Magnetic Fields and Electromagnetism

AP Physics C: Electricity and Magnetism · Vocabulary in context

Word	Example
magnetic field /mæg'netɪk fi:ld/	A magnet has a **magnetic field** around it.
vector field /'vektə fi:ld/	An electric field is a **vector field**: it has a direction at every point.
magnetic field lines /mæg'netɪk fi:ld laɪnz/	**Magnetic field lines** show where a compass needle points.
Maxwell's equations /'mækswelz ɪ'kweɪʒnz/	**Maxwell's equations** describe all electric and magnetic fields.
magnetic monopoles /mæg'netɪk 'mɒnəʊpəʊlz/	No one has ever found **magnetic monopoles**.
magnetic dipole /mæg'netɪk 'daɪpəʊl/	A bar magnet is a **magnetic dipole**, with a north and a south pole.
compass /'kʌmpəs/	A **compass** shows sailors which way is north.
ferromagnetic /ˌferəmæg'netɪk/	Iron is **ferromagnetic**: it can become a permanent magnet.
magnetic domains /mæg'netɪk də'meɪnz/	In iron, the **magnetic domains** line up when a magnet is near.
paramagnetic /ˌpærəmæg'netɪk/	Aluminium is **paramagnetic**: a magnet attracts it very weakly.
diamagnetic /ˌdaɪəmæg'netɪk/	Water is **diamagnetic**: a magnet pushes it away very weakly.

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magnetic permeability /mægˈnetɪk ˌpɜːməˈbɪlɪti/	Iron has a high **magnetic permeability**.
perpendicular /ˌpɜːpənˈdɪkjʊlə/	The wall is **perpendicular** to the floor.
centripetal force /senˈtrɪpɪtl fɔːs/	The string gives the **centripetal force** to the spinning ball.
velocity selector /vəˈlɒsɪti sɪˈlektə/	A **velocity selector** lets through particles of one speed.
Hall effect /hɔːl ɪˈfekt/	The **Hall effect** gives a small voltage across the metal.
Biot–Savart law /ˈbɪɒt ˈsævɑːt lɔː/	The **Biot–Savart law** adds up the field from each small piece of wire.
tangent /ˈtændʒənt/	The **tangent** line touches the curve at one point.
concentric circles /kənˈsentrɪk ˈsɜːklz/	The field around a straight wire forms **concentric circles**.
Ampère's law /ˈæmpeəz lɔː/	**Ampère's law** finds the field around a long straight wire.
Amperian loop /æmˈpɪərɪən luːp/	Choose an **Amperian loop** that follows the field lines.
current density /ˈkʌrənt ˈdensɪti/	**Current density** is the current per unit cross-sectional area of a conductor.
superposition /ˌsuːpəpəˈzɪʃn/	When two waves meet, **superposition** adds them together.
solenoid /ˈsəʊlənɔɪd/	A **solenoid** is a long coil of wire.

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