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| Term | Long definition | Common name |
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| acanthodian | Any member of an extinct order (Acanthodia) of fish called placoderms that were characterized by bony fins. Acanthodians are among the earliest known fish with jaws. | |
| acritarch | a single-celled organism enveloped by an acid-resistant wall. Most acritarchs were probably marine algae. They are common fossils in Proterozoic and later rocks. | |
| actinopterygian | see ray-finned fish | ray-finned fish |
| agnathan | Any member of a subphylum (Agnatha) of jawless, fish-like vertebrates. The other vertebrate subphylum (Gnathostomata) includes all vertebrates with jaws, the vast majority of living vertebrate species. | lamprey, hagfish |
| aistopod | Any member of an extinct order of amphibians (Aistopoda). Aistopods were highly specialized, limbless, and aquatic animals that resembled (in appearance and most likely in movement) modern snakes. | |
| algae | a general term for aquatic plants that lack seeds and vascular tissue. Algae belong to many lineages that are not closely related to one another. They are taxonomically and ecologically diverse. | |
| ammonite | Any member of an extinct suborder of cephalopod mollusks (Ammonoidea) with chambered, spiral shells that thrived in the Mesozoic and Paleozoic oceans. | |
| amniote | Any member of the Amniota, a group of vertebrates that includes all mammals, reptiles, and birds. Amniotes are characterized by their production of an amniotic egg, which envelops the developing embryo in a set of fluid-filled membranes. In derived amniotes like mammals, the fertilized egg develops internally. | |
| amphibian | Any member of the lineage of vertebrates that hatch from eggs in water, spend their legless juvenile existence there, then usually metamorphose into an air-breathing, land dwelling, four-legged adult. | |
| anapsid | Any member of a subclass of reptiles called Anapsida, whose skulls lack openings in the temporal region behind the eyes. Turtles are the only living group of anapsids. | |
| Angara | A late Paleozoic north-temperate floral region named after the central Siberian area of Russia. | |
| angiosperm | Any member of the highly diverse lineage of plants (~200,000 living species) that have their seeds enclosed in a carpel. The "pod" of a bean is a carpel, although carpels show a wide array of forms in different species. | flowering plant |
| ankylosaur | Any member of the suborder (Ankylosauria) of quadrupedal, armored, ornithischian dinosaurs. | |
| anthophyte | Any member of the lineage of plants consisting of angiosperms and related groups that had flower-like reproductive structures. | |
| anthracosaur | Any member of a small group of labyrinthodont amphibians that had long, eel-like bodies. Anthracosaurs are thought to be close relatives of amniotes. | |
| anthropoid | Any member of the suborder Anthropeidea, which includes Old and New World monkeys, apes, and humans. They are characterized by binocular vision, large brains, and high manual dexterity. | |

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| ape | A species of the family Pongidae. Living apes include gibbons, orangutans, gorillas, chimpanzees, and humans. | |
| arachnid | Any arthropod of the class Arachnida, which includes spiders and mites among others. They are characterized by four pairs of segmented legs and a two-part segmented body. | spider |
| archaeocyath | Any member of an extinct order of sponges (Archaeocyatha) that are known only from the Lower to Middle Cambrian. | |
| Archean | The unit of geologic time 2.5 – 4.0 billion years ago during which the first terrestrial rocks formed. | |
| archosaur | Any member of a major group of reptiles that includes the extinct pterosaurs and dinosaurs as well as living birds and crocodiles and their extinct relatives. | ruling reptile |
| arthropod | Any member of the phylum Arthropoda, which are characterized by jointed appendages, an exoskeleton, and segmented body parts. Arthropods are the most diverse group of animals on Earth and include insects, crustaceans, arachnids, myriapods, and onychophorans as well as extinct forms like trilobites. | |
| artiodactyl | Any member of the mammalian order Artiodactyla, which includes cattle, swine, and deer. Artiodactyls typically have an even number of toes on the feet. | even-toed ungulate |
| asteroid | One of thousands of small planet-like bodies. Asteroids can range in size from meters to hundreds of kilometers in diameter. Most asteroids in our solar system are in orbits between Mars and Jupiter, but others have orbits that intersect Earth's. The impact of large asteroids on Earth can have devastating effects on organisms, as at the Cretaceous-Tertiary extinction. | |
| Baltica | An ancient continent made up of the land masses surrounding the modern Baltic sea. Baltica, during the Late Silurian/Devonian, collided with Laurentia and Siberia, forming the supercontinent Laurussia. | |
| basalt | A hard, black volcanic rock with low silica content | |
| belemnite | Any member of an order of squid-like cephalopods (Belemnoida) that evolved in the Carboniferous and lived through the Mesozoic. Belemnites had soft bodies surrounding an internal shell and were probably fast-swimming carnivores, like modern squid. | |
| bennettitalean | Any member of a group of Mesozoic seed plants, the Bennettitales, with somewhat flower-like reproductive structures, and typically with stout trunks and cycad-like foliage. Bennettitaleans went extinct in the Cretaceous and may have been closely related to angiosperms (flowering plants). | |
| benthic | Living on or in the bottom of a body of water | |
| Bering Land Bridge | An expanse of land that connected North America and Asia. During the Pleistocene ice ages, when ocean levels dropped as ice formed on the continents, this low-lying region allowed terrestrial species to cross between the Old and New World. | |
| biomarker | A geologically stable molecule originally part of a living organism. Some biomarkers are distinctive of a particular group of organisms (e.g., cyanobacteria). Many biomarkers are lipids (fats). | |
| biostratigraphy | The use of fossil distribution in the stratigraphic record to organize different strata into units and assign relative dates. | |
| biota | The living organisms of a time and place. | |
| bird | Any member of the vertebrate class Aves. Birds are warm-blooded and feathered, and their forelimbs have been modified for flight through evolution. | |
| bivalve | A mollusk with a soft body enclosed by two distinct shells that are hinged and capable of opening and closing. | clam, oyster, scallop, mussel |

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| blastoid | Any member of the extinct echinoderm group Blastoidea. Most blastoids had stalks, were sessile, and fed on particles suspended in the water column. Blastoids went extinct at the end of the Paleozoic. | |
| bony fish | The common name for the class Osteichthyes, fish that have bony rather than cartilaginous skeletons. | |
| brachiopod | Any member of a phylum of marine invertebrate animals called Brachiopoda. Brachiopods are sessile, bivalved organisms, but are more closely related to the colonial Bryozoa than the bivalved mollusks. Brachiopod diversity peaked in the Paleozoic, but some species survive. | lamp shell |
| broad-leaved tree | Any large woody plant with broad leaves. Usually contrasted with needle-leaved trees (mostly conifers). | |
| browser | Any vertebrate animal that feeds on the twigs, shoots, and leaves of trees and shrubs. | |
| bryophyte | Any non-vascular land plant. There are three major groups of bryophytes: Bryophyta (mosses), Marchantiophyta (liverworts), and Anthocerotophyta (hornworts). | moss |
| bryozoan | Common name for any member of the phylum Bryozoa. Bryozoans are invertebrate aquatic organisms most commonly found in large colonies. | |
| calamite | Any member of the lineage of giant horsetails, which belonged to the Sphenopsida, a group that also includes smaller plants. Sphenopsids were an important part of late Paleozoic vegetation. Calamites grew to be tree-sized plants but had the characteristic architecture of whorled branches seen in modern horsetails. | giant horsetail |
| calcareous | Composed of calcium carbonate (CaCO ₃). | |
| callipterid | Any member of a group of seed plants with somewhat fern-like foliage that are common in Late Carboniferous and Permian floras. | |
| Cambrian | The first of the six periods of the Paleozoic Era, from 543 to 490 million years ago. | |
| Carboniferous | The fifth of six periods constituting the Paleozoic Era, from about 362 to 298 million years ago. In North America, the Carboniferous is divided into the Mississippian and Pennsylvanian periods. Their mutual boundary is around 323 mya. | |
| carnivore | Animals that eat mostly flesh. Can also mean any member of the mammalian order Carnivora, which includes dogs, cats, sea lions, otters, and raccoons, among others. | meat eater |
| carotenes | Red and orange pigments that help capture light energy in plants. | |
| cartilaginous fish | Any fish of the classes Chondrichthyes or Elasmobranchii, such as sharks and rays. These fish have skeletons composed entirely of cartilage instead of bone. | shark, ray |
| caseid | Any of a group of Permian reptiles related to the sail-backed pelycosaur. Caseids were herbivorous and ranged in size from 1 to 6 meters long. | |
| Cenozoic Era | The current geologic era, which started 65.5 million years ago and continues to the present. Also known as the Age of Mammals. The Cenozoic has seven Epochs, in ascending order, the Paleocene, Eocene, Oligocene, Miocene, Pliocene, Pleistocene, and Holocene. | 65 mya to present |
| cephalopod | Any mollusk of the class Cephalopoda, which includes squids, octopus, and ammonites. They are characterized by the tentacles attached to their heads. | squid, octopus |
| Ceratopsia | A suborder of dinosaurs that includes the "horned" dinosaurs. Ceratopsians are a Cretaceous group. | horned dinosaur |
| chalk | A sedimentary rock of marine origin, formed by the accumulation of calcareous shells (tests) left behind by microorganisms. | |

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| champsosaur | Small "crocodile lizards" that were convergent in form and ecology with aquatic crocodilians. This group evolved in the Cretaceous, survived the K-T boundary, and lived until the Eocene. | |
| chemosynthesis | The process by which some microbes make food (carbohydrates) by oxidation of simple inorganic compounds, rather than by photosynthesis. | |
| chlorophyll | Green pigment compounds that help capture light energy in plants. | |
| Chondrichthyes | The class of fish (including sharks, skates, and rays) whose skeletons are composed of cartilage. | cartilaginous fish |
| chordate | Any member of the phylum Chordata, which includes all organisms with a notochord at some stage in their development. | |
| circumpolar | Surrounding a terrestrial pole. For example, a circumpolar current flows around one of the poles. | |
| clade | A group or lineage of organisms whose members are descended from a single common ancestor. | lineage |
| class | A taxonomic category in Linnaean biological classification. A subdivision of a phylum, consisting of a grouping of similar orders or subclasses. | |
| coccolith | Any member of a group of primarily single-celled, photosynthetic organisms that originated in the Jurassic. They have calcareous plates and are at the base of the food chain in some marine environments. Coccolith plates are a major constituent of some marine limestones and chalks. | |
| coelacanth | Any member of the order Coelacanthiformes, a lineage of lobe-finned bony fish that dates back to the Devonian. Living coelacanths look much like their Paleozoic ancestors. | |
| condylarth | Any member of the Condylarthra, an order of archaic, extinct mammalian ungulates that were common in the Paleocene and Eocene. | |
| conifer | Any member of the conifer lineage of seed plants that have cone-like reproductive structures, and typically have needle or scale-like leaves. Pines and redwoods are examples of living conifers. Conifers were common trees in the late Paleozoic and Mesozoic and remain abundant in some environments today, although they are much less diverse than the flowering plants. | |
| conodont | Any member of a group of worm-like, vertebrate organisms common from the Ordovician to the Triassic. Conodont dental batteries are important tools for Paleozoic and early Mesozoic biostratigraphy. | |
| continental drift | A theory, originally proposed by Alfred Wegener, that the continents were once part of a single land mass and have since moved across the Earth to their present locations. The modern theory of plate tectonics proposes specific mechanisms for how continental drift occurs. | |
| continental crust | The outermost layer of the solid Earth. The crust is colder and more solid than the mantle and core. Continental crust is 20-60 km thick and is made up mostly of rocks that are relatively old and silica-rich compared with the basalt rocks of the ocean crust. | |
| continental shelf | The marginal area of continental crust, often covered by relatively shallow seas. | |
| coral reef | A rock-like accumulation of calcareous exoskeletons in a relatively shallow area of the seafloor. The reef is built layer by layer as new organisms grow on top of the skeletons of previous generations. | |
| creodont | Any member of the mammalian order Creodonta, one of two common groups of carnivorous mammals in the Paleocene and Eocene. | |
| Cretaceous | The third and final period of the Mesozoic Era; it lasted from 146 to 65.5 million | |

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| crinoid | The common name for any echinoderm of the class Crinoidea, including sea lilies, feather stars, etc. Crinoids are common fossils in the Paleozoic and persist to the present. Many species have stalks and radiating arms and feed on particles in the water column. | sea lily |
| Crocodyliformes | A lineage of archosaurian reptiles that includes a diverse array of fossil and living crocodiles and their relatives. | crocodile |
| crustacean | Any arthropod of the superclass Crustacea, including lobsters, shrimp, crabs, etc. They are characterized by the presence of two pairs of antennae on the head and most are found in marine environments. | |
| cyanobacteria | A group of single-celled Bacteria (formerly called blue-green algae). Cyanobacteria probably played the major role in oxygenating the Earth's atmosphere, and fossils of cyanobacteria are the oldest record of life on Earth. | blue-green alga |
| cycad | Any member of a group of seed plants with somewhat cone- or leaf-like reproductive organs and leaves that superficially resemble those of some palms. Cycads were moderately common in the late Paleozoic and Mesozoic, and a small number of types survive to the present. | |
| deciduous teeth | The first set of teeth, which are replaced during growth by permanent teeth. | milk teeth, baby teeth |
| deciduous tree | A tree that sheds its leaves seasonally. Some conifers are deciduous (for example, bald cypress). | |
| decomposer | An organism that breaks down dead organic material into simpler compounds. | |
| deformation | Folding, faulting, shearing, compression, or stretching of rocks. | |
| detritivore | An organism that feeds on dead organic debris. | |
| Devonian Period | The fourth of six periods constituting the Paleozoic Era, from about 418 to 362 million years ago. | |
| diapsid | A member of the Diapsida, the subclass of reptiles that includes lizards and snakes. Diapsids are characterized by two pairs of openings in the temporal region of their skulls. | |
| diatom | Any member of a group of single-celled algae that live in both marine and fresh-water environments. Diatoms secrete walls of silica called frustules. These frustules can accumulate in massive quantities, forming a rock called diatomite. | |
| dicynodont | A member of a group of Permo-Triassic herbivorous pig-like terrestrial vertebrates. Dicynodonts are a lineage of synapsids, and thus related to mammals. They are characterized by a wide beak and two tusks. | |
| dinoflagellate | A type of unicellular alga. Dinoflagellates are dominantly marine, evolved in the Paleozoic or Precambrian, and are useful in biostratigraphy of Cenozoic and Marine deposits. Some living dinoflagellates can either make their own food through photosynthesis or feed on other organisms, and toxic dinoflagellates are responsible for "red tides." | |
| dinosaur | A member of the archosaur class Dinosauria. Dinosaurs (except for birds) are confined to the Mesozoic, and two orders are usually recognized: Saurischia and Ornithischia. The word Dinosauria, as translated in 1842 by its originator, Sir Richard Owen, means "fearfully-great lizard." | |
| diversification | An evolutionary increase in the number of species within a lineage of organisms. Diversification can be geologically rapid or slow. | |
| echinoderm | the common name for members of the phylum Echinodermata. These organisms are characterized by bodies showing radial symmetry (usually in fives) and the presence of tube feet in most forms. | |
| echinoid | common name for any member of the class Echinoidea, typified by sea urchins. Echinoids are a major component of Mesozoic and Cenozoic benthic marine faunas, and most have a rounded form with five-fold radial symmetry. | sea urchin |

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| ecosystem | an integrated ecological system, consisting of organisms, chemical and physical conditions, and the interactions among them. | |
| Ediacaran fauna | a general term applied to macroscopic, soft-bodied organisms of the Vendian Period (last part of the Proterozoic). How (and if) ediacaran organisms are related to later multicellular life is a subject of great interest and debate. | |
| elasmobranch | Any member of the subclass of Chondrichthyes (cartilaginous fish) that have plate-like scales. This subclass includes all sharks, rays and skates. | |
| entelodont | An extinct group of artiodactyl mammals from the Eocene and Oligocene. Entelodonts were large and somewhat pig-like, and may have been omnivores. | |
| Eocene | The second of the seven epochs of the Cenozoic; it lasted from 55.8 – 33.9 million years ago. | |
| eon | The largest division of geologic time. The history of the Earth is divided into the Hadean, Archean, Proterozoic, and Phanerozoic eons. Eons are divided into eras. | |
| epoch | The fourth largest division of the geologic time scale, subdivision of a period. The Paleogene Period (part of the Cenozoic Era) is divided into the Paleocene and Eocene epochs. Epochs may be divided into ages. | |
| era | The second largest division of the geologic time scale, subdivision of an eon. The Phanerozoic Eon is divided into the Paleozoic, Mesozoic, and Cenozoic Eras. Each era is divided into periods. | |
| eukaryote | An organism with cells that have a membrane-bounded nucleus and organelles such as mitochondria and plastids. Archaea and true bacteria are not eukaryotes. | |
| Euramerica | An ancient supercontinent consisting of large parts of the modern continents of North America, Europe, and Greenland. Euramerica formed as the supercontinents Laurentia and Baltica collided in the Late Silurian/Devonian. Euramerica collided with Gondwana during the Carboniferous, helping to form the supercontinent Pangaea. | |
| eurypterid | Any member of an extinct order (Eurypterida) of mostly aquatic, scorpion-like arthropods that were common in the early Paleozoic. | |
| evolution | Descent with modification. A lineage of organisms evolves when its genetic makeup changes, as the result of either natural selection for particular genes or random accumulation of mutations. Evolution is also sometimes used in a more general sense to indicate change over time - either within lineages or in ecological communities or physical environments. | |
| exoskeleton | External protective and supportive structure, as in arthropods. | |
| extant | Describes a species that is still living, not extinct. | |
| extinct | No longer living anywhere. | |
| extinction | The death of all individuals of a species. | |
| Faeroe Platform | An extensive block of igneous rock located between Britain and Greenland - part of the continental connection between Europe and North America in the early Cenozoic before formation of the North Atlantic by rifting. | |
| family | A taxonomic category in Linnaean biological classification. A subdivision of an order, consisting of a grouping of similar genera or subfamilies. | |
| fauna | Animals or animal life from a specific geologic time or geographic locality. | |
| foraminifera | Any member of the order Foraminifera. Foraminifera, or forams, are single-celled organisms with calcareous shells that can be found in every marine habitat. | |
| formation | A mappable body of rock that is identified by the characteristics of its rocks and its position relative to other formations. Typical characteristics of a formation are the color, chemistry, and fossil composition of its rocks. | |

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| fusulinid | Any member of a group of extinct foraminifera that first appeared in the Carboniferous and went extinct at the end of the Permian. Many fusulinids were large for single-celled organisms. | |
| GPS | Global Positioning System - a system that utilizes satellites and a handheld device to pinpoint one's exact location on the Earth. | |
| gastropod | Any member of a large class of mollusks (Gastropoda), commonly called snails. Gastropods live in marine, freshwater, and terrestrial habitats. They have a univalve, often spiral shell (or none at all), a muscular foot for locomotion, and distinctive sensory organs. | snail |
| genus | A taxonomic category in Linnaean biological classification (plural <i>genera</i>). A subdivision of a family, consisting of a grouping of similar species or subgenera. | |
| gigantopterid | Any member of a group of seed plants from the Permian that have large, complex-veined leaves. | |
| ginkgo | A woody deciduous seed plant with distinctive fan-shaped leaves. Ginkgos, which first appeared in the Permian, are known as "living fossils" because the sole living species (<i>Ginkgo biloba</i>) closely resembles fossils from the Mesozoic. | |
| glaciation | A process in which large accumulations of snow and ice (glaciers) advance over the surface of the land or sea. | |
| global warming | A term used to describe a warming event that raises Earth's average temperature and causes an associated climate change. | |
| glossopterid | <i>Glossopteris</i> is entirely Southern Hemisphere, entirely Permian, and entirely temperate in distribution. It occurs, for example, in Antarctica. There is a possibility that its ancestors were Northern Hemisphere or at least tropical, possibly Southern Hemisphere (at the time) and known as far back as the Early Pennsylvanian (<i>Lesleya</i> and <i>Megalopteris</i> , from western Illinois in "upland" deposits), and may have migrated into the south temperate zones by moving in higher elevation areas. The plants appear to have been shrubs to small trees. Although the leaves do not appear to vary much, there seem to have been many species of <i>Glossopteris</i> . | |
| gnathostome | Any member of the superclass Gnathostomata. All jawed vertebrates are gnathostomes, the first of which evolved in the Middle Devonian. | |
| gneiss | A coarse-grained rock usually with alternating light and dark layers composed of different minerals. The light bands are generally quartz and feldspar rich, the dark have more biotite mica, garnet, or graphite. Gneisses may be derived from the metamorphosis of many types of igneous or sedimentary rocks; they are common in Precambrian regions. | |
| Gnetales | A lineage of seed plants thought to be the closest living relatives of flowering plants or angiosperms. There are few living species of Gnetales, but they appear to have been more common in the Mesozoic. | |
| Gondwana | An ancient supercontinent in the Southern Hemisphere made up of the modern land masses Africa, South America, Australia, India, and Madagascar. | |
| gorgonopsian | Any of a lineage of Permian and Triassic carnivorous vertebrates. These dog-sized and larger animals had sharp fangs and flat heads, and were related to the group that gave rise to mammals. | |
| granite | Granite is a coarse-grained, usually light-colored, igneous rock that cools deep under the Earth's surface. The major minerals are quartz, feldspar, and mica. | |
| graptolite | Any member of the Graptolithina, a class of extinct marine invertebrate animals. Graptolites are believed to have been planktonic and are especially prevalent in Ordovician and Silurian rocks. | |

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| grass | Any plant of the angiosperm family Gramineae. Grasses are generally small herbs (except for bamboo) and are an important component of the late Cenozoic and living flora in many parts of the world. The earliest fossil record of grass is in the last part of the Cretaceous. | |
| grassland | A region where grass is the dominant vegetation | |
| grazer | An animal that feeds on grass. | |
| green algae | Algae of the class Chlorophyceae. Green algae is characterized by chlorophyll a and b, and carotenes alpha and beta. Green algae are more closely related to land plants than other groups of algae. | |
| greenhouse climate | A period of globally warm climate thought to result from the trapping of heat at the Earth's surface by high concentrations of carbon dioxide, methane, or water vapor in the Earth's atmosphere. | |
| greenhouse effect | The tendency for certain gases, such as carbon dioxide and methane, to trap heat at the Earth's surface by reducing outgoing long-wave radiation. The process is similar to the way greenhouse glass allows sun to enter and prevents the generated heat from escaping; hence the name. | |
| gymnosperm | Any non-angiosperm seed plant, such as a conifer, cycad, or ginkgo. | |
| gyres | a circular course of motion, usually referring to an ocean current pattern. | |
| hadrosaur | Any of a lineage of herbivorous, "duck-billed" ornithischian dinosaurs common in the Late Cretaceous. Hadrosaurs were one of the few groups of dinosaurs to evolve dentitions that could shred food in a manner like that of herbivorous mammals. | duck-billed dinosaurs |
| hemichordate | Any member of the phylum Hemichordata, which are worm-like marine animals with a primitive notochord and gill slits. | |
| herbivore | An animal that consumes living plants or their parts. | |
| herb | A plant that lacks woody tissue. | |
| hexapod | Any member of the Hexapoda, the group of arthropods that characteristically has three pairs of walking legs. Hexapods include insects and the smaller groups Collembola, Diplura and Protura. The vast majority of animal species on the planet today are hexapods. | insect |
| Holocene | The last of the seven epochs of the Cenozoic; it extends from 11,500 years ago to the present. | |
| horn coral | The common name for rugose corals, an extinct type of coral common during the Paleozoic. | |
| horse | Any member of the perissodactyl ungulate family Equidae. | |
| horsetail | Any member of the sphenopsid genus Equisetum. Sometimes horsetail is used to refer to all members of the sphenopsids, a group of spore-bearing plants with a distinctive architecture of lateral leaves and branches arranged in whorls on the stem. | |
| hydrothermal vent | A place where hot water emerges from the ocean floor because marine water comes into contact with molten rock below the bottom. Many of the chemosynthetic microbes that live near vents are thought to be among the most primitive living organisms, and thus hydrothermal vents may have been early sites for the evolution of life. | |
| ice age | A period of time during which glaciers expand and cover more of the Earth's surface. Typically ice ages are marked by fluctuations in the extent of glaciers, with "interglacials" being geologically brief periods with less glacial cover. | |
| ichthyosaur | Any of a group marine reptiles of the Mesozoic called Ichthyosauria. They were not dinosaurs, but rather dolphin-shaped and very specialized swimming reptiles. | |
| inland sea | a sea on top of continental crust. Also known as an epicontinental or epeiric sea. | |

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| inoceramid | Any member of a group of oyster-like, large, bivalved mollusks abundant during the Jurassic and Cretaceous. | |
| insectivore | Any animal that chiefly eats insects and other small terrestrial arthropods. | |
| invertebrate | Any animal lacking a spinal column or back bone. Many distantly related lineages of animals are "invertebrates." | remove |
| Jurassic Period | The second of the three periods of the Mesozoic Era; it lasted from 200 -146 million years ago. | |
| kingdom | The largest taxonomic category in traditional Linnaean biological classification. Recent work on the relationships among organisms based on their genetic and molecular composition suggests that groups of kingdoms could be organized into three "domains" of life: Archaea, Eubacteria, and Eukaryota. | |
| labyrinthodont | Common name for any member of the extinct superorder Labyrinthodontia. These primitive amphibians of the late Paleozoic resembled crocodiles and are considered the earliest tetrapods. | |
| Laurasia | An ancient supercontinent in the Northern Hemisphere made up of the modern continents North America, Europe, and Asia. Laurasia formed as the supercontinent Pangea broke up during the Mesozoic Era. | |
| Laurentia | An ancient continent made up of most of modern eastern North America and parts of western Eurasia. During the Late Silurian/Devonian, Laurentia collided with Baltica and Siberia, forming the supercontinent Laurussia. | |
| Laurussia | An ancient supercontinent made up of the continents Baltica, Laurentia, and Siberia. Laurussia formed in the Late Silurian/Devonian and collided with Gondwana during the Carboniferous, forming the supercontinent Pangaea. | |
| legume | Any member of the pea and bean family, Leguminosae. Legumes are a diverse and abundant group of flowering plants. Their earliest fossil record is Late Cretaceous or Paleocene. | bean |
| lemur | Any member of a group of prosimian primate mammals that are currently restricted to Madagascar. Most lemurs are arboreal frugivores, omnivores, or insectivores. | |
| lepospondyle | Any member of an extinct subclass of amphibians, Lepospondyli, that gave rise to modern salamanders and frogs. | |
| limestone | A sedimentary rock composed primarily of calcium carbonate, and often formed from the calcareous remains of organisms. | |
| lithification | The process of cementation, compaction, desiccation, and crystallization of sediments into solid rock. | |
| lithosphere | The outer layer of the Earth's crust. | |
| lobe-finned fish | Common name for members of the class Sarcopterygii. Lobe-finned fishes are osteichthyans (bony fishes) with fleshy lobe-shaped fins that are like the limbs of terrestrial animals. | |
| lungfish | Common name for members of the Dipnoi subdivision of Choanichthyes, fishes that date back to the Devonian. Lungfish have a developed air bladder that functions as lungs for breathing air. | |
| lycophyte | Any member of the spore-bearing vascular plant group Lycophyta. The earliest fossil lycophytes are Late Silurian or Early Devonian, and the group persists to the present day, although living species are inconspicuous. Lycophytes are the sister-group to all other vascular plants. Paleozoic lycophytes were more diverse and included trees up to 35 meters tall in the order Lycopsidea. | club mosses |
| lycopsid | Any member of the mostly arborescent lycophyte order Lycopsidea. | |

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| mammal | Any member of the vertebrate class Mammalia. Mammals are distinguished by having hair, specialized teeth, separate air and food passages, a complex brain, and a constant, self-regulated, warm body temperature. Females have milk glands and give birth to living young. | |
| marine | Existing in or produced by the sea. | |
| marsupial | Any member of the mammalian group Metatheria. Common name for the members of the mammalian subclass Marsupialia, which includes kangaroos and koalas, among others. Most marsupials have a pouch in which the young complete early development. Most marsupials lack a true placenta, instead giving birth to an underdeveloped fetus that grows outside the mother's womb in a protective pouch. Marsupial fossils are known from the Cretaceous and Cenozoic. They were common on many continents during the Cretaceous, but today dominate only in Australia. | |
| mass extinction | The rapid extinction of many species in a short interval of time. | |
| Mesozoic | The geologic era that spans the length of time between the Paleozoic and Cenozoic eras, roughly 252-65.5 million years ago. It comprises three periods: the Triassic, Jurassic, and Cretaceous periods. | |
| metamorphosis | Among insects, metamorphosis is the transition from a distinct larval to adult (reproductive) form. In geology, metamorphosis refers to the chemical and physical modification of rocks by heat and pressure below the surface of the Earth. | |
| methane | A colorless, odorless, and non-toxic gas (CH ₄). Methane is released by microbes as they decompose organic matter. Like other greenhouse gases, methane allows sunlight to reach the Earth's surface but traps outgoing heat. | |
| microcontinent | an isolated fragment of continental crust that has broken off of a continent. | |
| Miocene | The fourth of the seven epochs of the Cenozoic; it lasted from 23.0 – 5.3 million years ago. | |
| monocot | One of two classes of flowering plants characterized by one primary embryonic leaf, parallel veins, vascular bundles scattered throughout ground tissue, petals in multiples of three, one pore or slit in pollen grains, and fibrous roots. | |
| monotreme | a member of the mammalian subclass Monotremata. Monotremes differ from other mammals in laying eggs and having a single opening for urine, feces, and reproduction. | platypus, echidna |
| mosasaur | Any member of a group of large, extinct, predaceous marine reptiles that appeared late in the Cretaceous and became extinct at the end of the period. Mosasaurs were related to modern-day monitor lizards. | |
| multituberculate | Any member of the extinct mammalian group Multituberculata. Multituberculates were the most diverse and common mammals of the Mesozoic. Most species were omnivorous, and they ranged from mouse to woodchuck in size. | |
| nautilus | Common name for a genus of cephalopods with spiral, chambered shells. | |
| Neogene Period | The second of the two periods of the Cenozoic Era; it lasted from 33.9 to the present. | |
| niche | The set of resources and manner of using them of a given species. | |
| nitrous oxide | A colorless, almost odorless gas with the chemical formula N ₂ O. It is a powerful greenhouse gas but a minor component of the Earth's atmosphere. | |
| nothosaur | Any member of a group of aquatic reptiles of the Triassic. Nothosaurs had long necks and tails with wide paddle-like limbs. | |
| notochord | A flexible rod-like structure that forms the main support of the body, a primitive backbone. | |
| ocean circulation | The movement of the ocean currents around the Earth. | |

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| oceanic crust | Along with continental crust, the outermost layer of the solid earth, colder and more solid than the mantle and core. Oceanic crust is generally less than 10 km thick. It is denser than continental crust and is made up mostly of young basaltic rocks recently erupted from seafloor spreading centers. | |
| Oligocene | The third of the seven epochs of the Cenozoic; it lasted from 33.9 – 23.0 million years ago. | |
| omnivore | An animal that eats both plants and other animals. | |
| onychophoran | Any member of the phylum Onychophora, worm-like animals that are currently found only in tropical forest areas, but whose marine ancestors date back to the Cambrian. They are believed to be related to arthropods. | |
| order | A taxonomic category in Linnaean biological classification. A subdivision of a class consisting of a grouping of similar families or suborders. | |
| Ordovician Period | One of six periods constituting the Paleozoic Era, from 490 to 439 million years ago. | |
| oreodont | Any member of an extinct group of hoofed herbivorous mammals found exclusively in North America from the Eocene to the Miocene. | |
| organic compounds | Carbon compounds generally derived from living organisms. | |
| Ornithischia | One of the two lineages that make up the Dinosauria. The Ornithischia includes five major lineages: Ornithomimidae, Stegosauria, Ankylosauria, Pachycephalosauria, and Ceratopsia. All Ornithischians have a pre-dentary bone in the lower jaw. | |
| orogeny | The process of mountain building. | |
| orographic | Caused by topographic elevation. | |
| osteichthyan | See <i>bony fish</i> | |
| ostracode | Any member of the crustacean class Ostracoda, which have a shrimp-like body in a bivalved shell. Ostracodes are very small and are common fossils in marine and freshwater environments through much of the Phanerozoic. | |
| Pachycephalosauria | A group of "dome-headed" dinosaurs. They are represented by the smallest number of specimens among all major groups of dinosaurs. | |
| Paleocene | The first of the seven epochs of the Cenozoic Era; it lasted from 65.5 to 55.8 million years ago. | |
| Paleogene Period | The first of the two periods of the Cenozoic Era; it lasted from 65.5 to 33.9 million years ago. | |
| paleontologist | A scientist who studies ancient life. | |
| Paleozoic Era | The geologic Era between the Precambrian and Mesozoic Eras, roughly 543-252 million years ago. It comprises six periods: Cambrian, Ordovician, Silurian, Devonian, Carboniferous, and Permian. | |
| Pangea | The supercontinent that included all the modern continental masses. Pangea came together in the Permian and began to split up during the Late Triassic. The northern portion of Pangea is called Laurasia, the southern part Gondwana. | |
| pantodont | Any member of the mammalian order Pantodonta, a group of mostly herbivorous primitive mammals common in Paleocene and Eocene faunas. | |
| Paratethys Sea | An inland sea that formed in eastern Europe and western Asia during the late Cenozoic as an extension of the lower-latitude Tethys Sea. Portions of Paratethys may have been brackish or freshwater at times. | |
| pareiasaur | Any member of a group of herbivorous anapsid reptiles from the Permian. | |
| pedogenesis | The process of soil formation. | |
| pelycosaur | Any member of a group of Permian synapsid vertebrates. Pelycosaur are known for the sails on their backs, which may have been used to maintain high internal temperatures through basking. | |

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| period | The third largest division of the geologic time scale, subdivision of an era. The Paleozoic Era is divided into the Cambrian, Ordovician, Silurian, Devonian, Carboniferous, and Permian periods. Each periods is divided into epochs. | |
| perissodactyl | Any member of the mammalian ungulate order Perissodactyla, which includes rhinoceroses and horses. The earliest perissodactyls are known from the Eocene. Most perissodactyls have an odd number of toes on their feet. | odd-toed ungulate |
| Permian | The last of the six periods of the Paleozoic Era; it lasted from 298 to 252 million years ago. | |
| photosynthesis | The process by which some organisms use energy from sunlight to convert carbon dioxide and water into organic materials. This process requires the use of the molecule chlorophyll, found in all photosynthesizing plants. | |
| phylum | A taxonomic category in Linnaean biological classification. A subdivision of a kingdom, consisting of a grouping of similar classes or subphyla. | |
| phytoplankton | Algal plankton. Phytoplankton form the base of the food chain in open-marine ecosystems. | |
| placental mammal | Any member of the mammalian group Eutheria. Placental mammals bear live young that are nourished in the mother's uterus before birth by a placenta. The placenta was derived during evolution from the same membranes that surround the embryos in the eggs of other amniotes. The only living non-eutherian mammals are monotremes and marsupials. The earliest fossil placental mammals are from the Cretaceous. | |
| placoderm | Any member of the extinct vertebrate group Placodermi. These were the earliest jawed fish and are known for bony armor on their heads and necks. | |
| placodont | Any member of a group of aquatic reptiles from the Triassic. Placodonts lived in shallow coastal waters and many had turtle-like shells and flat teeth for crushing mollusks. | |
| planktonic | Living on or near the surface of the ocean or other body of water. Planktonic organisms drift with the wind and currents. | |
| plate | One of the large, rigid pieces of Earth's crust that move as the result of circulation in the underlying mantle. | |
| plate boundary | The contact zone between two plates. Plate boundaries are commonly of three types: divergent, in which new crust is formed as plates move apart (as at mid-ocean ridges); convergent, in which one plate dives under the other (as in a subduction zone); and transform, in which the plates slide past each other horizontally. | |
| plate tectonics | The theory of plate tectonics proposes that the Earth's crust is composed of a dozen or more large and small plates that move relative to one another as they ride on convection currents in the hotter mantle that lies beneath. New sea floor is erupted along mid-ocean ridges, then diverges from both sides in opposing directions toward continental margins, where it sinks back into the mantle along subduction trenches. | |
| Pleistocene | The sixth of the seven epochs of the Cenozoic; it lasted from 1.8 million to 11,500 years ago. | |
| Plesiadapiformes | An order of primate-like mammals common in the Paleocene. Plesiadapiformes may be ancestral to primates, the order that includes humans. | |
| plesiosaur | Any of a group of large, marine diapsid reptiles from the Mesozoic. Plesiosaurs were characterized by having four large flippers. Some forms had small heads and long necks, whereas others evolved large heads and short necks. | |
| Pliocene | The fifth of the seven epochs of the Cenozoic; it lasted from 5.3 – 1.8 million years ago. | |
| pluton | A large body of intrusive igneous rock that crystallizes below the Earth's surface. | |

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| pollination | The transfer of pollen from male to female reproductive organs in seed plants. | |
| Precambrian | All geologic time prior to the Cambrian Period. | |
| primate | Any member of the mammalian order Primates, including apes, monkeys, and humans. The earliest undisputed primate fossils are from the Eocene. | |
| prokaryote | A unicellular organism lacking a membrane-bound nucleus. Bacteria and Archaea are both prokaryotic. | |
| prosauropod | Any member of a group of herbivorous dinosaurs that lived in the Triassic and Jurassic. They were the first large herbivorous dinosaurs, and were related to sauropods. | |
| Proterozoic | The uppermost of the three divisions of the Precambrian, dating from 2.5 billion years ago to 542 million years ago. | |
| pteridosperm | Any of several groups of seed plants common in the late Paleozoic and Mesozoic that had somewhat fern-like foliage. Seed ferns were not a single lineage of plants but rather represent a grade of evolution seen in many separate lineages in which primitive fern-like foliage was combined with reproduction via seeds. | |
| pterobranch | Any member of the Pterobranchia, one of the two classes of Hemichordata. | |
| Pterosauria | An order of flying reptiles of the Mesozoic, closely related to the dinosaurs and their ancestors, and ranging in size from sparrows to the largest flying animal known. Pterosaurs evolved in the Late Triassic and went extinct in the Late Cretaceous. | pterosaur |
| Quaternary Period | The latter part of the Cenozoic Era, consisting of the Pleistocene and Holocene Epochs, roughly 1.8 million years ago to the present. According to the International Commission on Stratigraphy, this term is no longer used. | |
| ray-finned fish | Any member of the class Actinopterygii. Ray-finned fishes are osteichthyans (bony fishes) that have webbed fins supported by bony spines. | |
| reef | A ridge or mound-like structure, usually of calcium carbonate, built by the accumulation of skeletons of sessile marine organisms, dominantly corals in the present day. At different times in the geological past, reefs have been built by a variety of groups of organisms, including cyanobacteria and clams. Reefs provide important habitat for many species of marine organisms. | |
| rhinoceros | Any member of the mammalian family Rhinocerotidae, which are odd-toed ungulates. Rhinoceroses were quite diverse through much of the mid-Cenozoic, although there are only five living species. | |
| rhizome | An underground stem that grows horizontally and generally gives off vertical stems that bear leaves and reproductive structures. | |
| rodent | Any member of the mammalian order Rodentia. These are gnawing mammals with a single pair of chisel-like incisors in both the upper and lower jaw. Rodents first appear in the Paleocene and are common small mammals throughout the Cenozoic. | |
| rudistid clam | Any member of an unusual group of clams that evolved in the Cretaceous. Rudists were asymmetrical, having a long, tubular right valve and a short lid-like left valve. They grew in large clusters, forming organ-pipe-like reef structures. | |
| rugose coral | Any member of an extinct order (Rugosa) of corals that take their name from the wrinkled ridges on their thecae. They range from Ordovician to Early Triassic and were major reef builders in the late Paleozoic. | |
| ruminant mammal | Any artiodactyl mammal of the order Ruminantia, including cattle, deer, and giraffes. Ruminants have a four-compartment stomach designed for cud chewing. They are a particularly important part of late Cenozoic faunas. | |

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| sandstone | A sedimentary rock composed dominantly of grains that are 0.02 to 2 millimeters in diameter. The grains are commonly silica cemented together by calcium carbonate or other minerals. | |
| sarcopterygian | See <i>lobe-finned fish</i> | |
| sauropod | Any member of a lineage of very large, herbivorous, long-necked dinosaurs (Sauropoda) known from the Jurassic and Cretaceous. Some sauropods were the largest terrestrial animals of all time. | |
| scleractinian | Any member of the cnidarian group Scleractinia, or "hard-rayed" corals. Scleractinians first evolved in the Middle Triassic and began to form reefs, as had the tabulate and rugose corals in the Paleozoic. Scleractinians probably arose independently from a sea anemone-like ancestor. They are the dominant reef-forming organisms today. | |
| sedge | Any member of the angiosperm family Cyperaceae. Sedges are small, herbaceous monocots, and many live in wet habitats. There are about 5,000 living species, but there are relatively few fossils, mostly from the late Cenozoic. | |
| seed plant | Any member of the land plant group Spermophyta. Non-seed plants include living ferns, horsetails, and clubmosses. Seed plants first evolved in the Late Devonian and became the dominant group of terrestrial plants in most habitats by the mid-Permian. | |
| Silurian | The third of six periods constituting the Paleozoic Era, from about 438 to 418 million years ago. | |
| sirenian | Any member of the mammalian order Sirenia, or sea cows. The Sirenia includes manatees. | sea cow |
| sister-group | The group or lineage of organisms that are the closest relatives of the lineage under consideration. Sister-groups originate from a common ancestor and are by definition of the same age. | |
| species | The lowest taxonomic category in Linnaean biological classification, denoted by a combined generic and specific name, as in <i>Homo sapiens</i> - humans. Species are considered to be composed of populations of individuals that are actually or potentially capable of interbreeding and producing viable offspring, and that are reproductively isolated from other such groups. | |
| sphenodontian | Any of a group of archosaurian reptiles called Sphenodontia. Sphenodontians peaked in diversity during the Triassic, and only the tuatara (<i>Sphenodon</i>), survives to the present. Tuataras are restricted to islands off the coast of New Zealand. | |
| sponge | Any member of the phylum Porifera, which are multicellular, colonial, aquatic invertebrates. Sponges are among the simplest multicellular animals, and they are known as fossils throughout the Phanerozoic. | |
| sporangia | The spore-bearing structures of a plant or fungus. | |
| spreading center | A divergent margin along which two continental plates are moving away from one another and where new crust is being created. Mid-ocean ridges are typical spreading centers. | |
| Stegosauria | Any of a group of large, quadrupedal armored ornithischians (Stegosauria) with bony plates and spikes. Stegosaurs were herbivorous, and lived during the Jurassic and Cretaceous periods. | |
| stratum | A layer of sedimentary rock that is visually separate from layers above or below it. | |
| stromatolite | A layered sedimentary structure in which the alternating layers have more and less organic matter. Stromatolites are commonly formed by the trapping, binding, or precipitating of sediment by colonies of microbes, commonly cyanobacterial archaeans or bacteria. Stromatolites are among the oldest fossils. | |

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| stromatoporoid | Any member of a group of extinct sponge or sponge-like organisms that formed vertical pillars of horizontally laminated calcareous fossils (similar in appearance to stromatolites). | |
| subtropical | The climatic and geographic zone between the Tropics and temperate zone that has intermediate temperatures. | |
| supercontinent | A mass of land comprising more than one continental plate. | |
| synapsid | Any member of the vertebrate group Synapsida, characterized by a single temporal opening in the skull. Synapsids were the dominant terrestrial vertebrates during the Permian. They include all mammals and their ancestors. | |
| tabulate coral | Any member of an extinct order (Tabulata) of corals that take their name from their horizontal internal partitions. The oldest tabulate coral may be Cambrian, and the group last occurs in the Permian. | |
| tectonic | Relating to, causing, or resulting from deformation of the Earth's crust | |
| teleost fish | Any member of the Teleostei, a subclass of bony fishes. Most living fishes are teleosts. | bony fish |
| temnospondyl | Any member of the Temnospondyli, a diverse group of primitive amphibians that range from the Early Carboniferous to the Cretaceous. The best known temnospondyl is <i>Eryops</i> . | |
| terrestrial | Belonging to or inhabiting the land. | |
| Tertiary Period | A unit of geologic time, which began about 65.5 million years ago and ended about 1.8 million years ago. The Tertiary comprises five epochs: Paleocene, Eocene, Oligocene, Miocene, and Pliocene. Together with the Quaternary Period it constitutes the Cenozoic Era. | |
| Tethys sea | The large east-west seaway that lay between Laurasia and Gondwana during the Paleozoic and Mesozoic Eras. The final closure of Tethys began with the docking of India against Asia in the Paleocene, followed by Africa's collision with southern Europe in the Miocene. The Alps and Himalayas arose from the squeezing of Tethys between Laurasia and Gondwana. | |
| therapsid | Any member of the extinct synapsid order Therapsida. Some lineage of therapsid is likely to be the direct ancestor of mammals. | |
| theca | A case, covering, or sheath, such as the pollen sac of an anther, the spore case of a moss, or the outer covering of the pupa of certain insects. | |
| theropod | Any member of the group Theropoda, which were bipedal, flesh-eating saurischian dinosaurs. | |
| tooth crown | The part of the tooth exposed above the gum line, usually covered with enamel. | |
| Trade Winds | The steady winds that blow westward and toward the equator from the subtropical high-pressure belts near 30° N and 30° S. | |
| Triassic Period | The first of the three periods of the Mesozoic Era; it lasted from 252-200 million years ago. | |
| trilobite | Any member of Trilobita, an extinct class of marine arthropods. Trilobites are known from the Cambrian to the Permian. They had segmented, oval-shaped bodies and were the first animals to have complex eyes (similar to the compound eyes in modern insects). | |
| tritylodont | Any of a group of Triassic-Jurassic herbivorous synapsids. These small to medium-sized animals were highly specialized and mammal-like. | |
| tropical | A climate warm enough to allow continual plant growth, sometimes arbitrarily defined as having a mean annual temperature greater than 25° C. Geographically, the tropics are the band of latitude between the Tropic of Cancer and the Tropic of Capricorn. | |

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| uintathere | Any of an extinct group of large mammalian herbivores common in the early to mid Cenozoic. Uintatheres were among the first large mammals. They had bony knobs protruding from their skulls. | |
| ungulate | Any hoofed mammal. | |
| varanopseid | Any member of a diverse group of pelycosaur from the Late Carboniferous through Permian. Varanopseids were carnivorous and had relatively small and slender bodies. | |
| vascular plant | Any member of the land plant group Tracheophyta, which have specialized tissues (xylem and phloem) for conducting fluid through the stem. Among living land plants only mosses, liverworts, and hornworts lack these conducting tissues. Vascular plants are first known from the Late Silurian or Early Devonian. | |
| vertebrate | Any member of the chordate group Vertebrata, which are characterized by a spinal column or backbone. | |
| xerophytic | Adapted to growing under dry conditions. | |
| xiphosurid | Any member of the arachnid order Xiphosurida. These are mostly marine animals that include horseshoe crabs and their ancestors. | |