

## Glossary

Term	Meaning
<b>A</b> 	
<b>abdomen</b>	one section of an animal's body structure; position varies among organisms
<b>abiotic</b>	relating to a non-living component of an environment
<b>absorb</b>	to take in or receive matter or energy
<b>absorbent</b>	capable of soaking up a liquid
<b>absorption</b>	process of energy or matter being taken in by a material
<b>acceleration</b>	the rate of change of velocity over time, measured in metres per second per second; units of $\text{m/s}^2$ , $\text{ms}^{-2}$ .
<b>accretion</b>	an increase in the size of a body or surface, caused by parts adhering together; can be a continual process
<b>accuracy</b>	the correctness of a measure
<b>acid</b>	a substance that has a pH of less than 7; produces $\text{H}^+$ in water
<b>actinide</b>	an element with an atomic number between 89 and 103
<b>action</b>	<i>Physical sciences.</i> a force applied to an object or substance, that results in a change in speed, direction or shape
<b>active volcano</b>	a volcano that has erupted within the past 600 years
<b>adaptation</b>	a physical or behavioural characteristic that is inherited and that results in an individual being more likely to survive and reproduce in its environment 
<b>aeration</b>	the process of circulating air or gas through a substance
<b>aerosol</b>	a mixture of tiny liquid or solid particles suspended in a gas
<b>aftershock</b>	a small earthquake that follows a large earthquake
<b>agriculture</b>	the growing of crops or animals by farmers
<b>agriculture science</b>	the research and study of agricultural practices; may involve many branches of science
<b>air</b>	the mixture of gases that makes up Earth's atmosphere
<b>air pollution</b>	substances suspended in the air that are not the usual components
<b>air resistance</b>	the forces opposing the movement of an object through the air; a form of friction
<b>albedo</b>	the degree to which a surface reflects light
<b>alkali</b>	a substance that has a pH of greater than 7; soluble base
<b>alkali metal</b>	an element that can be found in Group 1 of the periodic table

<b>alkaline</b>	a substance that dissolves in water and has a pH greater than 7 (adjective of <i>alkali</i> )
<b>alkaline earth metal</b>	an element that can be found in Group 2 of the periodic table
<b>allele</b>	a different version of the same gene
<b>allergen</b>	an antigen that causes an allergic response in an organism
<b>allergy</b>	a non-specific response to allergens in the environment
<b>allotrope</b>	a different structural form of the same element in the same physical state
<b>alloy</b>	mixture of metals, combined for a specific purpose
<b>alluvial</b>	located on or near the soil surface and able to be recovered with a minimum of digging; deposited by flowing water
<b>alpha decay</b>	decay of a nucleus due to loss of an alpha particle
<b>alpha particle</b>	a particle ejected by the nucleus during radioactive decay; consists of two protons and two neutrons, similar to a helium atom
<b>alumina</b>	a compound (aluminium oxide) extracted from bauxite to make aluminium
<b>aluminium</b>	a lightweight metal used in, e.g. aircraft fittings, window frames and drink cans
<b>amino acid</b>	molecular building blocks of protein
<b>ammeter</b>	a device used to measure electrical current in amperes
<b>amphoteric</b>	able to react as an acid or a base; molecules or ions
<b>amplitude</b>	the maximum displacement or distance moved by a point on a vibrating body or a wave measured from its equilibrium position
<b>analyse</b>	to methodically consider in detail in order to find meaning or relationships and to identify patterns, similarities and differences (adapted from ACARA  )
<b>anemometer</b>	a device used to measure wind speed; a common weather station instrument
<b>angle of elevation</b>	the angle above horizontal at which a point such as the top of a tree is sighted
<b>angle of incidence</b> ( <i>i</i> )	the angle between the incident ray and the normal to the surface
<b>angle of reflection</b> ( <i>r</i> )	the angle between the reflected ray and the normal to the surface
<b>angle of refraction</b> ( <i>R</i> )	the angle between the refracted ray and the normal to the surface
<b>animal</b>	an organism belonging to the domain Eukaryota or historically the kingdom Animalia
<b>anion</b>	an ion that has a negative charge
<b>annotated diagram</b>	a labelled diagram with notes to explain processes or relationships
<b>annular eclipse</b>	an eclipse of the sun in which the moon does not cover the entire disc of the sun, so that a ring of sunlight surrounds the shadow of the moon
<b>anomaly</b>	a result that is out of range, sequence, pattern or trend

<b>antacid</b>	a substance that neutralises stomach acid or forms a barrier to inhibit reflux
<b>antennae</b>	a pair of sensory structures of an animal that are used to touch, smell, taste and detect temperature
<b>anther</b>	a male reproductive structure in a flower that produces and stores pollen
<b>anthropocentrism</b>	the perspective that humans are the centre of life on Earth; interprets everything in terms of human values
<b>anthropogenic</b>	derived or caused by humans
<b>antibiotic</b>	a specialised drug developed to target and counter bacterial infections
<b>antibody</b>	a disease-fighting molecule produced by the body as part of the immune response to a specific infectious antigen
<b>antigen</b>	any infectious agent that invades the body and causes an immune response
<b>antiseptic</b>	substance that inhibits the growth and development of microorganisms
<b>antiviral</b>	a specialised drug developed to target and counter viral infections
<b>aquifer</b>	an underground layer of permeable rock that holds water and from which groundwater can be extracted
<b>arable</b>	a type of soil that is suited to growing plants
<b>Archaea</b>	domain or kingdom of single-celled microorganisms with no cell nucleus (prokaryotes)
<b>archaeology</b>	the recovery and study of ancient items associated with human communities
<b>arid</b>	limited moisture to the point of preventing or hindering the survival of living things
<b>array</b>	a set of instruments, often telescopes, arranged in a pattern so that data collected can be integrated
<b>artefact</b>	a human-made object of historical interest
<b>artificial insemination</b>	a process where sperm is harvested from a male and introduced into the female reproductive tract
<b>asexual reproduction</b>	reproductive processes where a single parent organism produces offspring with identical genetic material
<b>assisted reproductive technologies (ART)</b>	technologies that assist in the conception and development of embryos
<b>asteroid</b>	a rock-based body travelling through space independently of planets or moons
<b>asthenosphere</b>	the lower part of Earth's mantle, which is fluid, thus allowing the plates of lithosphere to 'float' on top
<b>astral navigation</b>	the practice of determining locations by using the positions of stars in space relative to Earth
<b>astrolabe</b>	an instrument once used to navigate by using the elevation of the sun or other stars

<b>astronomer</b>	a scientist who studies celestial objects, such as planets, moons, stars and galaxies
<b>astronomy</b>	the scientific study of celestial objects, such as planets, moons, stars and galaxies
<b>atmosphere</b>	layers of gas that surround a planet; held in place by gravitational force
<b>atom</b>	the smallest particle of matter that cannot be divided by chemical or physical means
<b>atomic</b>	to do with atoms
<b>atomic mass</b>	the average mass of all the isotopes of an element, taking into account their percentage of total composition
<b>atomic number</b>	the number of protons in the atom of an element
<b>attract</b>	to exert a force that pulls or draws objects together
<b>audible range</b>	the frequencies of sound that are detectable to a particular organism
<b>aurora</b>	a natural light display in the sky, particularly at high latitudes
<b>autosome</b>	a non-sex chromosome
<b>avalanche</b>	rapid fall of snow, and sometimes rocks, down a sloping surface
<b>axis</b>	the line around which a body rotates
<b>axis tilt</b>	the degree of difference between the axis around which planets and moons rotate and the rotational axis of a planet around the sun
<b>axle</b>	the pin, bar or shaft on or around which a wheel rotates
<b>B</b>  back	
<b>bacteria</b>	prokaryotic unicellular microorganisms; may be helpful or harmful to humans
<b>background radiation</b>	small amounts of natural and artificial radiation constantly present in the environment
<b>barometer</b>	an instrument used to measure atmospheric pressure; used to determine altitude or weather changes
<b>base</b>	a substance that has a pH of greater than 7
<b>bauxite</b>	ore that yields alumina for aluminium production
<b>Beaufort wind scale</b>	a scale based on wind observations; used to establish approximate speed of the wind
<b>bedrock</b>	the layer of rock underneath subsoil
<b>behavioural adaptation</b>	an action taken by an organism to increase its chance of survival, e.g. stalking prey or sheltering under a rock
<b>beneficial mutation</b>	any change to the genetic code that results in noticeable physiological changes that are of benefit to the organism

<b>beta decay</b>	decay of the nucleus caused by loss of a beta particle, resulting in a proton turning into a neutron or vice versa
<b>beta negative decay</b>	the emission of an electron that occurs when a neutron in an unstable atom undergoes radioactive decay resulting in the atomic number of the atom increasing by one and the mass number remaining the same
<b>beta particle</b>	an electron or a positron emitted from a nucleus during radioactive decay
<b>Big Bang theory</b>	the scientifically accepted theory of the origin of the universe
<b>binary system</b>	<i>Earth and space sciences.</i> a system in which two stars or other celestial objects orbit a common centre of mass
<b>biodegradable</b>	having the capability of decaying in the environment often due to the action of living organisms
<b>biodiversity</b>	the relative abundance, genetic diversity and composition of species in an ecosystem
<b>bioenergy</b>	renewable energy derived from biological sources such as crops
<b>biogas energy</b>	energy produced by harnessing the chemical potential energy stored in organic waste materials
<b>biologist</b>	a scientist who studies living matter in all its forms and the environment
<b>biomass</b>	the quantity of biological matter; usually of a specified type or in a specified habitat
<b>biomass pyramid</b>	a graphical representation showing the amount of living biological matter available at each trophic level of a food chain or web
<b>biome</b>	an ecological community that is defined by climatic and environmental conditions
<b>biomimicry</b>	the solving of human problems by imitating models and systems of the natural world
<b>biosphere</b>	that part of Earth comprising all living things
<b>biotic</b>	relating to component of an environment that is living or has lived
<b>biowaste</b>	organic waste products from industries; can be used as an energy source
<b>black hole</b>	a region of space proposed to have arisen due to the collapse of a giant star with such strong gravity that no radiation or matter can escape
<b>bladder</b>	a distensible sac in the body for holding liquid or gas; especially urinary bladder
<b>body system</b>	a group of organs that work together to perform a function of the body
<b>Bohr model</b>	diagrammatic representation of the atom as a positively charged nucleus surrounded by electrons travelling in circular orbits
<b>boiling</b>	the rapid changing of a substance from a liquid to a gas (vapour) when a liquid is heated to its boiling point

<b>boiling point</b>	the temperature at which a substance changes phase from liquid to gas or vice versa
<b>bore</b>	a hole in the ground to access groundwater
<b>botanist</b>	a scientist who studies plants
<b>botany</b>	the study of plants
<b>breeding</b>	mating of plants or animals, producing offspring
<b>bulb</b>	<i>Biological sciences.</i> a rounded, underground part of a plant that acts as a food reserve and produces a stem above and roots below
<b>burette</b>	a graduated, glass tube used to dispense accurate amounts of liquid for analysis
<b>bushfire</b>	unplanned burning of vegetation
<b>bycatch</b>	any unwanted marine creatures caught while fishing for a different species; may include the young of the species being fished for
<b>C</b>  back	
<b>camera obscura</b>	see <i>pinhole camera</i>
<b>camouflage</b>	appearance of an organism that is similar to parts of the environment
<b>carbohydrate</b>	class of organic compound used by animals for energy
<b>carbon abatement</b>	steps taken to avoid or reduce production of carbon-based greenhouse gas emissions
<b>carbon cycle</b>	a series of processes that describes the exchange and movement of carbon within and among the four systems of the planet
<b>carbon fixing</b>	process by which carbon is withdrawn from the surrounding environment, usually by photosynthesis, and stored as compounds
<b>carbon footprint</b>	the quantity of greenhouse gas emitted as a result of an individual's everyday activities and lifestyle
<b>carbon sequestration</b>	process by which carbon is packaged and stored where it will not be a part of the carbon cycle for an extended period
<b>Carboniferous Period</b>	a geological period that lasted from about 359.2 to 299 million years ago and during which many coal beds were formed
<b>carnivore</b>	an organism that feeds on animal matter
<b>carrier</b>	an individual organism that is heterozygous for a particular gene, thus having the capacity to pass on the recessive allele to its offspring
<b>carrion</b>	the decaying flesh of dead animals
<b>cartographer</b>	a person who makes maps
<b>catalyst</b>	a substance that speeds up a chemical reaction without being consumed in the chemical reaction
<b>catchment</b>	a geographical area where water is deposited, channelled and naturally collected

<b>cation</b>	an ion that has a positive charge
<b>cause and effect</b>	the relationship between an event (cause) and the phenomenon (effect) caused by the event
<b>celestial</b>	relating to stars and other bodies located in space
<b>celestial pole</b>	the point in the observable sky that would appear directly overhead to an observer at one of Earth's poles; in line with Earth's axis of rotation
<b>cell</b>	the basic unit of living things
<b>cell cycle</b>	the series of stages of growth, division and death of a cell
<b>cell membrane</b>	semi-permeable membrane that surrounds and encloses the contents of a cell
<b>cell specialisation</b>	differences in the structure and function of cells in multicellular organisms
<b>cell theory</b>	scientific theory outlining the fundamental role of the cell as the structural unit of organisms
<b>cell wall</b>	a specialised support structure surrounding the cell membrane of plant cells
<b>cellular respiration</b>	a process in cells that combines oxygen and glucose to produce water, carbon dioxide and energy
<b>cementation</b>	the natural process by which sediments fuse together to form sedimentary rock
<b>cephalothorax</b>	the first of the two segments of a spider's body; fusion of the head and thorax in arachnids
<b>Cepheid variable star</b>	a type of star that can be used to gauge distance in space due to a predictable relationship between its cyclical luminosity patterns and size
<b>cerci</b>	a pair of sensory structures found at the end of the abdomen in some insects
<b>cervix</b>	the opening to the uterus that allows the passage of fluids to and from the uterus
<b>chalcopyrite</b>	a mineral that yields copper
<b>change of state</b>	a physical change between states of matter, e.g. from solid to a liquid
<b>characteristic</b>	distinguishing aspect (including features and behaviours) of an object, material, living thing or event
<b>chemical bond</b>	the energy that holds atoms together in molecules
<b>chemical change</b>	a process where substances (chemicals) react to form new substances
<b>chemical equation</b>	a symbolic representation of a chemical reaction
<b>chemical formula</b>	a symbolic representation of the number and types of atoms in an element or compound
<b>chemical potential energy</b>	energy stored in chemical bonds During chemical reactions, as bonds are broken, this energy can be used to form new bonds, transferred to other objects, materials or substances, or transformed into other forms of energy.
<b>chemical properties</b>	the properties of a substance related to its chemical reactivity

<b>chemical symbol</b>	a one- or two- (rarely three-) letter representation for a chemical atom
<b>chemosynthesis</b>	a process that uses methane or inorganic molecules (such as hydrogen sulphide) instead of sunlight to convert carbon molecules and nutrients into organic matter (compare with <i>photosynthesis</i> )
<b>chlorination</b>	the use of chlorine-based chemicals as disinfectants
<b>chloroplast</b>	a specialised cell organelle that is the site for photosynthesis
<b>chromatography</b>	a technique used to separate a mixture into its components, based on their rate of movement through a medium
<b>chromosome</b>	a long strand of DNA that contains multiple genes; found in the nucleus of cells
<b>chrysalis</b>	the hard case surrounding the pupal stage of a butterfly or moth
<b>circuit</b>	path around which an electrical current can flow; can be open or closed (complete)
<b>circuit symbol</b>	a symbol used to signify a specific component of an electrical circuit
<b>circulatory system</b>	a coordinated group of organs that facilitate the circulation of blood and the transportation of materials through the body; aids in the processes of bodily defence and homeostasis
<b>clade</b>	group of organisms that are descendants from a common ancestor
<b>cladogram</b>	a chart or diagram showing evolutionary relationships between organisms
<b>classify</b>	arrange items into named categories in order to sort, group or identify them 
<b>clast</b>	a grain or piece of rock
<b>clay</b>	natural earthy material with fine particles; usually heavy and sticky when wet
<b>cleavage</b>	the tendency for a mineral to break in specific directions or planes, forming a smooth crystal face
<b>climate</b>	the pattern of weather conditions in a particular region over an extended period such as 10 to 30 years
<b>climate change</b>	changes to the observable, long-term climate trends across the planet or in a region, over years or decades
<b>climate graph</b>	a graph of a location's monthly average temperature and rainfall, as line and/or column graphs on the same set of axes
<b>climb</b>	to move up an object using limbs, e.g. arms and legs, hands and feet or paws
<b>clinometer</b>	a device used to measure the angle of elevation of the apex of a landform or feature such as a tree
<b>clone</b>	offspring with identical genetic material to the parent organism
<b>closed system</b>	a system that may exchange only energy, not matter, with the surrounding environment
<b>coagulation</b>	the process of changing from a fluid to a thickened mass

<b>coal</b>	rock formed in the earth from sedimentation and carbonisation of plant material; can be burned as fuel
<b>cocoon</b>	protective covering of an insect larva inside which the larva develops into a pupa
<b>collaborate</b>	to work with others to perform a specific task 
<b>collision</b>	an event where two or more bodies come into contact and exert a force on the other/s; the outcome of the collision will depend on a range of factors
<b>collision zone</b>	area at convergent plate boundaries where the less dense continental crust does not sink into the mantle but collides with other continental crust, causing rocks to be compressed and deformed through folding and faulting
<b>colloid</b>	a mixture that has very small particles of one substance dispersed and suspended through another
<b>colour</b>	electromagnetic radiation of specific wavelength that is perceived by the eye
<b>combustion</b>	the reaction of fuel and an oxidant, to produce heat and/or other forms of energy
<b>comet</b>	a ball of ice, dust, rocks and gases travelling in an orbit independent of planets; forms a gaseous tail when near a star
<b>commensalism</b>	an interaction between two species where one benefits from the relationship while the other is neither benefited nor harmed
<b>commercial fisheries</b>	the industry of taking, processing and selling of fish and fish products
<b>commodity</b>	a good or service that many people buy; can refer to mineral or energy resources
<b>community</b>	organisms of multiple species interacting with each other in a defined area
<b>competition</b>	contest between species to secure the use of a range of resources required by all competing species
<b>compost</b>	a mixture of organic material that decays naturally; used to enrich soil
<b>compound</b>	two or more elements chemically combined in a fixed, whole-number ratio
<b>compound eyes</b>	a pair of visual organs made up of many individual light receptive structures; found on an insect's head
<b>compressed air</b>	air particles are forced closer together so more air can be stored in a container
<b>compression</b>	the process of forcing the particles of a substance closer together
<b>concave</b>	curved inward like the inside surface of a bowl, e.g. concave mirror, concave lens
<b>concentration</b>	proportion of solute to solvent
<b>conclusion</b>	a judgment based on evidence 
<b>condensation</b>	the change of state from gas to liquid

<b>conduct (heat or electricity)</b>	to transfer electricity or heat energy
<b>conduct (an experiment)</b>	to perform actions to test a hypothesis following a stated method
<b>conduction (heat)</b>	transfer of heat energy from a hotter region to a cooler region
<b>conduction (electrical)</b>	the transfer of electrical energy
<b>conductivity</b>	the extent to which energy (electrical or thermal) can be transferred through a material
<b>conductor</b>	material through which energy (heat or electrical) can be transferred
<b>conservation of energy</b>	the principle or law that states that the total energy of an isolated system remains unchanged
<b>conservation of mass</b>	the law that states that the total mass of a closed system remains unchanged, e.g. when a chemical reaction takes place the total mass stays the same (although the atoms are re-arranged)
<b>conserve</b>	<i>Earth sciences.</i> to use Earth's resources in a sustainable way (noun: <i>conservation</i> ) <i>Biological sciences.</i> to protect Earth's resources <i>Physical sciences.</i> certain physical properties do not change over time
<b>constellation</b>	a group of stars that forms a recognisable pattern, many of which have been named, e.g. the Southern Cross
<b>consumer</b>	an organism that consumes other organisms to gain essential nutrients and energy for survival
<b>consumer demand</b>	the amount of living or non-living organisms that are required by consumers for survival
<b>constructed environment</b>	environment that has been made by humans, e.g. cities with buildings, streets and bridges
<b>contaminant</b>	a substance that makes a mixture unusable or harmful
<b>continental drift</b>	the movement of Earth's continents in relation to each other
<b>continental shelf</b>	an extension of the continent that projects under the sea resulting in relatively shallow water
<b>continuous data</b>	quantitative data with a potentially infinite number of possible values along a continuum
<b>controlled variable</b>	a variable that is kept constant (or changed in constant ways) during an investigation
<b>convection</b>	heat transfer within fluids from one part of the fluid to another
<b>convection current</b>	the mass movement of particles that causes the transfer of heat in fluids
<b>conventions</b>	agreed methods of representing concepts, information and behaviours

<b>convergent plate boundaries</b>	boundaries where two lithospheric plates are moving towards each other, resulting in collision zones and/or subduction zones
<b>convex</b>	curved outward like the outside surface of a bowl, e.g. convex mirror, convex lens
<b>cooling</b>	the process of heat being lost or removed
<b>copper</b>	a ductile metal often used in electrical and electronics circuits
<b>core sample</b>	a cylindrical rock sample obtained by drilling with a hollow drill at a recorded location and drawing this core of the rock to the surface in one piece
<b>Coriolis effect</b>	the observed motion of freely moving particles as a result of Earth's rotation
<b>corona</b>	the outermost part of the atmosphere of a star
<b>coronagraph</b>	instrument that attaches to a telescope to allow observing and photographing of the sun's corona
<b>coronal mass ejection (CME)</b>	massive burst of solar wind and magnetic fields arising from the solar corona and being ejected into space
<b>correlation</b>	what two or more variables or data sets have in common
<b>corrosive</b>	chemical property that describes a substance's ability to react with and degrade the structure of other substances on contact
<b>cosmic</b>	relating to outer space and the cosmos
<b>cosmic microwave background radiation (CMBR)</b>	microwave radiation with no current source, spread throughout the universe and theorised to have been produced at the formation of the universe
<b>cosmology</b>	study of the physical universe including origin, structure, laws, space and time
<b>cosmos</b>	the physical universe
<b>covalent bond</b>	chemical bond in which atoms share electrons
<b>crater</b>	cup-shaped depression or cavity on the surface of the land; marks the main vent of a volcano or meteor impact site
<b>crescent moon</b>	the outer arc of the moon as observed in the sky
<b>crest</b>	the highest point that particles reach in each oscillation of a wave as represented on a waveform diagram
<b>crop</b>	plants specifically grown for cultivating and harvesting or the material harvested
<b>crop management</b>	procedures to either improve and sustain crop yield or to reduce environmental impact
<b>crop yield</b>	the mass of useful harvest per hectare
<b>crossing over</b>	exchanging genetic material between homologous chromosomes during meiosis
<b>cross-linking</b>	<i>Chemical sciences.</i> forming of covalent bonds between adjacent polymer chains

<b>crust</b>	the thin surface layer of Earth surrounding the mantle, consisting of a thick, less dense continental layer and a thin, more dense, oceanic layer
<b>crystal</b>	a regular solid formed as a repeating, three-dimensional pattern of atoms, ions or molecules, e.g. quartz, salt, ice
<b>crystalline structure</b>	the specific shape of the crystal and arrangement of its particles into which matter forms naturally
<b>crystallisation</b>	the process of crystals forming
<b>CSIRO</b>	Commonwealth Scientific and Industrial Research Organisation
<b>current</b>	<i>Physical sciences.</i> flow or movement of electricity through a medium <i>OR</i> <i>Earth and Space sciences.</i> movement of a mass of air or water in a certain direction
<b>cutting</b>	a part of a plant (e.g. root, leaf, bud) used to propagate a new plant through rooting or grafting
<b>cycle</b>	a sequence or pattern that is repeated regularly
<b>cyclone</b>	a violent tropical storm characterised by high-velocity winds and torrential rain, swirling around an area of low pressure in a clockwise direction
<b>cytoplasm</b>	clear gel-like substance that fills a cell and contains the cytosol, the organelles and other cellular components, excluding the nucleus
<b>cytosol</b>	the liquid part of a cell's cytoplasm around the organelles and other cellular components; many of the metabolic processes occurring within the cell take place in the cytosol
<b>D</b>  back	
<b>dark energy</b>	a form of energy proposed by scientists that pulls cosmic entities away from each other against gravitational attraction
<b>dark matter</b>	matter in space that neither emits nor reflects light, but the existence of which is proposed to explain gravitational lensing
<b>data</b>	the plural of datum; the measurement of an attribute, e.g. the volume of gas or the type of rubber. This does not necessarily mean a single measurement: it may be the result of averaging several repeated measurements and these could be quantitative or qualitative
<b>daughter element</b>	an element formed as a result of a nuclear reaction
<b>decant</b>	to separate a liquid from a denser liquid or solid by pouring off the less dense liquid
<b>deceleration</b>	slowing down; the opposite of acceleration
<b>decibel (dB)</b>	the unit used to measure the intensity or loudness of a sound
<b>decomposers</b>	organisms (e.g. fungi, mould) that facilitate the recycling of materials within an ecosystem through the breakdown of dead and decomposing material, which they use to obtain nutrients

<b>decomposition</b>	<i>Chemical sciences.</i> a type of reaction in which the elements in a chemical compound are separated either into individual elements or less complex compounds <i>OR</i> <i>Biological sciences.</i> the breakdown of materials into constituent parts
<b>deletion mutation</b>	a mutation that occurs when nucleotides have become misplaced or are missing due to incorrect replication of a chromosome
<b>denaturation</b>	the breakdown of proteins due to exposure to extreme conditions such as heat, acidic or alkaline substances
<b>density</b>	a measure of the amount of mass per unit volume
<b>dependent variable</b>	a variable that changes in response to changes to the independent variable in an investigation 
<b>deposition</b>	change of state from gas to solid without passing through a liquid state
<b>design</b>	to plan and evaluate the construction of a product or process, including an investigation 
<b>detoxification</b>	the removal of toxins from a substance through various processes
<b>dichotomous key</b>	a tool used for categorising items (e.g. materials, rocks, species of living things) using two logical, mutually exclusive choices
<b>diffusion</b>	movement of particles through a medium until a uniform distribution is achieved
<b>digestive system</b>	a coordinated group of organs that break down food and liquids, absorb nutrients and expel waste materials from the body
<b>digital technologies</b>	systems that handle digital data, including hardware and software, for specific purposes 
<b>dilution</b>	process of adding more solute to a solution to decrease the proportion of solvent to solute
<b>diploid cell</b>	a cell that has a full set of homologous chromosomes (two of each type of chromosome)
<b>discrete data</b>	quantitative data consisting of a number of separate values where intermediate values are not permissible 
<b>disease</b>	incorrect functioning of any part of a living organism, which may be caused by infection, genetic factors, toxicity or unfavourable environmental factors
<b>disease treatment</b>	any method to reverse or alleviate the incorrect functioning of an organism; includes medicines, sprays, isolation or removal of diseased parts
<b>disinfection</b>	a specialised cleaning technique to prevent the growth and spread of microorganisms that can cause infection
<b>disperse</b>	to spread over a wide area
<b>displacement</b>	change in position of an object expressed in terms of both (straight line) distance and direction between two points; volume of fluid displaced

<b>dispose responsibly</b>	to get rid of waste in sustainable ways
<b>dissection</b>	to methodically cut open and view the internal organs of a once-living organism
<b>dissolve</b>	to mix particles of a substance homogeneously with a liquid to form a solution
<b>distance</b>	a measurement of the length travelled (Note: This may not be a straight line.)
<b>distillation</b>	a technique used to separate and collect the components of a mixture based on differences in boiling points
<b>divergent plate boundaries</b>	boundaries where two lithospheric plates are moving away from each other
<b>DNA (deoxyribonucleic acid)</b>	molecules found in the nucleus of a cell and that contain encoded genetic information for the development and function of an organism
<b>DNA replication</b>	a genetic process in which a double-stranded DNA molecule separates and each strand is copied, producing two identical replicas of the original DNA molecule; occurs prior to cell division by mitosis or meiosis
<b>dominant allele</b>	an allele that masks a recessive allele and results in the expression of the phenotype associated with the dominant allele
<b>Doppler effect</b>	the effect when the wavelength of energy appears longer to an observer as an object moves away
<b>dormancy</b>	when a living organism's normal physical functions are temporarily suspended
<b>dormant volcano</b>	a volcano that has not erupted within the past 600 years but is predicted to erupt again in the future
<b>drag</b>	a force that opposes motion through fluids and gases; a form of friction
<b>drill stick</b>	a rod of suitable wood with an end sharpened for drilling
<b>drought</b>	condition where rainfall is less than normal for an extended period of time so the amount of available water is insufficient for living things
<b>drug resistance</b>	reduction in the effectiveness of drugs
<b>drought tolerance</b>	degree to which an organism requires less water to survive
<b>ductile</b>	ability of a material to be drawn into a wire without shearing
<b>ductility</b>	extent to which a material is ductile (can be drawn into a wire)
<b>duplication mutation</b>	mutation that occurs when nucleotides become repeated on a chromosome during replication
<b>durable</b>	a property of a material that indicates it is able to withstand wear, pressure, or damage
<b>dwarf planet</b>	a spherical or near-spherical celestial body that orbits a star but that has not cleared the path of its orbit

<b>Earth</b>	the planet in our solar system that is third from the sun and the only planet currently known to support life
<b>Earth's magnetic field</b>	Earth's core generates a magnetic field that extends beyond the solid surface, protecting Earth from charged particles from the sun (solar winds)
<b>Earth's polarity</b>	the direction of Earth's magnetic field
<b>earthquake</b>	seismic activity that occurs due to a release of pressure and movement in the lithosphere
<b>echo</b>	sound that is heard after being reflected
<b>ecocentrism</b>	environmental perspective that values nature in its own right, not just as it can be used
<b>ecoregion</b>	a unit of land or water that contains an interdependent and interactive set of species, communities and environmental conditions that are geographically specific
<b>ecosystem</b>	all the organisms of multiple species interacting with each other and the abiotic factors in an area
<b>efficacy</b>	the capacity to produce or achieve an intended result
<b>efficient</b>	referring to output or effect compared to input or effort
<b>effort arm</b>	a component of a lever that delivers the input force
<b>egg</b>	specialised female reproductive cell
<b>El Niño</b>	a cyclic weather pattern where the difference in atmospheric pressure between Tahiti and Darwin tends to be negative; associated with drought periods
<b>elastic</b>	property of a material or structure that returns to its original size and shape after deformation
<b>elastic potential energy</b>	energy in a deformed (stretched, twisted, compressed) object or material that has the potential to return to its original shape and size
<b>electricity</b>	associated with the electrically charged matter (electrons and protons); the flow of electricity in a closed circuit is associated with the movement of charged matter and is measured in Coulombs per second
<b>electrical energy</b>	form of energy transferred and transformed in electrical circuits and is associated with electromagnetic waves; the movement of electrical energy in a circuit is measured in Joules per second
<b>electromagnetic radiation</b>	all wavelengths of radiation including gamma rays, x-rays, ultraviolet (UV), visible light, microwaves and radio waves
<b>electromagnetic spectrum</b>	the complete range of wavelengths of electromagnetic radiation
<b>electron arrangement</b>	the arrangement of electrons in energy levels around the nucleus of an atom

<b>electron</b>	a very small, negatively charged subatomic particle that moves rapidly and is located outside the nucleus of an atom
<b>electron configuration</b>	the arrangement of electrons in electron shells
<b>energy level</b>	a representation of the electron arrangement around the nucleus of an atom; this term may be used interchangeably with <i>electron shell</i>
<b>electron shell</b>	a representation of the electron arrangement around the nucleus of the atom; also known as the energy level of the atom
<b>element</b>	a substance that cannot be broken down into simpler substances by chemical reaction
<b>embryo transfer</b>	a process where embryos are removed from donor females and inserted in recipient females
<b>emission</b>	process of energy and/or matter being sent out from an object or source
<b>emit</b>	to give out or give off
<b>emergent ray</b>	a light ray emerging out of one medium back into the original medium, e.g. light ray emerging from a glass prism back into the air
<b>endangered</b>	a species that is facing a very high risk of becoming extinct in the wild
<b>endocrine system</b>	a coordinated group of glands that helps to regulate the functions and processes of the body through the release of hormones
<b>endoplasmic reticulum</b>	a specialised organelle in a cell that is the site for protein processing and packaging
<b>endothermic</b>	a process in which heat energy is absorbed by a system from its surroundings
<b>energy</b>	the ability to make things happen or cause changes; the capacity to do work; measured in joules (J)
<b>energy arrows</b>	arrows used in food webs and food chains to indicate the direction of the flow of matter and energy
<b>energy chain diagram</b>	a series of steps representing energy changes (transfers or transformations), e.g. chemical energy → heat energy → kinetic energy; also known as an <i>energy flow diagram</i>
<b>energy efficiency</b>	ratio of useful energy coming from a system to the total energy supplied to that system
<b>energy flow diagram</b>	a series of steps representing energy changes (transfers or transformations), e.g. chemical energy → heat energy → kinetic energy; also known as an <i>energy chain diagram</i>
<b>energy pyramid</b>	a diagrammatic representation to show the flow and amount of biomass energy available at each trophic level in a food chain or web
<b>energy transfer</b>	movement of one form of energy within or between media
<b>energy transformation</b>	the change from one form of energy to another

<b>enhanced greenhouse effect</b>	increased output of greenhouse gases into the atmosphere due to human (anthropogenic) actions contributing to the natural greenhouse effect
<b>environment</b>	all the surroundings, both living and non-living 
<b>environmental disaster</b>	an event that causes major damage to parts of an ecosystem
<b>environmental ethics</b>	the moral obligation and responsibility of humans to minimise actions that result in negative environmental impacts
<b>environmental factors</b>	things in the surroundings that can affect organisms
<b>environmental impact statement (EIS)</b>	a statement prepared for the purpose of informing regulatory bodies and the community of the extent to which a project affects the living and non-living surroundings
<b>environmental impacts</b>	the damage or risks to the surrounding ecosystems
<b>environmental modelling</b>	techniques used to simulate the processes that occur in an environment
<b>environmental resources</b>	resources that occur naturally in the environment
<b>environmental stewardship</b>	the care and management of the environment by an individual or organisation on a local, national or international level
<b>enzyme</b>	biological catalyst; protein that alters the rate of chemical reaction in an organism
<b>epicentre</b>	the point on Earth's surface that is directly above the focus of an earthquake
<b>epidemic</b>	spread of an infectious disease in a location or a small region, affecting local populations
<b>epidermis</b>	the outer layer of tissue covering an organism, composed of cells arranged in one or more layers (e.g. skin, top and bottom of leaf directly under cuticle, if one is present)
<b>equation</b>	<i>Physical sciences.</i> a mathematical or symbolic representation of expressions or values that are equal to one another
<b>equator</b>	an imaginary line that circles Earth, halfway between the North and South Poles
<b>equilibrium</b>	<i>Physical science.</i> state of balance or a stable situation where opposing forces cancel each other out and where no changes are occurring <i>Chemical sciences.</i> state of balance in a chemical reaction where there is no overall change to the concentrations of reactants and products
<b>equinox</b>	the time all over Earth when night and day are approximately the same length because the sun crosses the plane of Earth's equator This normally occurs about 21 March (autumnal equinox in the Southern Hemisphere) and 22 September (vernal equinox or spring equinox in the Southern Hemisphere). In the Northern Hemisphere the dates of the equinox are the same but the names are reversed.

<b>erosion</b>	movement of weathered material through the action of wind, water, gravity or ice	
<b>ethics</b>	the principles of correct and decent action that apply when completing a task that will affect other people or the world around them	
<b>eukaryote</b>	uni- or multi-cellular organism in which the cell or cells contain membrane-bound organelles, including nucleus, mitochondria, Golgi apparatus and chloroplast	
<b>evaluate</b>	examine and judge the merit or significance of something, including processes, events, descriptions, relationships or data	
<b>evaporation</b>	the process of changing state from liquid to gas	
<b>evidence</b>	data that is considered reliable and valid and that can be used to support a particular idea, conclusion or decision	
<b>evolution</b>	gradual changes that may occur over time in populations of organisms through natural selection	
<b>excretory system</b>	a coordinated group of organs that facilitate the removal of wastes from the body	
<b>exfoliation</b>	removal of an upper layer of rock by the action of water and ice	
<b>exoskeleton</b>	a hard outer shell covering an organism's body	
<b>exothermic</b>	a process in which heat energy is lost from a system to its surroundings	
<b>experimental investigation</b>	an investigation that involves carrying out a practical activity	
<b>exploration</b>	a process of methodically searching in an area	
<b>exposure</b>	lack of shelter from weather, extremes of temperature or the elements, often resulting in damage to an organism	
<b>external features</b>	observable features on the exterior of an organism	
<b>external fertilisation</b>	fertilisation of sex cells that occurs outside the body of the organism	
<b>extinct species</b>	a species that is no longer in existence	
<b>extinct volcano</b>	a volcano that has not erupted for at least 10 000 years and is not expected to erupt again in a comparable time frame	
<b>extreme environment</b>	surroundings that have conditions that most organisms find intolerable, e.g. volcanoes, deep ocean	
<b>extremophile</b>	an organism that lives in an extreme environment	
<b>extrusive igneous rock</b>	rock made from lava that has cooled on the surface	
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<b>fair test</b>	an investigation where one variable (the independent variable) is changed and all other conditions (controlled variables) are kept the same; what is measured or observed is referred to as the dependent variable	

<b>fallopian tubes</b>	the tubes connecting the female reproductive organs of the ovaries and uterus and that allows passage of the egg (ovum)
<b>fangs</b>	hollow, piercing teeth that can be used to injure prey and deliver venom
<b>farming</b>	activity for growing crops
<b>fats</b>	nutrients that provide an essential dietary requirement to the human body
<b>fault</b>	a fracture in Earth's crust due to movement of tectonic plates
<b>fauna</b>	general term used for all animal life
<b>feature</b>	a distinguishing characteristic or property
<b>feral</b>	any living thing that has changed from being domesticated to being wild
<b>fermentation</b>	breakdown of complex molecules such as sugars into simpler compounds by yeast and bacteria
<b>fertilisation</b>	the joining of the female and male sex cells
<b>fibre</b>	natural or synthetic thread formed from living tissue or mineral substance
<b>field work</b>	observational research undertaken in the normal environment of the subject of the study
<b>filament</b>	<i>Chemical sciences.</i> material arranged in the form of a fine wire, as used in incandescent bulbs  <i>OR</i> <i>Biological sciences.</i> part of the male reproductive structure in a flower, support structure for the anther
<b>filter</b>	<i>Physical sciences.</i> material that allows certain colours of light to be transmitted and others to be absorbed  <i>OR</i> <i>Chemical sciences.</i> material that retains solids and allows liquids, gases or smaller particles to pass through
<b>filtrate</b>	the liquid component after filtering
<b>filtration</b>	the separation of components of a mixture based on particle size
<b>firestick farming</b>	a traditional method of Australia's First Peoples, involving periodic, patchwork burning of the landscape to promote new growth, biodiversity and to reduce fuel load
<b>flagella</b>	threadlike cellular structures that some microscopic organisms use to move
<b>flammable</b>	readily burns
<b>flexible</b>	can be easily deformed without breaking
<b>flocculation</b>	the formation of a solid in a solution to separate substances
<b>focus</b>	the location where an earthquake begins and from which seismic waves radiate
<b>flora</b>	general term used for all plant life
<b>flower</b>	reproductive organ of flowering plants

<b>fluid</b>	a substance that is able to flow from one place to another
<b>flux</b>	movement of matter from a store, usually by a biological or physical process; flow
<b>focal point</b>	the point at which rays of light converge
<b>food chain</b>	graphical representation of a sequence of feeding relationships between organisms in a community or defined area
<b>food web</b>	a series of interrelated food chains
<b>force</b>	a push or pull between objects that may cause one or both objects to change speed and/or the direction of their motion (i.e. accelerate) or change their shape Scientists identify four fundamental forces: gravitational, electromagnetic (involving both electrostatic and magnetic forces), weak nuclear forces and strong nuclear forces. All interactions between matter can be explained as an action of one or a combination of the four fundamental forces. 
<b>formal measurement</b>	measurement based on an agreed standard unit (e.g. metre, second, gram) 
<b>formal unit</b>	a unit of measurement based on an agreed fixed standard (e.g. metre, second, gram) 
<b>formula</b>	<i>Chemical sciences.</i> representation of a chemical substance using symbols, e.g. H <sub>2</sub> O
<b>fossick</b>	to sift through sediment or excavated material looking for gemstones or precious minerals
<b>fossil</b>	preserved remains or traces of once-living organisms
<b>fossil fuel</b>	carbon compounds formed by geological processes and often used to produce energy, e.g. coal, oil, natural gas
<b>free-body diagram</b>	a diagrammatic representation of forces acting on a body or object
<b>freeze</b>	to change state from liquid to solid due to the removal of heat energy
<b>frequency</b>	the number of cycles per unit time, usually measured in Hertz (Hz)
<b>Fresnel lens</b>	a diverging lens similar to convex but with a stepped surface
<b>friction</b>	a force that opposes motion
<b>froth flotation</b>	a process by which powdered minerals are separated from other materials by floating them on bubbles
<b>fuel</b>	substances that produce a significant amount of usable energy, usually heat, when oxidised (burned)
<b>fuel load</b>	the amount of material that is capable of burning in a defined area
<b>fulcrum</b>	the point of rest on which a lever turns
<b>full moon</b>	a phase of the moon when the moon is completely illuminated by the sun as viewed from Earth
<b>fungi</b>	the kingdom of eukaryotic organisms that includes yeasts, moulds and mushrooms

<b>galaxy</b>	a very large grouping of stars and other celestial bodies travelling together through space, often in a pattern, e.g. spiral
<b>gamete</b>	a specialised reproductive cell of an organism
<b>gamma radiation</b>	high energy electromagnetic radiation produced by radioactive decay
<b>gas</b>	the physical state in which matter takes the shape and occupies the volume of its container
<b>gear</b>	a simple machine with teeth that mesh together and receive or transmit force and motion
<b>Geiger counter</b>	an instrument that can detect alpha, beta and gamma radiation
<b>gel</b>	semi-solid, semi-liquid substance
<b>gelatine</b>	a protein substance sourced from animals and used as a gelling agent
<b>gene</b>	a heritable unit represented in a section of DNA that contains cellular instructions for an aspect of the organism's form and/or function
<b>generation</b>	all the offspring produced during one lifecycle of a species of organism In genetic crosses a parent (P) generation reproduces to give rise to the first filial (F <sub>1</sub> ) generation.
<b>genetic</b>	of or to do with genes
<b>gene flow</b>	transfer of genes from one population to another of the same species (also known as gene migration)
<b>genetic drift</b>	the process of change in the genetic composition of a population due to random change leading to new species being formed; a mechanism of evolution
<b>genetically modified organisms (GMO)</b>	organisms whose genes have been altered by genetic engineering
<b>genome</b>	the complete set of genes that is characteristic of a species of organism
<b>genotype</b>	alleles responsible for the characteristics displayed for a given trait
<b>geocentric</b>	astronomical model where Earth was thought to be at the orbital centre of all celestial bodies
<b>geo-heliocentric</b>	astronomical model in which the sun, moon and stars were thought to revolve around Earth, and the other planets revolved around the sun
<b>geological history</b>	changes, events and geological processes that occurred on Earth during the past 4.6 billion years, based on the geological time scale
<b>geological timescale</b>	the arrangement of changes and events in the history of Earth, in order of occurrence in time, as determined from the age of rock layers
<b>geologist</b>	a scientist who studies the earth, including rocks, landforms and processes
<b>geology</b>	study of the earth, including rock and landforms

<b>geothermal energy</b>	energy produced by harnessing the heat of Earth's crust
<b>ger</b>	portable felt dwelling structure used in Central Asia; Mongolian word for 'yurt'
<b>germ cell</b>	gametes or the cells that give rise to gametes
<b>germinate</b>	to begin to grow after a period of dormancy, e.g. of a seed or spore
<b>gestation</b>	the period of growth of an organism from fertilisation to birth
<b>gibbous moon</b>	a phase of the moon that is between half of the moon being illuminated and a full moon
<b>glacial erosion</b>	removal of weathered material by glacial movement
<b>glaciologist</b>	a scientist who studies glaciers
<b>global systems</b>	the lithosphere, hydrosphere, atmosphere and biosphere of Earth
<b>global warming</b>	the increase of the planet's average surface temperature
<b>gold</b>	dense, metallic element with high monetary value, used in jewellery and circuits
<b>Golgi apparatus</b>	a specialised cell organelle that combines simple molecules into more complex molecules and packages them inside vesicles either to store inside the cell or transport out of the cell
<b>Gondwana</b>	one of two supercontinents formed by the separation of Pangaea
<b>graph</b>	a visual representation of the relationship between quantities plotted with reference to a set of axes
<b>gravitational lensing</b>	the bending of light by the gravitational attraction of nearby bodies
<b>gravitational potential energy</b>	energy of an object that is being acted on by the force of gravity due to its position above a surface and its potential to fall to a lower position
<b>gravity</b>	a force of attraction between two objects due to their mass
<b>greenhouse effect</b>	the trapping of heat energy in the lower atmosphere of Earth by greenhouse gases
<b>greenhouse gases</b>	gases including carbon dioxide, hydrocarbons and ozone, which increase the retention of heat energy in the atmosphere
<b>group</b>	<i>Chemical sciences.</i> a column on the periodic table
<b>groundwater</b>	water present beneath Earth's surface in the fractures of rock formations and in soil pore spaces
<b>guided investigation</b>	an investigation partly directed by the teacher
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<b>habitat</b>	the place in an environment where an organism usually lives
<b>half-life</b>	the time period over which 50 per cent of the radioactive atoms of a radioisotope sample are expected to decay
<b>halogen</b>	any element of Group 17 on the periodic table: fluorine, chlorine, bromine, astatine, iodine

<b>haploid cells</b>	cells that have only one chromosome from each homologous pair; half the number of chromosomes of a diploid cell
<b>hardness</b>	ability of a mineral to withstand scratching or abrasion, controlled by the strength of bonds between particles A mineral can only be scratched by a harder material. Mohs scale of mineral hardness ranks minerals from 1 (softest) to 10 (hardest).
<b>HDPE</b>	high-density polyethylene is a recyclable plastic made from ethylene, which comes from petroleum
<b>head</b>	front or upper section of an animal's body, containing mouthparts, sensory organs and brain or brain-like structures
<b>hearth stick</b>	a rod of suitable wood that has a small socket gouged into it for making fire
<b>heat</b>	a measure of the energy of an object due to the kinetic energy of the particles present; the amount of heat energy present is due to the number of particles, which influences the temperature measured
<b>heat absorption</b>	heat energy taken in by an object
<b>heat emission</b>	heat energy given off by an object as it cools
<b>heat energy</b>	a form of energy transferred between two regions of different temperatures
<b>heat transfer</b>	movement of heat energy from one place to another
<b>hectopascal (hPa)</b>	the international metric unit for measuring atmospheric pressure; 1 hectopascal equals 100 pascals
<b>heliocentric</b>	astronomical model where Earth and planets revolve around a stationary sun at the centre of the solar system
<b>helioseismology</b>	the study of the propagation of wave oscillations, such as acoustic pressure waves, of the sun
<b>hemisphere</b>	half of a sphere Earth is divided into the Northern and Southern Hemispheres
<b>herbivore</b>	an organism that feeds on plant matter
<b>herd immunity</b>	a level of immunity for individuals who are unable to be vaccinated, which is provided when a substantial proportion of a population is vaccinated against infectious diseases
<b>heredity</b>	the passing of traits from parents to their offspring through one or more generations
<b>heritable characteristic</b>	a characteristic that can be transmitted genetically
<b>hertz (Hz)</b>	official unit of frequency defined as cycles per second
<b>Hertzsprung-Russell (H-R) diagram</b>	a diagram that shows star categories by luminosity, size and type

<b>heterozygous</b>	having different alleles for a given gene
<b>heterozygous advantage</b>	when having the heterozygous genotype is more beneficial than having one or both homozygous genotypes
<b>high pressure system</b>	an atmospheric circulation that rotates anticlockwise in the Southern Hemisphere, generally associated with lighter winds and fine and settled conditions; sometimes referred to as an anticyclone
<b>hibernation</b>	a sleep-like state in which the body's metabolism slows for an extended amount of time, usually to survive harsh conditions such as cold winters when there isn't much food available
<b>homeostasis</b>	coordinated processes that maintain balance in the internal conditions of the body
<b>homologous chromosomes</b>	pair of chromosomes similar in length, each containing a set of genes for the same characteristics One chromosome from each pair is inherited from each parent.
<b>homozygous</b>	having the same alleles for a given gene
<b>horizon</b>	the line that forms an apparent boundary between earth and sky
<b>hotspot</b>	a volcanic region, far from tectonic plate boundaries, where magma rises through weak spots in the lithosphere and produces volcanoes on Earth's surface
<b>human impact</b>	changes in an environment as a result of human activity
<b>humane</b>	demonstrating compassion and sympathy to reduce or prevent any suffering of other organisms
<b>humus</b>	component of soil composed of broken-down plant and animal matter
<b>hydro (electrical) energy</b>	energy produced by harnessing the gravitational potential energy of falling water
<b>hydrology</b>	the science of groundwater location and water quality
<b>hydrosphere</b>	the sum of all water on the planet, including salt water, freshwater, ice and water vapour
<b>hypothalamus</b>	a small part of the lower-frontal area of the brain that functions in maintaining homeostasis; part of the endocrine system
<b>hypothesis</b>	a tentative idea or explanation for an on observation, which can be tested and either supported or refuted by investigation
<b>hypothesise</b>	to make a scientific prediction (hypothesis)
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<b>igneous rocks</b>	rocks formed from the cooling of molten rock
<b>immune system — 1st line of defence</b>	external barriers to disease such as the skin, mucosa and stomach acid
<b>immune system — 2nd line of defence</b>	non-specific internal barriers to disease such as the inflammatory response of macrophages

<b>immune system — 3rd line of defence</b>	specific internal barriers to disease, involving the production of antibodies in response to an infectious antigen and the production of memory cells to prevent future infection
<b>immunisation</b>	the process of becoming immune to or protected against a specific disease
<b>immunity</b>	the condition of being immune as a result of the body's response to being exposed to or vaccinated against a particular pathogen
<b>impact</b>	what occurs when a body in motion comes into contact with a body at rest or in motion
<b>impermeable</b>	does not allow fluids to pass through
<b>in-vitro fertilisation (IVF)</b>	a process where sperm and eggs are harvested, fertilised externally and reintroduced to the female reproductive tract as an embryo
<b>incident ray</b>	a ray of light falling onto the surface of a medium or an object such as a glass prism
<b>inclined plane</b>	a simple machine that consists of a plane surface tilted from horizontal
<b>independent assortment</b>	genetic process during meiosis, in which maternal and paternal chromosomes in each homologous pair separate independently of the other pairs, so gametes end up with a random distribution of alleles from each chromosome
<b>independent variable</b>	a variable that is changed in an investigation to see what effect it has on the dependent variable
<b>indicator</b>	a substance that undergoes a colour change when the acid or alkali conditions (pH) of a solution change
<b>indigestion</b>	discomfort in the upper abdomen from digestive acid contacting tissues beneath the protective mucous layer of the oesophagus, stomach or duodenum
<b>inertia</b>	the tendency of a body to remain at rest or to continue to move in a straight line unless acted on by an outside force
<b>infectious disease</b>	an illness caused by the presence or activity of a specific infectious agent, such as a microorganism
<b>influenza</b>	a virus that causes illness characterised by high fever, sore throat, cough, weakness, muscle and joint pain and headache
<b>informal measurement</b>	measurement that is not based on any agreed standard unit (e.g. hand spans, paces, cups)
<b>infrared</b>	electromagnetic radiation of wavelength greater than red visible light (750 nm) and less than that of microwaves (1 mm)
<b>infrasonic</b>	having a sound frequency lower than the audible range of humans
<b>ingot</b>	block of metal shaped for storage, transport or further processing
<b>inherit</b>	to receive genetic traits from parents
<b>injection</b>	the process of using a syringe and hollow needle to penetrate and transfer a fluid into a body

<b>inner core</b>	the centre of Earth, which is the hottest part and believed to be composed mainly of iron
<b>inoculate</b>	to boost immunity by administering a vaccine using any delivery medium (oral, aerosol, nanopatch, injection)
<b>input</b>	component that moves into a defined system
<b>inselberg</b>	an isolated hill or mountain arising from a plain, often heavily eroded; often formed from a mountain chain
<b>insoluble</b>	unable to dissolve more than 0.1 g/mL in a given liquid (usually water)
<b>instar</b>	the period between moults of an insect larva
<b>insulate</b>	to reduce or resist energy transfer
<b>insulation</b>	the process of reducing or slowing down energy transfer from one medium to another
<b>insulator</b>	a material that greatly inhibits the transfer of energy
<b>intensity</b>	the amount of energy per unit area at a particular distance from the source
<b>intergalactic</b>	between galaxies
<b>internal fertilisation</b>	the joining of male and female gametes inside the body of an organism
<b>interrelationships</b>	relationships that exist between two or more factors
<b>introduced species</b>	any living thing that is present in an area where it is not native
<b>intrusion</b>	where liquid rock has been pushed into cracks and spaces between other rocks in Earth's crust
<b>intrusive igneous rock</b>	a rock formed by magma cooling underground
<b>inverse</b>	relationship where one value increases while a compared value decreases
<b>invertebrate</b>	an animal without a backbone
<b>investigation</b>	a scientific process of answering a question, exploring an idea or solving a problem that requires activities such as planning a course of action, collecting data, interpreting data, reaching a conclusion and communicating these activities
<b>ion</b>	an atom or compound with a difference in the number of electrons and protons resulting in a charged particle
<b>ionic bond</b>	a chemical bond caused by the electrostatic attraction between oppositely charged ions
<b>ionic charge</b>	the electrical charge of an ion (see an <i>anion</i> and <i>cation</i> )
<b>ionic compound</b>	a compound made up of ions
<b>ionic formula</b>	the simplest whole number ratio of ions present in an ionic substance
<b>iron</b>	a metallic element, used in the production of steel

<b>irreversible change</b>	a reaction that cannot be reversed
<b>isobar</b>	a line joining places of the same atmospheric pressure on a weather map
<b>isolation</b>	where one process or system is not connected with another
<b>isotopes</b>	forms of an element with the same number of protons but a different number of neutrons
<b>IUU fisheries</b>	IUU (illegal, unreported and unregulated) fisheries: illegal fishing that takes place when fishing vessels operate in violation of the laws of a fishery
<b>J</b>  back	
<b>joule (J)</b>	unit of energy; defined as the amount of energy used when a force of one Newton is applied to an object to move it one metre
<b>K</b>  back	
<b>karyotype</b>	appearance (shape, size and number) of chromosomes in a cell
<b>kevlar</b>	synthetic fibre that is five times stronger than steel
<b>key</b>	a representation with criteria to assist in classification
<b>key species</b>	species that is the focus of a food web
<b>kiln</b>	a chamber used to heat materials
<b>kilojoule (kJ)</b>	a unit of energy, equal to 1 000 joules
<b>kinetic energy</b>	energy of motion in all forms of matter (e.g. objects, substances, molecules, atoms, electrons, waves)
<b>knot</b>	a unit of measurement often used to describe boat and wind speed; 1 knot is equal to 1.852 km/h
<b>Kup-murri</b>	an underground oven used by some Aboriginal peoples and Torres Strait Islander peoples
<b>L</b>  back	
<b>La Niña</b>	a natural cyclic weather pattern that brings rain to the east coast of Australia; occurs when the atmospheric pressure difference between Tahiti and Darwin tends to be positive
<b>labelled diagram</b>	a descriptive diagram with labelling to show specific parts
<b>labia majora</b>	the external folds of skin bordering the opening of the vagina
<b>labia minora</b>	the internal folds of skin bordering the opening of the vagina
<b>land</b>	the part of Earth's surface that is not water
<b>landslide</b>	downward sliding of a mass of earth and rock, usually over a confined area
<b>lanthanide</b>	an element with an atomic number between 57 and 71
<b>Large Hadron Collider (LHC)</b>	a large, underground facility set up to research particle physics
<b>larva (pl. larvae)</b>	early stage in the lifecycle of some organisms

<b>laser</b>	a device for producing light of discrete wavelength	
<b>latitude</b>	the number of degrees that a location lies north or south of Earth's equator	
<b>launch</b>	commencing the motion of a body	
<b>Laurasia</b>	one of two supercontinents formed by the separation of Pangaea	
<b>lava</b>	molten rock that flows from a volcano or from a crack in the earth	
<b>law</b>	statement of a relationship based on available evidence	
<b>law of conservation of energy</b>	states that energy cannot be created or destroyed, only changed from one form to another	
<b>leaf</b>	a specialised plant organ that is the main site for photosynthesis	
<b>leaf litter</b>	organic matter decaying on the ground under trees	
<b>lens</b>	a piece of transparent material used for changing the direction of light rays	
<b>lever</b>	a simple machine that consists of a rigid bar that pivots around a point	
<b>Lewis dot diagram</b>	diagrammatic representation of an atom's outer electron arrangement	
<b>life cycle</b>	representation of the stages of reproductive growth and development that lead to the continued survival of a species of organism	
<b>light</b>	a form of electromagnetic radiation visible to the naked eye	
<b>light curve</b>	a graph or plot of brightness data over time; used in the study of celestial objects that emit or reflect light	
<b>light energy</b>	electromagnetic energy that can be detected by the eye	
<b>light source</b>	anything that produces light	
<b>light year</b>	the distance travelled by light in one Earth year	
<b>lime</b>	common name used for calcium oxide or calcium hydroxide	
<b>limestone</b>	sedimentary rock made of lime-based minerals	
<b>liquid</b>	the physical state in which matter with a fixed volume takes the shape of its container	
<b>liquefaction</b>	process whereby water-saturated soil sediment loses strength and acts like a fluid after a force has been applied (such as the force from an earthquake)	
<b>lithosphere</b>	the rigid layer of Earth formed by the upper mantle and the crust	
<b>living</b>	displaying the common features of: being able to move, grow, sense and respond to stimuli, reproduce, excrete wastes; requiring nutrition and having cellular structure	
<b>load arm</b>	the component of a lever on which the object to be moved is placed	
<b>loam</b>	a fertile soil, usually a mix of clay, sand, silt and sometimes organic matter	
<b>local environment</b>	surroundings that can be considered as proximal or familiar to the subject of investigation	

<b>locus</b>	the position of a gene on a chromosome
<b>longline fishing</b>	a commercial fishing technique that uses a long line, called the main line, with baited hooks attached at intervals
<b>longitude</b>	the number of degrees that a location is east or west of the Royal Observatory, Greenwich, in London
<b>longitudinal wave</b>	an oscillation of particles parallel to the direction of the wave motion
<b>loudness</b>	the strength of a sound as it is heard
<b>low pressure system</b>	an atmospheric circulation that rotates clockwise in the Southern Hemisphere; generally associated with strong winds, unsettled conditions, cloudiness and rainfall
<b>luminosity</b>	a measure of the amount of light emitted by an object, usually expressed as a magnitude
<b>lunar calendar</b>	a calendar based on the moon's cycles
<b>lunar eclipse</b>	an eclipse that occurs when the moon passes directly behind Earth, into its shadow
<b>lunar libration</b>	<i>Astronomy:</i> a perceived oscillating motion of orbiting bodies relative to each other, e.g. the motion of the moon relative to Earth Lunar libration is distinct from the slight changes in the moon's visual size as seen from Earth.
<b>lunisolar calendar</b>	a calendar based on both lunar and solar cycles
<b>lustre</b>	the ability to reflect light and shine
<b>lymphocyte</b>	a white blood cell; exists as two main types: B cells that mature in the bone marrow and T cells that mature in the thymus
<b>lysosome</b>	a specialised organelle in a cell that contains enzymes that help digest food molecules and break down worn-out organelles and bacteria or viruses
<b>M</b>  <a href="#">back</a>	
<b>macrophage</b>	a specialised white blood cell that attacks foreign materials such as bacteria, viruses or particles invading the body
<b>Magellanic cloud</b>	a stream-like cloud of stars distributed more sparsely than those in a galaxy; more visible from the Southern Hemisphere
<b>magma</b>	a mixture of molten or semi-molten rock, volatiles and solids that is found beneath the surface of the earth
<b>magnetic field</b>	region affected by the attraction of a magnet
<b>magnetic striping</b>	stripes caused in rock when materials within magma align to Earth's magnetic field
<b>magnetism</b>	the force of attraction or repulsion between magnetic objects
<b>magnifier</b>	a device, such as a lens or microscope, used to make something appear larger than it is

<b>main sequence stars</b>	the 90 per cent of stars that fall into a band on a Hertzsprung-Russell diagram, which plots brightness against temperature or colour
<b>malleability</b>	ability to be shaped or deformed into sheets by application of pressure such as hammering
<b>managed environment</b>	an environment that is built, caused or controlled by humans
<b>mandibles</b>	the hard jaws of an insect, used for biting and grinding food
<b>mantle</b>	the viscous layer of Earth under the crust, comprised of two parts: an upper part that is less fluid and a lower part that is heated by the core, resulting in convection currents
<b>mantle plume</b>	an uprising of magma that is hotter than the surrounding Earth's crust, forming hotspots
<b>marine</b>	relating to or located in the sea
<b>mass</b>	the amount of matter in a body
<b>mass number</b>	the total of the number of protons and neutrons in an atom
<b>material</b>	a substance with particular qualities or that is used for specific purposes 
<b>materials science</b>	the study of the characteristics and uses of various materials
<b>materials scientist</b>	a scientist who studies materials science
<b>matter</b>	a physical substance; anything that has mass and occupies space 
<b>mechanical advantage</b>	the ratio of the output (load) force produced by a simple machine to the applied input (effort) force
<b>medium</b>	a substance or object through which energy may be conducted
<b>megafauna</b>	large or giant animal species; includes extinct species
<b>melting</b>	changing in state from solid to liquid
<b>melting point</b>	the temperature at which a substance changes from solid to liquid or vice versa
<b>menstrual cycle</b>	the complete fertility cycle that occurs in most female primates; includes menses and ovulation
<b>meiosis</b>	a special type of cell division resulting in the formation of gametes; produces cells with half the number of chromosomes of the parent
<b>mesophyll</b>	the soft tissue in a leaf that is between the upper and lower epidermis; contains high concentration of chloroplasts and is the major photosynthetic tissue in a plant
<b>metal</b>	an element that is solid at room temperature (except mercury), has metallic lustre, conducts electricity and heat when solid or molten and is ductile and malleable
<b>metalliferous</b>	contains metal that may be extracted
<b>metalloid</b>	an element that, under defined conditions, exhibits characteristics of both metals and nonmetals

<b>metallurgy</b>	the science of metals and alloys
<b>metamorphic rocks</b>	the class of rocks whose minerals and physical properties are changed due to heat and/or extreme pressure within Earth's crust
<b>metamorphosis</b>	<i>Biological sciences.</i> the complete change of physical form of an organism through its lifecycle <i>OR</i> <i>Earth and Space sciences.</i> change in igneous or sedimentary rocks resulting in metamorphic rock
<b>meteor</b>	the streak of light observed when a meteoroid begins to burn up in Earth's atmosphere
<b>meteorite</b>	a remnant of a natural object that enters Earth's atmosphere from space; burns due to friction and impacts Earth's surface
<b>meteoroid</b>	a small (less than 1 km in width) piece of rock or space debris
<b>meteorology</b>	the study of the atmosphere, with an emphasis on weather and climate
<b>meteorologist</b>	a scientist who studies meteorology
<b>metronome</b>	an inverted pendulum used to mark time by making regular, repeated sounds
<b>microgravity</b>	an environment of zero gravity or weightlessness
<b>microorganism</b>	an organism that is too small to be viewed with the naked eye and must be observed under microscopic magnification
<b>microscope</b>	a piece of equipment used for viewing enlarged images of specimens
<b>microscope slide</b>	a piece of thin glass that is used to place a specimen ready for viewing through a microscope
<b>midden</b>	a neat mound of waste created by Aboriginal peoples and Torres Strait Islander peoples in a selected area, consisting mainly of bones and shells left after eating
<b>mid-ocean ridge</b>	formed at a divergent plate boundary when tectonic plates move apart, allowing magma to rise to the surface and form undersea mountain chains
<b>Mid-Atlantic Ridge</b>	ridge on the sea floor in the Atlantic Ocean that stretches from Iceland to Antarctica; the ridge splits Europe from North America and South America from Africa
<b>migration</b>	the process of moving from one area, region or continent to another
<b>milling</b>	the process of using machines to crush or grind a solid substance to powder or to extract a liquid
<b>mineral</b>	naturally occurring elements or inorganic compounds that can have a crystalline state
<b>mineral exploration</b>	a series of processes used to locate minerals in such concentration as to support their extraction
<b>mineral processing</b>	processing rocks to separate minerals from other components of ore and to extract metals from these minerals

<b>mining</b>	extracting ores and minerals from Earth's crust
<b>mitochondria</b>	a specialised organelle of a cell that is the site of cellular respiration
<b>mitosis</b>	cell division including stages of DNA replication, resulting in two identical daughter cells
<b>mixture</b>	two or more substances combined with no fixed ratio
<b>model</b>	a representation that describes, simplifies, clarifies or provides an explanation of the workings, structure or relationships within an object, system or idea
<b>molecule</b>	a chemical unit consisting of two or more particles (atoms) that are joined
<b>momentum</b>	a measure of an object's tendency to continue motion; expressed as the product of an object's mass and velocity
<b>monohybrid</b>	an organism that is heterozygous for a particular gene
<b>monolith</b>	a tall block of solid stone standing by itself
<b>monomer</b>	a small, individual molecule that can bind to other molecules to form long chain polymers
<b>moon</b>	a natural satellite; a celestial body that orbits another body
<b>motion</b>	change in position of an object in relation to time
<b>multicellular</b>	composed of more than one cell
<b>multimodal text</b>	a text that combines two or more communication modes, for example, printed text, image and spoken word as in film or computer presentations
<b>mutation</b>	a permanent change that occurs to an organism's DNA
<b>mutualism</b>	close interaction between two species where both species benefit in some way
<b>N</b>  <a href="#">back</a>	
<b>nanopatch</b>	thousands of micro-projections coated with a vaccine, densely packed into a small silicon square. When applied to the skin, the vaccine is released directly into the epidermal and dermal cells.
<b>native species</b>	a species that occurs naturally in an environment without the deliberate or accidental introduction by humans or other species
<b>natural</b>	something that exists in or is formed by nature
<b>natural disaster</b>	a natural event that cause loss of life or economic damage
<b>natural environment</b>	an environment that exists in or is produced by nature, without massive human intervention
<b>natural materials</b>	products or physical matter that come from plants, animals or earth and have undergone very little modification by humans, [e.g.] minerals and the metals that can be extracted from them (without further modification) are considered natural materials

<b>natural selection</b>	an evolutionary mechanism that leads to changes in a species over time; individuals with adaptations to a particular set of environmental conditions are more likely to survive, reproduce and pass on these features to their offspring
<b>navel</b>	umbilicus; part of the body to which the umbilical cord was attached
<b>neap tide</b>	a tide that occurs when the sun and moon are at right angles to Earth, resulting in the least difference between high and low tide heights
<b>nebula (pl. nebulae)</b>	a cosmic cloud of dust and rocks left over from the demise of a star, e.g. supernova remnants or 'planetary' nebulae
<b>nervous system</b>	a coordinated group of organs and specialised cells that facilitate the actions of an organism through the transmission of signals throughout the body
<b>neutral</b>	<i>Physical sciences.</i> having no electric charge <i>Chemical sciences.</i> having a pH of 7
<b>neutralisation</b>	<i>Chemical sciences.</i> a reaction between an acid and a base to bring the pH of the resulting solution to 7
<b>neutron</b>	a neutral particle in the nucleus of the atom, of approximately the same size and mass as a proton
<b>neutron star</b>	a small, dense star remnant composed mainly of neutrons
<b>newton (N)</b>	a unit of measurement of force
<b>new moon</b>	a phase of the moon when the entire surface of the moon facing Earth is not lit and is therefore not easily visible from Earth
<b>nitrogen cycle</b>	a series of processes that describes the exchange and movement of nitrogen atoms within and between the 4 spheres of the planet
<b>noble gas</b>	unreactive gaseous elements that occupy Group 18 of the periodic table including helium, neon, argon, krypton, xenon and radon
<b>nocturnal</b>	describes animals that are most active during the night
<b>nomenclature</b>	a system of naming, e.g. compounds
<b>non-combustive</b>	tending not to burn in air
<b>non-heritable characteristics</b>	characteristics of an organism that are the result of factors not related to the genetic structure of an organism, e.g. hair length
<b>non-living</b>	does not display characteristics of living things
<b>non-metal</b>	an element that does not display the characteristics of metals, e.g. does not conduct electricity and heat when solid or molten (except graphite) and is not malleable or ductile
<b>non-renewable</b>	a natural resource that cannot be produced, grown or replaced for an indefinite period of time
<b>normal</b>	<i>Physical sciences.</i> an imaginary line perpendicular (90 degrees) to a surface
<b>nova</b>	a star that increases in brightness for an observable period

<b>north celestial pole</b>	point in the sky about which all the stars seen from the Northern Hemisphere appear to rotate
<b>nuclear</b>	to do with the atomic nucleus
<b>nuclear energy</b>	the energy stored in the nucleus of an atom. This energy may be released by nuclear reactions.
<b>nucleosynthesis</b>	the formation of atomic nuclei from protons and neutrons
<b>nucleotide</b>	a single unit of DNA
<b>nucleus</b>	<i>Chemical sciences.</i> the collection of protons and neutrons in the centre of an atom <i>OR</i> <i>Biological sciences.</i> a specialised organelle that is the site of cellular control and contains genetic material (DNA)
<b>numbers pyramid</b>	a graphical representation showing the total number of organisms at each trophic level within feeding relationships
<b>nutrient</b>	a substance contained in food and drink; used by the body for growth, life processes, maintenance and repair
<b>nymph</b>	larval stage of an organism that resembles an adult
<b>O</b>  back	
<b>obesity</b>	having an abnormally high level of body fat
<b>observatory</b>	a facility for observation, often based on telescopes, may be located on Earth or in orbit
<b>observable</b>	can be seen, heard, felt, tasted or smelled either directly by an individual or indirectly by a measuring device, for example, a ruler, camera or thermometer 
<b>observable feature</b>	a specific, physical characteristic that can be observed with our senses e.g. size, shape, colour, movement, weight, texture, parts
<b>observe/observation</b>	to examine and gather information using the senses (Students should not smell or taste a substance unless directed by their teacher.)
<b>ochre</b>	a reddish or yellowish earthy iron oxide, usually powdered and used as a pigment
<b>ochre mixture</b>	mixture of ochre powders and other substances such as plant sap, blood or water
<b>ocean trench</b>	a deep channel that forms when a continental plate and oceanic plate collide (converge) and the oceanic plate is pushed beneath the continental plate (subduction)
<b>offspring</b>	organisms resulting from reproduction
<b>oil (petroleum)</b>	hydrocarbon liquid from within the earth than can be used for fuel or making synthetic materials

<b>omnivore</b>	an organism that feeds on animal and plant matter
<b>opaque or opacity</b>	does not allow light to be transmitted
<b>open system</b>	a system that exchanges both matter and energy with the surrounding environment
<b>open-cut mine</b>	a mine where surface soil and rock is removed from above the ore body
<b>optics</b>	a branch of <i>Physical sciences</i> that deals with the properties of light
<b>orbit</b>	a circular or elliptical path over which a body such as a planet or satellite continually moves as it revolves around another body or point
<b>ore</b>	a rock that is rich in a mineral from which a metal or compound may be extracted in useable quantities
<b>organ</b>	a part of the body that has a specific function; usually made of more than one type of tissue
<b>organism</b>	a living thing that is composed of one or more cells and can function independently; can grow and develop, reproduce, respond to stimuli and maintain internal conditions through homeostatic processes
<b>organelle</b>	a specialised structure in a cell that is enclosed by a membrane and performs a specific function
<b>organic</b>	<i>Chemical sciences.</i> class of compounds that have a carbon backbone, originally derived from living or once-living things
<b>oscillation</b>	repetitive to-and-fro motion of an object or repetitive fluctuation in an electric or magnetic field
<b>outer core</b>	the liquid layer of Earth between the solid inner core and the mantle
<b>output</b>	component that moves out of a defined system
<b>ovary</b>	female reproductive structure in flowering plants and animals
<b>overactive immune system</b>	an immune system that has started attacking healthy tissue; known as autoimmunity
<b>ovipositor</b>	a special tube that certain insects use for laying eggs, located at the end of the female's abdomen
<b>ovule</b>	a little egg; the structure in seed plants that gives rise to the seed
<b>ovum (pl. ova)</b>	female germ cell
<b>oxidation</b>	the reaction of oxygen with another substance in a chemical reaction
<b>P</b>  back	
<b>Pacific Ring of Fire</b>	area in and surrounding the Pacific Ocean where volcanic eruptions and earthquakes occur
<b>palaeontology</b>	the study of prehistoric life including fossils
<b>pandemic</b>	the spread of an infectious disease to populations on every inhabited continent

<b>Pangaea</b>	the original supercontinent containing the entire land mass of Earth; initially divided into two smaller supercontinents, Laurasia and Gondwana
<b>parasitism</b>	close relationship between two species where the parasite exploits the resources of a host; the host is negatively affected yet usually does not die
<b>parent element</b>	the original radioisotope that undergoes a nuclear reaction
<b>parhelia</b>	bright circular spots on a solar halo, next to the sun; usually two on opposite sides of the halo
<b>particle</b>	a small, localised piece of matter to which physical properties can be ascribed
<b>particle model</b>	a model used by scientists to explain the properties of matter; also referred to as particle theory
<b>pathogen</b>	an infectious agent that causes disease in the organism it infects; includes bacteria, viruses and fungi
<b>pattern</b>	a repeated occurrence or sequence
<b>pedigree</b>	a family tree that outlines the details of a particular characteristic or the presence of a disease over multiple generations
<b>pedosphere</b>	the interactive interface (soil layer) of the lithosphere, atmosphere, hydrosphere and biosphere
<b>pendulum</b>	object suspended from a support so that it can swing freely under the influence of gravity
<b>penis</b>	the male reproductive organ of animals
<b>penumbra</b>	the part of a shadow where some light from the light source is obscured
<b>period</b>	<i>Chemical sciences.</i> a row across the periodic table <i>Physical sciences.</i> the interval of time required for a cyclic motion or phenomenon to complete a <i>cycle</i>
<b>periodic table</b>	an arrangement of elements according to their atomic numbers so that elements with similar properties are grouped together
<b>periscope</b>	a tube-shaped implement containing reflective surface that allows the viewing of an object that is not in the direct line of sight
<b>permeable</b>	allows fluids to pass through
<b>pest</b>	a living thing that is destructive or considered a nuisance
<b>PETE</b>	polyethylene terephthalate(PETE/PET) is a form of recyclable polyester
<b>pH</b>	a measure of the degree to which a substance is acidic or basic; stands for 'power of hydrogen'
<b>phagocyte</b>	white blood cell that ingests microbial invaders in the body
<b>phagocytosis</b>	the process by which a cell engulfs a solid particle
<b>pharmaceutical</b>	compound or mixture prepared for medicinal purposes

<b>phase</b>	a state of matter in which a substance can be defined by volume and shape, e.g. liquid, gas, solid
<b>phase change</b>	change of state between solid, liquid or gas
<b>phenotype</b>	observable feature resulting from an individual's combination of alleles for particular traits
<b>phloem</b>	a group of cells in vascular plants responsible for transporting the products of photosynthesis and other metabolic processes to growing tissues and storage tissues
<b>phosphorus cycle</b>	a series of processes that describes the exchange and movement of phosphorus atoms through the four spheres of Earth
<b>photon</b>	a discrete packet of electromagnetic radiation energy
<b>photosynthesis</b>	a chemical reaction within chloroplasts that uses carbon dioxide, water and light to produce glucose and oxygen (compare with <i>chemosynthesis</i> )
<b>phylogenetic tree</b>	chart or diagram showing the genetic relationships among all living things
<b>physical weathering</b>	the breaking down of rocks without changing their chemical composition, also called mechanical weathering
<b>physical change</b>	a change in the physical properties of a substance without changing its chemical composition
<b>physical properties</b>	measurable properties of a substance that can be observed or examined without changing the composition of the substance, e.g. melting/boiling points, hardness, strength, specific heat, conductivity
<b>phytoplankton</b>	microscopic photosynthetic organisms that float in the upper sunlit layers of oceans, seas and freshwater basins; producers in many aquatic food chains/food webs; a source of food for higher order organisms
<b>piezoelectric</b>	electrically operated device such as a buzzer; uses a layer of metal against a layer of ceramic to vibrate at high frequency
<b>pigment</b>	a substance that gives colour; usually added to paint or ink, often a dry powder
<b>pinhole camera</b>	a darkened box or space that allows light through a very small hole and projects an inverted image on a surface opposite the hole
<b>pistil</b>	the female reproductive organ of a flower; consists of stigma, style and ovary
<b>pitch</b>	<i>Physical sciences.</i> the apparent predominant frequency of a sound; frequency of an electrical pulse
<b>pivot</b>	a point or shaft on the end of which something rests and turns; the action of turning on that point
<b>plane mirror</b>	a mirror with a flat reflective surface
<b>planet</b>	a mostly spherical celestial body that orbits a star in a path that it has cleared of other objects

<b>plant</b>	a multicellular organism that belongs to the kingdom Plantae; a producer, capable of synthesising organic compounds (e.g. glucose) through photosynthesis
<b>plant medium</b>	type of soil or substance used for plant growth
<b>plastic</b>	a general term for a group of synthetic polymers
<b>plate boundary</b>	the place where lithospheric plates meet; types of plate boundaries are convergent, divergent and transform
<b>plate tectonics</b>	theory that describes how Earth's crust is divided into several plates; accounts for continental movement and associated events such as earthquakes and volcanoes
<b>pliable</b>	property of being flexible or easily bent
<b>poaching</b>	illegal catching of fish or animals in an area that is under official protection
<b>polarity</b>	<i>Physical sciences.</i> direction in which the poles of an electric circuit or magnetic field are arranged
<b>pole</b>	<i>Earth sciences.</i> a point at the southern or northern end of Earth's axis of rotation, or that of another planetary or celestial sphere
<b>pollen</b>	a small grain with a hard coat that houses and protects the male gamete (sperm) in plants
<b>pollen tube</b>	the tube through which sperm can move to reach ovaries in seed plants
<b>pollination</b>	the transfer of pollen from the anther of one flower to the stigma of the same or a different flower
<b>pollutant</b>	a substance or object that has harmful or poisonous effects on an environment
<b>pollution</b>	the presence of a substance or object that has harmful or poisonous effects to an environment
<b>polymer</b>	a large molecule containing repeating units
<b>polymerisation</b>	a chemical reaction in which two or more monomers bond together to form polymer chains or three-dimensional networks
<b>polymer slime</b>	a gel made from a polymer substance
<b>population</b>	the number of organisms of the same species within a defined area
<b>population dynamics</b>	the factors and processes that impact on population numbers
<b>post-harvest</b>	procedures followed after crops have been collected
<b>potable</b>	safe to drink
<b>potential energy</b>	stored energy, such as chemical, gravitational or elastic energy, available to be converted to other forms
<b>precipitate</b>	<i>Chemical sciences.</i> a solid ionic compound that is not water soluble and is produced when two water-soluble ionic compounds are mixed <i>OR</i> <i>Earth sciences.</i> condensed water vapour in the atmosphere that falls to the earth

<b>precipitation</b>	<i>Chemical sciences.</i> the formation of a solid from a solution during a chemical reaction <i>OR</i> <i>Earth sciences.</i> the condensation of water vapour in the atmosphere that falls to Earth
<b>predation</b>	biological relationship where one species (predator) feeds on another (prey)
<b>predator</b>	a species of organism that hunts, captures and consumes another species
<b>predator-prey relationship</b>	the interaction between organisms where one organism consumes another
<b>pressure</b>	measure of force per unit area; standard unit is N/m <sup>2</sup> or Pascal (Pa)
<b>pressurised</b>	at a pressure greater than atmospheric pressure
<b>prey</b>	an organism that is hunted and consumed by another; to hunt and kill for food
<b>primary source</b>	information created by the person or persons directly involved in a study or observing an event
<b>primordial</b>	from the beginning of time
<b>proboscis</b>	a long, drinking-straw-like tube in invertebrates used for sucking up liquids such as nectar
<b>processed materials</b>	products of physical matter that have been modified from natural materials by human intervention or that do not occur at all in the natural environment, but have been designed and manufactured to fulfil a particular purpose
<b>producer</b>	an organism that makes biomass from inorganic compounds
<b>product</b>	substance produced as the result of a chemical reaction
<b>products of living things</b>	things made by living organisms as part of the process of living but which are themselves not living, e.g. scat, honey, milk, spider web, silk
<b>prokaryote</b>	a unicellular organism in which the cell does not contain membrane-bound organelles; some prokaryotes form colonies, while others are solitary
<b>proleg</b>	a suction-cup-like pad found on many caterpillars and other larvae, which help them grip onto plants
<b>property</b>	an attribute of an object or material, normally used to describe attributes common to a group
<b>prospect</b>	to search for valuable minerals or artefacts in the earth
<b>prostate</b>	a gland in human males that secretes an acid-neutralising component of semen
<b>protective behaviour</b>	a behavioural adaptation of an animal to protect or defend itself
<b>protein</b>	a nutrient used by the body for growth and maintenance
<b>protist</b>	a group of simple unicellular eukaryotic microorganisms that belong to the kingdom Protista

<b>proton</b>	a positively charged particle in the nucleus of an atom
<b>protostar</b>	a mass of dust and gas accumulated by gravity prior to becoming a star
<b>pulley</b>	a simple machine that changes the direction of an applied force; consists of a wheel with an indented rim for carrying a line or rope
<b>pulp</b>	soft, wet material produced when recycling paper
<b>pulsars</b>	neutron stars that emit strong electromagnetic radiation, observable at regular intervals as a pulsation
<b>pupa (pl. pupae)</b>	the middle stage of a lifecycle between larva and adult
<b>pupate</b>	to develop into a pupa
<b>pure substance</b>	a substance that has distinct properties and constant composition
<b>PVC</b>	polyvinyl chloride (PVC) is a recyclable plastic made from vinyl chloride
<b>Q</b>  back	
<b>quadrant</b>	<i>Earth and Space sciences.</i> an instrument once used to navigate using the sun or other stars by determining elevation  OR equivalent to a quarter of a circle
<b>quadrat</b>	a small plot used in a data collection method that involves the use of a grid placed on the ground at random points within a defined study area
<b>qualitative data</b>	information that is not numerical in nature 
<b>quantitative data</b>	numerical information 
<b>quarantine</b>	the isolation of an organism with an infectious disease to prevent it spreading to the rest of the population
<b>quarrying</b>	a process of recovering stone from the earth, often for construction
<b>R</b>  back	
<b>radiation</b>	the emission and propagation of particles and waves
<b>radioactive decay</b>	natural change in the composition of an atomic nucleus; the process by which radioisotopes decay and emit radiation
<b>radioactivity</b>	one of the properties of a radioisotope involving spontaneous disintegration
<b>radiocarbon</b>	an isotope of carbon that is radioactive; usually refers to carbon-14
<b>radiocarbon dating</b>	a method of determining the age of an artefact based on the relative quantity of carbon-14 isotope
<b>radioisotope</b>	an isotope that is subject to radioactive decay
<b>rainwater tank</b>	large container to collect and store rainwater
<b>rainbow</b>	a multicoloured arc of light caused by the refraction, reflection and dispersal of light in water droplets

<b>random error</b>	unknown and/or unpredictable event that influences collected data
<b>rarefaction</b>	area of low density between two areas of high density in a longitudinal wave
<b>rate of reaction</b>	a measure of the change of amounts of reactants and products as a chemical reaction progresses
<b>ray</b>	a line along which light is transmitted, theoretically of no width
<b>ray diagram</b>	a diagram that uses lines and arrows to show the path light takes
<b>reactant</b>	a starting substance in a chemical change or reaction
<b>reaction</b>	<i>Chemical sciences.</i> a process where the chemical bonds in reacting substances are broken and reconfigured to produce different chemicals <i>Physical sciences:</i> the resultant change in speed, direction or shape when a force is applied to an object or substance
<b>reactivity</b>	the tendency of a substance to undergo chemical change either by itself or in the presence of other substances
<b>recessive</b>	masked by a dominant allele
<b>reclaimed substance</b>	the substance retrieved from a mixture after using a separation technique
<b>recyclable</b>	can be reused or processed for reuse
<b>recycle</b>	to prepare for a second use; to make a new product from something that has already been used; see <i>reuse, reduce</i>
<b>red giant</b>	a star that had increased in size after the main sequence
<b>red shift</b>	the effect where the spectra of objects moving away from the observer have a greater proportion of red than they would if their position did not change
<b>reduce</b>	use less of a resource to be more sustainable
<b>reflected ray</b>	ray of light reflected from an object
<b>reflection</b>	the casting back or change in direction of light, heat or sound after striking a surface
<b>reflect on</b>	think carefully about something, such as past experiences, activities or events 
<b>reflectivity</b>	a material's ability to reflect energy
<b>refracted ray</b>	ray of light that changes direction as it travels from one medium to another
<b>refraction</b>	the change in direction of light, heat or sound as it passes from one medium to another
<b>refractive index</b>	a property of a material that determines the amount of light being bent as it passes from one medium to another
<b>regolith</b>	a region of loose rock and soil that lies above bedrock
<b>rehabilitation</b>	the process of restoring appropriate land surface, water flow and plant and animal life to an area from which those things had been removed
<b>relationship</b>	a connection or association between ideas or between components of systems and structures 

<b>relative atomic mass</b>	the average mass of all isotopes of an element relative to the atomic mass of carbon
<b>reliability</b>	the extent to which repeated observations and/or measurements taken under identical circumstances will yield similar results 
<b>reliable data</b>	data that has been judged to have a high level of reliability; reliability is the degree to which an assessment instrument or protocol consistently and repeatedly measures an attribute achieving similar results for the same population 
<b>renewable</b>	a natural resource that can be produced or grown and continuously replaced for an indefinite period of time
<b>repeat unit</b>	<i>Chemical sciences.</i> repeated segments along the polymer chain
<b>repel</b>	to exert a force that pushes objects apart
<b>report</b>	a written account of an investigation 
<b>reproduction</b>	the process of organisms generating offspring to continue the existence of the species
<b>research</b>	to locate, gather, record and analyse information in order to develop understanding 
<b>resin</b>	non-volatile solid or semisolid obtained from certain plants
<b>resistance</b>	the ability to resist an effect, e.g. the degree to which a material resists the transfer of energy
<b>resolution</b>	the degree to which individual details can be discerned in an image
<b>resonance</b>	the natural frequency of vibration of a material or substance
<b>resource</b>	a source of materials and energy that can be used
<b>respiration</b>	the chemical process occurring in cells where carbohydrates react with oxygen to release energy, producing carbon dioxide and water as waste products
<b>respiratory system</b>	a coordinated group of organs that facilitate the intake of oxygen and removal of carbon dioxide from the body
<b>reuse</b>	use again for the same or a different purpose
<b>revegetation</b>	plants regrown in an area either through natural succession or by planting
<b>reverberate</b>	to repeatedly echo
<b>reversible change</b>	a reaction in which the products can be easily converted back to reactants
<b>revolve</b>	to move around another object or point
<b>ribosome</b>	a specialised organelle of a cell that is the site of protein synthesis
<b>rift valley</b>	a valley formed as a result of the boundaries of lithospheric plates moving in opposing directions, leading to the separation of the plates either in part or completely

<b>rill erosion</b>	removal of weathered material by water running in rivulets
<b>rock</b>	typically hard, naturally occurring mass of minerals
<b>root</b>	underpart of a plant that supports and secures the plant to the ground or to a growing surface and absorbs water and nutrients
<b>rotate</b>	to spin on its own axis
<b>rotation</b>	one complete turn of a body on its axis
<b>runner</b>	a vine, creeping plant, or slender trailing branch of a plant that takes root at joints along its length or end to form new plants
<b>rust</b>	a compound resulting from the reaction of iron with oxygen in the presence of water; to form rust
<b>S</b>  <a href="#">back</a>	
<b>safety switch</b>	a switch, either automatic or manually controlled, to cut off electrical power
<b>salinity</b>	a measure of the amount of dissolved salt in a solution
<b>salt</b>	an ionic compound that is a combination of a metal element with a non-metal element
<b>salt water</b>	a mixture of dissolved salt and water
<b>Sankey diagram</b>	a graphical representation of energy movement through and out of a system
<b>satellite</b>	a celestial body (man-made or natural) orbiting a planet or star
<b>scale (on a map)</b>	the ratio of a distance on the map to the corresponding distance on the ground
<b>scat</b>	animal faeces
<b>scatter</b>	the spreading of light over a range of directions when passing through a medium
<b>scavenger</b>	an organism that consumes dead or decaying biomass
<b>science</b>	knowledge gained through observations and/or studies about the physical and natural world and phenomena
<b>scientific language</b>	terminology that has specific meaning in a scientific context 
<b>scientific literacy</b>	an ability to use scientific knowledge, understanding, and inquiry skills to identify questions, acquire new knowledge, explain science phenomena, solve problems and draw evidence-based conclusions in making sense of the world, and to recognise how understandings of the nature, development, use and influence of science help us make responsible decisions and shape our interpretations of information 
<b>scientist</b>	a person who works within a recognised field of science 
<b>screening</b>	a test to detect the early stages or potential to develop a disease
<b>screw</b>	a simple machine consisting of an inclined plane wrapped around a shaft
<b>sea floor spreading</b>	process in which new oceanic crust is formed; occurs at mid-ocean ridges due to volcanic activity

<b>sea water</b>	water that contains dissolved salts, forming the oceans
<b>season</b>	a part of the year marked by noticeable changes to weather occurring on an annual cycle, e.g. winter, wet season
<b>season creep</b>	where weather associated with particular seasons is observed to be occurring earlier or later in the year than usual
<b>secondary source</b>	information that has been compiled from primary sources by a person or persons not directly involved in the original study or event 
<b>sediment</b>	solid particles that settle out of a liquid mixture
<b>sedimentary rocks</b>	rocks formed by the natural cementation of weathered rock grains and precipitated minerals, often occurs under pressure
<b>sedimentation</b>	the process of depositing sediment through the settling of solid particles from a liquid mixture
<b>seed</b>	a plant structure containing the embryo and food reserves, used for reproducing new plants
<b>seedling</b>	a young plant grown from seed
<b>seed pod</b>	a capsule containing the seed or seeds of a plant
<b>seismic survey</b>	using the reflection of sound waves to locate structures such as ore bodies below Earth's surface
<b>seismograph (or seismometer)</b>	a device that measures the intensity and duration of earthquakes
<b>senses</b>	hearing, sight, smell, touch and taste 
<b>sepals</b>	modified leaves at the base of the petals of a flower
<b>series</b>	multiple items arranged successively
<b>sex-linked trait</b>	a trait resulting from a gene on the X or Y chromosome
<b>shadow</b>	the dark or partially dark area where light has been blocked by an object
<b>shelter</b>	a structure that provides protection from sunlight, weather or other environmental conditions
<b>shoot</b>	a newly grown part of a plant, e.g. young branch or leaf bud
<b>sieving</b>	separating larger-sized particles from smaller-sized particles using a mesh that allows smaller particles to pass through
<b>silt</b>	granular component of soil with particles larger than clay but smaller than sand
<b>simple circuit</b>	an electrical circuit consisting of a power source, two wires and a load (e.g. light bulb, buzzer)
<b>simulation</b>	a representation of a process, event or system that imitates the real situation 
<b>sink</b>	<i>Physical sciences.</i> to move down, below the surface of a fluid <i>OR</i> <i>Earth and space sciences.</i> a reservoir that accumulates and stores something; see <i>store</i>

<b>skin</b>	the natural external covering of some organisms
<b>smelting</b>	a heat-based process to separate metal from other substances in ore
<b>soak</b>	to be immersed in a liquid
<b>soil</b>	a thin layer of material, composed mostly of mineral particles, organic matter, organisms, air and water, covering land surfaces
<b>soil degradation</b>	the reduction in soil quality (physical and chemical structure and biological content) as a result of poor management during agricultural, pastoral, industrial or urban use
<b>soil erosion</b>	the movement of soil from its location by wind, water or ice
<b>soil profile</b>	a vertical view of the soil from the surface down to the bedrock, composed of layers or horizons, that is used to provide information about the composition of a soil and its geological history
<b>solar storm</b>	a large stream of charged particles ejected from the surface of the sun
<b>solar calendar</b>	a calendar based on the sun's cycles
<b>solar eclipse</b>	an event that occurs when the moon passes between the sun and Earth, and the moon fully or partially blocks the sun
<b>solar energy</b>	energy from the sun
<b>solar flare</b>	a sudden brightening observed over the sun's surface
<b>solar system</b>	a set of planets revolving around a star
<b>solar wind</b>	a stream of charged particles ejected from the upper atmosphere (corona) of the sun
<b>solid</b>	state of matter with a fixed volume and shape regardless of the container
<b>solidify</b>	to change state from liquid to solid
<b>solstice</b>	an event observable each winter and summer where the day is the shortest or longest in the year because of Earth's place in orbit with respect to the sun
<b>solubility</b>	the amount of a substance that dissolves at a defined temperature to form a solution, measured in g/100 mL
<b>soluble</b>	able to dissolve more than 1 g/100 mL in a given solvent (usually water)
<b>solute</b>	a substance dissolved in solvent, forming a solution
<b>solution</b>	<i>Chemical sciences.</i> a mixture composed of a solute dissolved in a solvent
<b>solvent</b>	a liquid, solid or gas that dissolves another liquid, solid or gas, resulting in a solution
<b>somatic cell</b>	any cell in a multicellular organism other than gametes
<b>sound energy</b>	vibrations transmitted through a medium, with frequencies capable of being heard
<b>soundproofing</b>	the practice of minimising unwanted sounds in a part of a structure

<b>source</b>	the point or thing from which something originates, e.g. sources of water, light or sound
<b>south celestial pole</b>	the point in the observable sky that would appear directly overhead to an observer at the South Pole
<b>speciation</b>	the process by which a new genetically different species evolves from a main species, usually due to genetic isolation
<b>species</b>	a group of organisms with common characteristics and which is capable of breeding and producing fertile offspring
<b>spectrometer</b>	an instrument for analysing light
<b>spectrum, spectra</b>	a set of electro-magnetic wavelengths that relate, e.g. visible spectrum and hydrogen spectrum are subsets of the full electromagnetic spectrum
<b>spectral line</b>	a bright or dark line representing a single wavelength that forms when light is absorbed or emitted by atoms due to the movement of electrons
<b>spectroscope</b>	an instrument designed to split light from a source into its individual component wavelengths providing information about the arrangement of electrons in the source material
<b>sperm</b>	a specialised male reproductive cell
<b>sphere</b>	<i>Earth sciences.</i> one of the four interacting systems (lithosphere, atmosphere, hydrosphere and the biosphere) that together form Earth's system  <i>OR</i> <i>Physical sciences.</i> a round, three-dimensional shape that appears circular when viewed from any angle
<b>spin-off</b>	technologies developed as part of one project that are found to be useful in others; a derivative work
<b>spiracle</b>	a special opening in an organism's body through which air and water pass in the process of breathing
<b>spore</b>	a specialised structure from which bacteria, ferns, algae and fungi reproduce
<b>spring</b>	<i>Earth sciences.</i> the season after winter but before summer  <i>OR</i> <i>Physical sciences.</i> a coiled strip of material, usually wire, which recovers its shape after it has been deformed
<b>spring balance</b>	a machine that measures an applied force
<b>spring constant</b>	a value denoted to an elastic material or coiled object, representing the amount of force per metre of stretch
<b>spring tide</b>	an exceptionally high tide that occurs at the time of the new moon or the full moon when the sun, moon and Earth are aligned, resulting in the greatest difference between high and low water levels
<b>stable isotope</b>	an isotope that is not subject to radioactive decay

<b>stamen</b>	the male reproductive structure of a flower, consisting of the filament and the anther
<b>star</b>	a very large ball of mostly hydrogen gas that produces large amounts of energy and light through nuclear fusion over an extended period of time
<b>star-forming region</b>	a region in the universe where stars are observed to be forming
<b>starch grain</b>	a small, granular structure that acts as an energy storage unit in the different parts of a plant
<b>state of matter</b>	whether matter is solid, liquid, gas or plasma
<b>static charge</b>	electrical charge that is applied in the absence of a circuit
<b>steel</b>	an iron-based alloy that is used extensively in industry and construction
<b>stellar</b>	to do with a star or stars
<b>steam</b>	water in the form of gas or vapour, formed when water changes from liquid to gaseous state during boiling
<b>stem</b>	a plant structure that supports other parts of the plant
<b>stigma</b>	the sticky tip of a pistil where pollen is deposited; part of the female reproductive structure of a flower
<b>stimulus</b>	something detectable to which an organism responds
<b>stoma or stomata</b>	a tiny pore or opening mostly found in the lower epidermis of leaves that allows gas exchange and transpiration of water (plural: stomata); surrounded by two specialised guard cells that open and close the pore due to water pressure in the cells
<b>store</b>	<i>Earth sciences.</i> a reservoir of matter found in the spheres of Earth
<b>strata</b>	layers of rock or sediment that are distinctively different in composition and are deposited in horizontal beds one after the other
<b>streak</b>	the colour of a crushed mineral's powder, left behind when the mineral is rubbed on an unglazed porcelain tile or streak plate  Unlike a mineral's apparent colour, the streak has a consistent colour and often shows the mineral's true colour.
<b>strength</b>	the ability to resist force
<b>stretch</b>	to pull an object taut, extending or lengthening it
<b>strong acid</b>	an acid that completely ionises when dissolved in water
<b>structural adaptation</b>	a physical trait of an organism that increases its chance of survival, e.g. size, bone structure, ability to stand upright
<b>style</b>	the narrow stalk of the pistil, located above the ovary but below the stigma; part of the female reproductive structure of a flower
<b>subatomic particles</b>	components of an atom that are smaller than the atom, e.g. protons, neutrons and electrons

<b>subduction zone</b>	formed where oceanic crust meets continental crust, causing less dense continental crust to override denser oceanic crust
<b>sublimation</b>	change of state from solid to gas without passing through a liquid state
<b>subsoil</b>	layer of soil between topsoil and bedrock, containing sand, silt and clay but no humus
<b>summer</b>	usually the hottest season, occurs after spring but before autumn
<b>sun</b>	closest star to Earth
<b>sundog</b>	appears as bright light adjacent to the sun; when sunlight is refracted through ice crystals suspended in the atmosphere. They are officially known as solar parhelia.
<b>sunspot</b>	a dark spot that appears on the surface of the sun and is associated with intense magnetic activity and solar flares
<b>supermassive star</b>	stars in the largest size range, e.g. thirty times the size of the sun
<b>supernova</b>	an enormous explosion at the end of the life cycle of larger stars
<b>supernova remnant</b>	a nebula or other collection of material left over from a supernova explosion
<b>surface area</b>	<i>Chemical sciences.</i> the area of a substance that is available for contact with other substances
<b>surface water</b>	water found on the surface of a planet, e.g. in a stream, lake or in the ocean
<b>survey</b>	an investigation method involving asking questions of a range of respondents  <i>Earth sciences.</i> an investigation designed to collect geophysical data about the physical properties of rocks at or below Earth's surface (e.g. density, magnetic properties, electrical conductivity, radioactivity, seismic); or geochemical data (chemical analysis of rocks, soils, water or vegetation)
<b>suspension</b>	<i>Chemical sciences.</i> solid particles suspended in a liquid
<b>sustainable</b>	supports the needs of the present without compromising the ability of future generations to support their needs 
<b>swing</b>	to move or cause something to move to and fro, back and forth, or round and round while suspended
<b>switch</b>	<i>Physical sciences.</i> a device that allows electrical current to be turned on or off
<b>synoptic data</b>	surface weather observations and data including state of the sky, cloud height, atmospheric pressure, temperature, dew point, wind speed and direction, amount of precipitation
<b>synthetic</b>	a substance, material or product produced by humans
<b>system</b>	a group of interacting objects, materials or processes that form an integrated whole 
<b>systematic error</b>	innate, repeatable error in a measuring instrument or procedure that impacts on its accuracy

<b>table</b>	an arrangement of data or ideas in rows and columns	
<b>target species</b>	the sought-after species of a commercial enterprise such as fishing	
<b>taxonomy</b>	the science of grouping organisms based on common characteristics and naming them	
<b>technology</b>	development of products, services, systems and environments, using various types of knowledge, to meet human needs and wants	
<b>tectonic plate</b>	a section of the lithosphere that moves over the asthenosphere	
<b>telescope</b>	an observation instrument that uses electromagnetic radiation, generally visible light to detect distant objects	
<b>temperature</b>	a measurement of how hot something is using a defined scale	
<b>tensile strength</b>	measure of the ability to resist tearing or stretching under tension	
<b>testicle (pl. testes)</b>	male sex gland that produces sperm, found in the scrotal sac	
<b>textile</b>	raw material that is used for making fabrics; cloth that is woven, knitted or manufactured	
<b>texture</b>	a property of the surface of a material or object, e.g. rough, smooth, woven	
<b>theory</b>	an explanation of a set of observations that is based on one or more proven hypotheses, which has been accepted through consensus by a group of scientists	
<b>thermal conductivity</b>	the degree to which a substance allows the transfer of heat energy	
<b>thermal conductors</b>	materials that allow the movement of heat	
<b>thermal energy</b>	the energy generated by the movement of atoms within an object or substance; also known as heat energy	
<b>thermal insulation</b>	the decrease in the transfer of heat energy from one body to another; caused by thermal insulators	
<b>thermal insulator</b>	material that slows the transfer of heat from one body to another	
<b>thermograph</b>	visual representation of temperature differences; often used to identify sea surface temperature	
<b>thermohaline circulation</b>	major global ocean current that is driven by density variations caused by differences in salinity and temperature	
<b>thermometer</b>	calibrated instrument used for measuring temperature	
<b>thermoplastic</b>	a plastic that can be moulded when heated	
<b>thorax</b>	the portion of a body found between the head and the abdomen	
<b>threatened species</b>	a species that has a medium to high risk of becoming endangered in the near future	
<b>tidal energy</b>	energy produced by harnessing the kinetic energy in the motion of tides	

<b>tilt</b>	to cause to lean, incline, slope or slant
<b>timeline</b>	representation of a period of time showing important events
<b>tissue</b>	<i>Biological sciences.</i> a group, layer or collection of similar cells working together
<b>titration</b>	a laboratory method used to determine the unknown concentration of a substance in solution
<b>tools</b>	equipment used to make a task easier 
<b>topsoil</b>	the top layer of soil containing varying amounts of sand, silt, clay and humus
<b>toxic</b>	poisonous
<b>toxin</b>	poisonous substance produced by biological organisms or artificially that is detrimental to health
<b>trait</b>	<i>Biological sciences.</i> an inheritable characteristic
<b>trajectory</b>	the path taken, or to be taken, by a projected body
<b>transducer</b>	a device that receives energy from one medium and supplies related energy to another medium, e.g. sound energy to electrical energy
<b>transect</b>	<i>Biological and Earth sciences.</i> data collection method that involves the sampling of specific observations along a line; used when changes in vegetation or altitude occur within a study area
<b>transfer</b>	movement through a medium, e.g. the movement of energy
<b>transform plate boundary</b>	place where tectonic plates move sideways past each other, e.g. San Andreas Fault
<b>transformation</b>	<i>Physical sciences.</i> process where energy is converted from one form to another  <i>OR</i> <i>Biological sciences.</i> change in appearance during a life cycle, e.g. larva to pupa
<b>transit</b>	<i>Space sciences.</i> describes the movement of a small object (e.g. a planet) across the face of a larger object (e.g. a star) as viewed from a position, generally Earth
<b>translocation</b>	when a segment of DNA attaches to a different place, e.g. a segment from one chromosome of a pair attaches to the other chromosome of the pair
<b>translucent</b>	transmits light diffusely
<b>transmission</b>	the passing of infectious diseases through a population
<b>transmit</b>	to pass along or through something, e.g. sound, light and heat can be transmitted
<b>transparent</b>	property of a material that allows the direct transmission of light rays so objects can be directly seen through the material
<b>transpiration</b>	the loss of water from plants

<b>transverse wave</b>	waves in which particles oscillate perpendicular to the direction of wave motion
<b>trawling</b>	the practice of fishing using a net along the sea floor
<b>trend</b>	general direction in which something is changing 
<b>trophic level</b>	the energy position or feeding position that an organism occupies in a food chain
<b>trough</b>	the lowest point that particles reach in each oscillation of a wave as represented on a waveform diagram
<b>trunk</b>	woody main stem of a tree or shrub
<b>tsunami</b>	a large-volume, destructive ocean wave caused by an underwater earthquake or mass movement such as a landslide
<b>tuber</b>	an underground part of a plant (e.g. stem or root) used as a food reserve or for reproducing new plants
<b>turbidity</b>	clarity or cloudiness of a body of water as a result of suspended material
<b>turbine</b>	a propeller-type device that produces rotational energy
<b>Tyndall effect</b>	the scattering of light by particles in a solution, e.g. light is scattered by the particles of a colloid
<b>U</b>  <a href="#">back</a>	
<b>ultrasonic</b>	sound waves with frequencies above the maximum audible frequency of 20 kHz in humans
<b>ultraviolet</b>	electromagnetic radiation of wavelength greater than X-rays (4 nm) and less than that of violet visible light (380 nm)
<b>umbra</b>	the innermost and darkest part of a shadow where the light source is completely blocked
<b>unbalanced</b>	being unevenly arranged or disproportioned
<b>uncertainty</b>	an acceptance that investigation results may not be 100 per cent correct
<b>underactive immune system</b>	an immune system that is not able to perform its function effectively, leading to foreign bodies affecting the body to a greater degree
<b>underground mine</b>	a mine that relies on underground tunnelling to locate and recover ore
<b>unhealthy habitat</b>	a habitat that does not adequately provide for the needs of living things; does not have enough food, water or shelter to support life
<b>unicellular organism</b>	an organism that is a single cell
<b>universe</b>	all known cosmic matter and energy, extending outwards past the extent of observations; the sum total of everything
<b>urethra</b>	a tube allowing passage of urine from the bladder out of the body
<b>useful energy</b>	energy in a form that can be used by a particular system
<b>uterus</b>	a hollow, muscular organ lying within the pelvic cavity of female mammals where embryos are nourished and developed

<b>vaccination</b>	the process of placing a vaccine into the body to give it immunity against a certain disease
<b>vacuole</b>	a specialised organelle inside cells for storage
<b>vacuum</b>	a volume of space containing no matter
<b>vagina</b>	the passage leading from the uterus to the exterior of the body; allows passage of fluids and serves as the birth canal; part of the female reproductive system in mammals
<b>validity</b>	extent to which tests measure what was intended; the extent to which data, inferences and actions produced from tests and other processes are accurate 
<b>vapour</b>	gaseous state of a substance
<b>variable</b>	a factor that can be changed, kept the same or measured in an investigation, for example, time, distance, light, temperature 
<b>variable power source</b>	a power source in which the level of output can be changed
<b>vascular tissue</b>	the complex tissue in vascular plants responsible for transporting water and nutrients throughout the plant; consists primarily of phloem and xylem cells
<b>vas deferens</b>	the tube allowing passage of sperm from the epididymis to the ejaculatory ducts; part of the male reproductive system
<b>vegetation</b>	the plant life in a particular environment
<b>velocity</b>	the rate of change of displacement of an object over time, measured in metres per second, including directional information m/s, ms <sup>-1</sup>
<b>vernal</b>	related to the season of spring, e.g. the vernal equinox
<b>vertebrate</b>	an animal with a backbone
<b>vesicle</b>	a fluid-filled membrane-bound organelle that is involved in the packaging, secretion, uptake and transport of materials within the cytoplasm
<b>veterinarian</b>	a person who specialises in the care of animals and the treatment of their injuries and illnesses
<b>vibrate</b>	to repeatedly move to and fro or up and down very quickly
<b>vibration</b>	the oscillation of a particle or object about an equilibrium position
<b>virus</b>	a small, infectious microbe that replicates itself using the cellular structures of the host it infects
<b>viscosity</b>	a measure of the degree of flow of a fluid
<b>visible light</b>	electromagnetic radiation of wavelengths from about 370 nm (violet light) to about 750 nm (red light) that human eyes can detect
<b>vitamin</b>	an organic nutrient that is required in small amounts for certain bodily processes

<b>volcanic bomb</b>	a mass of molten rock larger than 65 mm in diameter that is formed when a volcano ejects viscous fragments of lava, which solidify before reaching the ground
<b>volcanic eruption</b>	a violent outburst of lava, rock, ash and gases originating from a volcano
<b>volcanic track</b>	the volcanic path created by a tectonic plate moving over a stationary hotspot
<b>volcanic vent</b>	an opening in Earth's crust where molten lava and volcanic gases escape to the surface
<b>volcano</b>	a geological feature formed when magma rises to the surface of Earth and escapes through an opening in the crust
<b>voltage</b>	measure of electrical potential in volts (V)
<b>voltmeter</b>	a device used to measure voltage
<b>volume</b>	<i>Physical sciences.</i> how loud a sound is at a point <i>OR</i> <i>Chemical sciences.</i> the amount of space taken up by matter
<b>vortex</b>	the centre of a spinning, often turbulent flow of liquid or gas
<b>vulnerable</b>	a species that faces a high risk of extinction in the wild
<b>W</b>  <a href="#">back</a>	
<b>waning moon</b>	when the moon is decreasing in apparent size, moving from the full moon towards the new moon
<b>wasted energy</b>	energy in a form that cannot be used by a particular system
<b>water</b>	one of Earth's resources that is needed for life; exists in a liquid state on Earth's surface and in the atmosphere
<b>water cycle</b>	a series of processes that describes the exchange and movement of water molecules through the four systems (spheres) of Earth
<b>water footprint</b>	total volume of freshwater used directly and indirectly for domestic, agricultural and industrial purposes (indirect water usage is the amount of water needed to produce a certain product)
<b>waterproof</b>	impermeable to water
<b>water-resistant</b>	able to resist the penetration of water to some degree but not impermeable
<b>watertable</b>	the upper surface of groundwater found in saturated soil and rocks
<b>water treatment plant</b>	a place that cleans water to make it safe to use
<b>wave</b>	an oscillation or regular pattern of oscillations that transfers energy through a medium
<b>wave energy</b>	the energy produced by harnessing the kinetic energy in the motion of waves
<b>wave model</b>	a model of energy transfer in which energy is identified as moving in waves
<b>wave crest</b>	the position when a wave is at maximum height above the equilibrium position

<b>wave period</b>	the time between oscillations in a wave cycle
<b>wave pulse</b>	a singular, wave-generating force or action
<b>wave trough</b>	the lowest position that transverse wave particles move to below the equilibrium point
<b>wavelength</b>	the distance between similar events in a wave cycle, represented as the displacement from one crest to the next
<b>waxing moon</b>	when the moon appears to be getting larger in the sky, moving from the new moon towards the full moon
<b>weak acid</b>	an acid that doesn't fully ionise when dissolved in water
<b>weather</b>	conditions in the atmosphere, including amount of sun, wind, rain, temperature
<b>weathering</b>	the process of breaking rocks into smaller pieces (called sediment) through physical and chemical change
<b>wedge</b>	a simple machine used to push objects apart; made of a hard object with two flat faces that meet at an acute angle
<b>weight</b>	the force of an object due to gravity
<b>wet mount slide</b>	a type of microscope slide in which a specimen is immersed in a drop of water and a cover slip is applied
<b>white blood cells</b>	specialised cells that help fight infection in the body
<b>white dwarf star</b>	a planet-sized remnant of a smaller main sequence star whose energy has been exhausted
<b>wildfire</b>	a fierce fire that spreads rapidly
<b>wind energy</b>	energy produced by harnessing the kinetic energy in the motion of air moving from high-pressure to low-pressure systems
<b>winnowing</b>	removal of lighter particles from a mixture by tossing in the air and allowing wind to blow across
<b>winter</b>	usually the coolest season; occurs after autumn and before spring
<b>word equation</b>	a written representation of a chemical reaction
<b>X</b>  back	
<b>X-ray</b>	a type of electromagnetic radiation that can be used for medical imaging
<b>xylem</b>	a group of cells in vascular plants that are responsible for transporting water and dissolved nutrients up through the plant from the roots
<b>Y</b>  back	
<b>yurt</b>	portable dwelling structure used in Central Asia; see <i>ger</i>
<b>Z</b>  back	
<b>zoologist</b>	a scientist who studies animals
<b>zoology</b>	the biological study of animals
<b>zygote</b>	the new organism formed by fertilisation of sex cells