

Glossary

biological evolution - descent with modification by means of genetic inheritance; it is not simply change over time.

clade - refers to a group that consists of an organism and all of its descendants.

common ancestor - the individual from which a number of organisms are directly descended.

derived trait - a character or trait that was not present in the common ancestor of a clade but has evolved and is present in one or more of its descendants. A derived trait can be a modified version of a more primitive condition of the character.

environment - everything within the biosphere. It is where all life on Earth occurs.

extinction - the death of all members of a species.

mutation - random occurrences which are the basis for genetic variation between individuals. Without mutations, evolution by means of natural selection could not take place. Often, mutations occur but disappear when the organism does not produce offspring or does not pass the mutation on to its offspring. Hereditary or germline mutations, however, are caused by an error in the DNA of cells that produce eggs and sperms (germ cells) and are passed from parent to offspring. Most mutations are neutral, meaning they have no effect on the organism bearing them. Others can be helpful or harmful, depending on the organism's environment.

phylogeny - a hypothesis of evolutionary relationships.

population - organisms belonging to the same species, which live in a given geographical area.

primitive trait - a character or trait present in the common ancestor of a clade.

speciation - the evolutionary process which results in a new species. This significant genetic change in a population is often the result of a major change in a population's environment.

species - a group of individuals that are capable of interbreeding and producing fertile offspring.

systematics - field within biology that studies how organisms are grouped together.