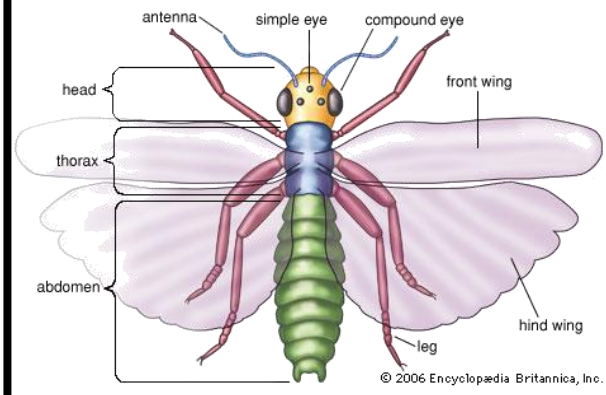
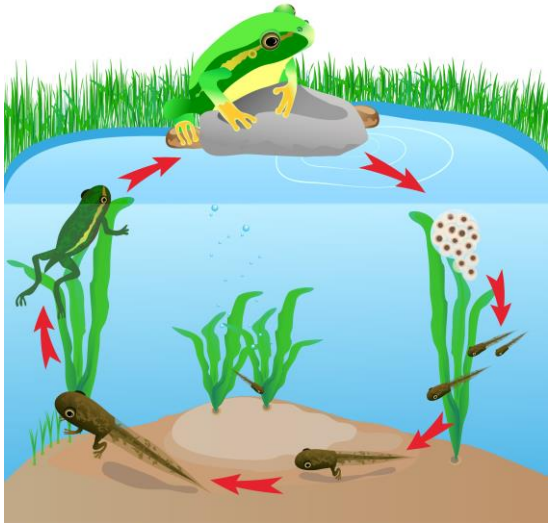
Animal Diversity - Invertebrates

Section 5: Insects



Insects are the largest, most common, and most successful group of arthropods. Adult insects have six legs, two pairs of wings, and a segmented body divided into three sections: the head, the thorax, and the abdomen. An insect's head is where the antennae attach. Antennae are used to not only feel objects but to smell and taste them too. Many insects have a compound eye, which is made up of thousands of lenses, making them adept at detecting movement. The thorax is where the legs and wings attach. Wings help insects find food, escape dangerous situations, and even find and attract a mate. The abdomen contains the digestive system, the heart, and the sex organs. An insect also has mouthparts that are adapted for a highly specific way to get food. Their jaws called mandibles are used for the chewing and grinding of food.

Each insect species undergoes either **complete metamorphosis** or **gradual (incomplete) metamorphosis**. Most insects undergo complete metamorphosis, which occurs in four distinct stages: egg, larva, pupa, and adult. Bees, butterflies, and beetles all undergo complete metamorphosis. Other insects, like cockroaches, undergo gradual or incomplete metamorphosis, which has no distinct larval stage. The egg hatches into a nymph or miniature adult without wings. They then molt several times before becoming an adult.



Insects play a key role in developing ecosystems. If there were no insects, our world would crumble. With no bees to pollinate our flowers, the crops we grow would fail, and without food to eat, we would starve. There are two ways insects interact with other living things. Many are **pollinators** that carry pollen among plants. Some are also disease carriers that spread disease to both plants and animals, including humans. A locust attack can be devastating. They can descend upon a field and completely destroy and devour its crops in a matter of minutes.

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Section 5: Insects Continued

Insects are also used to try to control pests. **Biological controls** involve releasing a living organism as a natural predator into an area to fight off a harmful insect. One example of this is using ladybugs to eat aphids, which are harmful to plant growth. Putting ladybugs in your garden can help ensure plant longevity.

Review:

1. Identify the body parts of an insect.
2. Compare complete metamorphosis to gradual metamorphosis.
3. How do insects play a role in developing ecosystems?