
GLOSSARY

This is not a list of words to be memorized. It is provided for the teacher's reference. Words which are appropriate vocabulary for students are in bold face. These are words which the students will learn as a part of doing the activities.

acclimate: change internal or external features to adjust to changes in the environment; the growing and shedding of a winter coat of heavy hair is an example of a mammalian acclimation process; aquatic organisms generally acclimate by means of internal chemical changes or adjustments; acclimation is a reversible process.

adapted or adaptation: an adaptation is a characteristic that was inherited and cannot be changed in an individual; adaptations have a genetic basis and are passed on to offspring.

alga (ae plural): a photosynthetic organism which lacks the structures of higher plants, such as roots or seeds; may be single-celled or may be large multi-celled organisms such as seaweeds.

anadromous: fish that live as adults in the ocean, but swim up into rivers and streams to lay their eggs.

anaerobic respiration: a process that takes place inside cells in which carbohydrate (food) molecules are broken down to release energy without using oxygen; less efficient than aerobic respiration which uses oxygen.

anoxic: without oxygen.

aquatic: growing, living or frequenting water; in this curriculum aquatic includes both fresh and salt water.

atom: the smallest unit into which a chemical element can be broken and still be that element.

benthos (ic): of or on the bottom of a body of water.

bony fish: fish with a skeleton made of bone as opposed to sharks, skates and rays whose skeletons are made of calcified cartilage.

brackish: water which has a salinity between that of fresh water and salt water; a mixture of salt water and fresh water; salinity between 0.5 and 35 parts per thousand.

buoyancy: the tendency of an object to rise or float when submerged in a fluid; the power of a fluid to exert upward force on an object placed in it.

carnivore: animal that eats other living animals which it catches, as opposed to a scavenger which consumes dead animals.

cartilaginous fish: sharks, skates and rays; fish with skeleton made of cartilage.

catadromous: animals that live in fresh water and move to the ocean to spawn.

characteristic: a feature or trait or property.

classification (ying): a systematic arrangement into groups or categories on the basis of characteristics shared in common.

cohesion: attraction of molecules of a substance for each other.

cold-blooded: term used to describe animals whose internal temperature is determined by that of its environment; may be quite warm on a hot day; also called ectotherms. Plants function as ectothermic organisms.

community: an assemblage of organisms living together in association in an environment.

condense: in this case, the collection of water molecules in vapor form around a particle or on a surface as they cool to become liquid water.

consumer: an organism that does not do photosynthesis and must feed on other organisms.

control: untreated objects or organisms which are used for comparison against treated objects or organisms in an experiment.

displacement: the volume or weight of fluid moved by a floating object.

cycle: process in which materials are not lost, but are exchanged continuously among organisms and their environment.

density: the mass per unit volume of a substance.

diffuse (ion): random movement of suspended or dissolved particles from areas of high concentration to areas of lower abundance; mixing until evenly distributed.

dissolve: to go into solution; in the case of water, a substance mixes with water and does not settle out upon standing, but stays evenly mixed.

dissolved oxygen: oxygen molecules mixed in solution with water.

ecological balance: the relatively stable conditions found in natural, undisturbed communities over time.

erode (sion): gradual wearing away; in this case water is the agent that causes the wearing away.

estuary: region where salt and fresh water mix in a partially enclosed body of water; generally at a river mouth or in lagoons behind barrier beaches.

euphotic zone: the surface layer of water in an aquatic environment in which photosynthetic organisms can survive; photic zone is depth to which light penetrates and is deeper.

evaporate (tion): liquid becomes a gas and disperses into the atmosphere.

fisheries management: like wildlife management, an attempt to use wild populations for human purposes without destroying them; requires an understanding of ecological principles and constant monitoring of populations managed.

flow chart: a visual representation of the choices made in a key

food: chemical compounds containing carbon atoms along with other elements which have been assembled by other organisms and are eaten and used for growth, repair, energy and reproduction.

food web (chain): the sequence of organisms in a community which produce food and consume it; the path that food (materials and stored energy) takes through a group of organisms.

fresh water: water with a salinity of less than 0.5 parts per thousand; no taste of salt.

ground water: water stored naturally underground, generally in rock layers; comes to the surface naturally in springs; water reaches these layers by moving down through the soil and rocks from the surface; humans drill wells to reach it.

habitat: place normally occupied by a particular organism; kind of place such as a lake or stream.

halocline: point in an aquatic system which is stratified with regard to salinity at which the salinity changes rapidly; boundary between two salinities.

herbivore: animal that eats plants or algae (photosynthetic organisms).

ion: an atom or molecule that has lost or gained one or more electrons and has become electrically charged.

indicators: color changes that make visible amounts of invisible products in solution or that change when chemical reactions that cannot be seen take place; markers for things that cannot be seen.

larva (ae plural): immature form of an animal that is physically very different from the adult.

mass: a means of expressing the quantity of a material that is not dependent on gravity as weight is; an object would have the same mass on the earth and the moon, but not the same weight; within one gravitational field, mass is the same as weight.

migration: movement of animals from one area to another; frequently done on a seasonal basis between specific areas.

modeling: process in which one constructs a system which attempts to reproduce aspects of a real system which can then be tested.

molecule: smallest possible unit of a compound substance; has two or more atoms.

nekton: freeswimming aquatic animals that are independent of currents or waves.

neutron: organisms that live at the surface of the water.

nitrogen: an element which is essential for living things; required to make proteins and nucleotides; frequently in low supply in marine environments where its lack may limit phytoplankton growth.

nonpoint source pollution: pollution that enters water through runoff from the land.

nutrients: in the case of plants and other photosynthetic organisms, chemicals from the environment which are necessary for life and growth.

omnivore: organism that feeds on both plant and animal sources; feeds at several levels of the food chain.

optimal (um): most favorable or best condition for an organism.

organism: any living thing.

oxygen: an element common in the atmosphere as a two atom molecule; a waste product of photosynthesis, it is required by plants and animals for respiration.

parts per thousand (ppt): a method of expressing the concentration of salts in solution based on the relative weight of the salts to the solution.

phosphorus: an element required by living things; as a plant nutrient it is most commonly limiting in freshwater environments.

photosynthesis: chemical process which takes place inside cells in which light energy is used to make carbohydrates from carbon dioxide and water; oxygen is a waste product of this reaction; done by plants, including algae such as seaweeds and phytoplankton.

phytoplankton: small, generally microscopic aquatic organisms that are photosynthetic and drift with the currents; generally single-celled; include many kinds of organisms called algae.

point source pollution: pollution that is released from a specific known source that has an exact location.

predator: animal that hunts and eats other animals.

prey: organism that is eaten by a predator.

producers: organisms that make food; in this curriculum primary producers, generally photosynthetic organisms, are simply called producers.

respiration: chemical process which takes place in the cells of plants and animals in which carbohydrates are broken down and energy is released which can be used by the cells to do work; most common form involves the use of oxygen and the release of the waste products carbon dioxide and water.

salt: a crystalline compound made up of ions which tend to separate readily in water; hence salts dissolve rapidly.

salt water: ocean or sea water; salinity of 35 parts per thousand.

seasons: spring, summer, fall and winter; different seasons characterized by climatic conditions caused by Earth's rotation; seasons are not apparent in tropical areas.

sessile: attached; not free moving.

simulation: a model system that imitates a real situation.

solution: a mixture, usually liquid, in which one or more substances are distributed throughout the liquid in the form of separate molecules or ions.

spawn: release eggs for fertilization in the water.

specific gravity: the density of a substance using water as a standard which is set at 1.0.

specific heat: the amount of heat a substance absorbs when its temperature increases one degree centigrade; different for different substances.

standing crop: total weight of animals or plants in existence at a point in time; as opposed to all the plant or animal material produced over a period of time, such as a year.

stratified: layered.

surface tension: condition at the surface of a fluid which acts as an elastic film due to the molecular forces within the fluid.

surface water: water on the surface of the ground such as a lake or river.

suspension: a mixture, usually liquid, in which a substance may settle out of the liquid upon being allowed to stand.

swim bladder: gas filled organ found in most bony fish which is inflated or deflated to adjust the buoyancy of the fish, and thus change its position in the water.

thermocline: boundary layer of water where temperature rapidly changes from warm surface water to colder bottom water.

tolerate: endure, resist or survive without grave or lasting injury.

turbid: prevents the passage of light; cloudy or opaque.

turnover: mixing of surface and bottom water in a previously stratified system.

variable: condition which is subject to change.

ventilation: movement of air in and out of lungs or movement of water over gills.

vertical migration: movement up and down in the water, rather than horizontally.

viscosity: resistance to flow.

warm-blooded: term used to describe animals that regulate their internal temperature to a constant warm temperature; also called endotherms.

water column: term used to describe the vertical dimension in an aquatic habitat.

zooplankton: generally small to microscopic aquatic animals, larvae or eggs that are not strong swimmers and drift with currents; may be a temporary resident of zooplankton or may be a permanent member.