DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
YOU MAY WANT TO USE A PENCIL…

Science and Planet Earth

astronomy	A conclusion based on observations
coordinate system	A grid in which each location has a unique designation defined by the intersection of two lines
density	A method of expressing very large and very small numbers using powers of 10
Earth science	A universal method of gathering, organizing, analyzing, and using information about the environment
ecology	Information gathered through the use of sight, touch, taste, smell, and hearing
exponential notation (scientific notation)	The branch of science that is concerned with the relationships between organisms and their environment
geology	The concentration of matter, or the mass per unit volume
inference	The science that applies the tools of the physical sciences to study Earth; including the solid Earth, its oceans, atmosphere, and core, and surroundings in space
meteorology	The study of Earth's atmosphere and how it changes
observation	The study of Earth's motions and the objects beyond Earth, such as planets and stars
oceanography	The study of the oceans that cover most of Earth
science	The study of the rock portion of Earth, its interior, and surface processes

DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
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Earth's Dimensions and Navigation

atmosphere	An imaginary line that circles Earth halfway between the North and South Poles
axis	An imaginary line that passes through Earth's North and South poles
equator	Coordinates based on Earth's system of latitude and longitude
geosphere	Earth's liquid water, including oceans, surface water, and groundwater
Greenwich Mean Time	Slightly flattened at the poles
hydrosphere	The angular distance east or west of the prime meridian
latitude	The angular distance north or south of the equator
lithosphere	The basis of standard time throughout the world; based on measurements of the position of the sun in Greenwich, England
longitude	The highest layer of Earth's atmosphere, located directly above the mesosphere, in which temperature rises with increasing altitude
mesosphere	The layer of Earth's atmosphere directly above the stratosphere, in which temperature decreases with increasing altitude
oblate	The layer of Earth's atmosphere directly above the troposphere, in which the temperature increases with increasing altitude
prime meridian	The layer of gases that surrounds a celestial body
stratosphere	The lowest layer of Earth's atmosphere, in which temperature decreases with increasing altitude
terrestrial coordinates	The mass of solid and molten rock that extends more then 6000 km from Earth's solid surface to its center
thermosphere	The north-south line through Greenwich, England, from which longitude is measured
troposphere	The outermost, relatively brittle layer of solid Earth, which includes the crust and upper mantle

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Models and Maps

azimuth	A cross section, of an object
contour line	A line on a field map that connects places having the same field quantity value
field	A line on a field map that connects places having the same temperature
gradient	A line on a map that connects places having the same elevation (height above or below sea level)
isoline	A region in which a force, temperature, land elevation, or another quantity can be measured at any location
isotherm	An isoline map on which the isolines, called contour lines, connect places having the same elevation
model	Anything that is used to represent something else
profile	The change in any field value per unit distance
topographic map	The compass direction specified as an angle. Azimuth starts at 0° at due north and progresses through east (90°), south (180°), west (270°), and back to north (360°, or 0°).
topography	The shape of the land

DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
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Investigating Minerals

cleavage	A mineral that contains silicon and oxygen
compound	A natural inorganic, crystalline solid that has a specific range of composition and consistent physical properties
element	A special scale of hardness used to identify minerals
fracture	Substances made up of more than one kind of atom (element) combined into larger units called molecules
hardness	The basic substances that are the building blocks of matter
luster	The color of the powdered form of a mineral
mineral	The resistance of a mineral to being scratched
Mohs scale	The tendency of some minerals to break along smooth, flat surfaces
silicate	The way light is reflected and/or absorbed by the surface of a mineral
streak	The way minerals break along curved surfaces

DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
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The Formation of Rocks

banding	A record of prehistoric life preserved in rock
bioclastic sedimentary rock	A substance that is or was a natural part of the solid Earth, or lithosphere
classification	Describes dark-colored minerals rich in magnesium
clastic	Describes igneous rocks that form deep underground
contact metamorphism	Describes light-colored minerals rich in aluminum or rocks made of these minerals; felsic rocks are rich in feldspar and quartz
crystalline sedimentary rock	Describes sedimentary rocks that are composed of the weathered remains of other rocks; clastic
extrusion	Fine-grained, extrusive igneous rocks
felsic	Hot, liquid rock within Earth
foliation	How something was formed
fossil	Melted rock coming from a volcano, or such rock that has cooled and hardened
fragmental	Rocks composed of materials made from or by living organisms
igneous rock	Rocks that contain gas pockets, or vesicles
intrusion	Rocks that form as a result of heat and/or pressure on other rocks causing chemical (mineral) or physical changes
lava	Rocks that form as a result of the compression and cementing of weathered rock fragments or shells of once living animals
mafic	Rocks that form by the solidification of melted rock
magma	Sedimentary rocks that are composed of the weathered remains of other rocks; fragmental
metamorphic rock	Sedimentary rocks that form by precipitation
origin	The alignment of mineral crystals, caused by metamorphism
plutonic	The light and dark-colored layers of mineral that form parallel to foliation in metamorphic rocks
precipitation	The loose material created by the weathering of rock
regional metamorphism	The movement of magma onto Earth's surface
rock	The movement of magma to a new position within Earth's crust. A body of rock that was injected into surrounding rock as magma
sediment	The organization of objects, ideas, or information according to their properties
sedimentary rock	The process in which a large mass of rock is changed by heat and pressure due to large-scale movement of Earth's crust
texture	The process in which an intrusion of hot, molten magma causes changes in the rock close to it
vesicular	The settling of solids from solution, often the result of the evaporation of seawater
volcanic	The surface characteristics of a rock that are the result of size, shape, and arrangement of mineral grains

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Managing Natural Resources

conservation	A long-term increase in the average temperature of Earth's atmosphere, it is the result of the increased concentration of carbon dioxide and other greenhouse gases in the atmosphere
global warming	A sufficient quantity of any material or form of energy in the environment that harms humans or the plants and animals on which they depend
natural resource	Any material from the environment that is used by people
nonrenewable resource	Resources that can be replaced by natural processes at a rate that will not decrease their availability
ore	Resources that exist in a fixed amount or for which the rate of regeneration is so slow that use of these resources will decrease their availability
pollution	Rocks that are mined to obtain a substance they contain of economic value
renewable resource	The careful use, protection, and restoration of our natural resources

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Weathering and Soils

abrasion	A change, such as rusting, that results in the formation of a new substance
bedrock	A form of physical weathering caused by repeated freezing and thawing of water within cracks in rocks
biological activity	A mixture of weathered rock and the remains of living organisms in which plants can grow
chemical change	A natural process that occurs under conditions at Earth's surface, forming new compounds
chemical weathering	A type of physical weathering caused by expansion that breaks rock into large curved slabs
exfoliation	Soil that formed in one location and was moved to another location
frost wedging	Soil that formed in place and remains there
infiltration	The actions of plants and animals that cause weathering
mechanical weathering	The breaking up of rock into smaller particles without a change in composition; mechanical weathering (see also)
organic matter	The breaking up of rock into smaller particles without a change in composition; physical weathering
physical weathering	The grinding away of rock by friction with other rocks
residual soil	The layers of a mature soil
soil	The physical and chemical changes in rocks that occur when they are exposed to conditions at Earth's surface
soil horizon	The process in which water soaks into the ground
transported soil	The remains of living organisms in which plants can grow
weathering	The solid, or continuous, rock that extends into Earth's interior

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Erosion and Deposition

agents of erosion	A decrease in the size of sediment particles with distance from the shore, produced as a stream enters calm water
bed load	A hill or ridge of wind-blown sand
deposition	A large mass ice that flows over land due to gravity
dune	A state of balance
dynamic equilibrium	How small particles that settle very slowly are carried by water or how cloud particles stay in the sky
equilibrium	Moving water, wind, or ice that causes the transport of weathered materials
erosion	Parallel scratches in bedrock that were made by rocks transported by glaciers
flotation	The method by which dissolved solids are carried in water
glacier	The method by which particles that are too large to be carried in solution or by suspension float on water
graded bedding	The motion of soil or rock down a slope without the influence of running water, wind, or glaciers
horizontal sorting	The rapid, downslope movement of rock and soil
landslide	The sediments that roll or bounce along the bottom of a stream
mass movement	The separation of particles of sediment as a result of differences in their shape, density, or size
solution	The settling, or release, of sediments that have been carried by an agent of erosion
sorting	The state of balance in which opposing processes take place at the same rate; a state of balance of events
striations	The transportation of sediments by water, air, glaciers, or by gravity acting alone. (See also agents of erosion.)
suspension	Within a layer of sediment, the gradual change in sediment size from bottom (large) to top (small) showing the order in which particles settled; graded bedding
vertical sorting	Within a layer of sediment, the gradual change in sediment size from bottom (large) to top (small) showing the order in which particles settled; vertical sorting

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Stream Dynamics

delta	A curve that develops in the path of a river when the river flows over relatively flat land
discharge	A deposit of sediment built into a large body of water by deposition from a stream
drainage divide	A flat region next to a stream or river that can be covered by water in times of flood
drainage pattern	A stream that flows into a larger stream
floodplain	All the streams that drain a particular geographic area
levee	Banks along a river of natural or human origin
meander	Flowing water, such as a brook, river, or even an ocean current
overland flow	The amount of water flowing past a particular place in a specified time
runoff	The geographic area drained by a particular river or stream; drainage basin
stream	The high ridges, from which water drains in opposite directions, that separate one watershed from another
stream system	The path of a stream, which is influenced by topography and geologic structures
tributary	The water from precipitation that flows downhill under the influence of gravity until it reaches a stream or seeps into the ground; runoff
watershed	The water from precipitation that flows downhill under the influence of gravity until it reaches a stream, or seeps into the ground; runoff may also include stream flow

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Groundwater

aquifer	A form of heat flow that moves matter and energy as density currents under the influence of gravity
capillarity	A model that represents water movement and storage within Earth, on the surface, and within the atmosphere
condensation	a place where groundwater flows onto the surface of the ground
convection	An underground zone of porous material that contains useful quantities of groundwater
dew point	The ability of a material to hold water in open spaces, or pores
evaporation	The ability of soil or sediment to allow water to flow through it
groundwater	The change in state from liquid to gas when the temperature is below the boiling point
hydrologic cycle	The part of the rock and soil in which air fills most of the available spaces
infiltration	The part of the rock and soil where all available spaces are filled with water
permeability	The process by which a substance changes from a gas to a liquid
porosity	The process by which plants release water vapor to the atmosphere, largely through pores in their leaves
precipitation	The process in which water soaks into the ground
spring	The temperature at which air is saturated with water vapor
transpiration	The tendency of a substance to pull water into tiny spaces, or pores, by adhesion
water table	The upper limit of the underground zone of saturation or the top surface on an aquifer
zone of aeration	Water that enters the ground and occupies free space in soil and sediment as well as openings in bedrock, including cracks and spaces between grains
zone of saturation	Water that falls to Earth as rain, show, sleet, or hail

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Oceans and Coastal Processes

barrier island	A low ridge of sand deposited along the shore by currents
Coriolis effect	An area on the shore that extends from where the waves' base touches the ocean bottom to the upper limit the waves reach on the beach
El Niño	Flow of ocean water, usually horizontally, that transports energy and biological nutrients, and can influence the climate of nearby land areas
longshore transport	Offshore features, similar to sandbars, that rise above sea level
neap tide	The apparent curvature of the path of winds and ocean currents as they travel long distances over Earth's surface; caused by Earth's rotation
ocean current	The difference between the lowest water level and the highest water level
sandbar	The largest tidal range, which occurs when Earth, the sun, and the moon are in a line with one another (not related to Earth's seasons)
spring tide	The motion of sediment parallel to the shore caused by waves
surf zone	The periodic replacement of upwelling cold water by warm water along the western coast of South America
tidal range	The smallest tidal range, which occurs when the sun and moon are at right angles as observed from Earth
tide	The twice(or once-) daily cycle of change in sea level caused by the gravitational influence of the moon and sun on Earth's oceans

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Glaciers

continental glacier	A deposit of unsorted glacial sediment (till) pushed into place by an advancing glacier
drumlin	A glacier that flows outward from a zone of accumulation to cover a large part of a continent
erratic	A small closed basin formed in a moraine
groove	Furrows of glacial origin in bedrock that are deeper and wider than striations
kettle	Glaciers that begin in high mountain areas and flow through valleys to lower elevations
moraine	Irregular, hilly deposits of till formed where a glacier stopped advancing and began to melt back
outwash	Large rocks transported from one area to another by glaciers
terminal moraine	Sorted sediments deposited by water from a melting glacier
till	Streamlined hills of glacial origin aligned north-to-south that have steep sides, a blunt north slope, and a gentle slope to the south; made of till
valley glacier	Unsorted sediments deposited by a glacier

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Landscapes

escarpment	A feature of a landscape
landform	A region that has landforms that are related by similarities in shape, climate, and/or geologic setting; the general shape of a large area of the land surface, such as plains, plateau, or mountain
landscape	A rolling landscape or elevated, comparatively flat region with modest topographic relief
mountain landscape	A rugged landscape that has great relief from the top of the highest peaks to deep valleys, commonly underlain by resistant rock types and distorted structures including folds and faults
plain	A steep slope or a cliff of resistant rock that marks the edge of a relatively flat area
plateau	Relatively flat landscapes, commonly at low elevation and usually underlain by flat-lying sedimentary rocks; the range of elevation is small
relief	The difference in elevation from the highest point to the lowest point on the land surface in a specific region

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Earthquakes and Earth's Interior

conduction	(P-waves) Longitudinal earthquake waves that cause the ground to vibrate forward and back along the direction of travel; the earthquake waves that travel the fastest; P-waves can travel through solids, liquids, and gases
convection	(S-waves) Transverse earthquake waves that cause the ground to vibrate side-to-side, perpendicular to the direction of travel; S-waves travel through solids, but not liquids or gases
convection cell	A form of heat flow that moves matter and energy as density currents under the influence of gravity
earthquake	A scale for measuring earthquake intensity based on the reports of people who felt the quake and observed the damage it caused
epicenter	A scale for measuring earthquake magnitude based on measurements from seismographs
fault	A scale for measuring the magnitude of an earthquake based on the total energy released by the earthquake
focus	A scale in which an increase of one unit translates to a 10-fold increase in the quantity measured
logarithmic	A science that deals with earthquakes
Mercalli scale	A sudden movement of Earth's crust that releases energy
Moho	An instrument that measures the magnitude of earthquakes
origin time	Cracks in Earth's crust along which movement occurs
primary wave	Force that tends to distort rock, resulting in slow bending or fracture
radiation	Scientists who study earthquakes
refraction	The bending of light and other energy waves as they enter a substance of different density
Richter scale	The boundary between Earth's crust and mantle
secondary waves	The elastic bending of rocks in response to stress
seismic moment	The movement of heat that occurs as heated molecules pass their vibrational energy to nearby molecules
seismograph	The pattern of circulation that involves vertical and horizontal flow
seismologist	The place on Earth's surface directly above an earthquake's focus
seismology	The place where rock begins to separate during an earthquake, usually located underground.
strain	The time at which a fault shifted to produce an earthquake
stress	The time between the breaking of the rocks that causes an earthquake and when the event is detected at a distant location
travel time	The transfer of energy in the form of electromagnetic waves

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Plate Tectonics

asthenosphere	A coherent set of principles and understandings
convergent plate boundary	A curved line of volcanic islands that are the result of partial melting of a tectonic plate where it descends beneath another oceanic plate
divergent plate boundary	A deep-ocean location where old lithosphere moves back into Earth's interior; also called a subduction zone or a convergent plate boundary (see also)
fluid	A long-lived source of magma within the asthenosphere and below the moving lithospheric plates
hot spot	A major section of Earth's outer solid shell that generally moves as a rigid unit
island arc	A material that is solid under short-term stress, but flows like a liquid when stress is applied over a long period of time
lithospheric plate	A place where lithospheric plates collide
mid-ocean ridges	A place where lithospheric plates separate
ocean trench	A place where two lithospheric plates move past each other without creating new lithosphere or destroying old lithosphere
paradigm	A region in which Earth's crust is destroyed as it is pulled down into the mantle
plastic	A system of underwater mountain ranges that circles Earth like the seams on a baseball
plate tectonics	A theory of crustal movements that combines sea-floor spreading with continental drift
polarity	Any substance that can flow, usually a liquid or a gas
sea-floor spreading	Large-scale motions of Earth's crust that are responsible for uplift and mountain building
subduction zone	The direction of a magnetic field determined with an instrument such as a magnetic compass
tectonics	The process in which new lithosphere is made at the mid-ocean ridges, and adds on to older material that moves away from the ridges on both sides
transform boundary	The upper part of the mantle, capable of slow deformation and flow under heat and pressure

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Geologic Hazards

avalanche	A bowl-shaped depression at the top of a volcano caused by an explosive eruption or the impact of an object from space
caldera	a large amount of snow and rock that moves rapidly downhill over a steep slope
crater	A large, bowl-shaped depression formed when the top of a volcano collapses into the emptied magma chamber
hazard	A place where lava comes to the surface
landslide	A series of waves caused by an earthquake or underwater landslide that can cause damage and loss of lives in coastal locations
liquefaction	An opening in Earth's surface through which molten magma (lava) erupts
mass movement	The motion of soil or rock down a slope without the influence of running water, wind, or glaciers
tsunami	The process in which strong shaking allows water to surround the particles of sediment, changing the sediments into a material with the properties of a thick fluid
vent	The rapid, downslope movement of rock and soil
volcano	Unsafe conditions that pose a threat of property damage, injury, or loss of life

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Sequencing Geological Events

absolute age	A buried erosion surface that represents a gap in the record of Earth's history
decay product	A comparison of the amount of the original radioisotope with the amount of its decay product
decay-product ratio	A fragment of one type of rock that is enclosed in another rock
geologist	A place where bedrock is exposed at Earth's surface
half-life period	An age expressed as a specific amount of time, absolute age always includes a unit of time; numerical age
inclusion	An unstable isotope that breaks down spontaneously at a predictable rate
isotopes	Atoms of the same element that contain different numbers of neutrons in their nucleus
original horizontality	Describes atoms that break down spontaneously, releasing energy and/or subatomic particles to become different elements
outcrop	determining absolute age with radioactive isotopes
radioactive	Scientists who study the materials, origin, history, and structure of Earth and how it changes
radioisotope	The age of one thing compared to the age of another
radiometric dating	The concept that the geological processes that took place in the past are similar to those that occur now
relative age	The concept that, unless rock layers have been moved, each layer is older than the layer above it and younger than the layer below it
superposition	The principle that no matter the present angle or orientation of sedimentary rock layers, the layers were originally horizontal and were tilted after deposition
unconformity	The stable, ending material of radioactive decay
uniformitarianism	The time it takes for half of the atoms in a sample of radioactive element to decay

DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
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Fossils and Geologic Time

correlation	A group of organisms so similar that they can breed to produce fertile offspring
evolution	Fossils used to establish the age of rocks; they must be easy to recognize, found over a large geographic area, and have existed for a brief period of geologic time
extinction	Matching bedrock layers by rock type or by age
index fossil	The death and disappearance of every individual of a particular species
paleontology	The gradual change in living organisms from generation to generation, over a long period of time
species	The study of fossils

DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
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Weather Variables and Heating of the Atmosphere

angle of insolation	A comparison of the actual water-vapor content of the air with the maximum amount of water vapor the air can hold at a given temperature
barometer	A measure of the average kinetic energy of the molecules in a substance
climate	An instrument used to measure air pressure
duration of insolation	An instrument used to measure temperature
fluid	Any substance that can flow, usually a liquid or a gas
fog	Solar energy that reaches Earth (incoming solar radiation)
greenhouse effect	The amount of time the sun is visible in the sky, or the number of hours between sunrise and sunset
humidity	The angle between Earth's surface and incoming rays of sunlight; angle of the sun above the horizon
insolation	The average weather conditions over a long time, including the range of conditions
meteorology	The bending of light and other energy waves as they enter a substance of different density
nuclear fusion	The condition in which air is holding as much moisture as it can at a particular temperature
precipitation	The process by which carbon dioxide and water vapor absorb heat radiation, increasing the temperature of Earth's atmosphere
reflection	The process by which light bounces off a surface or material
refraction	The process by which the nuclei of light elements, such as hydrogen, under intense heat and pressure form the nuclei of heavier elements, such as helium
relative humidity	The reflection of light in many different directions
saturated air	The short-term conditions of Earth's atmosphere at a given time and place
scattering	The study of Earth's atmosphere and how it changes
temperature	The water-vapor content of air
thermometer	Very low clouds that reach the ground
weather	Water that falls to Earth as rain, show, sleet, or hail

DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
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Humidity, Clouds, and Atmospheric Energy

absolute humidity	(J) Unit used to measure energy
boiling	A large body of tiny water droplets or ice crystals suspended in the atmosphere
cloud	An instrument used to measure atmospheric humidity
condensation	An instrument, made up of two thermometers mounted side-by-side on a narrow frame, that is used to determine the dew-point temperature and relative humidity; also known as a wet and dry-bulb thermometer
condensation nuclei	Energy absorbed or released when matter changes state
dew	Ice crystals that form when water vapor comes in contact with surfaces whose temperature is below 0°C
dew-point temperature	Liquid water that forms by condensation on cold surfaces
evaporation	Precipitation events that occur downwind from large lakes as the result of moisture that enters the air over the lake; especially common as early winter snow events
freezing	The change in state from liquid to gas (vapor) at any temperature
frost	The change in state from liquid to gas (vapor) at the boiling temperature
hygrometer	The change in state from liquid to gas when the temperature is below the boiling point
joule	The change in state from liquid to solid
lake-effect storm	The change in state from solid to liquid
latent heat	The energy needed to raise the temperature of 1 gram of a substance 1 Celsius degree
melting	The mass of water vapor in each cubic unit of air
phase of matter	The process by which a substance changes from a gas to a liquid
psychrometer	The process by which plants release water vapor to the atmosphere, largely through pores in their leaves
specific heat	The states of matter: solid, liquid, and gas
transpiration	The temperature to which air must be cooled to become saturated with moisture
vaporization	Tiny particles of solids suspended in the air on which water condenses to form clouds

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Air Pressure and Winds

convection cell	A device that uses reflected radio waves to measure at a distance wind speed and direction
convergence	A method or device that uses reflected radio waves to locate or map distant objects or weather events; an acronym from radio detection and ranging
divergence	A place where cool, dry air sinks lower into the atmosphere
Doppler radar	A region of atmospheric convergence where low-density air rises, a cyclone
high-pressure system	Isolines that connect locations with the same atmospheric pressure on a weather map
isobar	Light winds that blow from the land to the water; they usually develop at night as the air over the land becomes cooler than the air over the water
jet stream	Light winds that blow from the water to the land that usually develop in the late morning or afternoon when the land warms; they continue into the evening until the land cools
land breeze	Seasonal changes in the direction of the prevailing winds, causing changes in temperature and rainfall
low-pressure system	The act of moving apart
monsoons	The act of moving together
prevailing wind	The most common wind direction and speed at a particular location and time of year
radar	The pattern of circulation that involves vertical and horizontal flow
sea breeze	Wandering currents of air far above Earth's surface that influence the path of weather systems

DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
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Weather Maps

air mass	(1) A region of relatively low atmospheric pressure; (2) term applied to hurricanes in the Indian Ocean; (3) synonym for tornado
anticyclone	A boundary, or interface, between air masses
arctic air mass	A large body of air that has relatively high humidity because it originated over the ocean or other large body of water
cold front	A large body of air that has relatively low humidity because it originated over land
continental air mass	A large body of air that is relatively uniform in temperature and humidity
cyclone	A large body of cold air that originated near one of Earth's poles
front	A large body of very cold air that originated in the Arctic
maritime air mass	A large body of warm air that originated close to the equator
mid-latitude cyclone	A region of relatively high atmospheric pressure
polar air mass	A standard format used to display abbreviated weather data
polar front	An area of low pressure or a storm system, such as those that usually move eastward across the United States
source region	The boundary between two great convection cells; the most common path of the upper atmosphere polar jet stream.
station model	The height at which rising air begins to form clouds
tropical air mass	The location in which an air mass originated

DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
YOU MAY WANT TO USE A PENCIL…

Weather Hazards and the Changing Atmosphere

acid precipitation	A form of precipitation that consists of rain drops that freeze before they reach the ground; also known as ice pellets. Unlike hail, sleet does not require violent winds aloft
blizzard	A large storm of tropical origin that has sustained winds in excess of 74 mph (120 km/h)
drought	A long period of dry weather
freezing rain	A long-term increase in the average temperature of Earth's atmosphere, it is the result of the increased concentration of carbon dioxide and other greenhouse gases in the atmosphere
global warming	A mixture of fog and air pollution particles, especially smoke from the burning of fossil fuels
hail	A rainstorm that produces thunder, lightning, strong winds, and sometimes hail
hurricane	A small, usually short-lived storm that has extremely high winds
lightning	A winter snowstorm that produces heavy snow and winds of 35 mph (56 km/h) or greater
outgassing	Liquid precipitation that falls quickly; precipitation droplets larger than drizzle
rain	Pellets of ice, which grow larger as they repeatedly become coated with water, and are then blown higher into cold air where the coating of water freezes; eventually the ice pellets become heavy enough to fall to the ground. (Hail is most common during thunderstorms.)
rain shower	Precipitation (snow or rain) with corrosive (low pH) chemical properties, generally the result of pollution from the burning of fossil fuels
sleet	Rain that freezes on contact with Earth's surface
smog	Short periods of rain
snow shower	Short periods of snowfall
thunderstorm	Sudden electrical discharges within clouds, between clouds, and between clouds and the ground that are seen as flashes of light
tornado	The process in which bubbles of hot gas escape from magma exposed to reduced pressure near Earth's surface
weather hazard	Weather events that generate strong winds, excessive precipitation, and other hazards

DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
YOU MAY WANT TO USE A PENCIL…

Patterns of Climate

arid climate	A climate characterized by large seasonal changes in temperature
climate	A climate that has little rain and low humidity
continental climate	A humid climate that occurs over the oceans and in coastal locations
deforestation	A moderate climate that has large seasonal changes in temperature
maritime climate	Cutting forests to clear the land for other uses
temperate climate	The average weather conditions over a long time, including the range of conditions
urbanization	The development of heavily populated areas

DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
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Earth, Sun, and Seasons

altitude	A model of the universe that assumed that Earth is stationary and at the center of the universe
Antarctic Circle	A model of the universe that places the sun at the center of the solar system
Arctic Circle	Objects in the sky that are beyond Earth's atmosphere
celestial object	One of the two days each year on which the sun rises due east and sets due west, on which the length of day and night are equal, on which the sun's vertical rays are at the equator; the first day of spring or fall
equinox	Sunlight that strikes Earth's surface at an angle of 90°
geocentric	The angular elevation of an object above the horizon
heliocentric	The greatest latitude north of the equator reached by the sun's vertical ray; 23.5°N
solar noon	The greatest latitude south of the equator reached by the sun's vertical ray; 23.5°S
solar time	The latitude (66.5°N) north of which the sun does not rise on the Northern Hemisphere's winter solstice; the latitude (66.5°N) north of which the sun is in the sky for 24 h on the Northern Hemisphere's summer solstice
summer solstice	The latitude (66.5°S) south of which the sun does not rise on the Southern Hemisphere's winter solstice; the latitude (66.5°S) south of which the sun is in the sky for 24 h on the Southern Hemisphere's summer solstice
Tropic of Cancer	The name generally applied to the day of the year with the longest period of sunlight (For observers in the Northern Hemisphere, this occurs near June 21. The Northern Hemisphere summer solstice occurs when the vertical rays of the sun are at the Tropic of Cancer. In the Southern Hemisphere, the summer solstice occurs in December when the vertical rays of the sun are at the Tropic of Capricorn.)
Tropic of Capricorn	The name generally applied to the day of the year with the shortest period of sunlight (For observers in the Northern Hemisphere, this occurs near December 22. The Northern Hemisphere winter solstice occurs when the vertical rays of the sun are at the Tropic of Capricorn. In the Southern Hemisphere, the winter solstice occurs in June when the vertical rays of the sun are at the Tropic of Cancer.)
vertical ray	The point in the sky directly over an observer's head
winter solstice	The time at which the sun reaches its highest point in the sky
zenith	Time based on observations of when the sun reach its highest point and crosses a north-south line through the sky

DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
YOU MAY WANT TO USE A PENCIL…

Earth, Its Moon, and Orbits

eccentricity	A closed curve formed around two fixed points such that the total distance from any point on the curve to both fixed points is constant
ellipse	A measure of the elongation of an ellipse
focus	A short-term darkening of the moon caused by the moon orbiting through Earth's shadow [Occurs only during the full moon phase.]
gravity	A short-term darkening of the sun caused by the moon passing in its orbit between Earth and the sun [Occurs only during the new (dark) moon phase]
inertia	An object in space that revolves around another object as a result of gravity
lunar eclipse	Either of the two fixed points that determine the shape of an ellipse
major axis	The distance across an ellipse measured at it widest point
phase	The force of attraction between all objects
satellite	The observed shape of the lighted portion of a celestial object, for example, the moon or Venus
solar eclipse	The tendency of an object at rest to remain at rest or an object in motion to move at a constant speed in a straight line unless acted on by an unbalanced force

DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
YOU MAY WANT TO USE A PENCIL…

The Solar System

asteroid	a meteoroid that strikes Earth's surface
comet	A piece of rock that moves through space
Jovian planet	A planet whose composition is similar to Jupiter's; also know as a gas giant
meteor	A rocky planet whose composition is similar to Earth's
meteorite	A streak of light produced as a meteoroid burns due to friction with Earth's atmosphere
meteoroid	An irregularly shaped rocky mass that is smaller than a planet and occupies an orbit around the sun; most are found between the orbits of Mars and Jupiter
terrestrial planet	An object made of ice and rock fragments that revolves around the sun usually in a highly eccentric orbit; it may be visible periodically in the night sky as a small spot of light with a long tail

DIRECTIONS: Draw a line from the Earth Science term (on the left) to its definition (on the right).
YOU MAY WANT TO USE A PENCIL…

Stars and the Universe

big bang	A displacement of the spectral lines of very distant stars and galaxies, an increase in the wavelength of starlight caused by rapid relative motion of the star away from the observer (see Doppler effect)
cosmic background radiation	A huge group of stars held together by gravity
Doppler effect	A measure of how many waves pass a given point in a given period of time
frequency	The apparent change in frequency and wavelength of energy radiated by a source as a result of the motion of the source or the observer
galaxy	The distance electromagnetic energy can travel in 1 year, approximately 6 trillion mi (10 trillion km)
light-year	The group of billions of stars that includes the sun and our solar system, it is visible as a faint band of light across the night sky
luminosity	The process by which the nuclei of light elements, such as hydrogen, under intense heat and pressure form the nuclei of heavier elements, such as helium
Milky Way galaxy	The theory that the universe formed as a concentration of matter expanded explosively
nuclear fusion	The total energy output of a star; absolute brightness
redshift	Weak electromagnetic radiation (radio waves) left over from the formation of the universe (big bang)