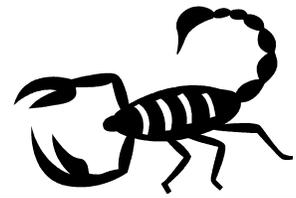


# Arthropods

By Cindy Grigg



Insects, spiders, crabs, and scorpions belong to the phylum Arthropoda. Arthropods are invertebrate animals without a backbone. They have segmented bodies and an exoskeleton, a skeleton outside of their bodies. The name comes from another feature they share— jointed appendages such as wings, legs, and mouthparts. In Greek, *arthro* means "joint," and *pod* means "foot" or "leg."

All arthropods have an external skeleton- an exoskeleton. Some exoskeletons are hard, like that of a lobster. It is made out of chitin. Some exoskeletons are leathery, like that of a caterpillar. Both types are waterproof. The exoskeleton keeps the animal from drying out. This characteristic gave arthropods the ability to live on land.

As arthropods grow larger, they shed their exoskeletons and grow new, bigger ones. This process is called molting. After an arthropod has molted, its new skeleton is soft for a while. It is not as well-protected until the new exoskeleton hardens.

Another trait all arthropods share is an open circulatory system. Their blood is not confined to blood vessels. It fills the body cavities and makes direct contact with the internal organs and tissues.

The phylum of arthropods is the largest phylum, with more than 875,000 identified species. There are more types of arthropods on Earth than of all other animals combined. The major groups of arthropods are arachnids, centipedes, crustaceans, insects, and millipedes.

Spiders, mites, ticks, and scorpions are arachnids. These arthropods have only two body segments, eight legs, but no antennae. All spiders are predators. Most of them eat insects. Mites and ticks are parasites that feed upon other animals', including humans', blood. They have two pairs of jointed appendages near the mouth used to hold their food. Scorpions are predators that sting their prey, usually spiders or insects.

Centipedes and millipedes have many-segmented bodies. They have one pair of antennae. Centipedes have over one hundred body segments that have one pair of legs attached to them. Their name means "hundred feet." In fact, they may have many more than that! They are predators that inject venom into the smaller animals that they catch for food. They have mouth parts that can bite and chew. Millipedes, whose name means "thousand feet," don't have that many legs. They do have more legs than any other arthropod. Their bodies may have more than eighty segments, and each segment has two pairs of legs attached to it. Most millipedes are herbivores that eat decayed leaves. When threatened, they can curl up into a ball and squirt a foul-smelling liquid.

Crustaceans, like lobsters, crabs, and shrimp, have two or three body segments. They often have three pairs of appendages for chewing, and at least five pairs of legs. Crustaceans are the only arthropods that have two pairs of antennae. They have a lifecycle that goes through metamorphosis. Most begin their lives as microscopic larvae in water that do not look like the adult animals. During their life cycle, they change dramatically in form. Some other types of crustaceans are crayfish or "crawdads," krill, lobsters, and pill bugs or "roly-polys."

Insects are arthropods that have three body segments, three pairs of legs, one pair of antennae, and many have one or two pairs of wings. The three body sections are called the head, the thorax, and the abdomen. Wings and legs are attached to the thorax, the middle section. The eyes and antennae, which are sense organs, are attached to the head. Most of the internal organs are located in the abdomen. Insects get oxygen through a system of tubes. These tubes lead from openings on the insect's exoskeleton. Air enters the insect's body through these tubes and goes directly to the insect's body cells. Flies, grasshoppers, beetles, bees, and butterflies are all insects. Insects are the most numerous animals on Earth. About 90% of all animals are insects!

Name: \_\_\_\_\_

Science Pd: \_\_\_\_\_

## Arthropods

<p>1. Arthropod means:</p> <ul style="list-style-type: none"><li><input type="radio"/> A disease of the foot</li><li><input type="radio"/> B jointed leg</li><li><input type="radio"/> C insects</li></ul>	<p>2. Arthropods have _____ circulatory systems</p> <ul style="list-style-type: none"><li><input type="radio"/> A closed</li><li><input type="radio"/> B circulating</li><li><input type="radio"/> C open</li></ul>
<p>3. An arthropod's skeleton is:</p> <ul style="list-style-type: none"><li><input type="radio"/> A outside its body</li><li><input type="radio"/> B just like ours</li><li><input type="radio"/> C hard shelled</li></ul>	<p>4. Arthropods' exoskeletons gave them the ability to:</p> <ul style="list-style-type: none"><li><input type="radio"/> A move their feet</li><li><input type="radio"/> B have antennae</li><li><input type="radio"/> C move onto land</li></ul>
<p>5. What is molting?</p> <ul style="list-style-type: none"><li><input type="radio"/> A R when a bird lays eggs</li><li><input type="radio"/> B when an arthropod sheds its exoskeleton</li><li><input type="radio"/> C when an arthropod changes forms</li></ul>	<p>6. Name three major groups of arthropods</p> <hr/> <hr/> <hr/>
<p>7. Crustaceans are the only arthropods that have:</p> <ul style="list-style-type: none"><li><input type="radio"/> A hard outer shells</li><li><input type="radio"/> B two or three body segments</li><li><input type="radio"/> C two pair of antennae</li></ul>	<p>8. What is metamorphosis?</p> <ul style="list-style-type: none"><li><input type="radio"/> A stinging prey</li><li><input type="radio"/> B a process in which an animal's body undergoes dramatic changes in form during its life cycle</li><li><input type="radio"/> C growing from a baby into an adult</li></ul>
<p>9. Spiders, mites, ticks, and scorpions are called:</p> <ul style="list-style-type: none"><li><input type="radio"/> A arachnids</li><li><input type="radio"/> B insects</li><li><input type="radio"/> C crustaceans</li></ul>	<p>10. Millipedes have:</p> <ul style="list-style-type: none"><li><input type="radio"/> A a thousand legs</li><li><input type="radio"/> B more legs than any other arthropod</li><li><input type="radio"/> C venom they inject into their prey</li></ul>