Magnetic fields

A-Level Physics · Vocabulary in context

Word	Example
magnetic field /mæg'netɪk fi:ld/	A magnet has a **magnetic field** around it.
bar magnet /bɑ: 'mægnɪt/	A **bar magnet** has a north pole and a south pole.
field line /fi:ld laɪn/	Each **field line** shows the direction of the force.
current /'kʌrənt/	The **current** in the lamp is 0.5 A.
force /fɔ:s/	You use a **force** to push a door open.
permanent magnet /'pɜ:mənənt 'mægnɪt/	A fridge magnet is a **permanent magnet**.
right-hand grip rule /raɪt hænd grɪp ru:l/	Use the **right-hand grip rule** to find the field direction.
coil /kɔɪl/	Wrap the wire into a **coil**.
long solenoid /lɒŋ 'səʊlənɔɪd/	The field inside a **long solenoid** is uniform.
solenoid /'səʊlənɔɪd/	A **solenoid** is a long coil of wire.
iron core /'aɪən kɔ:/	An **iron core** makes the electromagnet stronger.
electromagnet /ɪˌlektrəʊ'mægnɪt/	An **electromagnet** picks up scrap iron.
transformer /træns'fɔ:mə/	A **transformer** changes the voltage.
ferrous /'ferəs/	Iron and steel are **ferrous** metals.

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magnetised /ˈmægnɪtaɪzd/	The nail is **magnetised** by the coil.
couple /ˈkʌpl/	Your two hands on a steering wheel make a **couple**.
uniform field /ˈjuːnɪfɔːm fiːld/	In a **uniform field**, the field lines are parallel and evenly spaced.
magnetic flux density /mægˈnetɪk flʌks ˈdensɪti/	The **magnetic flux density** is measured in tesla.
magnetic flux /mægˈnetɪk flʌks/	**Magnetic flux** is the flux density times the area.
tesla /ˈteslə/	The **tesla** is the unit of magnetic flux density.
Fleming's left-hand rule /ˈflemɪŋz left hænd ruːl/	Use **Fleming's left-hand rule** to find the force on the wire.
velocity /vəˈlɒsɪti/	The ball's **velocity** is 5 m/s to the left. 5 m/s
electric field /ɪˈlektrɪk fiːld/	A charged ball has an **electric field** around it.
velocity selector /vəˈlɒsɪti sɪˈlektə/	A **velocity selector** lets through particles of one speed.
kinetic energy /kɪˈnetɪk ˈenədʒi/	A fast car has a lot of **kinetic energy**.
centripetal force /senˈtrɪpɪtl fɔːs/	The string gives the **centripetal force** to the spinning ball.
momentum /məʊˈmentəm/	A heavy truck has a lot of **momentum**.
helix /ˈhiːlɪks/	The electron moves in a **helix**, like a spring.
positrons /ˈpɒzɪtrɒnz/	**Positrons** curve the opposite way to electrons.

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Hall effect /hɔːl ɪˈfekt/	The **Hall effect** gives a small voltage across the metal.
Hall voltage /hɔːl ˈvəʊltɪdʒ/	The **Hall voltage** grows with the field strength.
drift velocity /drɪft vəˈlɒsɪti/	The electrons move slowly along the wire at the **drift velocity**.
Hall probe /hɔːl prəʊb/	Use a **Hall probe** to measure the field.
semiconductor /ˌsemɪkənˈdʌktə/	Silicon is a **semiconductor**.
calibrate /ˈkælɪbreɪt/	**Calibrate** the probe before you use it.
velocity selection /vəˈlɒsɪti sɪˈlekʃn/	**Velocity selection** keeps only the particles at one speed.
electromagnetic induction /ɪˌlektrəʊməgˈnetɪk ɪnˈdʌkʃn/	Moving a magnet in a coil causes **electromagnetic induction**.
weber /ˈveɪbə/	The **weber** is the unit of magnetic flux.
flux linkage /flʌks ˈlɪŋkɪdʒ/	**Flux linkage** is the flux times the number of turns.
Lenz's law /ˈlentsɪz lɔː/	**Lenz's law** says the current opposes the change.
electromotive force /ɪˌlektrəʊˈməʊtɪv fɔːs/	The battery has an **electromotive force** of 9 V. 9 V
Faraday's law /ˈfærədeɪz lɔː/	**Faraday's law** says faster change gives a bigger e.m.f.
conservation of energy /ˌkɒnsəˈveɪʃn ɒv ˈenədʒi/	**Conservation of energy** means energy is never made or destroyed.

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wingspan /ˈwɪŋspæn/	The plane's **wingspan** is 30 m. 
galvanometer /ˌgælvəˈnɒmɪtə/	The **galvanometer** shows zero when the circuit balances.
eddy currents /ˈedi ˈkʌrənts/	**Eddy currents** heat the metal plate.

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