

Glossary/Index

A

- Acceleration** Rate of change of velocity **84–6, 88**
- Air resistance** Frictional force due to air particles hitting a moving object. **71, 86**
- Alternating current (ac)** Current that changes in size and direction. **36, 121, 123**
- Ammeter** Instrument with virtually no electrical resistance used to measure electric currents. **27, 31**
- 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. **95**
- Artificial satellites** Man-made objects orbiting a planet. **127**
- Astronomical model** A model to explain how the universe was formed. **127–8**
- Attractive forces** Forces that cause two or more objects to attract each other (pull on each other). **40, 113–14**

B

- Bar magnet** A permanent magnet, usually shaped like a bar, or a rod. **113–14**
- Battery** A set of electrical cells connected in series to generate a potential difference. **27, 36**
- 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. **130–1**
- Braking distance** The distance a vehicle travels from the moment the brakes are applied until it stops completely. **90–1**

C

- Cell** An electrical component that generates a potential difference. **27**
- Charge** A physical quantity exerting a force that attracts other unlike charges and repels like charges. **29, 38, 40–1, 51**
- Circuit** A set of electrical components connected by wires to form one or more loops. **27–39, 103**
- Circuit diagrams** An electric circuit represented with drawn symbols and lines. **27–8, 31, 33, 34**
- Component forces** The effect of a force along a particular axis/direction. **69–70**
- Component perpendicular** The component (of a force) perpendicular to a surface, direction, or another physical quantity. **69–70**
- Compression** Squeezing **73, 95**
- Concave lens** Lenses that are thinner in the middle. The rays of light going through the lens spread out, i.e. they diverge. **105, 107**
- Conduction** The ability of a material to transmit (let through) electric currents. Often used for transmission of energy in the context of thermal conductivity. **19–20**
- Conductor** A material, or component, with high conductivity. **40, 119**
- 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. **19**
- Contact forces** Forces between two objects that act when they are touching each other (in contact). **66**
- Convex lens** Lens that is thicker in the middle. The light rays going through the lens get closer together (they converge). **105–6**

- Coulomb** Unit of electric charge.
- Current** Rate of flow of charge. **29–36, 117–22**

D

- Dark energy** Unobservable quantity thought to be responsible for the increasing acceleration in the expansion of the universe. **131**
- Dark matter** Physical quantity that is affected by gravitational forces but that cannot be observed directly, as it is not affected by electromagnetic radiation. **131**
- dc power supply** Electrical power supply that generates a dc potential difference. **36, 117**
- Density** Property of materials that shows the ratio between their mass and the volume occupied by that mass. **43–4, 79, 98–9**
- Diaphragm** The primary muscle used in the process of respiration. **122**
- Diffuse reflection** Reflection of light from a rough surface that reflects light at many angles. **108**
- Diode** Electrical component that lets current flow in one direction only. **28, 33**
- Direct current (dc)** Electric current of fixed value and direction. **36, 120**
- Direct proportionality** When the independent variial is doubled the dependent variable also doubles. **30, 32, 67, 75, 88**
- Displacement** The shortest way between the initial and the final position. In other words it is the distance with a direction. **71, 80, 85**
- Dissipated energy** Energy too spread out be used in a useful way. **10, 19**
- Dynamo** Generator that can generate a dc current. **120–21**

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. **36**
- Elastic deformation** When objects are stretched/compressed and return to their original shape when released. **73–5**
- Electric field** A force field generated by electric charges. **40–1**
- Electrical signal** Transmission of information coded in an electric pulse of current. **118**
- Electrically charged** An object carrying an electric charge. **40–1**
- Electromagnet** A magnet that can be switched on and off, as it is magnetic only when current flows through it. **115**
- Electromagnetic spectrum** The range of electromagnetic waves of different wavelengths and frequencies. **102, 104, 108**
- Electromagnetic waves** Transversal waves generated by oscillations of electric and magnetic fields that can travel through empty space. **95, 102–4**
- Electron** Subatomic particle carrying negative charge. **29, 40, 51**
- Electrostatic repulsion** A pushing force generated by electrostatic interactions, for example, two like charges close to each other will repel. **40, 89**
- Energy** Mathematical quantity associated to the configuration of a system. If a change in the system happens the energy is redistributed within the system. **10–26**
- 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. **10–17, 23–4, 63, 71**