**FCAT Science Glossary Grade 8**

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| abiotic | an environmental factor not associated with the activities of living organisms |
| acceleration | rate of change in velocity, usually expressed in meters per second; involves an increase or decrease in speed and/or a change in direction |
| air resistance | force of air on moving objects |
| allele | any of two or more alternate forms of a gene that an organism may have for a particular trait |
| amplitude | in any periodic function (e.g., a wave) the maximum absolute variation of the function |
| asexual reproduction | a form of reproduction in which new individuals are formed without the involvement of gametes |
| biodiversity | the existence of a wide range of different species in a given area or specific period of time |
| biotic | factors in an environment relating to, caused by, or produced by living organisms |
| calorie | unit of energy; the amount of heat needed to raise one gram of water one degree  Celsius at standard atmospheric pressure |
| chemical weathering | the breakdown and alteration of rocks at or near Earth’s surface as a result of chemical processes |
| circuit | an interconnection of electrical elements forming a complete path for the flow of current |
| conduction | the transmission of heat through a medium and without the motion of the medium |
| conservation of energy | a fundamental principle stating energy cannot be created nor destroyed but only changed from one form to another |
| convection | heat transfer in a gas or liquid by the circulation of currents from one region to another |
| crest | the peak or highest point on a wave |
| crust | outermost layer of Earth covering the mantle |
| dependent variable | factor being measured or observed in an experiment |
| deposition | the process by which sediment is carried by forces (e.g., wind, rain, or water currents) and left in a certain area |
| diffraction | the change in direction of a wave caused by passing by an obstacle or traveling through an opening |
| dominance | tendency of certain (dominant) alleles to mask the expression of their corresponding (recessive) alleles |
| ecosystem | an ecological community, together with its environment, functioning as a unit |
| efficiency | therelative effectiveness of a system or device determined by comparing input and output |
| electromagnetic radiation | the emission and propagation of the entire range of electromagnetic spectrum including: gamma rays, x-rays, ultraviolet radiation, visible light, microwaves, and radio waves |
| electron | a stable elementary particle that is negatively charged and orbits the nucleus of an atom |
| entropy | a measure of randomness or disorder of a closed system |
| erosion | a combination of natural processes in which materials from Earth’s surface are loosened, dissolved, or worn away and transported from one place to another |
| fossil fuels | the remains of animal or plant life from past geologic ages that are now in a form suitable for use as a fuel (e.g., oil, coal, or natural gas) |
| frequency | the number of cycles or waves per unit time |
| gene | a specific part of a chromosome or sequence of DNA that determines a particular feature or characteristic in an organism |
| heterozygous | cell or organism that has two different alleles for a particular trait |
| homozygous | cell or organism that has identical rather than different alleles for a particular trait |
| independent variable | the factor that is changed in an experiment in order to study changes in the dependent variable |
| inertia | the property of an object, due to its mass, by which it resists any change in its position unless overcome by force |
| magnetic field | the region where magnetic force exists around magnets or electric currents |
| mass | the amount of matter an object contains |
| meiosis | the process of nuclear division in cells during which the number of chromosomes is reduced by half |
| mitosis | a process of nuclear division in eukaryotic cells during which the nucleus of a cell divides into two nuclei, each with the same number of chromosomes |
| neap tide | a twice-monthly tide of minimal range that occurs when the Sun, Moon, and Earth are at right angles to each other, thus decreasing the total tidal force exerted on Earth |
| neutral | a particle, object, or system that lacks a net charge |
| neutron | a subatomic particle having zero charge, found in the nucleus of an atom |
| nucleus | the center region of an atom where protons and neutrons are located; also a cell structure that contains the cell’s genetic material |
| ocean basin | a depression on the surface of Earth occupied by water |
| plate tectonics | theory of global dynamics in which Earth’s crust is divided into a smaller number of large, rigid plates whose movements cause seismic activity along their borders |
| potential energy | energy stored in an object due to the object’s configuration and position |
| pressure | the force exerted per unit area |
| prism | a piece of glass with polished plane surfaces that disperses a beam of white light into its component colors |
| proton | a subatomic particle having a positive charge and which is found in the nucleus of an atom |
| Punnett square | a graphic checkboard used to determine results from a particular genetic cross |
| radiation | emission of energy in the form of rays or waves |
| recessive | an allele for a trait that will be masked unless the organism is homozygous for this trait |
| screw | a type of simple machine that consists of an inclined plane wrapped around a cylinder |
| sexual reproduction | reproduction involving the union of gametes producing an offspring with traits from both parents |
| spectroscope | an instrument that uses a prism to separate and catalog light wavelengths |
| speed | amount of distance traveled divided by time taken; the time-rate at which any physical process takes place |
| spring tide | the tide of increased range that occurs twice monthly at the new and full phases of the Moon |
| thermal energy | internal energy found by adding the kinetic energy of particles making up a substance |
| tropism | the motion of an organism or part of an organism toward or away from an external stimulus |
| trough | the lowest point on a wave |
| variable | an event, condition, or factor that can be changed or controlled in order to study or test a hypothesis in a scientific experiment |
| velocity | the time-rate at which a body changes its position; defined as displacement divided by the time of travel |
| vibration | a repetitive movement around an equilibrium point |
| virus | a noncellular, disease-causing particle that uses the genetic material from its host to reproduce |
| wavelength | the distance between crests of a wave |
| wedge | a type of simple machine that consists of an inclined plane used to separate two objects |
| wheel and axle | a type of simple machine that consists of a rod driven through the center of a cylinder that is allowed to rotate freely, yielding a mechanical advantage equal to the cylinder’s diameter |

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| adaptation | a characteristic of an organism that increases its chance of survival in its environment |
| atmosphere | the layers of gas that surround Earth, other planets, or stars |
| atom | the smallest unit of a chemical element that can still retain the properties of that element |
| axis | the imaginary line on which an object rotates (e.g., Earth’s axis runs through Earth between the North Pole and the South Pole); an imaginary straight line that runs through a body; a reference to the line in a coordinate system or graph |
| carnivore | an animal or plant that consumes or obtains nutrients from animals |
| change of state | a physical change that occurs when matter changes to another state (i.e., liquid, gas, or solid) |
| chemical change | a reaction or a change in a substance produced by chemical means that results in producing a different chemical |
| chemical weathering | the breakdown and alteration of rocks at or near Earth’s surface as a result of chemical processes |
| circuit | an interconnection of electrical elements forming a complete path for the flow of current (SERIES AND PARALLEL) |
| community | all the populations of organisms belonging to different species and sharing the same geographical area 19 |
| compound | a substance made up of a combination of two or more elements held together by chemical bonds that cannot be separated by physical means; has properties unlike those of the elements that make up the compound |
| condensation | theprocess of changing from a gas (i.e., water vapor) to a liquid (i.e., dew); the act of making more dense or compact |
| conduction | the transmission of heat through a medium and without the motion of the medium |
| conservation | controlled use and/or maintenance of natural resources; various efforts to preserve or protect natural resources |
| constellation | a star pattern identified and named as a definite group; usually thought of as forming certain shapes or figures in a specific region of the sky |
| consumer | an organism that feeds on other organisms for food |
| decomposer | any organism that feeds or obtains nutrients by breaking down organic matter from dead organisms |
| density | concentrationof matter of an object; number of individuals in the same species that live in a given area; the mass per unit volume of a substance in a given area |
| deposition | the process by which sediment is carried by forces (e.g., wind, rain, or water currents) and left in a certain area |
| diffraction | the change in direction of a wave caused by passing by an obstacle or traveling through an opening |
| dominance | tendency of certain (dominant) alleles to mask the expression of their corresponding (recessive) alleles |
| earthquake | the shaking of the ground caused by a sudden release of energy in Earth’s crust |
| electromagnetic radiation | The emission and propagation of the entire range of electromagnetic spectrum including: gamma rays, x-rays, ultraviolet radiation, visible light, microwaves, and radio waves |
| electron | a stable elementary particle that is negatively charged and orbits the nucleus of an atom |
| element | a substance that cannot be reduced to a simpler substance by chemical means |
| energy | a quantity that describes the capacity to do work; a source of usable power |
| energy pyramid | a pyramidal diagram that compares the amount of energy available at each position, or level, in the feeding order |
| energy transfer | a change of energy from one form to another (e.g., mechanical to electrical, solar to electrical) |
| environment | the sum of conditions affecting an organism, including all living and nonliving things in an area, such as plants, animals, water, soil, weather, landforms, and air |
| equator | an imaginary circle around Earth’s surface located between the poles and a plane perpendicular to its axis of rotation that divides it into the Northern and Southern Hemispheres |
| erosion | the wearing away of Earth’s surface by the breakdown and transportation of rock and soil |
| erosion | a combination of natural processes in which materials from Earth’s surface are loosened, dissolved, or worn away and transported from one place to another |
| evaporation | the process by which a liquid is converted to its vapor phase by heating the liquid |
| experiment | a procedure that is carried out and repeated under controlled conditions in order to discover, demonstrate, or test a hypothesis; includes all components of the scientific method |
| food chain | transfer of energy through various stages as a result of feeding patterns of a series of organisms |
| food web (food cycle) | the interconnected feeding relationships in a food chain found in a particular place and time |
| force | a quality that tends to produce movement or acceleration of a body in the direction of its application; a push or pull 55 |
| fossil | a whole or part of a plant or animal that has been preserved in sedimentary rock |
| friction | a force that opposes the relative motion of two material surfaces in contact with one another |
| fulcrum | the pivot point of a lever |
| galaxy | a large collection of stars, gases, and dust that are part of the universe (e.g., the Milky Way galaxy) bound together by gravitational forces |
| gas | one of the fundamental states of matter in which the molecules do not have a fixed volume or shape |
| gravitation | a force of attraction between two masses |
| gravity | the observed effect of the force of gravitation |
| habitat | a place in an ecosystem where an organism normally lives |
| heat | a form of energy resulting from the temperature difference between a system and its surroundings |
| herbivore | an animal that feeds on plants |
| igneous rock | a type of rock that forms from molten or partly molten material that cools and hardens |
| inclined plane | a type of simple machine; a slanted surface that makes it easier to move a mass from a lower point to a higher point |
| investigation | aprocedure that is carried out in order to observe a response caused by a stimulus; not a complete experiment |
| kinetic energy | the energy possessed by a body because of its motion |
| lever | a type of simple machine; consists of a rigid bar that pivots about a fulcrum, used to transmit and enhance power or motion |
| life cycle | the entire sequence of events in an organism’s growth and development |
| light | electromagnetic radiation that lies within the visible range |
| liquid | one of the fundamental states of matter with a definite volume but no definite shape |
| magnetic | having the property of attracting iron and certain other materials by virtue of a surrounding field of force |
| magnetic field | the region where magnetic force exists around magnets or electric currents |
| mass | the amount of matter an object contains |
| matter | a solid, liquid, or gas that possesses inertia and is capable of occupying space |
| metamorphic rock | a type of rock that forms from existing rock because of extreme changes caused by heat, pressure, or chemical environments |
| microscopic | relating to an object too small to be visible without the use of a microscope |
| mixture | the product of a thorough blending of two or more substances, not chemically combined |
| moon | a natural satellite that revolves around a planet |
| moon phase | a phrase that indicates the fraction of the Moon’s disc that is illuminated (as seen from Earth); the eight moon phases (in order): new moon, waxing crescent, first quarter, waxing gibbous, full moon, waning gibbous, last quarter, waning crescent 92 |
| neutral | a particle, object, or system that lacks a net charge |
| nonrenewable resource | a resource that can only be replenished over millions of years |
| ocean basin | a depression on the surface of Earth occupied by water |
| organ | a structure containing different tissues that are organized to carry out a specific function of the body (e.g., heart, lungs, brain, etc.) |
| organism | any living plant, animal, or fungus that maintains various vital processes necessary for life |
| photosynthesis | a chemical process by which plants trap light energy to convert carbon dioxide and water into carbohydrates (sugars) |
| physical change | a reaction; a change in matter from one form to another, without forming new substances |
| planet | a large body in space that orbits a star and does not produce light of its own |
| plate tectonics | theory of global dynamics in which Earth’s crust is divided into a smaller number of large, rigid plates whose movements cause seismic activity along their borders |
| pollution | any alteration of the natural environment producing a condition harmful to living organisms; may occur naturally or as a result of human activities |
| population | a group of organisms of the same species living in a specific geographical area |
| potential energy | the energy an object has because of its position or structure; stored energy |
| predator | an organism that preys on and consumes animals; usually an animal 109 |
| pressure | the force exerted per unit area |
| prey | an organism caught or hunted for food by another organism |
| prism | a piece of glass with polished plane surfaces that disperses a beam of white light into its component colors |
| producer | an organism that makes its own food from the environment; usually a green plant |
| protist | unicellular organisms belonging to the kingdom Protista |
| pulley | a type of simple machine; a circular lever, usually a wheel with a groove where a rope can be placed and used to change the direction of a force |
| radiation | emission of energy in the form of rays or waves |
| recessive | an allele for a trait that will be masked unless the organism is homozygous for this trait |
| reflection | the bouncing off or turning back of light, sound, or heat from a surface |
| refraction | a change in the direction of a wave that occurs as it passes from one medium to another of different density |
| renewable resource | a resource that is replaced or restored, as it is used, by natural processes in a reasonable amount of time |
| resource | any material that can be used to satisfy a need |
| scientific method | a plan of inquiry that uses science process skills as tools to gather, organize, analyze, and communicate information |
| sedimentary rock | rock formed from layers of sediment that overlay and squeeze together or are chemically combined |
| sexual reproduction | reproduction involving the union of gametes producing an offspring with traits from both parents |
| solar system | a star and all the planets and other bodies that orbit it; the region in space where these bodies move |
| solid | having a definite shape and a definite volume; one of the fundamental states of matter 130 |
| solution | a mixture of two or more substances uniformly dispersed throughout a single phase |
| spring tide | the tide of increased range that occurs twice monthly at the new and full phases of the Moon |
| star | a large, gaseous, self-luminous body held together by gravity and powered by thermonuclear reactions |
| Sun | the closest star to Earth and the center of our solar system |
| system | a set of objects, organisms, or different parts acting to form a whole |
| thermal energy | internal energy found by adding the kinetic energy of particles making up a substance |
| tissue | similar cells acting to perform a specific function; four basic types of tissue are muscle, connective, nerve, and epidermal |
| topography | the surface, shape, and composition of a land area |
| universe | the total sum of all matter and energy that exists |
| variable | an event, condition, or factor that can be changed or controlled in order to study or test a hypothesis in a scientific experiment |
| vibration | a repetitive movement around an equilibrium point |
| volcano | a vent or fissure in Earth’s surface through which magma and its associated materials are expelled; generally a mountain-like structure |
| volume | a measure of the amount of space an object takes up; also the loudness of a sound or signal |
| water cycle | the path water takes as it is being cycled through the environment, including condensation, evaporation, and precipitation |
| weathering | the natural processes that break down and change rock into soil, sand, and other materials; differs from erosion in that no transportation of those materials takes place |

Scientific Method – steps to solving scientific questions - KNOW ALL STEPSIndependent variable – The variable that is manipulated or changed by an experimentor (what YOU control or change)  
Dependent Variable – The outcome variable that depends on the other variables/what is measured (like growth of plants, speed through a maze, etc.)