

# Earth science



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The phylum Arthropoda is the largest and most varied in the animal kingdom. It contains well over one million described species. This represents approximately three-quarters of all known biological organisms, living or extinct. Numerous arthropods remain unnamed and the actual number of living species could be as great as ten million or more. Some of the better-known arthropods include insects, crustaceans, and spiders, as well as the fossil trilobites. Arthropods are found in virtually every known marine (ocean-based), freshwater, and terrestrial (land-based) ecosystem, and vary tremendously in their habitats, life histories, and dietary preferences.

The arthropods success and diversity is mainly based on their body plan. They are bilateral (left/right) symmetry, a segmented body, a hard exoskeleton, jointed legs and many pairs of limbs. Many animals have a body forms that is symmetrical, which means they can be divided into matching halves. Another character inherited by all arthropods is a body divided into segments that are often grouped into larger functional units. Arthropods also inherited a hard exoskeleton made of chitin, a substance produced by many non-arthropods as well. In arthropods the exoskeleton is like a form fitted suit of armor. This exoskeleton provides protection and prevents water loss. In most of the legs of the arthropods, the exoskeleton is hard, but at the joints it is softer and bendable, allowing movement in the same way that a suit of armor does. The limb can be controlled by contracting muscles connected to the exoskeleton on both sides of the joint. All the above listed contributed to their overall success rate and astonishing success of arthropods.

In many science fiction scenarios, post-apocalyptic Earth is mainly populated with giant insects. I believe we don't see giant insects today because over time the arthropods have evolved and so how movies and insects are portrayed. In the late 80s and early 90s seeing 6-foot radioactive arthropods was what was in, but now with new technology that is the thing of the past.

In conclusion arthropods have been around for millions and millions of years and will continue to evolve in order to survive.