

Approach:	One to one
Focus:	Magnetism
Resources:	2 magnets with poles marked, mystery magnet box, 2 flat cardboard "magnets" with poles marked, sticker, recording book

**Questions / instructions:**

**Give student one magnet.**

Look carefully at this magnet. You can see that the magnet has an "N" at one end and an "S" at the other end.

1. What do those letters mean?

PROMPT: *What is meant by N and S?*

N = North, North pole	41 (56)	59 (67)
S = South, South pole	42 (60)	60 (71)

**If student doesn't know tell them that these are the magnetic poles, North and South.**

**Give student 2 cardboard magnets marked N and S.**

2. Imagine that these are 2 magnets. Let's put together the two ends that are the same.

Put the two North ends together. What would happen if these were two real magnets?

**Allow time for student to respond.**

would resist, repel	36 (27)	66 (64)
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3. What might happen when you put two different poles together?

Try putting the North and South ends together. What would happen if these were real magnets.

would attract	51 (48)	76 (73)
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**Allow time. Then give the student the two real magnets.**

Now try testing with the two real magnets. Find out what happens when you put the two North poles together. Then try putting the two South poles together.

4. What happened when you put the same poles together?

resists/repels	89 (98)	97 (98)
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5. Now try putting two different poles together. Try a North pole to a South pole. What happens?

attracts	98 (99)	100 (99)
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6. Try to tell me a rule for what happens when you put the same poles together or different poles together.

not marked	•	•
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There is a magnet in this mystery box that is the same as your magnets.

**YEAR 4:**

Lie one of your magnets on the mystery box. Move your magnet around and try to work out where the hidden magnet is.

**YEAR 8:**

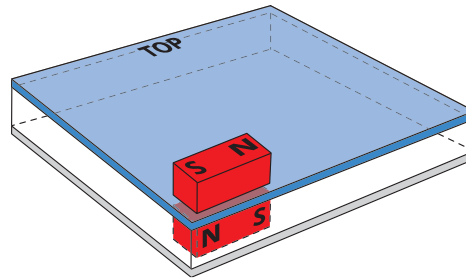
Use one of your magnets to work out where the magnet is hidden.

**YEAR 4 & 8:**

**Place sticker exactly as shown on top of the box.**

*[Plain white sticker with word 'top' printed at one edge is placed over the surface of the box to enable the student to record their answer]*

**Use the blue side and match top to top. Give student box.**



7. Now draw on the sticker the position of the magnet that is inside the box.

On your drawing, write N where you think North is and S where you think South is on the magnet that is inside the box.

horizontal in bottom left corner	60 (60)	72 (70)
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**When student finishes the task put sticker in recording book.**

<b>Total score:</b>	7	11 (10)	30 (30)
	5-6	32 (41)	42 (45)
	3-4	40 (39)	23 (22)
	0-2	17 (10)	5 (3)

**Commentary:**

About 30 percent more year 8 than year 4 students scored 5 or more. Overall, there was little change in performance at either year level between 1999 and 2003.