

Word/Term	Definition
Dynamics	
Acceleration	The change in velocity per unit time. It is a vector quantity and is given by the gradient of the line on a velocity-time graph.
Average Speed	The total distance travelled by an object measured over the total time taken. The rate of covering a distance. It is measured in metres per second.
Bearing	A three-digit number without a degree symbol that can be used to describe direction. It is measured from North (000) in a clockwise direction.
Deceleration	A negative acceleration which indicates that an object is slowing down. The SQA have said they will use the term negative acceleration instead of using deceleration.
Displacement	The shortest distance between the starting point and finishing point of a journey, which takes into account the direction of travel of the object. The two points are connected with a straight line. It is a vector quantity and is given by the area under a velocity-time graph.
Distance	How far an object has travelled from the starting point to the finishing point of a journey, regardless of its direction. It is a scalar quantity.
Instantaneous Speed	The speed of an object at a particular moment in time. It is measured in metres per second. The time for the instantaneous speed must be very small
Mass	The quantity of particles that make up an object. It is a scalar quantity and is measured in kilograms (kg).
Resultant Vector	The final vector drawn from the starting point to the finishing point after adding two vectors.
Scalar	A quantity that consists of a magnitude (size) only.
Speed	The distance travelled per unit time. The rate of covering a distance. It is a scalar quantity.
Vector	A quantity that consists of a magnitude (size) and direction.
Velocity	The displacement per unit time. It is a vector quantity.
Weight	The force due to gravity acting on an object. It is a vector quantity and is measured in newtons (N).

Word/Term	Definition
Space	
Asteroid	Objects orbiting the sun that do not fulfil planetary criteria.
Celestial Body	A natural object in the sky.
Docking	The joining together of spacecraft modules in orbit. It requires a very precise Hohmann transfer from one orbit to the target orbit.
Dwarf Planet	An object that orbits a star and is similar to a planet but is not large enough to clear its orbital path of debris.
Exoplanet	A planet outside of our solar system that orbits a star.
Galaxy	A cluster of gravitationally bound stars, gas and dust clouds.
Geostationary Satellite	A satellite that has a period of 24 hours and orbits the Earth's equator at an altitude of 36 000 km. It remains above the same point on the Earth's surface.
Gravity Assist	Using the gravitational pull of a celestial body to gain or lose orbital velocity.
Gravitational field strength	Weight per unit mass. Weight per kilogram. (Nkg^{-1})
Gravity Turn	A spacecraft takes a slight turn when it reaches a certain altitude after a vertical launch. This minimises the effect of the gravitational pull of the body on the spacecraft, allowing it to reach a certain horizontal speed for its desired orbit.
Hohmann Transfer	The movement of a spacecraft from one circular orbit to another by gaining or losing orbital velocity.
Ion Drive	Ion thrusters accelerate ions in an electric field to generate thrust rather than burning fuel. They only require a small amount of fuel to do this.
Kepler's 3rd Law	As the orbital radius increases, the orbital period also increases.
Moon	A natural object that orbits a planet.
Orbital Period	The time taken to go around the Sun in one full revolution, or the time taken for a moon to go once around a planet etc
Orbital Radius	The distance between the centre of an object and the centre

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	of the body it is orbiting.
Planet	An object that does not undergo nuclear fusion but orbits a star.
Solar System	A central star orbited by planets.
Star	A large ball of hot gases that is undergoing nuclear fusion and emitting electromagnetic radiation
Sun	The star at the centre of our solar system.
Universe	Consists of many galaxies separated by empty space.
Electricity	
Alternating Current (A.C.)	An electric current which constantly changes direction and its magnitude (size).
Ammeter	A component used to measure the current in a circuit.
Battery	A collection of two or more cells.
Bulb/Lamp	A component that converts electrical energy to light energy.
Cell	A component used to power a circuit.
Direct Current (D.C.)	The flow of electrons or charge in one direction only. Current which only flows direction in the circuit.
Electric Field	A force field that surrounds any electric charge, causing a charge to experience a force.
Electrical Current	The electric charge transferred per second.
Mains Voltage	The voltage supplied to any electrical device plugged into the mains. In the UK, this is 230 V.
Non-Ohmic Conductor	A component that does not obey Ohm's law.
Ohm's Law	For a fixed temperature, the voltage across a conductor is directly proportional to the current passing through it.
Ohmic Conductor	A component that obeys Ohm's law.
Ohmmeter	A device used to measure the resistance of a circuit component.
Parallel Circuit	A circuit in which there is more than one path (branch) for the current to flow.

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Potential Difference (Voltage)	The energy supplied to each coulomb of charge that passes through a power supply.
Resistance	The opposition to a current or electron flow.
Resistor	A component that opposes the flow of current.
Series Circuit	A circuit in which all components are connected one after the other and there is only one path for the current to flow.
Switch	A component that allows a circuit to be turned on/off.
Variable Resistor	A component that allows the flow of current in a circuit to be changed.
Voltmeter	A device used to measure the voltage across a circuit component.
Properties of Matter	
Absolute Zero	The temperature at which the pressure in a substance is zero. This occurs at $-273\text{ }^{\circ}\text{C}$ (or 0 K), where we assume that the average kinetic energy of the particles is zero.
Condensing	The process by which a gas changes state to a liquid.
Conduction	The transfer of heat through a solid. Heat flows from a high temperature to a low temperature.
Convection	The transfer of heat from one place to another by the movement of fluids (liquids and gases).
Freezing	The process by which a liquid changes state to a solid.
Fusion (Melting)	The process by which a solid changes state to a liquid.
Heat	A form of energy measured in joules (J). It is a measure of the total kinetic energy of the particles in an object.
Pressure	The force per unit area.
Radiation	The transfer of heat by electromagnetic waves (infrared).
Specific Heat Capacity	The amount of heat energy required to change the temperature of 1 kg of a substance by $1\text{ }^{\circ}\text{C}$.
Specific Latent Heat	The amount of heat energy required to change the state of 1 kg of a substance without a change in temperature .

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Specific Latent Heat of Fusion	The energy required to change 1 kg of a solid into a liquid at its melting point without a change in temperature.
Specific Latent Heat of Vaporisation	The energy required to change 1 kg of a liquid into a gas at its boiling point.
Temperature	Indicates how hot or cold an object is, measured in degrees Celsius ($^{\circ}\text{C}$) or kelvin (K). It is a measure of the average kinetic energy of the particles in an object.
Vaporisation (Evaporating)	The process by which a liquid changes state to a gas.
Waves	
Amplitude	The maximum distance from the mean position on a wave. (The vertical distance from the axis to the top of the wave (crest) or axis to the bottom of the wave (trough). It is also half the vertical height of the wave.
Angle of Incidence	The angle measured between the incident ray and the normal.
Angle of Refraction	The angle measured between the refracted ray and the normal.
Crest	The top point (peak) of a wave.
Diffraction	The bending of waves through gaps or around obstacles.
Electromagnetic Spectrum	A group of all the types of electromagnetic radiation ordered in terms of their wavelength/frequency. All the waves travel at the speed of light ($3 \times 10^8 \text{ ms}^{-1}$)
Frequency	The number of waves produced or passing a point per second.
Longitudinal Wave	A longitudinal wave is one where the particles vibrate along the same direction as the wave.
Normal	A dashed line that is drawn perpendicular (at 90°) to any surface.
Period	The time taken for one wave to pass a point. It is also calculated from the inverse of the frequency.
Refraction	The change in speed of light as it passes from one medium to another (e.g. from air to glass).
Transverse Wave	A transverse wave is one where the particles move at right angles (90°) to the direction of travel of the wave.

Word/Term	Definition
Trough	The bottom point of a wave.
Wave speed	The distance travelled per second. It is also the frequency multiplied by the wavelength.
Wavelength	The horizontal distance from one crest to the next crest, one trough to the next trough or one point on a wave to the same point on the next wave.
Radiation	
Absorbed Dose	The energy absorbed by a material per unit mass.
Activity	The number of nuclear decays (or disintegrations) per second.
Alpha Particle	A particle made up of 2 protons and 2 neutrons. It is also the nucleus of a helium atom. It has a charge of +2 or $3.2 \times 10^{-19} \text{ C}$
Atom	An overall neutral particle consisting of a nucleus (protons and neutrons) and orbiting electrons. All matter is made up of atoms.
Background Radiation	Radiation that is all around us and is caused by both natural and artificial sources, e.g. radon gas.
Beta Particle	A fast moving electron. It has a charge of -1. It forms in the nucleus when a neutron changes to a proton.
Electron	A negatively charged particle that orbits the nucleus of an atom. It has a charge of -1. or $-1.6 \times 10^{-19} \text{ C}$
Film Badge	An obsolete radiation detector worn by people who work with radioactive materials to monitor the radiation dose that they are exposed to. It uses different filters which blacken or 'fog' when radiation hits them.
Gamma Ray	An electromagnetic wave of very high frequency and energy.
Geiger-Muller Tube	A radiation detector that uses the ionisation of gas in the tube to count the number of times radiation hits it.
Ionisation	The addition or removal of an electron from a neutral atom.
Neutron	A particle with neutral charge that exists in the nucleus of an atom.
Nucleus	The small, dense region containing protons and neutrons at the centre of an atom.

Word/Term	Definition
Proton	A positively charged particle in the nucleus of an atom. It has a charge of +1. or $+1.6 \times 10^{-19} \text{ C}$
Radiation Weighting Factor	An indicator of the relative biological effect of radiation on a material.
Scintillation Counter	A radiation detector that counts the flashes of light produced when radiation hits the scintillating material.
Shielding	The act of placing a material between a person and a radioactive source to absorb radiation.