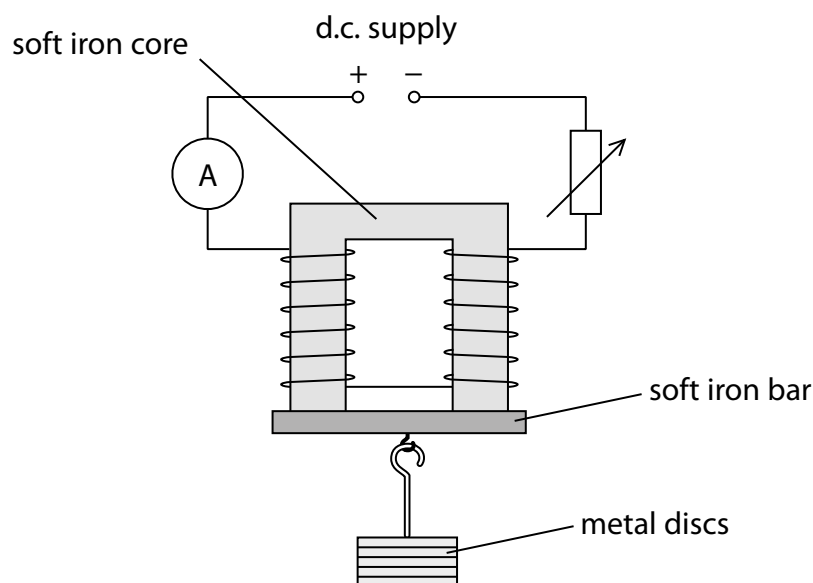


- 5 A student investigates how the minimum current required to support a load using an electromagnet varies as the load is increased.

He uses metal discs to increase the load and changes the current using a variable resistor.



- (a) (i) State the independent variable in this investigation.

(1)

- (ii) Give a reason for using a core and a bar made from soft iron.

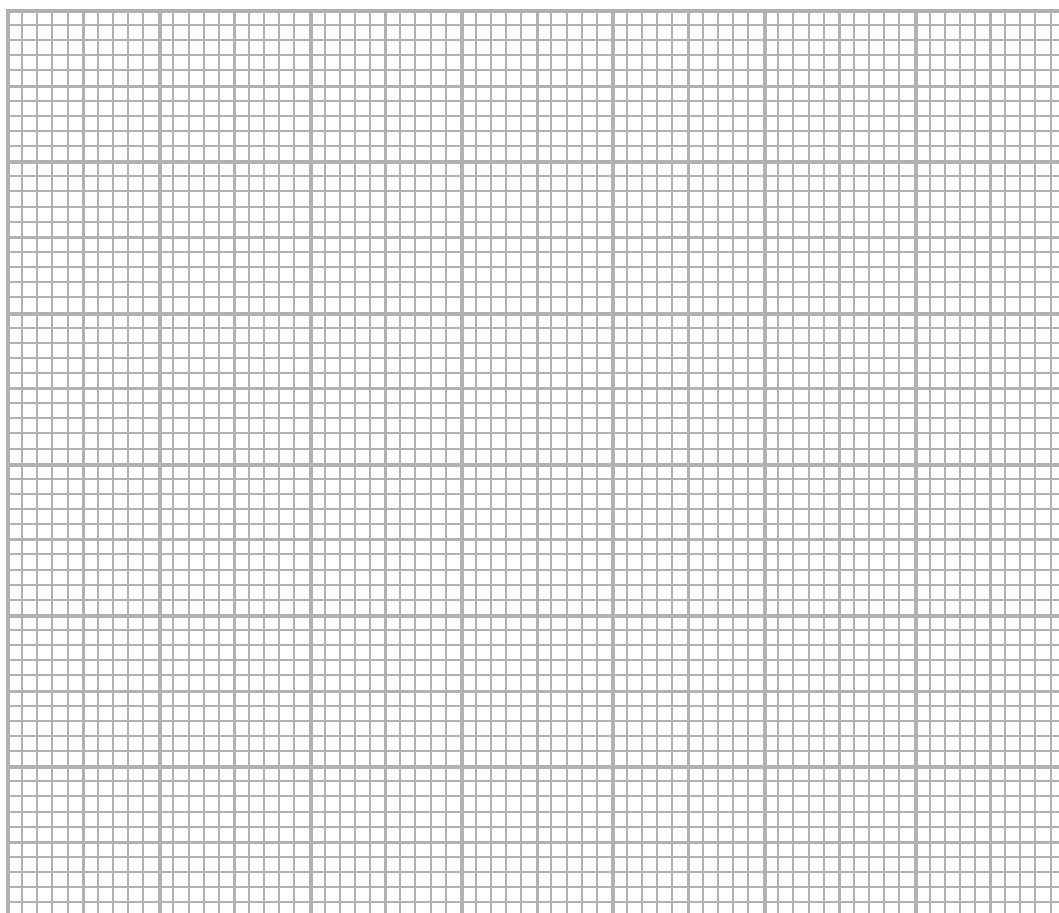
(1)

(b) The student's results are given in the table.

Number of metal discs	Minimum current / mA
0	30
2	48
5	75
6	78
7	93
10	120

(i) On the grid, draw a bar chart of current against number of metal discs.

(4)



(ii) State why a current is needed when there are no metal discs added to the load.

(1)

(iii) Explain how the student can improve his results.

(3)

**(Total for Question 5 = 10 marks)**

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