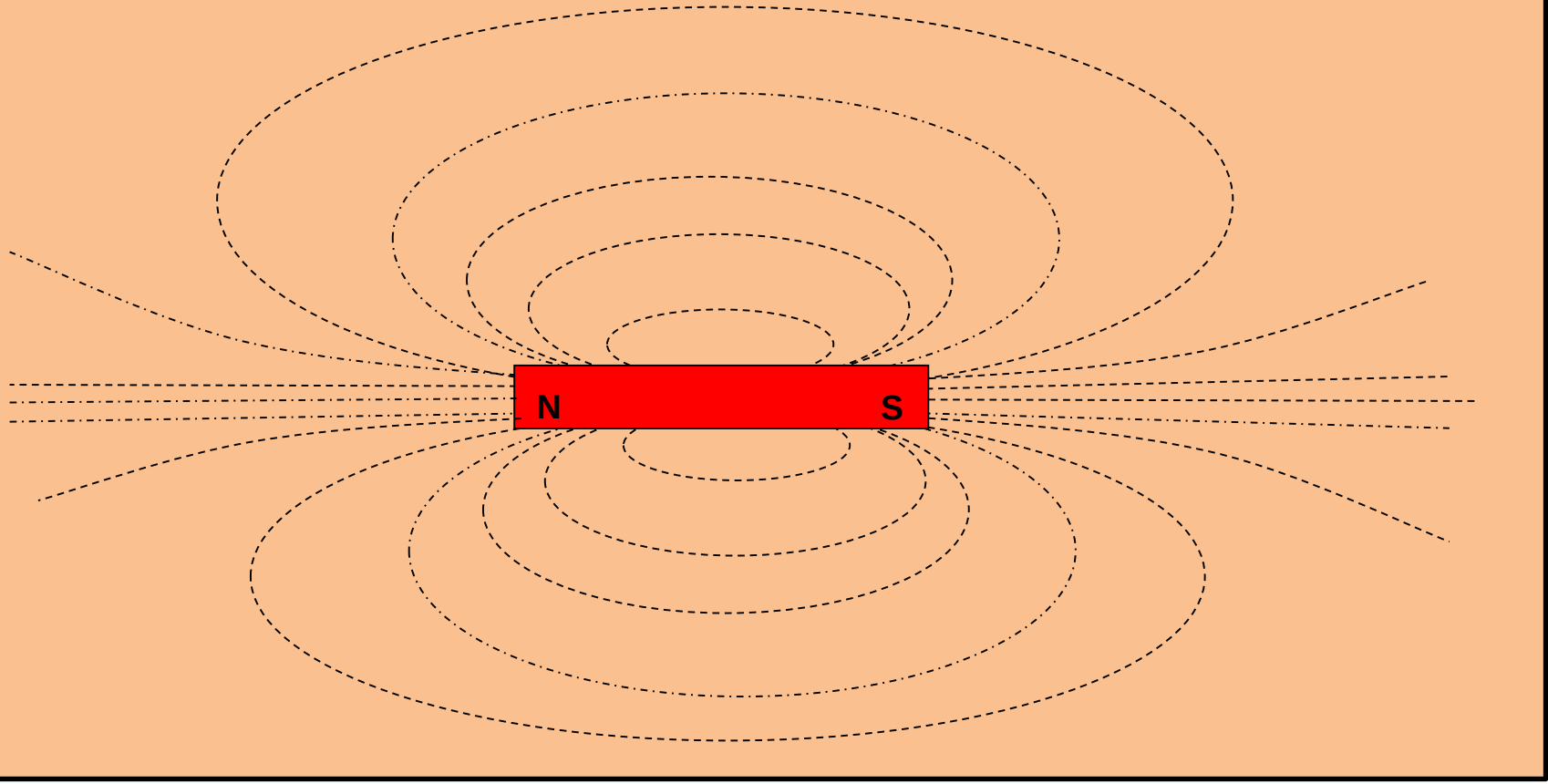
Think	Think about what we have discussed so far.
Share	Hold your thumb up if you are confident in your understanding. Hold your thumb down if you are not confident in your understanding. Hold you thumb across if you are in between.

Assessment Phase

Level	Expectations
All	Draw the magnetic field around a bar magnet.
Most	Add to your diagram the field arrows.
Some	Write two rules for when drawing field diagrams.

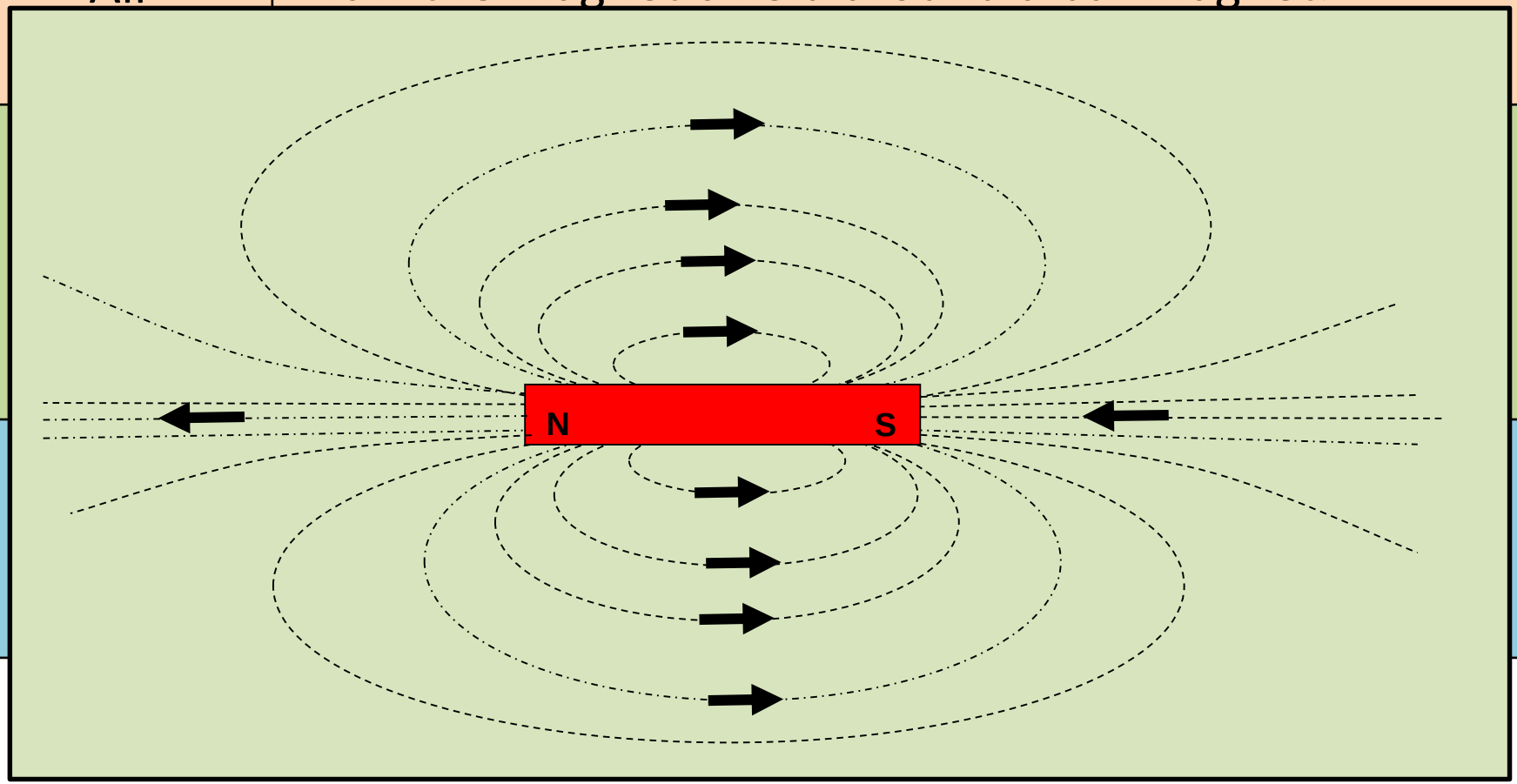
Assessment Phase

Level	Expectations
All	Draw the magnetic field around a bar magnet.



Assessment Phase

Level	Expectations
All	Draw the magnetic field around a bar magnet.



Assessment Phase

Level	Expectations
Some	Write two rules for when drawing field diagrams.

Field lines NEVER cross.

Field Arrows go from North to South.

Plenary

Draw a horseshoe magnet and include its field lines.