

Glossary/Index

A

- Acceleration** Rate of change of velocity **82–4, 86**
- Air resistance** Frictional force due to air particles hitting a moving object. **69, 84**
- Alternating current (ac)** Current that changes in size and direction. **34, 119, 121**
- Ammeter** Instrument with virtually no electrical resistance used to measure electric currents. **25, 29**
- Ampere** Unit of electric current
- Amplitude** The intensity of a wave, usually measured as the distance between the centre of the oscillation and its peak/trough. **93**
- Artificial satellites** Man-made objects orbiting a planet. **125**
- Astronomical model** A model to explain how the universe was formed. **125–6**
- Attractive forces** Forces that cause two or more objects to attract each other (pull on each other). **38, 111–12**

B

- Bar magnet** A permanent magnet, usually shaped like a bar, or a rod. **111–12**
- Battery** A set of electrical cells connected in series to generate a potential difference. **25, 34**
- Big Bang model** Model of the formation of the universe that states the universe began from a single point with a massive explosion that created all matter and space. **128–9**
- Braking distance** The distance a vehicle travels from the moment the brakes are applied until it stops completely. **88–9**

C

- Cell** An electrical component that generates a potential difference. **25**
- Charge** A physical quantity exerting a force that attracts other unlike charges and repels like charges. **27, 36, 38–9, 49**
- Circuit** A set of electrical components connected by wires to form one or more loops. **25–37, 101**
- Circuit diagrams** An electric circuit represented with drawn symbols and lines. **25–6, 29, 31, 32**
- Component forces** The effect of a force along a particular axis/direction. **67–8**
- Component perpendicular** The component (of a force) perpendicular to a surface, direction, or another physical quantity. **67–8**
- Compression** Squeezing **71, 93**
- Concave lens** Lenses that are thinner in the middle. The rays of light going through the lens spread out, i.e. they diverge. **103, 105**
- Conduction** The ability of a material to transmit (let through) electric currents. Often used for transmission of energy in the context of thermal conductivity. **17–18**
- Conductor** A material, or component, with high conductivity. **38, 117**
- Conservation of energy** Law of thermodynamics that states energy cannot be created nor destroyed, but it can only be redistributed in different parts of a system, or between systems. **17**
- Contact forces** Forces between two objects that act when they are touching each other (in contact). **64**
- Convex lens** Lens that is thicker in the middle. The light rays going through the lens get closer together (they converge). **103–4**

- Coulomb** Unit of electric charge.
- Current** Rate of flow of charge. **27–34, 115–20**

D

- Dark energy** Unobservable quantity thought to be responsible for the increasing acceleration in the expansion of the universe. **129**
- Dark matter** Physical quantity that is affected by gravitational forces but that cannot be observed directly, as it is not affected by electromagnetic radiation. **129**
- dc power supply** Electrical power supply that generates a dc potential difference. **34, 115**
- Density** Property of materials that shows the ratio between their mass and the volume occupied by that mass. **41–2, 77, 96–7**
- Diaphragm** The primary muscle used in the process of respiration. **120**
- Diffuse reflection** Reflection of light from a rough surface that reflects light at many angles. **106**
- Diode** Electrical component that lets current flow in one direction only. **26, 31**
- Direct current (dc)** Electric current of fixed value and direction. **34, 118**
- Direct proportionality** When the independent variial is doubled the dependent variable also doubles. **28, 30, 65, 73, 86**
- Displacement** The shortest way between the initial and the final position. In other words it is the distance with a direction. **69, 78, 83**
- Dissipated energy** Energy too spread out be used in a useful way. **8, 17**
- Dynamo** Generator that can generate a dc current. **118–19**

E

- Earth wire** Wire connected to the ground as safety for appliances. If there is a surge of current the earth wire is the path of least resistance for the charges to flow through, instead of the user. **34**
- Elastic deformation** When objects are stretched/compressed and return to their original shape when released. **71–3**
- Electric field** A force field generated by electric charges. **38–9**
- Electrical signal** Transmission of information coded in an electric pulse of current. **116**
- Electrically charged** An object carrying an electric charge. **38–9**
- Electromagnet** A magnet that can be switched on and off, as it is magnetic only when current flows through it. **113**
- Electromagnetic spectrum** The range of electromagnetic waves of different wavelengths and frequencies. **100, 102, 106**
- Electromagnetic waves** Transversal waves generated by oscillations of electric and magnetic fields that can travel through empty space. **93, 100–2**
- Electron** Subatomic particle carrying negative charge. **27, 38, 49**
- Electrostatic repulsion** A pushing force generated by electrostatic interactions, for example, two like charges close to each other will repel. **38, 87**
- Energy** Mathematical quantity associated to the configuration of a system. If a change in the system happens the energy is redistributed within the system. **8–24**
- Energy stores** A way to visualise where energy can be stored and measured in a system. They are not physical stores, like containers or boxes, but just a visual representation of a numerical value. **8–15, 21–2, 61, 69**