

Combined science - Physics

Key stage 4 - Magnetism

Magnetism

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Independent practice

1. What part of the magnet has the strongest force? What's the proper name?
1. What are the 'rules of magnetic attraction'?
1. Which materials are attracted to magnets?
1. How can you determine if a material is a magnet, a magnetic material or a non-magnetic material?



The student's method

A student investigates how the force of attraction between two magnets depends on the distance between them. She uses the following procedure:

- ensure that the newton meter does not have a zero error
- hold one of the magnets
- put sheets of paper on top of the magnet
- place the other magnet, with the newton meter **magnetically attached**, close to the first magnet
- pull the magnets apart
- note the reading on the newton meter as the magnets separate
- repeat with different numbers of sheets of paper between the magnets.



The student's results

Number of sheets of paper between the magnets	5	10	15	20	25	30	35	40	45
Newton meter reading as the magnets separate	3.1	2.6	2.1	1.5	1.1	1.1	1.1	1.1	1.1

1. Describe the pattern of her results.
2. Why does the newton meter never read zero?
3. Why can the student not perform the experiment with fewer than 5 sheets of paper unless the magnet is actually screwed onto the newton meter?



Exam question

Which of these pairs of objects will attract each other?

A   copper bar

B  

C  

D   aluminium bar

OCR, Specimen, J249/01

Additional answers and guidance not checked by OCR

