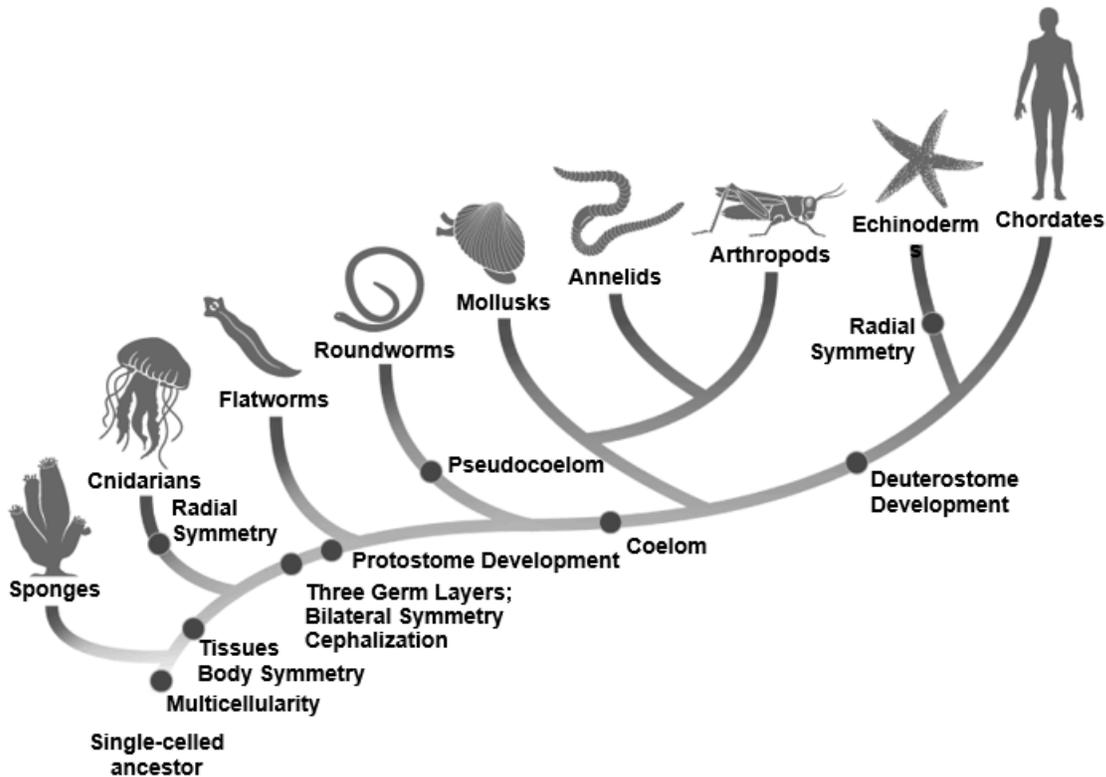


## Answer on Question #42666, Biology, Other

Explain how the earthworm fits into the cladogram of invertebrates?



Over 95% of all animal species are grouped informally as invertebrates.

Earthworms belong to the Phylum Annelida

All invertebrates possess **multicellularity**. Worms, mollusks, and arthropods exhibit **bilateral symmetry**. These organisms also exhibit **cephalization**, which is the concentration of sense organs and nerve cells in the front of the body.

All invertebrates except Sponges and Cnidarians develop from **three germ layers**.

The annelids are **protostomes**: mouth develops from blastopore.

The annelids have a true **coelom** that is completely lined with mesoderm. The coelomic fluid creates a hydrostatic skeleton that gives each segment rigidity.

Worms of the phylum Annelida are **segmented**. One advantage of a segmented body is that the development and function of individual segments or groups of segments can differ.

A fundamental question in annelid phylogeny concerns the sister-taxon of this metazoan group. If segmentation in annelids and arthropods is interpreted as being homologous, then the grouping of annelids with arthropods and other segmented animals in a clade termed the Articulata is supported. However, if segmentation arose convergently or in parallel in annelids and arthropods, the sister-taxon of the annelids may be an unsegmented spiralian group, and the Eutrochozoa is supported. According to the Eutrochozoa hypothesis, annelids, molluscs, and other unsegmented, bilateral coelomates that share a trochophore larva are more closely related to each other than to arthropods. Phylogenetic analyses of morphological characters have yielded contradictory results concerning the issue (e.g., Eernisse et al. 1992; Rouse and Fauchald 1995; Eibye-Jacobsen and Nielsen 1996; Rouse 1997). However, molecular data support the Eutrochozoa hypothesis, though the strength of the support depends on the data analyzed.