

FCAT Science Glossary Grade 10

(Knowledge of the terms in the Grade 5 and Grade 8 glossaries is assumed.)

accuracy	the extent to which a measurement is in proximity to the standard or expected value
acid	a substance that increases the H^+ concentration when added to a water solution
activation energy	the least amount of energy required to start a particular chemical reaction
adaptation	a particular development, behavior, or physiological change in a population of organisms, in response to changes in the populations
amino acids	an organic molecule containing an amino ($-NH_2$) and a carboxyl ($-COOH$) group from which proteins are synthesized
aqueous	a solution containing water
astronomical unit	the average distance from Earth to the Sun, approximately 150 million kilometers
atomic number	the number of protons in an atom's nucleus; the atomic number determines an element's placement on the periodic table
base	a substance that increases the OH^- concentration of a solution; a proton acceptor
biome	a complex biotic community characterized by the interaction of living organisms and climatic factors
catalyst	a substance that speeds up or slows down the rate of a reaction without being consumed or altered
centrifugal	the motion away from center or axis
centripetal force	the force on an object required to keep this object on a circular path, pulling toward the center of the circle

compound	a substance made up of at least two different elements held together by chemical bonds that can only be broken down into elements by chemical processes
concentration	the relative amount of a particular substance, a solute, or mixture
conservation of mass	the principle that mass cannot be created or destroyed; also conservation of matter
convergent boundary	area where two tectonic plates collide
covalent bond	a chemical bond between two atoms of the same or different elements in which each atom shares an electron
diffraction	the bending of a wave around an obstruction
DNA	a nucleic acid that carries genetic material; present in all cellular organisms
electromagnet	a magnet consisting of a coil of wire wrapped around a core that becomes strongly magnetized when current flows through the coil producing a magnetic field
electromagnetic waves	waves generated by the oscillation of a charged particle and characterized by periodic variations of electric and magnetic fields
fault	a rock fracture along which movement or displacement of Earth's crust has taken place
first law of thermodynamics	a law that states the internal energy in a system remains constant and the change in thermal energy of a system is equal to the work done on the system
genotype	the sum total of the genetic information contained in an organism
half-life	the amount of time required for half of an original sample of radioactive material to decay or undergo radioactive transformation

heat of fusion	the amount of heat energy required to convert a unit mass of substance from a solid to a liquid through melting at a constant temperature and pressure
heat of vaporization	the amount of heat energy needed to change a unit mass of substance from a liquid to a gas at its boiling point
indicator	a chemical compound that changes color depending on the pH of the solution or other chemical change
isotope	the form of an element with the same number of protons but a different number of neutrons
Kelvin	fundamental SI unit of temperature where zero degrees Kelvin is equal to absolute zero (One degree Kelvin equals one degree Celsius.)
mass number	the total number of protons and neutrons in a nucleus
membrane	a thin layer of tissue that surrounds or lines a cell, a group of cells, or a cavity; any barrier separating two fluids
mid-ocean ridge	a continuous, seismic mountain range extending across the floor of the world's major oceans; area where two oceanic plates are moving away from each other; area where new crustal material may be released
molecule	the smallest unit of matter of a substance that retains all the physical and chemical properties of that substance; consists of a single atom or a group of atoms bonded together
momentum	a vector quantity that is the product of an object's mass and velocity; the general effect of ongoing motion
mutation	the process by which a gene undergoes a change in DNA sequence or a structural change
natural selection	the theory stating every organism displays slight variations from other organisms of its kind, and the struggle for limited natural resources results in individuals with certain natural variations adapted to their specific environments

niche	the unique position occupied by a particular species in terms of the area it inhabits and the function it performs within the community
nuclear fission	the process by which an atomic nucleus splits into two or more large fragments of comparable mass, simultaneously producing additional neutrons and vast amounts of energy
nuclear fusion	the process by which two lighter atomic nuclei combine at extremely high temperatures to form a heavier nucleus and release vast amounts of energy
permeability	the capability of a porous substance or membrane to allow a fluid or gas to enter it; the measure or degree to which a substance can be penetrated by a liquid or gas
pH	a symbol for the measure of the acidity or alkalinity of a solution
phenotype	the appearance or other observable characteristic of an organism resulting from the interaction of its genetic makeup and its environment
precision	the degree of accuracy or exactness of a measurement or tool
product	a substance or compound resulting from a chemical reaction
protein	a biological macromolecule composed of one or more chains of amino acids
rate of reaction	the speed at which reactants are consumed and products are produced in a given reaction
reactant	any substance or molecule that participates in a chemical reaction
rift valley	a long, narrow valley in Earth's crust where two continental plates are separating or between two faults
RNA	a single-stranded nucleic acid consisting of a phosphate group and one of four nitrogenous bases that encodes information needed to synthesize proteins

second law of thermodynamics	a law that states all natural processes proceed in a preferred direction (e.g., heat flows from high temperature regions to low temperature regions)
solar mass	the quantity equal to the mass of the Sun
solubility	the ability or tendency of one substance to dissolve in another at a given temperature and pressure
species	a group of organisms of common ancestry able to reproduce only among themselves and usually geographically distinct
stimulus	a condition that produces a response
succession	the progressive replacement, on a single site, of one type of community by another
vector	a physical quantity with both a magnitude and direction
velocity	the time rate at which a body changes its position vector; quantity whose magnitude is expressed in units of distance over time