Electromagnets

Electromagnets 3.2.3 | Part 2, usually Year 8 | 20 quick questions

KS3 science quick questions

Answer online, marked instantly

Activate 2: Electricity and magnetism; Activate 3: Electricity and magnetism | Exploring Science 9J

Name: _____ **Date:** _____ **Score:** _____ **/ 20**

1 What do we call a coil of wire that becomes magnetic when a current flows through it?

2 Which metal is usually put in the middle of the coil to make an electromagnet stronger?

3 What happens to the magnetism of an electromagnet when the current is switched off? Answer in a few words.

4 Wrapping more turns of wire round the coil makes the electromagnet stronger or weaker?

5 What happens to the strength of an electromagnet if you make the current bigger? Answer in one word.

6 Apart from adding more turns, give one way to make an electromagnet stronger.

7 The magnetic field around a current-carrying coil is the same shape as the field of which kind of magnet? Answer in two words.

8 The current through an electromagnet is made to flow the other way. What happens to its north and south poles? Answer in one word.

9 A steel nail is held 1 cm from a switched-on electromagnet, then 10 cm from it. At which distance is the magnetic pull on the nail weaker?

10 What small instrument could you move around a coil to show the direction of its magnetic field?

11 A scrapyard crane uses an electromagnet to lift old cars. It is better than a normal magnet because it can be switched on and what?

12 Will an electromagnet pick up aluminium drinks cans? Answer yes or no.

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13 Name one everyday device that has an electromagnet inside it.

14 A class tests how the number of turns on a coil affects how many paper clips it picks up. What is the independent variable?

15 An electromagnet picks up 4 paper clips with 10 turns and 8 paper clips with 20 turns. If the pattern carries on, how many would it pick up with 30 turns?

Year 9 stretch

16 In an electric doorbell, an electromagnet pulls an iron arm across to hit the bell. As the arm moves, it breaks the circuit. Does the electromagnet switch on or off?

17 Explain why the core of an electromagnet is made of iron rather than steel.

18 In an electric motor, a coil carrying a current sits between two magnets. What does the coil do? Answer in one word.

19 A relay uses an electromagnet so that a small current in one circuit can switch on a bigger current in another. What does the electromagnet pull to close the second circuit? Answer in one word.

20 In a circuit breaker, a dangerously big current makes an electromagnet strong enough to pull a switch open. What happens to the current then? Answer in one word.

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