

## GLOSSARY



**acid rain** A mild acid solution formed when rain mixes with sulfur dioxide and nitrogen oxides in the air. Contributes to the chemical weathering of certain kinds of rocks and minerals.

**adaptation** A structure or behavior that helps an organism survive and reproduce in its environment.

**alluvial fan** A triangular-shaped landform created when deep, fast-moving water enters a wide, shallow area, slows down, and deposits its sediment. Similar to a delta but forms upstream.

**Alpha Centauri** A three star system, the closest to Earth.

**animal** A living being capable of movement and motor response to stimulation.

**armature** The coil(s) of wire in an electric motor that rotate through the magnetic fields of permanent magnets.

**average distance** A measurement used to calculate the difference in distance between planets.

**axis** An imaginary line, or axle, through the center of an object, about which the object rotates.

**base level** The level at which a stream or river enters a lake or ocean. The mouth of a stream or river is at its base level.

**biceps** The large muscle at the front of the upper arm.

**breakwater** An artificial barrier constructed along the shoreline to absorb or deflect the energy of waves, thereby reducing erosion.

**brush** The device in an electric motor that transfers the electric current from the batteries to the coils of the armature by brushing up against the lead wires.

**carrying capacity** The greatest number of organisms of one kind that can survive in an area.

**cell** The tiny structures of which all living things are made.

**centimeter** A unit of length equal to one hundredth of a meter.

**chemical weathering** The process of breaking down Earth's surface by changing the chemical composition of rocks and minerals (for example, by acid rain or oxidation).

**chlorophyll** The green pigment in plants that allows them to photosynthesize.

**chromosome** A structure that contains an organism's genes; located in cells.

**clavicle** The collar bone.

**competition** The struggle of two or more organisms over a limited resource, such as food.

**conclusion** A statement that describes what an experiment showed, based on data collected.

**controlled variable** Any variable that is held constant in an experiment.

**cranium** The skeletal bone protecting the brain.

**data** Information collected in an experiment.

**day** The length of time a planet takes to make one complete rotation about its axis.

**delta** A landform created when a river or stream reaches its base level, slows down, and deposits its sediment; named after the Greek letter delta ( $\Delta$ ) from its shape.

**dependent variable** The variable in an experiment that changes in response to changes in the independent variable.

**deposition** The process in which particles settle to the bottom of a liquid; the release of sediment that occurs when a fast-moving river or stream slows down.

**diaphragm** The muscle that separates the chest cavity from the abdominal cavity.

**dike** A barrier of earth erected to keep a river or stream from overflowing its banks. See also *levee*.

**dominant gene** A gene that masks, or overpowers, a recessive gene; a dominant gene is expressed when it is paired with a recessive gene. See also *recessive gene*.

**driven gear** The gear receiving the force.

**driving gear** The gear transmitting the force.

**dune** A mound of windblown sand resulting from the constant erosion and deposition of sand by wind.

**Earth** The third planet from the Sun in our Solar System.

**electromagnet** A magnetic system consisting of a ferrous object surrounded by coils of wire that have electric current flowing through them.

**energy** The ability to do work or to bring about change in a system or the surroundings.

**environment** The area where a plant or animal lives.

**equator** The imaginary line that divides Earth in half between the North and South Poles.

**erosion** The carrying away of weathered material by wind, water, or glaciers.

**extensor** A muscle that straightens out a body part.

**femur** The thighbone, extending from the pelvis to the knee.

**fibula** The smaller of the two bones forming the lower leg.

**flexor** A muscle that bends a body part.

**floodplain** The broad, flat, low-lying land around rivers and streams subject to occasional flooding.

**flower** The plant structure that makes seeds in flowering plants.

**force** A push or pull on an object; measured in newtons.

**fruit** A plant structure that surrounds and protects the seeds.

**galaxy** One of countless swirling, massive clusters of solar systems in the universe.

**gear** A wheel with teeth that, when meshed with the teeth of another wheel, is able to transmit, modify, or change the direction of an applied force.

**gear ratio** The ratio of the number of rotations of the driving gear to the driven gear.

**gene** Tiny structures within cells that contain the information for a trait.

**germinate** To sprout and begin to grow into a seedling.

**gravitational attraction** The force of gravity that causes objects to be attracted to one another.

**gravity** The attractive force that exists between objects.

**home range** The area where a population of animals usually forages for food.

**humerus** The bone in the upper arm, connecting the elbow to the shoulder.

**hypothesis** An educated guess about what the answer to the stated problem in an experiment might be.

**independent variable** The variable that is not held constant in an experiment.

**inherited** Passed from parents to children.

**joint** The place where two adjoining bones meet.

**joule** A unit of work; 1 joule of work is performed when a force of 1 newton is used to move an object a distance of 1 meter.

**Jupiter** The fifth planet from the Sun in our Solar System.

**levee** A continuous dike; may be human-made or natural.

**leaf** A plant structure that uses the energy in sunlight to make food.

**light-year** A unit of distance, equal to the distance light travels in a year—about 9.46 trillion km.

**lungs** The basic respiratory organ of vertebrates.

**mandible** The lower jaw bone.

**map** A scale drawing used to represent geographic locations and their relative distances from one another.

**Mars** The fourth planet from the Sun in our Solar System.

**mass** The measure of the amount of material an object contains.

**meander** A curve or bend in a streambed or riverbed formed by slow-moving water on gently sloping land.

**mechanical energy** Physical energy, as opposed to chemical energy.

**Mercury** The planet closest to the Sun in our Solar System.

**meter** The international standard unit of length.

**Milky Way** The galaxy of which our Solar System is a member.

**millimeter** A unit of length equal to one thousandth of a meter.

**mnemonic device** A memory aid, such as a made-up sentence or rhyme, that helps recall the order of items in a list.

**moon** A satellite of a planet.

**motor** An electromechanical device by which electric energy is transformed into mechanical energy.

**muscle** Body tissues that function in movement.

**muscular system** All the muscles in our body including muscles that move our limbs and heart.

**Neptune** The eighth planet from the Sun in our Solar System.

**newton** The international unit of force.

**North Star (Polaris)** The star almost directly above the north pole of the Earth.

**Northern Hemisphere** The half of Earth that is located north of the equator.

**orbit** The elliptical path that a satellite travels as it moves around a star or a planet.

**oxidation** The chemical reaction of rusting that occurs when certain substances are exposed to the oxygen in air. Oxidation contributes to the chemical weathering of certain kinds of rocks and minerals.

**particle** A small bit of material.

**patella** The kneecap.

**pelvis** The hip bone.

**permanent magnet** A material exhibiting a magnetic field, regardless of its environment.

**physical weathering** The mechanical breakdown of rocks and minerals (for example, by wind, water, ice, changes in temperature, and plant roots).

**planet** A large, spherical satellite of a star.

**plant** A living thing that produces its own food and typically lacks locomotive movement or obvious sensory organs.

**Pluto** A dwarf planet in our Solar System.

**population** A group of organisms of one kind that lives in the same area.

**producer** Green plants that can produce food from sunlight, carbon dioxide, and water.

**radius** The bone of the inner forearm.

**ratio** A numerical representation of a relationship between two measurements, as in a scale for a drawing or a model.

**recessive gene** A gene that is not expressed when it is paired with a dominant gene. See also *dominant gene*.

**relative brightness** The brightness of an object when compared with the brightness of surrounding objects.

**relative distance** The distance between objects when compared with the distance between surrounding objects.

**relative size** The size of an object when compared with the size of surrounding objects.

**respiratory system** Includes the lungs, trachea, bronchi, and the channels leading to the mouth and nose; handles the body's air supply.

**revolution** One complete orbit of a satellite.

**revolve** To travel around another object.

**rib** One of a series of bones surrounding the chest cavity of the body.

**root** A plant structure that holds a plant in place and takes in water and nutrients from the soil.

**rotation** One complete turn of a satellite about its axis.

**runoff** Running water from rain or melting snow that has not evaporated and has not been absorbed by the ground.

**satellite** An object in orbit around a larger object.

**Saturn** The sixth planet from the Sun in our Solar System.

**scale** A proportion used in determining the relationship between two measurements of size or distance.

**scale drawing** A two-dimensional scaled representation of a smaller or larger object.

**scapula** The shoulder blade.

**season** A short-term weather condition that repeats on a regular basis.

**sediment** Earth materials (sand, soil, rocks) carried away by moving water and deposited when the water slows down.

**seed** A plant structure that contains a tiny new plant and a supply of food for the plant.

**series circuit** A single path by which current can flow through an electric circuit.

**skeletal system** The bones that provide support for the body, protection for internal organs, and places of attachment for muscles.

**skeleton** All the bones that make up the supportive structure in the body of an animal.

**slope** The incline (upward or downward slant) of terrain.

**solar system** A star and all the satellites that orbit it.

**Southern Hemisphere** The half of Earth that is located south of the equator.

**star** An extremely large, hot ball of glowing gas that radiates light and heat.

**stem** A plant structure that holds the leaves up to sunlight and moves food, water, and nutrients around the plant.

**sternum** The breastbone.

**Sun** The star of our Solar System.

**system** An interdependent group of items that form a unified whole.

**tendon** The tissue that connects muscle to bone.

**tibia** The larger of the two bones making up the lower part of the leg.

**tidal action (tide)** The periodic change (rise and fall) of the surface of the oceans caused by the gravitational pull of the moon.

**trachea** The windpipe.

**trait** A physical or behavioral characteristic of an organism.

**triceps** The large muscle at the rear of the upper arm.

**ulna** The bone of the outer forearm.

**universe** The vast space that surrounds and includes all the galaxies as well as all other existing matter and energy.

**Uranus** The seventh planet from the Sun in our Solar System.

**variable** Any factor that can change in an experiment.

**Venus** The second planet from the Sun in our Solar System.

**vertebra** One of the bones comprising the backbone.

**wave** A rhythmic rise and fall of the water's surface commonly caused by the wind.

**weathering** The slow process of breaking down rocks and minerals on Earth's surface. See also *chemical weathering* and *physical weathering*.

**windbreak** A natural or artificial barrier that reduces erosion caused by wind.

**work** The transfer of energy resulting from a force acting to move an object over a distance.  $\text{Work} = \text{Force} \times \text{distance}$ .

**year** The length of time a planet takes to make one complete revolution around the Sun.

