

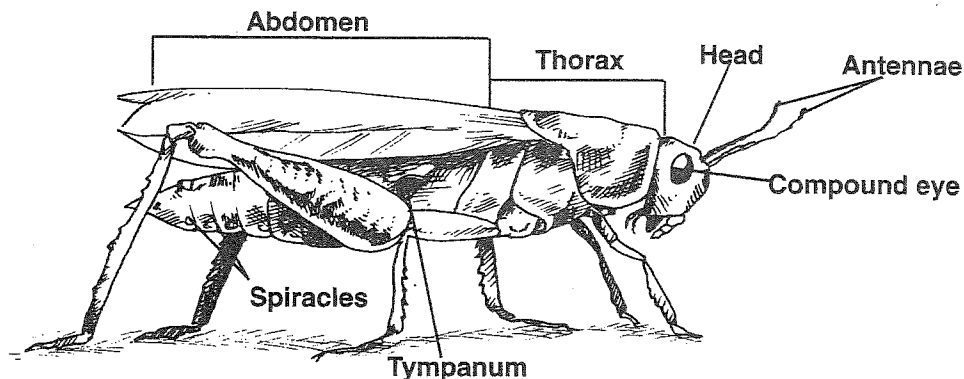
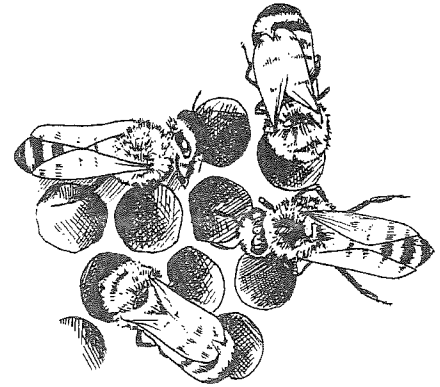
Arthropods: What Is an Insect?

Kingdom: *Animalia*

Phylum: *Arthropoda*

Class: *Insecta*

Insects are remarkably successful creatures, and are the largest class of arthropods. Insects have become adapted to every environment; they live on land, in the air, and in water. They can be found in scorching or freezing habitats. They have segmented bodies, jointed legs, and hard, protective **exoskeletons** (skeletons on the outside). Insects are different from other arthropods because they have six jointed legs, wings to help them escape from predators and hunt for food, and three body regions. They have a **head**, a **thorax**, and an **abdomen**. Insects have **spiracles**, openings or air tubes for breathing. The air moves in and out through the spiracles on their abdomen or thorax. Insects use a structure under their wings called a **tympanum** for hearing. They have sensory organs called **antennae** that detect air movement, vibrations, and smells. Insects also have three simple eyes and two compound eyes. **Simple eyes** detect light and dark. **Compound eyes** are made up of many lenses that allow the insect to detect color and movement in all directions at once. An insect has specialized mouth parts unique for eating plant material. They have **mandibles** for chewing, a **maxilla** to push or suck food into the mouth, and a **labium** that acts as a lower lip to hold food. The grasshopper makes a good model for the study of insect parts. Observe the parts of the grasshopper below.



Most insects live alone; however, some do live in colonies. Insects that live in colonies are called **social animals**. Ants and bees are examples of social insects. Honeybees live in a hive. The beehive is made up of three kinds of bees: the queen, the drone, and the worker. Each bee has its own job to do within the social unit. The **queen bee** is busy laying eggs. The job of the **drone** is to fertilize the eggs. The **worker bee** stays busy gathering honey and protecting the hive.