Paper 2 Chapter 7 — Magnetism

Put Same Number on Word and Definition

ATTRACT	A magnet that produces its own magnetic field
MAGNETIC	A solenoid (coil of wire) with an iron core
NORTH SEEKING POLE	A material that becomes a magnet when placed in a magnetic field
POLES	A device containing a small rotating bar magnet that lines up with the Earths magnetic field
REPEL	The area around a magnet where its force acts on magnetic objects
SOUTH SEEKING POLE	A material that is attracted to a magnet is _____ (iron, steel, cobalt and nickel)
COMPASS	Different poles will _____ each other
MAGNETIC FIELD	A safety device where a low current circuit controls a high current circuit
INDUCED MAGNET	The end of a magnet that points south
PERMANENT MAGNET	Like poles will _____ each other
ELECTROMAGNET	A coil of wire which increases the strength of a magnetic field
SOLENOID	The end of a magnet that points north
RELAY	A force caused by the magnetic field around a wire interacting with magnetic field from permanent magnets
MOTOR EFFECT	The place on a magnet where the magnetic force is strongest

Draw the Field

Draw the field for the bar magnet and the electromagnet. How can you show a stronger magnetic field?

Magnetism

A c___ of wire carrying a c_____ in a magnetic field tends to r_____. This is the basis of an e_____ m____.

Name 4 Magnetic Materials

1

2

3

4

Electromagnets

Name 4 ways to increase the strength of an electromagnet

1

2

3

4

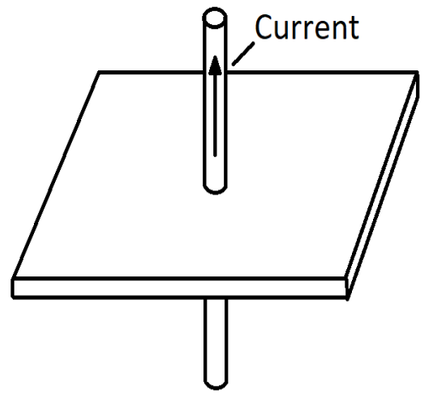
Magnets

The magnetic forces are s_____ at the p____ of a magnet.

Two like poles r____ each other. Two unlike poles a_____ each other.

Magnetic attraction and repulsion are examples of n___-c_____ forces.

Draw the field lines around the wire



HT Calculation Practice

Use the equation to calculate the magnetic flux density. Convert current and length to standard units. Include units in answer.

force = magnetic flux density × current × length

Force = 24N

Current = 2000mA

Length = 300cm

Magnetic Flux Density = _____ (____)

Magnets

A p_____ magnet produces its own m_____ f____.

An i_____ magnet becomes a magnet when it is placed in a m_____ f____.

Induced magnetism always causes a force of a_____.

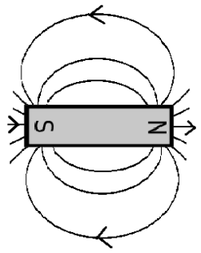
Paper 2 Chapter 7 — Magnetism

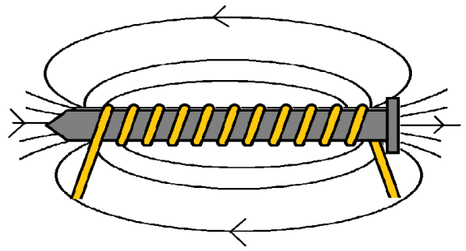
Put Same Number on Word and Definition

1 ATTRACT	10 A magnet that produces its own magnetic field
2 MAGNETIC	11 A solenoid (coil of wire) with an iron core
3 NORTH SEEKING POLE	9 A material that becomes a magnet when placed in a magnetic field
4 POLES	7 A device containing a small rotating bar magnet that lines up with the Earths magnetic field
5 REPEL	8 The area around a magnet where its force acts on magnetic objects
6 SOUTH SEEKING POLE	2 A material that is attracted to a magnet is _____ (iron, steel, cobalt and nickel)
7 COMPASS	1 Different poles will _____ each other
8 MAGNETIC FIELD	13 A safety device where a low current circuit controls a high current circuit
9 INDUCED MAGNET	6 The end of a magnet that points south
10 PERMANENT MAGNET	5 Like poles will _____ each other
11 ELECTROMAGNET	12 A coil of wire which increases the strength of a magnetic field
12 SOLENOID	3 The end of a magnet that points north
13 RELAY	14 A force caused by the magnetic field around a wire interacting with magnetic field from permanent magnets
14 MOTOR EFFECT	4 The place on a magnet where the magnetic force is strongest

Draw the Field

Draw the field for the bar magnet and the electromagnet. How can you show a stronger magnetic field? Draw the field lines closer together.





Magnetism

A coil of wire carrying a current in a magnetic field tends to rotate. This is the basis of an electric motor.

Name 4 Magnetic Materials

1 Iron

2 Steel

3 Cobalt

4 Nickel

Electromagnets

Name 4 ways to increase the strength of an electromagnet

1 More turns in the coil

2 Iron Core

3 Increase Current/Voltage

4 Turns Closer Together

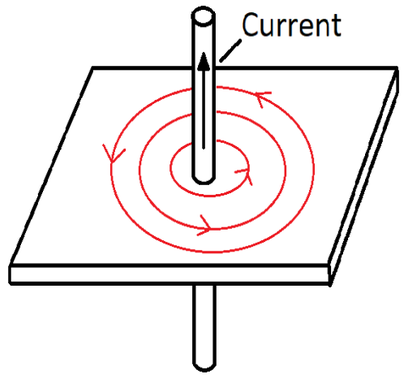
Magnets

The magnetic forces are strongest at the poles of a magnet.

Two like poles repel each other. Two unlike poles attract each other.

Magnetic attraction and repulsion are examples of non-contact forces.

Draw the field lines around the wire



HT Calculation Practice

Use the equation to calculate the magnetic flux density. Convert current and length to standard units. Include units in answer.

force = magnetic flux density × current × length

Force = 24N

Current = 2000mA = 2A

Length = 300cm = 3m

Force / (current x length) = Magnetic Flux Density

24 / (2 x 3) = 24 / 6 = 4

Magnetic Flux Density = 4T

Magnets

A permanent magnet produces its own magnetic field.

An induced magnet becomes a magnet when it is placed in a magnetic field.

Induced magnetism always causes a force of attraction.