

Y3 Magnetic Materials

KS2 Science · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

Are all metals magnetic?

Step 1 · Test a steel paper clip

Attracted

Step 2 · Test an aluminium drinks can

Not attracted

Step 3 · Test a copper wire and a brass key

Not attracted

Answer: No. Only some metals are magnetic — iron, steel, nickel and cobalt. Aluminium, copper, brass and gold are not.

Check: All magnetic materials are metals, but not all metals are magnetic.

2. Now try one with the steps

How could a recycling centre separate steel food tins from aluminium drinks cans?

Step 1 · Which can is magnetic?

Step 2 · What could pick up only the steel?

Answer:

3. Practice

Have a go at each one. There is space underneath to work it out.

1. What does 'attract' mean?

2. Will a magnet attract a wooden pencil?

3. Will a magnet attract a steel paper clip?

4. Name TWO magnetic metals.

5. Name ONE metal that is NOT magnetic.

6. Are all metals magnetic?

7. Is magnetism a contact or a non-contact force?

8. Can a magnet attract a paper clip through a sheet of paper?

9. Sort these into magnetic and not magnetic: iron nail, plastic spoon, steel tin, aluminium foil.

10. A magnet held a paper clip through 8 sheets of paper. It fell through 10. Through how many sheets did it still work?

11. Magnet A held 12 paper clips in a chain, Magnet B held 7 and Magnet C held 9. Which was strongest?

12. Using question 11, how many more clips did Magnet C hold than Magnet B?

13. To compare magnets fairly using a paper clip chain, what must stay the same?

14. Why do fridge magnets stick to a fridge door but not to a wooden cupboard?

4. Before you hand it in

All metals are attracted to magnets.

Only some metals are magnetic: iron, steel, nickel and cobalt.

Shiny things are magnetic.

Test it! Shiny foil is not magnetic, but a dull, rusty nail is.

Bigger magnets are always stronger.

Compare magnets with a fair test, such paper clip chain.

A magnet has to touch something to attract it.

Magnetism is a non-contact force — it gets weaker the further away the object is.