

cephalothorax – “head-thorax”. Some members of Phylum Arthropoda, such as arachnids and crustaceans have anterior body regions comprised of a head and a thorax that are fused together to create a single body part.

cerebellum – portion of the brain, posterior to the cerebrum, that functions to provide a sense of special orientation of the body and its parts and coordinate movements of these parts resulting in balance and smooth motions during activity.

cerebrum – anterior portion of the brain that is subdivided into lobes, each with its own set of specializations, such as interpreting sensory input, generating motor impulses, thought, memory etc.

Cestoda – class name of tapeworms (see Appendix A - Taxonomic Guide).

chaetae – “bristles.” Chaetae are a defining characteristic of oligochaetes and polychaetes in Phylum Annelida. The bristles in Oligochaetes are commonly called setae (oligo means “few”). In polychaetes, the bristles grow from the parapods on each segment (poly means “many”). In both cases, the bristles contribute to traction/locomotion.

change through time – “evolution.” Species that experience changes to the composition of their gene pools over generations of time are considered to have evolved. There are several mechanisms of this change process. Change through time is a key theme in biology.

Chelicerata – subphylum of Phylum Arthropoda (see Appendix A - Taxonomic Guide).

Chelonia – order name of reptiles such as turtles and tortoises (see Appendix A - Taxonomic Guide).

chemical equation – shorthand relationship between products and reactants describing a chemical reaction.

chemosynthetic – using chemicals to generate nutrient molecules. Some bacteria are chemosynthetic.

Chilopoda – class name of centipedes (see Appendix A - Taxonomic Guide).

chitin – the protein-carbohydrate rich material that makes up the flexible and waterproof exoskeleton of members of Phylum Arthropoda.

Chlamydomonas – genus of unicellular green algae. *Chlamydomonas* are flagellated and have eyespots (see Appendix A - Taxonomic Guide).

chlorophyll – pigment molecule that absorbs wavelengths of light in the blue and red portions of the visible spectrum (reflecting green light, which are why many plants appear green). The absorbed light energy is passed on to chlorophyll-a, which has the ability to release energized electrons starting the process of photosynthesis.

Chlorophyta – phylum of plants known as green algae (see Appendix A - Taxonomic Guide).

Chondrichthyes – class name of sharks and rays (see Appendix A - Taxonomic Guide).

Chordata – phylum of animals including those with backbones (see Appendix A - Taxonomic Guide).

chorion – embryonic membrane. In an amniotic egg, the chorion encloses the chorionic fluid, which bathes the yolk sac, allantoic sac and the amniotic membrane with the embryo inside. In placental mammals, the chorion develops into a tissue, which becomes part of the placenta.

chromatid – single strand of DNA (plus proteins) that constitutes a chromosome. Chromatids replicate to produce the double stranded chromosome structures that are evident during mitosis.

chrysalis – pupa stage in the complete metamorphosis of a butterfly. A butterfly caterpillar (larval stage) will develop into a chrysalis during which the larva undergoes metamorphosis and develops into the adult butterfly.

cilia – microscopic protein structures that protrude from basal bodies through the membrane of cells into the cellular environment. Coordinated movement of these cilia generate movement of the medium or, if the organism is small, of the organisms itself.

ciliated gliding – swimming movement of a planaria worm when propelled by its cilia.

circular – in a circle-shape. Throughout topics in biology, there are many examples of circular muscles, particularly around tube-shaped structures, which control the movement of materials in the tube.

claspers – rigid structures on the pelvic fins of male sharks, which are used to hold onto a female shark for reproduction.

class – a taxon name. A class is more specific than a phylum, but less specific than an order.

claws – similar to finger and toenails, claws are primarily protein material that is secreted from growth centers at the ends of digits. Claws tend to be hooked and used for various purposes like food gathering and defense. Many birds, reptiles and mammals have claws.

climax condition – in ecology, a climax condition exists when an environment has a mature and stable organism structure. Climax conditions are the end results of succession.

clitellum – specialization of the cuticle of many earthworms. The clitellum of a worm is visible as a thickened region partway back from the anterior end of the worm (behind the reproductive region). It functions to secrete a slime that shrouds the worms aiding in the exchange of gametes.

cloaca – opening at the posterior end of vertebrates other than mammals where the terminal ends of the excretory, digestive and reproductive systems are located.

closed circulatory system – circulatory system where the blood remains in blood vessels and the heart at all times (such as in humans). The alternative is an open circulatory system more characteristic of small and/or relatively sessile animals. In this case the blood is allowed to leave small arteries and soak through tissues and sinuses until it returns to the circulatory system at veins.

closed population – population that is not subject to changes in size or density due to the immigration or emigration of members. Such is the case of animals in tanks or cages or even on islands that are not free leave their environment.

Cnidaria – phylum of animals that includes jellyfish (see Appendix A - Taxonomic Guide).

cnidoblast – see “nematocyst.”

coccus – one of three common shapes of bacteria. Coccus bacteria are spherical.

cocoon – pupa stage in the complete life cycle of a moth. A moth caterpillar (larval stage) will develop into a cocoon during which the larva undergoes metamorphosis and develops into the adult moth.

coelom – body cavity lined with a muscle layer on both sides. Animals lower on the phylogenetic tree than annelids lack a coelom and therefore lack the advanced development of systems that are associated with it, like circulation, excretion, and digestion.

coelomate – animal with a coelom.

collar cell – flagellated cell characteristic of poriferans, which is used to generate a water current through their structure. This water current is essential for their survival as it is the source of oxygen and food and provides a means to get rid of wastes.

colonial – living as a colony. *Volvox* is a colonial green alga. Bacteria cells develop in colonies. The cells of colonies