

## Life Science Vocabulary

### Structure and Function

**cell** - basic unit of life found in all living things

**tissue** - a group of specialized cells

**organ** - group of tissues that work together to carry out a specific function

**organ system** - group of organs that work together within an organism to carry out a specific function

**organism** - any living thing

**multicellular** - living things that are composed of many cells

**specialized cell** - cell that carries out a specific function within an organism

**microorganism** - living thing that can only be seen with a microscope

**bacteria** – single celled microorganism that has a cell wall but no nucleus

**protist** – living things that have a nucleus, are usually singled celled microorganisms, and are not plants, animals, or fungus (ex: amoeba, paramecium)

**fungi** – living things that have a nucleus, cell wall, are usually multicellular, and obtain their food from dead and organic matter (ex: mushrooms, yeast)

**animal** – living things that are multicellular, have a nucleus, do not have cell walls, and are consumers

**plant** – living things that are multicellular, have a nucleus and cell walls, and are producers

**ecosystem** – all of the living and the non living things that exist together in a certain place

### Regulation and Behavior

**stable internal environment** – internal conditions of an organism that remain fairly constant

**stimulus** – anything that causes an organism to react or respond

**response** – reaction of an organism to an internal or external stimulus

## **Reproduction and Heredity**

**reproduction** – process by which organisms produce new organisms

**species** – group of similar organisms that can mate and reproduce fertile offspring

**asexual reproduction** – process by which a single organism can reproduce by itself

**sexual reproduction** – process by which sex cells from two organisms join to reproduce a new organism

**egg** – female reproductive cell

**sperm** – male reproductive cell

**heredity** – passing of characteristics or traits from one generation of organisms to another

**trait** – specific characteristic that varies from one organism to another

**gene** – small part of a chromosome that determines a specific trait for an organism

**chromosome** – structure found in the nucleus that carries the genetic information for an organism

## **Diversity and Adaptations of Organisms**

**diversity** – differences among traits within a species

**adaptation** – inherited characteristic or trait that increases an organism's chance of survival

**extinction** – disappearance of a species from its geographical range

## **Populations and Ecosystems**

**population** – group of organisms of the same species that live in the same area

**producers** – organisms that make their own food using the energy from the sun

**consumers** – organism that gets its food supply from other organisms or plants

**decomposer** – organism that breaks down and gets its food from dead organic matter

**food chain** - the path of energy transfer (food) from one living thing to another in an ecosystem

**food web** – complex interactions formed by the feeding relationships among various organisms in an ecosystem

**photosynthesis** – process that plants and some other organisms use to convert light energy into usable food energy

**abiotic factor** – physical, or nonliving, thing that has an affect on the organisms in an ecosystem

**biotic factor** – living components that affect other organisms in an ecosystem

**niche** – all of the physical and biological conditions in which an organism lives and how it uses these conditions

## Earth and Space Science Vocabulary

### Structure of the Earth System

**earth materials** - rocks, soils, water, and gases of the atmosphere

**soil** - made of weathered rock, and decomposed organic material; properties are: color, texture, ability to retain water and support plant growth, and often layers of different chemical composition

**minerals** - make up rocks; properties are color, texture, and hardness

**lithosphere** – thin outer shell of the earth consisting of the crust and the rigid upper mantle

**crust** – outermost layer of the earth

**mantle** – layer of rock below the earth's crust

**core** – center of the earth below the mantle; consists mostly of iron and has a dense liquid layer and a dense solid center sphere

**lithospheric plates** – separate pieces of the lithosphere that move very slowly due to motion in the mantle

**rock cycle** – series of processes in which rock changes from one type to another and back again

**sedimentary rock** – rock formed from hardened deposits of sediment

**metamorphic rock** – rock formed from other rocks as result of intense heat, pressure, or chemical processes

**igneous rock** – rock formed from cooled and hardened magma

**constructive force** – forces that deform and change the surface of the earth (ex: crustal deformation, volcanic eruption, deposition of sediment)

**crustal deformation** – the bending, tilting, and breaking of the earth's crust caused mainly by movement of the lithospheric plates

**destructive force** – forces that wear away and change the surface of the earth (ex: weathering, erosion)

**erosion** – the slow movement of weathered rock and soil from one place to another caused by water, wind, gravity and glaciers

**weathering** - slow process that causes rocks to crumble, crack, and break, changing its physical form and chemical make up

**hydrosphere** – all the earth’s water

**water cycle** – continuous movement of water from the air to the earth and back again

**precipitation** – process of water falling from clouds to earth in the form of rain, sleet, snow, or hail

**condensation** – process of water vapor changing to liquid water

**evaporation** – process of liquid water changing to water vapor

**atmosphere** – thick blanket of gases (nitrogen, oxygen and trace gases) surrounding the earth

**troposphere** – atmospheric layer closest to earth; nearly all weather change occurs here

**stratosphere** – second atmospheric layer above the troposphere; nearly all of ozone found here

**mesosphere** – third atmospheric layer above the stratosphere; coldest layer of atmosphere

**thermosphere** – highest layer of the earth’s atmosphere; very thin air

**weather** – daily and seasonal changes in temperature, wind, and precipitation

**climate** – general weather conditions over many years

### **Earth’s History**

**fossils** – trace or remains of a plant or animal in sedimentary rock; preserved clues to what life on Earth and its environment were like long ago

**asteroid** – fragment of rock that orbits the sun; impact with Earth can cause catastrophic influence on its history

**comet** – body of rock, dust, ice, and gases that revolves around the sun in a long, elliptical orbit; impact with Earth can cause catastrophic influence on its history

### **Earth in the Solar System**

**solar system** – the sun and the bodies (planets, moons, asteroids, comets) that revolve around it

**orbit** – elliptical path of motion that planets, asteroids, and comets make around the sun

**revolution** – one complete movement (orbit) of a planet around the sun or a moon around a planet

**year** – time required for the earth to make one revolution around the sun

**rotation** – spinning of a planet on its axis

**day** – time required for the earth to make one rotation on its axis

**phases of the moon** - repeating monthly pattern of different moon shapes we see due to the moon's movement around earth

**eclipse** – passing of one planetary body through the shadow of another

**gravity** – force of attraction between all matter in the universe; it is the force that keeps the planets in orbit and governs all motion in solar system

**tides** – daily change in the level of the ocean surface caused by the gravitational pull of the moon on the earth and its waters

**seasons** – summer, fall, winter, spring caused by the tilt of the earth on its axis as it orbits the sun that changes the angle at which the sun's rays strike the earth's surface

## Physical Science Vocabulary

### Properties and Changes of Properties in Matter

**matter** – all substance is made of this; it has mass and takes up space

**mass** – the amount of matter in an object

**volume** – amount of space occupied by an object or a substance

**physical property** - characteristics that is observable or measurable in a substance without changing the chemical composition of the substance (ex: mass, density, temperature, boiling point, solubility)

**density** – ratio of the mass of a substance to its volume, expressed in  $\text{g/cm}^3$

**solubility** – amount of a substance that will dissolve in a specific amount of another substance at a given temperature

**mixture** – two or more substances that are blended without combining chemically

**physical change** - change in shape, color or size, or state; a change without a change in chemical composition (ex: paper cut into pieces, water freezing, ice melting)

**chemical property** – characteristics of a substance that determine how it reacts to form other substances (ex: combustion, corrosion)

**element** – substance that cannot be broken down by physical or chemical means; consists of only one kind of atom

**periodic table** – system that organizes the elements in a way that shows their common properties

**atom** – smallest unit of an element that has the properties of that element

**compound** – substance containing atoms of two or more elements that are chemically combined, always in the same ratio

**chemical change** – change in which a substance becomes another substance with different properties (ex: wood burning, metal rusting)

### Motion and Forces

**motion** - a change in the position of an object over time

**force** - any push or pull (ex: gravity, friction)

**relative position** – location of an object as described in relation to a reference point (ex: you are standing to the left of the teacher's desk)

**distance** – the separation between two positions (ex: there are three feet between my desk and the door)

**speed** – the rate of change of the position of an object; how fast something is moving (ex: 55 miles per hour)

**constant speed** – a speed that does not change

**unbalanced force** – occurs when the forces acting on an object are not equal; therefore, one force is greater than the other which causes object's speed or direction to change

### **Transfer of Energy**

**energy**- property of many substances that give the ability to do work; many forms of energy (i.e., light, heat, electricity, sound)

**energy transfer** – changing energy from one form to another, such as potential to kinetic

**potential energy** – energy that is being stored in an object

**kinetic energy** – energy that a moving object has

**temperature** – a measurement of the average kinetic energy in the particles of an object

**heat** – energy that is transferred from an object at a high temperature to an object at a lower temperature

**reflection** – bouncing of light off of a surface

**refraction** – bending of light as it passes from one substance into another

**electrical circuits** - complete conducting path which allows electric current to flow through; electrical energy in circuit can be transferred into light, heat, sound

**conductor** - material that allows electricity and heat to move through it (ex: metals)

**insulator** – material that does not allow electricity and heat to flow through it (ex: wood, glass)