

GLOSSARY

A

acid a compound that forms a sour-tasting solution, which reacts with metals and can cause serious burns on skin; a solution that is acidic turns blue litmus paper red

acidic a term used to describe a solution that has a value below 7 on the pH scale; the more acidic a solution, the lower its pH value

aftershocks smaller tremors that may occur after an earthquake as pressure in Earth's crust is gradually released; may occur at any time for months after an earthquake

B

base a compound that forms a bitter-tasting solution, which feels slippery, reacts with fats and oils, and can cause serious burns on skin; a solution that is basic turns red litmus paper blue

basic a term used to describe a solution that has a value above 7 on the pH scale; the more basic a solution, the higher its pH value

biodiversity the variety of plant and animal life within an ecosystem; the greater the number of different types of plants and animals, the greater the biodiversity

biological weathering weathering that is aided by living things, such as plants, animals, and micro-organisms

biome large regions of Earth where temperature and precipitation are the same and similar plants and animals are found

biosphere the parts of Earth where life can be found, from mountaintops to the deepest parts of the ocean

boiling point the temperature at which the liquid form of a substance changes to a gas; for example, liquid water changes to water vapour (a gas) at 100°C

C

carnivore a consumer that eats other animals; for example, wolves and orca are carnivores

chemical change a reaction in which the original substance is changed into one or more different substances with different properties; clues that a chemical change has occurred include the production of heat or light, gas bubbles, a colour change, and the formation of new substances

chemical weathering weathering that is caused by a chemical reaction between water, air, or another substance and the materials in rocks

community a group that is made up of two or more populations of different species in an ecosystem

compound a pure substance that is made up of two or more different elements; consists of only one kind of particle

concentration the amount of a substance (the solute) that is dissolved in a given quantity of the substance it is dissolved in (the solvent); the more solute dissolved, the greater the concentration; for

example, the concentration of an orange-drink solution depends on the amount of orange-drink crystals dissolved in a given amount of water

condensation the change in the state of a substance from a gas to a liquid; happens when a gas cools and its particles move slower; the opposite of evaporation

consumer an organism, such as an animal, that must obtain its food by eating other organisms in its environment

continental crust the parts of Earth's crust that have continents on them

convergent boundary an area of Earth's crust between plates that are moving toward each other and colliding

crust the "shell" of rock that makes up the hard outermost layer of Earth; "floats" on the inner layers of Earth because it is made of lighter materials than the lower layers

cycle anything that happens over and over again; for example, the seasons of the year and the phases of the moon are both cycles

D

decomposer an organism that gets its food energy by breaking down the final remains of living things, such as dead animals and plants and animal waste; for example, bacteria and fungi are decomposers

delta deposits of sediment in the shape of a triangle at the mouth of a river

density the mass of a substance per unit volume of the substance; expressed as grams per cubic centimeter (g/cm^3) or grams per millilitre (g/mL)

deposition the settling of eroded rock materials on Earth's surface

detrivore an organism that feeds on large bits of dead and decaying plant and animal matter; for example, earthworms, dung beetles, and wolverines are detritivores

dilute a solution that has a low concentration of the dissolved substance (the solute); for example, lemonade with a small amount of dissolved sugar is a more dilute solution than lemonade with a lot of dissolved sugar

dissolve to completely mix one substance (the solute) in another (the solvent) to form a solution; for example, if you add sugar to water, the sugar dissolves in the water

divergent boundary an area of Earth's crust between plates that are moving apart

E

earthquake a vibration of Earth's crust, caused by the sudden release of accumulated energy from plate movement

ecological pyramid a model that shows the effects of the loss of

energy in a food chain; at each higher level of the pyramid, the amount of available energy and the number of organisms decrease

ecosystem the network of interactions that link together the living and non-living parts of an environment

element a pure substance that cannot be broken down into any other pure substance; consists of only one kind of particle

emulsion a special kind of suspension that has been treated to prevent the parts of the mixture from separating; for example, homogenized milk is an emulsion

erosion the movement of weathered rock material from one place to another

evaporation the change in the state of a substance from a liquid to a gas; happens when a liquid is heated enough for its particles to break free of each other; the opposite of condensation

extrusive igneous rock igneous rock that is formed on Earth's surface when lava cools

F

fiord a long and narrow inlet of the sea that is formed when valleys become filled with seawater

food chain a model that shows how food energy is passed from one organism to another in a feeding pathway

food web a model that represents several interconnected food chains

fossil rock-like cast, impression, or actual remains of an organism that was buried when it died, before it could decompose

fossil record the history of changes to life on Earth as shown by fossils

freezing (or solidification) the change in the state of a substance from a liquid to a solid; happens when a liquid cools and its particles move more slowly until they settle into fixed positions in a pattern; the opposite of melting

freezing point the temperature at which the liquid form of a substance changes to a solid; for example, liquid water changes to solid ice at 0°C ; the freezing point of a substance is the same as its melting point

G

gas a substance with no fixed volume or shape; will fill any container it is in, taking on the container's shape

geologic time scale a time line of the changes to life on Earth

H

habitat the physical space where a certain species lives

herbivore a consumer that eats only plants

hot spot part of the mantle where the temperature is much higher than normal; the magma melts the rock above it and rises to the surface of Earth

I
ice wedging the widening or splitting of cracks in rocks as rain-water freezes and expands

igneous rock rock that forms from the cooling and hardening of liquid magma; most of Earth's crust is composed of igneous rock

indigenous knowledge understandings, values, and beliefs about the natural world that are unique to a particular group or culture who have lived for a very long time in a particular area. This specialized knowledge is passed from generation to generation in the form of stories told, experiences shared, or songs sung by Elders or other people

inner core the innermost layer of Earth, which is made up of iron and nickel

intrusive igneous rock igneous rock that is formed when magma cools below Earth's surface

L
lava magma that is forced out of cracks onto Earth's surface

liquid a substance with a fixed volume but no fixed shape; takes the shape of the container it is in; particles can move around more freely in a liquid than they can in a solid

M
magma hot molten rock; cools to form igneous rock

mantle the layer of Earth between the crust and the outer core; a hot, thick layer of solid and partly melted rock

mass a measurement of the amount of matter in an object; usually measured in milligrams (mg), grams (g), or kilograms (kg); an object's mass stays constant everywhere in the universe

matter anything that has mass and volume (occupies space)

mechanical mixture a mixture in which two or more different parts can be seen with the unaided eye; for example, granola cereal is a mechanical mixture

mechanical weathering weathering caused by a physical force such as ice, wind, or water

melting the change in the state of a substance from a solid to a liquid; happens when a solid is heated enough to free its particles from their fixed positions; the opposite of freezing

melting point the temperature at which the solid form of a substance changes to a liquid; for example, water changes from solid ice to liquid water at 0°C; the melting point of a substance is the same as its freezing point

metamorphic rock rock that is formed below Earth's surface when heat and pressure cause the characteristics of the existing rock to change

micro-organism a living thing that is too small to be seen without the help of a microscope; for example, bacteria and some algae are micro-organisms

mid-ocean ridge the long underwater mountain range that runs through the middle of the oceans

mineral pure, naturally occurring substance that is found in Earth's crust; the building block of rock; for example, diamonds, graphite, and talc are minerals

mixture any substance that contains two or more pure substances and therefore has two or more kinds of particles; properties of mixtures can be different in different samples

mountain a landmass that rises significantly from the surrounding level of Earth's surface

N
neutral neither an acid nor a base; on the pH scale, a neutral substance or solution has a value of 7

niche the way that an organism fits into an ecosystem, in terms of where it lives, how it obtains its food, and how it interacts with other organisms

non-reversible change a change in a substance that cannot be reversed; for example, wood sawed into pieces cannot be put together to form the original piece of wood again

O
oceanic crust the parts of Earth's crust that have only ocean floor on them

omnivore a consumer that eats both plants and animals

organism a living thing, such as a plant or an animal

outer core a dense, hot layer of Earth between the mantle and the inner core; made up of mostly liquid iron and some nickel

P

Pangaea the name of a hypothetical supercontinent proposed by Alfred Wegener

particle model a scientific model that describes matter as made up of tiny particles with spaces between the particles; the particles are always moving, and adding heat makes them move faster

pH a scale that measures the acidity of substances; has numbers from 0 (strongly acidic) to 7 (neutral) to 14 (strongly basic)

photosynthesis the process in which the Sun's energy is used by plants to produce simple sugars from carbon dioxide and water; oxygen is released in this process

physical change a change in the properties of a substance, such as its form or state; the substance itself does not change; for example, a piece of wood cut into pieces is still wood, and melted wax is still wax

plain a level area of land; usually in the interior of a continent

plateau a large area of high, fairly flat ground

plate tectonics the theory that the surface of Earth consists of approximately a dozen large plates that are continually moving

population all the members of one particular species living in a given area

predator an organism that hunts another living thing for food

preserve to maintain something in its existing state; for example, you can help to preserve an

ecosystem by working to keep it in its current state

prey an organism that is hunted by a predator

producer an organism that can make its own food from non-living materials

property a characteristic of a material that can be observed (colour or lustre) or determined through simple tests and measurements (density or melting point)

pure substance a substance that contains only one kind of particle throughout and therefore always has the same properties; there are two kinds of pure substances: elements and compounds

R

reversible change a change in a substance that can be reversed; for example, melted wax can be cooled to form solid wax again

rock cycle the changing of igneous, sedimentary, and metamorphic rocks from one into another over a long period of time

S

saturated a solution in which no more of one substance (the solute) can be dissolved in another substance (the solvent); for example, when you cannot dissolve any more drink crystals in water, the solution is saturated

sediment solid particles (such as rock particles, clay, mud, sand, gravel, and boulders) that are carried by moving water and gradually settle onto the floor of a lake or ocean

sedimentary rock rock that is formed by the breaking down, depositing, compacting, and cementing of sediment

seismic wave an energy wave that is caused by an earthquake

solid a substance with a fixed shape and a fixed volume; the particles in a solid only move a little—they vibrate back and forth but remain in a fixed position in a pattern

solubility the ability of a substance (the solute) to dissolve in another substance (the solvent); temperature plays an important role in solubility; for example, you can dissolve more orange-drink crystals in warm water than in cold water

solution a mixture of two or more substances that appears to be made up of only one substance; for example, clear apple juice (a liquid), clean air (a gas), and stainless steel (a solid mixture of metals) are all solutions

species a term used to describe each different kind of organism; for example, all dogs (from toy poodles to great Danes) belong to the same species because they can mate and reproduce fertile offspring; cats belong to a different species than dogs

state a property describing whether a substance is a solid, a liquid, or a gas; for example, water can be found as a solid (ice), a liquid (water), or a gas (water vapour in the air)

stewardship taking personal responsibility for something; for example, by caretaking in an ecosystem

subduction zone an area of Earth's crust where one plate is sinking below another

sublimation the change in state of a substance from a solid to a gas without first becoming a liquid; happens when particles of a solid gain enough energy to break completely away from the other particles, forming a gas

supersaturated a solution that is more than saturated; contains more of the dissolved substance (the solute) than would normally be found in a saturated solution

suspension a cloudy mixture in which clumps of a solid or droplets of a liquid are scattered throughout

a liquid or gas; for example, muddy water is a suspension

sustainability the ability of ecosystems to bear the impact of the human population over a long period of time, through the replacement of resources and the recycling of waste

T
transform fault boundary an area of Earth's crust between plates that are slipping past each other

tsunami an ocean wave that is caused by an earthquake or an underwater volcano

U
unsaturated a solution in which more of one substance (the solute) can still be dissolved in another substance (the solvent); for example, when you can still dissolve

drink crystals in water, the solution is unsaturated

V
valley a low region of land between hills or mountains

volcano any opening in Earth's crust through which molten rock and other materials erupt

volume a measure of the amount of space that is occupied by matter; the volume of a liquid is generally measured in millilitres (mL) or litres (L); the volume of a solid is usually measured in cubic centimetres (cm³); 1 cm³ is the same as 1 mL, and 1000 cm³ equals 1 L

W
weathering the process that slowly breaks down natural materials (such as rocks and boulders) into smaller pieces