The Effect Of Various Factors On The Strength Of Electromagnets

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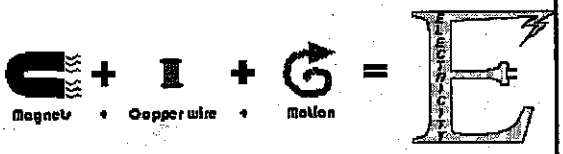
Overview

- Background information
- Problem
- Procedure
- Results
- Conclusion

What is electricity?

- Electricity is the flow of electrons through a circuit.
- Electricity produces a magnetic field around anything it flows through.

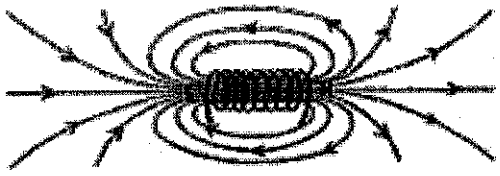
How Electricity is Generated



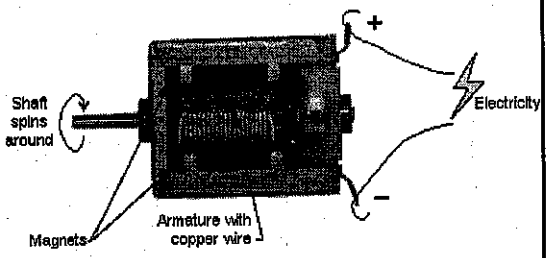
What is electromagnetism?

- Electromagnetism involves passing current through an object (usually wire) to produce a magnetic field, which can be used to create temporary magnets.
- Primary method used by power plants to produce electricity.

Electromagnetism



How electromagnetism is created



Objective

To determine the effects of three factors, such as core material, current and the number of wire wraps on the strength of an electromagnet.

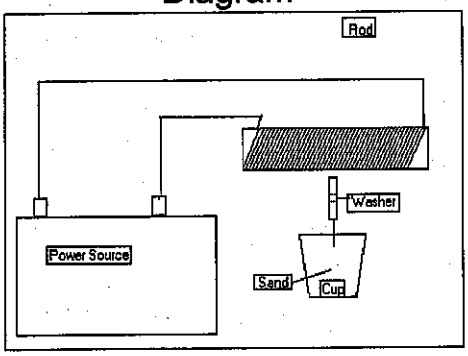
Hypothesis

If we increase the number of layers of wire on the rod, the amount of current passing through the wire, and use the rod with the largest percentage of iron, the amount of mass that will be held by the magnet will increase.

Procedure

- Randomize trials
- Configure each variable for the given trial.
- Add mass to vessel to test.
- Record results

Diagram



Effect of A

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Effect of B

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Effect of C

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Interaction of A and B

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Interaction of A and C

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Interaction of B and C

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Parsimonious Equation

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Tests of Significance

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Conclusion

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