

Arthropod factsheet assignment

Due on September 7

Arthropods have become very successful organisms in marine and terrestrial environments. They are a very old group of organisms that diverged into several major groups hundreds of millions of years ago. For this reason, it is difficult to determine how they are related evolutionarily. In this assignment, you will compare major groups of arthropods with respect to some features and learn about our knowledge about how these groups evolved.

**Part 1- Comparison of features among groups**

Construct a table of features possessed by the following major groups of arthropods: Crustacea, Chelicerata, Myriopoda, Hexopoda. The features include: overall body plan, appendage morphology (uniramous or biramous), major kinds of appendages, mouthpart features, types of eyes, type of respiratory system, type of excretory system, habitats (terrestrial, aquatic, marine), number of species.

**Part 2- Drawing evolutionary trees of arthropods**

Visit the Arthropod pages in the Tree of Life (<http://tolweb.org/tree/home.pages/popular.html>). You will see a proposed evolutionary tree for the arthropods. Draw this tree. Then provide a brief description of when the colonization of terrestrial habitats might have evolved, given this tree (there is no single right answer to this, but some scenarios are more plausible than others). Next, draw the two trees proposed by the authors of the Nature articles on reserve at the library, using the drawing on page 122 of the Blaxter article as your model. Then propose a scenario for the evolution of terrestriality based on the Giribet et al. tree.