8th Grade Science Vocabulary

WORD	DEFINITION
Abiotic Factors	Non-living factors that affect the ecosystem; light, space, temperature, shelter, water, soil, composition
Abundance	The number of one type of species in an area
Acceleration	Change of an object's speed or direction; Measures how an object changes velocity-moving faster, slower, or continues to move at the same rate
Actinide series	The series includes the 15 metallic elements in Group 3 with atomic numbers 89-103. They are all radioactive and release energy when they decay. Some are synthetic, only formed in science labs.
Action	Movement caused by force
Air Masses	An air mass is a body of air extending over a large area (1,000 miles or more) that develops and retains specific characteristics of pressure, temperature, and humidity
Air Pressure	Atmospheric air pressure is the force exerted on Earth's surface by the weight of the air above the surface
Alkali Metals	Metals found in Group 1 of the Periodic Table; compared to other metals they are soft and have low melting points and densities
Alkaline Metals	Metals found in Group 2 of the Periodic Table; all alkaline earth elements have an oxidation number of +2, making them very reactive. Because of their reactivity, the alkaline metals are not found free in nature.
Amu unit	Amu stands for atomic mass unit and is used to indicate mass on an atomic or molecular scale
Aquatic Ecosystem	An ecosystem that is located in bodies of water
Artificial Reefs	A man-made, underwater structure that promotes marine life
At Rest	The state of an object when it is not in motion
Atmosphere	The whole mass of air surrounding Earth made up of 78% nitrogen, 21% oxygen, and other trace gases
Atmospheric Movement	Global air circulation patterns within the atmosphere held to Earth by gravity and warmed as heat radiated from Earth; influenced by convection of warm less dense air (rises and spreads out) and cold dense air (sinks)
Atom	The smallest unit of an element that has all of the properties of that element containing a nucleus within an electron cloud
Atomic Mass	The average mass of protons and neutrons in an element
Atomic Mass	The average mass of protons and neutrons in an element
Atomic Number	The number of protons in the nucleus of one atom of an element
Atomic Symbol	A one- or two-letter notation used to represent an atom of a particular element
Autotroph	An organism that produces its own food such as a plant
Axis	The imaginary line extending from the North Pole to the South Pole going through the center of Earth
Black Hole	An object with more than four solar masses squeezed into a ball only 10 km across whose gravity is so strong that even light can not escape
Balanced Equation	A symbolic representation of a chemical reaction in which both sides of the equation contain equivalent numbers of atoms of each element. The mass and the charge must be balanced on both sides of the reaction.
Balanced Forces	Forces of an object that do not change the motion of the object
Barometer	An instrument that measures the amount of atmospheric pressure
Big Bang Theory	A theory that says the universe began as a small point that expanded rapidly about 13.7 billion years ago
Biodiversity	The number of different species of plants and animals in an area
Biotic Factors	Living factors that affect the ecosystem; food sources, other population members,, other species
Carnivore	An organism that consumes other animals
Chemical Equation	Chemical formulas and symbols written to represent a reaction
Chemical Formula	A shorthand notation that uses chemical symbols and numbers as subscripts to represent the type of atoms and number of atoms that are present in the smallest unit of the substance
Chemical Reaction	The process by which one or more substances change to produce one or more different substances

Climate Change	A change in the world's climate
Coefficient	A number placed in front of a chemical symbol or formula during balancing of the equation
Cold Front	Forms at the surface of Earth when a cold, dry air mass overtakes a warmer, humid air mass
Combustion	When an organic substance combines with oxygen and releases large amounts of heat and light energy
Commensalism	The relationship between organisms where one is benefitted and the other is neither benefitted nor harmed
Competition	More than one individual, or population in an ecosystem, relies upon the same limited resources
Consumer	An organism that must consume other organisms for nutrients
Continental Drift	The theory that continents were once connected but have drifted apart
Convection	The transfer of heat from one place to another, when matter is in direct contact and is in motion due to density changes in liquid or gas
Convergent Boundary with Mountain Building	A major geological event; occurs when continental plates of equal density converge
Convergent Boundary with Subduction	The boundary between two tectonic plates moving toward each other; results in volcanic activity when a denser ocean plate subducts below a continental plate
Coriolis Effect	The apparent deflection of moving air, as see by an observer on Earth; apparent deflection is a result of Earth's rotation
Crescent Moon	Shape of the Moon that is less than a quarter moon
Dam	A barrier to obstruct the flow of water, especially one of earth, or masonry, built across a stream or river
Decomposer	Organisms such as bacteria and fungi that break down the remains of dead plants and animals
Decomposition	A compound breaks down into two substances (an element and a compound)
Dependent Variable	in a scientific investigation, the factor that changes as a result of manipulation of one or more independent variables; can be measured
Direction	The path that an object is moving or facing
Disease	An impairment on the health of an organisms
Distance	Measurement from one place to another
Divergent Boundary	The boundary between two tectonic plates moving away from each other; on land creates rift valleys, on the sea floor created new ocean crust
Double Replacement	Two elements from different compounds switch places and form new substances
Dust Lanes	Bands of dust that appear as dark ribbons against the bright stars in a galaxy
e-	Symbol for an electron, showing its negative charge
Eclipse	an event during which one object in space casts a shadow onto another; can be lunar (during a full moon; Earth's shadow falls on the moon) or solar
Ecosystem	Interacting populations of organisms with biotic and abiotic factors
Electrical Charge	A form of charge, designated negative, positive, or neutral (without charge) that is found on the subatomic particles that make up all atoms
Electromagnetic Radiation	Radiation consisting of electric and magnetic waves that travel at the speed of light
Electromagnetic Spectrum	Vast arrangement of electromagnetic waves in relation to their wavelengths
Electron	A negatively charged subatomic particle of the electron cloud; involved in the formation of chemical bonds
Electron Cloud	All of the area inside an atom surrounding the nucleus where electrons are found
Electron Shell	A specific area where electrons of the same energy level are found
Element	A pure substance that cannot be separated into simpler substances by physical or chemical means
Elevation	Indicates the height to which something is relative to sea level
Elliptical-Shaped Galaxy	A galaxy with a bright center and very little dust or gas
Empirical evidence	the observations, measurements and other types of data that people gather and test to support and evaluate scientific explanations
Endangered	Occurs when a species becomes low in numbers in their natural habitat
Endothermic	A reaction that gets cold because heat energy is absorbed from the surroundings
Energy Level	Regions around the nucleus of an atom where electrons may be found
Energy Pyramid	A diagram that shows the trophic levels of organisms in a food web
Equator	An imaginary line that wraps around Earth at 0 degrees latitude separating the surface into two equal parts
Erosional Features	Earth's surface that shows evidence of the natural processes of weathering and the removal and relocation of weathered materials

Evaporation/Condensation	Evaporation: The change from liquid phase to gas phase Condensation: The change from gas phase to liquid phase
Evidence	Noticeable signs of a chemical reaction are: production of (1) gas, (2) heat/light, formation of (3) precipitate or a (4) color change
Exothermic	A reaction that gets hot because heat energy is released
Extinct	Occurs when a species no longer exists
First Quarter Moon	The phase with half of the Moon visible as it changes from new moon to full moon; Half the disk with the lighted side on the right
Food Chain	The path of food energy from the Sun to the producer then transferred to a series of consumers
Food Web	The elaborate interconnected feeding relationships in an ecosystem
Force	A push or pull that can change the motion of an object
Fossil Evidence	Fossils found of organisms that could only spread to other areas by land found on continents now separated by vast ocean basins
Freshwater Ecosystem	An ecosystem found in streams, lakes, and rivers where the water has less than 1% salt content
Friction	A force between two surfaces rubbing against each other; friction works against motion
Full Moon	Earth is between the Sun and the Moon, and all of the sunlit part of the Moon can be seen from Earth; the entire disk is illuminated
Galactic Center	Rotational center of a huge galaxy such as the Milky Way Galaxy
Galaxy	A large grouping of stars in space
Gamma Rays	Electromagnetic waves with very high energy and no mass or charge; emitted by the nucleus of a radioactive atom
Gibbous Moon	Shape of the Moon that is greater than a quarter moon, but not full
Gravitational Pull	The attraction between two objects due to the invisible force of gravity. The gravitational pull from the Moon is primarily responsible for the tides hat
Group A: Main Group	Elements in Periodic Table groups 1 (except hydrogen) and 2 and groups 13 to 18
Group B: Transition Elements	The 38 elements in groups 3 through 12; the transition elements are both ductile and malleable, and conduct electricity and heat
Groups	The columns on a periodic table that arranges the elements by the number of electrons that are in the outside shell
Hemisphere	Half of the terrestrial globe or celestial sphere
Herbivore	An organism that consumes only plants
Hertzsprung-Russell Diagram	A plot of the surface temperature (color) of stars vs. their luminosity (brightness)
Heterotroph	An organism that must use other organisms for food such as animals
High Tide	When the tide is at its greatest elevation
High-Pressure Air Mass	An air mass with greater atmospheric pressure the surrounding air masses; air moves away from the high pressure, traveling in a clockwise direction
Host	An organisms that is used by another organism for nutrients, shelter, or transport; it is harmed by the relationship
Humidity	Amount of water vapor (gas phase of water) present in the air
Hurricane	A large, tropical weather system w/ of an extreme low pressure air mass with heavy rains and wind speeds of at least 119 km/h
Independent Variable	in a scientific investigation, the factor that is deliberately manipulated
Inertia	The tendency of a physical object to remain still or continue moving, unless force is applied
Infrared Waves	Electromagnetic waves with longer wavelengths than visible light
Invasive Species	An introduced, alien species that lives outside of its native environment and causes a disruption to the native species within an ecosystem
Ion	Form as a result of the loss or gain of electrons; indentified by the overall net charge
Irregular-Shaped Galaxy	A galaxy that does not fit into any category; a galaxy with very little symmetry
Isotope	Atoms of the same element that have different numbers of neutrons
Lanthanide series	A series of metallic elements, included in the rare-earth metals listed in in Group 3 of the Periodic Table
Last Quarter Moon	The phase with half of the Moon visible as it changes from full moon to new moon; half of the disk with the lighted side on the left
Law of Conservation of Mass	The mass of all reactants must equal the mass of all products, mass is neither created nor destroyed
Lenticular-Shaped Galaxy	Galaxy with a central bulge or bar with short arms, if any are present
Light Waves	Provide us with visible light spectrum, the colors we see
Light Year	A unit of length equal to the distance that light travels through space in one year
Limiting Factor	A biotic or abiotic factor needed as a resource for survival; depletion prevents growth or expansion of the organisms or population
Lithosphere	Cool, rigid, outermost layer of Earth that is divided into enormous pieces called tectonic plates; consists of the crust and the rigid uppermost part of the

Long-Term Environmental	Environmental change that occurs slowly over time and effects organisms over generations
Low Tide	When the tide level is at its lowest elevation
Low-Pressure Air Masses	An air mass with less atmospheric pressure than the surrounding air masses; air moves toward the low pressure, traveling in a counterclockwise direction
Lunar Cycle	Refers to the Moon's pattern of movement and how it appears to change
Lunar Cycle	The orbit of the Moon around Earth during which all of the lunar phases occur
Magnitude	A number that tells how much of something there is; quality of being big
Marine Ecosystem	An ecosystem found in oceans, seas, and gulfs where the water has a salt content of at least 3.5%
Mass	The amount of matter an object contains, measured in grams
Matter	Anything that has volume and mass
Metalloids	Elements that have properties of both metals and non-metals; sometimes referred to as semiconductors
Metals	Most elements are metals, typically solid, shiny malleable, and a good conductor of heat and electricity
Meteorologists	Specialist who studies the science of Earth's atmosphere and the causes of weather conditions
Microwaves	Electromagnetic waves that are between radio waves and infrared waves in the electromagnetic spectrum
Milky Way Galaxy	The huge grouping if stars that rotate around a center of which the Sun and the Solar System are a part
Motion	A change in an object's position, direction, or location
Mutualism	The relationship between organisms where both benefit
n^0	Symbol for a neutron, showing its neutral charge
Neap Tide	Tides with the smallest daily tidal range; occurs when the Sun, Earth, and Moon form a 90 degree angle
Nebula	Large cloud of gas and dust in interstellar space; the location of star formation
Net Charge	The sum of negative and positive charges
Net Force	The sum of all the forces acting on an object
Nucleus	The tiny, very dense, positively charged region in the center of an atom; made up of protons and neutrons
Neutron	A subatomic particle of the nucleus of an atom that is without charge and contributes to the mass of an atom
New Moon	Phase of the Moon when it is between the Sun and Earth
Newton's Law of Action-	Newton's law state that for every action there is an equal and opposite reaction
Newton's Law of Force &	Acceleration of an object depends on the object's mass and magnitude of the force acting upon it (F=ma)
Newton's Law of Inertia (1st	An object at rest stays at rest, or an object in motion stays in motion until balanced forces act upon it
Niche	Role in an ecosystem
Noble Gases	Un-reactive non-metals in Group 18 of the Periodic Table
Non-metals	Elements typically not shiny, usually a gas or brittle solid, not malleable, and a poor conductor of heat and electricity
Nuclear Model of the Atom	A conceptual model of the atom in which a small positively charged nucleus is surrounded by planetary electrons
Nucleus	The tiny, very dense, positively charged region in the center of an atom; made up of protons and neutrons
Ocean Currents	A directional movement of ocean water; surface currents result from steady winds over the ocean surface; deep currents result from density variations
Ocean Tide	Daily changes in the level of ocean water
Omnivore	An organism that consumes both animals and plants
Origins	Beginning point at which something begins, or from which it derives
Outermost Electron Cloud	The partially-filled outermost shell (or shells) determine the chemical properties of the atom; it is called the valence shell
Over-Harvesting	Harvesting a resource to the point of diminishing returns
p^+	Symbol for a proton, showing its positive charge
Parasite	An organism that survives on a host organism and causes harm to the host
Periodic Table of Elements	A table showing the chemical elements arranged according to their atomic numbers
Periods	The rows in a periodic table that classifies the elements by the number of atomic shells
Phases	A regular and reoccurring cycle of changes in the appearance of the Moon
Plate Tectonic Theory	Theory that the lithosphere is divided into tectonic plates that slowly move on top of the asthenosphere

Pollution	When a natural environment is contaminated with harmful substances
Precipitate	A solid substance that forms in a liquid from a chemical reaction
Predator	An organism that hunts for its food
Prey	An organism that is hunted by other organisms for food
Producer	An organism that is capable of performing photosynthesis to use the Sun's energy directly
Products	A substance produced during a chemical reaction
Property	The physical and chemical characteristics of a substance or element
Proton	A positively charged subatomic particle in the nucleus of an atom and contributes to the mass of the atom
Pseudoscience	a process of investigation that in one or more ways resembles science but deviates from the scientific method
Qualitative data	data that tells about the quality or kind of subject; descriptive rather than numerical; ex: color or texture
Quantitative data	data that can be expressed by quantity or number; numerical rather than descriptive; ex: length or mass
Radiation	The transfer of energy through matter or space as electromagnetic waves, such as visible light and infrared waves
Radio Waves	Electromagnetic waves with long wavelengths and low frequencies
Rate	A quantity, amount, or degree of something measures per unit of something else
Reactants	A substance that takes part in and undergoes change during a reaction
Reaction	Resistance or opposition to a force, influence, or movement
Reactivity	Rate at which a chemical substance tends to undergo a chemical reaction and significantly influenced by valence electrons
Red Shift	The change in wavelength that allows us to determine if an object is moving toward us or away from us
Revolution	Earth's year-long elliptical orbit around the Sun
Rotation	The spinning of Earth on its axis that causes day and night to occur
Runoff	Something that drains or flows off, as rain that flows off from the land in streams
Satellite Views	Images taken over time that can be used for comparison and interpretation of erosional features such as these taken of the Yellow River Delta
Satellites	An object which has been placed into orbit by human endeavor for various purposes including the ability to obtain aerial images of land features
Scale Model	A representation of an object that is accurate in its proportions to the actual object
Scientific Data	Information obtained from experiments or observations that represent the qualitative or quantitative attributes or a variable or set of variables
Scientific Notation	A method of expressing numbers in terms of a decimal number between 1 and 10 multiplied by a power of 10. The scientific notation for 10,492, for
Scientific Theories	Unifying scientific explanations for a broad range of hypotheses and observations that have been supported by scientific experiments
Sea Floor Spreading Evidence	A parallel pattern of rock material found at identical locations on each side of the Mid-Atlantic Ridge reveals rock of the same geologic age and polarity
Seasons	Weather changes due to varied amounts of sunlight (both intensity and number of daylight hours received.) Caused by the tilt of Earth during revolution
Sediment Deposition	Solid fragments of material that come from the weathering of rock, are eroded then deposited by wind, water, ice, and gravity
Short-Term Environmental	Environmental change that occurs quickly and effects organism immediately
Single Replacement	A single element replaces another in a compound and forms new substances
Solar Mass	Used in astronomy as a standard unit to compare the size of other stars with our Sun
Speed	The measurement of the rate of change of position with respect to time
Speed of Light	How fast light travels, 300,000 km/sec
Spiral Arms	Areas of stars that spread out from the center of a spiral galaxy
Spiral-Shaped Galaxy	A galaxy with bulge in the center and very distinct long arms winding around the center
Spring Tide	Tides with the largest daily tidal range; occurs when the Sun, Earth, and Moon line up with each other
Star	A self-luminous celestial body consisting of a mass of gas held together by its own gravity in which the energy is generated by nuclear reactions in its
Subatomic Particles	Particles that are smaller than the atom
Subduction	A plate is forced below when one plate is denser than another as they converge; occurs at continental to oceanic boundaries and oceanic to oceanic
Subscript	A number written below and to the right of a chemical symbol, shows the number of a specific type of atom present
Substance	Elements or compounds that can only be separated or combined to make substances with new properties by means of a chemical reaction
Sun	The luminous celestial body around which Earth and other planets revolve; composed mainly of hydrogen and helium

Supernova	The death of a large star by explosion
Surface Water	Water found on the surface of Earth in lakes, rivers, oceans, and other bodies of water
Synthesis	Two elements react to form a compound
Telescope	An instrument that collects light or other electromagnetic radiation and concentrates it for better observation
Temperature	Measure of average kinetic energy of particles of matter in an object; expressed in degreed Celsius or Fahrenheit
Terrestrial Ecosystem	An ecosystem that is found on land
Theory	a system of ideas that explains many related observations and is supported by a large body of evidence acquired through scienfic investigation
Thermal Energy	Energy radiated by hot objects such as the Sun in the form of electromagnetic radiation
Tilt	The slant of Earth's axis, which is 23.5 degrees from vertical
Topographic Map	A map showing changes in elevation of Earth's surface
Transform Boundary	The boundary between two plated that slide pass one another; sudden shifts result in major geological events such as earthquakes and the release of
Trophic Level	The position an organism occupies on the food web
Ultraviolet Waves	Electromagnetic waves with a shorter wavelength than visible light
Unbalanced Forces	Forces on an object that cause change in the motion of the object
Universe	All space and the matter space contains
Variable	any factor that can change in an experiment, obsevation or model
Valence Electrons	The electrons in the outermost energy level of an atom that influence how an element will react with other substances
Velocity	Measurement of speed and direction of an object
Waning	Getting smaller
Warm Front	Forms at the surface of Earth when a warm, moist air mass overtakes a cool, dense, and dryer air mass
Water Pollution	The addition of harmful chemicals to natural water
Wavelength	The distance between any two corresponding points that are adjacent on a wave
Waxing	Getting larger
Weather	The day-to-day state of the atmosphere
Weather Map	A weather map or charts shows the weather conditions at a specific point in time over a specific region
Weather System	A specific set of weather conditions occurring in the lowest levels of the atmosphere, reflecting the configuration of air movement
Weathering	The mechanical or chemical processes that break rock into smaller pieces
Wind	A natural movement of air sometimes with considerable force from an area of high density and pressure to an area of low density and pressure
X-rays	Electromagnetic waves that are very high energy and are used in medical and astronomical applications