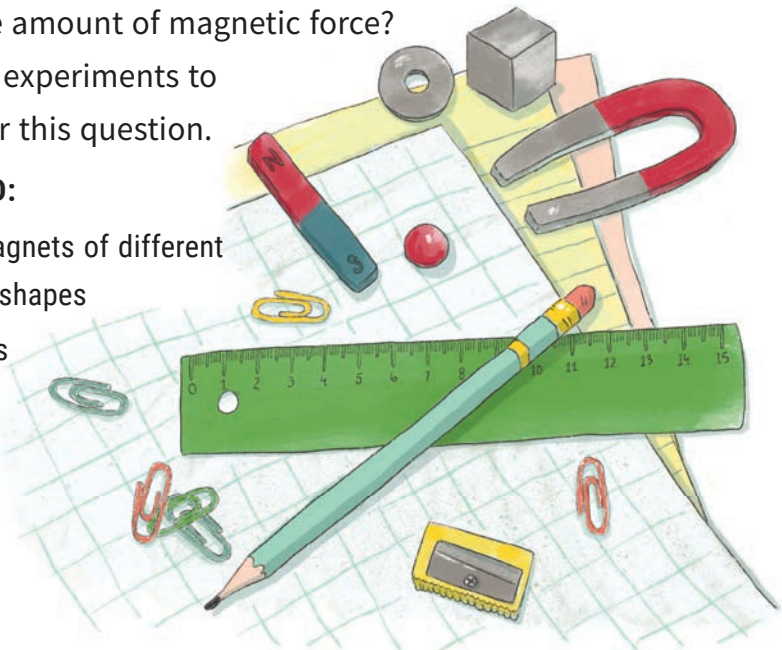
INVESTIGATING MAGNETS

by Dr Sarah Kenworthy

We know that magnets can attract other magnets and metal objects. This is magnetic force in action. But do all magnets have the same amount of magnetic force? Let's try some experiments to help us answer this question.

YOU WILL NEED:

- several magnets of different sizes and shapes
- paper clips
- paper
- a pencil
- a ruler.

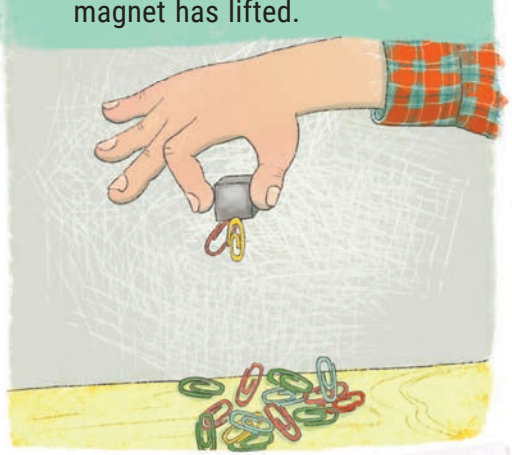


Do all magnets have the same amount of magnetic force?

EXPERIMENT ONE

1. Choose one magnet and touch it to a pile of paper clips.

2. Lift the magnet up and count how many paper clips the magnet has lifted.



3. On your paper, draw a table with the headings Magnet, Prediction, and Result and write the result for your first magnet.

4. Make a prediction about how many paper clips each of the other magnets will lift.

5. Test each magnet and write down your results.

Magnet	Prediction	Result
	–	2
	2	3
	6	6
	3	4

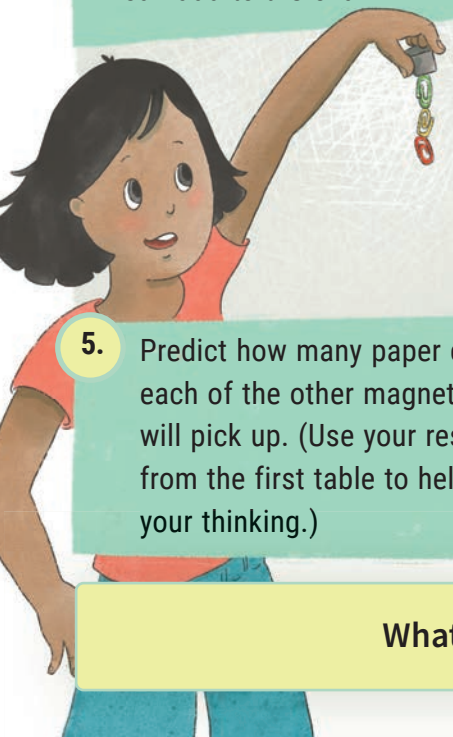
Were the results the same for each magnet?

EXPERIMENT TWO

1. Use a magnet to pick up a paper clip.

2. Hold the magnet and paper clip over a second paper clip. The first paper clip should pick up the second one.

3. See how many paper clips you can add to the chain.



4. Draw another table and write the result.

Magnet	Prediction	Result
□	–	3
○	3	4
🧲	6	4
	4	3

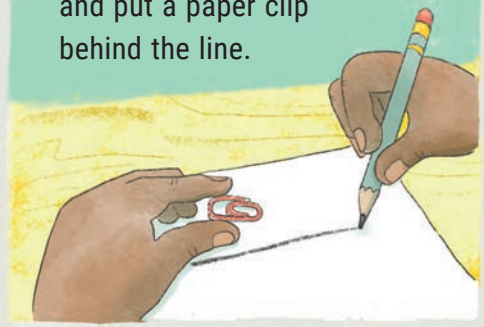
5. Predict how many paper clips each of the other magnets will pick up. (Use your results from the first table to help your thinking.)

6. Test each magnet and write down the results.

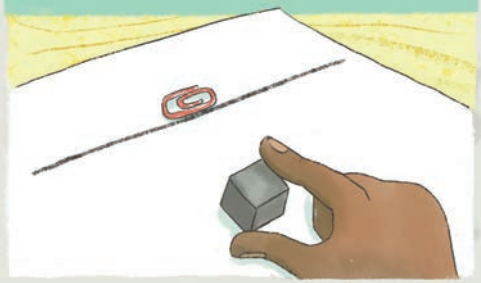
What are you noticing?

EXPERIMENT THREE

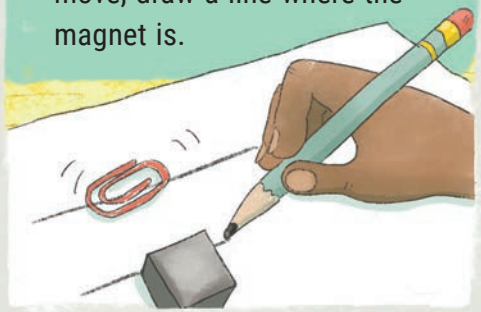
1. Draw a line on a piece of paper and put a paper clip behind the line.



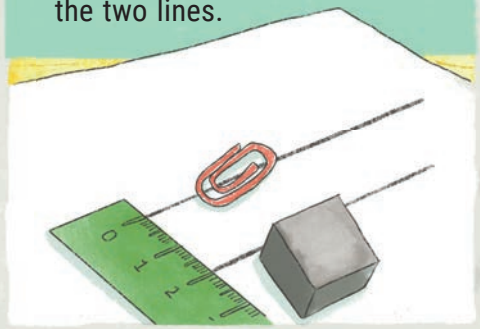
2. Choose one magnet and move it towards the paper clip.



3. When the paper clip starts to move, draw a line where the magnet is.



4. Measure the distance between the two lines.



5. Draw another table. Add in your result and predict how close the other magnets will need to be.

Magnet	Prediction	Result
□	–	2cm
○	1·5cm	

6. Test each magnet and write down your results.

Is it the same distance for all the magnets?

How have these experiments helped your thinking?
Do all magnets have the same amount of magnetic force?

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Published 2020 by the Ministry of Education,
PO Box 1666, Wellington 6140, New Zealand.
www.education.govt.nz

ISBN 978 1 77663 711 9 (online)
ISSN 2463 4174 (online)

Publishing Services: Lift Education E Tū
Editor: David Chadwick
Designer: Simon Waterfield
Literacy Consultant: Dr Kay Hancock
Consulting Editors: Hōne Apanui and Emeli Sione

JUNIOR JOURNAL 61

Curriculum learning areas	English Science Technology
Reading year level	Year 3
Keywords	activity, discovery, experiment, force, magnetism, magnet, metal, prediction, recording results, science, table, technology, testing

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New Zealand Government