**Walk Through Geologic Time: A Glossary of Useful Terms**

**Acraman impact –** An event in which [evden eve nakliyat](http://www.evdenevenakliyatuzmani.net/) a large meteorite hit the earth in South Australia, leaving a crater that is currently about 30 km (almost 20 miles) in diameter. The impact occurred during the Ediacaran Period, approximately 580 million years ago.

**Algae -** Eukaryotic organisms that use photosynthesis to obtain energy. Can be single celled or multicellular.

**Animal** - Kingdom of living, multicellular organisms.  All animals eat food (such as plants or other animals), and move at some stage of their life.

**Bacteria -**Prokaryotic, unicellular, and usually microscopic organisms.

**Bauplan** – a term which in German literally means ‘body plan’ and is used to refer to the different major types of bodies that animals have, such as four legged creatures (tetrapods).

**Benthic –** A term used to refer to organisms that live on the bottom of the ocean or of a lake.

**Bilateria -** Animals with one line of symmetry in their body structure, such as humans, insects, flatworms, and many other types of animals.

**Biomarkers** – fossilized lipids, or fat molecules, that are preserved in sedimentary rocks and can give us information on what types of organisms lives in ancient oceans.

**Cambrian** –The earliest period of the Paleozoic era, when complex organisms became common. The Cambrian Explosion refers to the relatively quick diversification of life at the beginning of this period. The Cambrian lasted from 542 million years ago (Ma) to 488 Ma.

**Clade** – A group of organisms with just one common ancestor.

**Cryogenian** - the time period in Earth history that spans the two major ‘snowball earth’ glacial events, from approximately 850 million years ago (Ma) to 635 Ma.

**Drop stones –** Fragments of rock that are isolated in sedimentary rock by dropping down through a column of water during the formation of the sedimentary rock. Drop stones are often caused by rocks dropping from melting glaciers into underlying sediment.

**Ecospace –** The capacity or ability of an ecosystem to expand and diversify life.

**Ediacaran –** The final period in the Neoproterozoic Era, lasting from 635 Ma to 542 Ma.

**Ejecta –** Fragments or particles of rock that originated in a volcanic eruption.

**Evaporite –** A mineral found in a sedimentary rock consisting mainly of salt formed by the evaporation of ocean water.

**Evo-devo –** Short for the study of Evolutionary Development, or the biological study of how organisms’ ancestral connections shape their developmental processes.

**Geochronology:** The science of finding the approximate ages of sediments, rocks, and fossils.

**Glaciation** -- The process in which the earth is covered in large bodies of ice.

**Half-Life --** An important factor in dating geological material, the half-life of a parent substance is the time it takes for half of the substance to decay into its daughter substance.

**Horizon** -- A layer in the earth parallel to the surface of the soil, often with similar characteristics to layers surrounding it.

**Hox gene** -- A gene that determines the skeletal makeup (i.e. segmentation, axis) of an animal.

**Microbial mat** – A layered sheet of bactera that forms a cohesive structure.

**Neoproterozoic**-- Geologic time from about 1 billion years ago to about 542 million years ago.

**Ordovician** – A period in geologic time during the Paleozoic Era, about 488-443 million years ago.

**Phanerozoic** – Eon describing the time period during Earth history during which diverse animals have existed, lasting from 542 Ma to the present.

**Phylogenetic tree** – A branching, “tree-like” diagram showing evolutionary relationships between organisms.

**Phylogeny** – The biological study of how organisms are related evolutionarily.

**Plate tectonics –** The theory that the earth is broken up into tectonic plates that move depending on each others’ positions.

<http://www.windows2universe.org/earth/interior/plate_tectonics.html>

**Precambrian –** A term used to describe the time before the Phanerozoic, from the formation of the earth until 542 Ma.

**Proterozoic –** A geologic eon from about 2.5 to 1 billion years ago.

**Protist** – A eukaryotic microorganism, such as an amoeba.

**Radiometric dating –** A technique geologists use to date rocks and fossils by comparing the natural abundance of a radioactive (atoms having unstable nuclei) isotopes (parent) and the abundance of the decayed product (daughter) in the rocks.

**Rangeomorph** – A fossil taxon of Ediacaran fronds, with fractally arranged elements branching out from a central skeleton.

**Rhythmite** – A collection of precisely separated and regular layers in sedimentary rock, helpful in showing the relative ages of rocks

**Rock cycle** - <http://www.windows2universe.org/earth/geology/rocks_intro.html>

**Sedimentary rock** – a type of rock that is composed of the compressed grains of other rocks. For example, a sandstone is a rock made from grains of sand that are buried and compressed and then turned into stone, or ‘lithified’, whereas a mudstone is a rock made of particles of mud that have been buried and compressed, and turned into stone.

**Snowball Earth** – A hypothesis that at certain points in time the Earth was almost entirely frozen and covered with ice at the surface

**Sponge** – An animal in the phylum Porifera that receives oxygen by allowing water to pass through its porous body.

**Stem group** – A group of fossil organisms within a clade that are lacking certain classifying features of the common ancestor.

**Stratigraphy** – The study of rock layers.

**Stromatolite** – Layered rock usually found in shallow waters, formed by the microbial mats that trap bits of sedimentary rock and grain. Stromatolites occur today in only a few locations, but were very common in the Precambrain.

**Taphonomy –** The study of decaying life; the science of looking at how organisms decay and fossilize.

**Taxonomy –** The classification of relationships between comparable things.

**Volcanic debris** – Ash and other particles released from a volcano.

**Zircon** – A mineral that can withstand erosion, transport, and other often damaging geological processes. Zircon for this reason is very commonly used in radiometric dating.