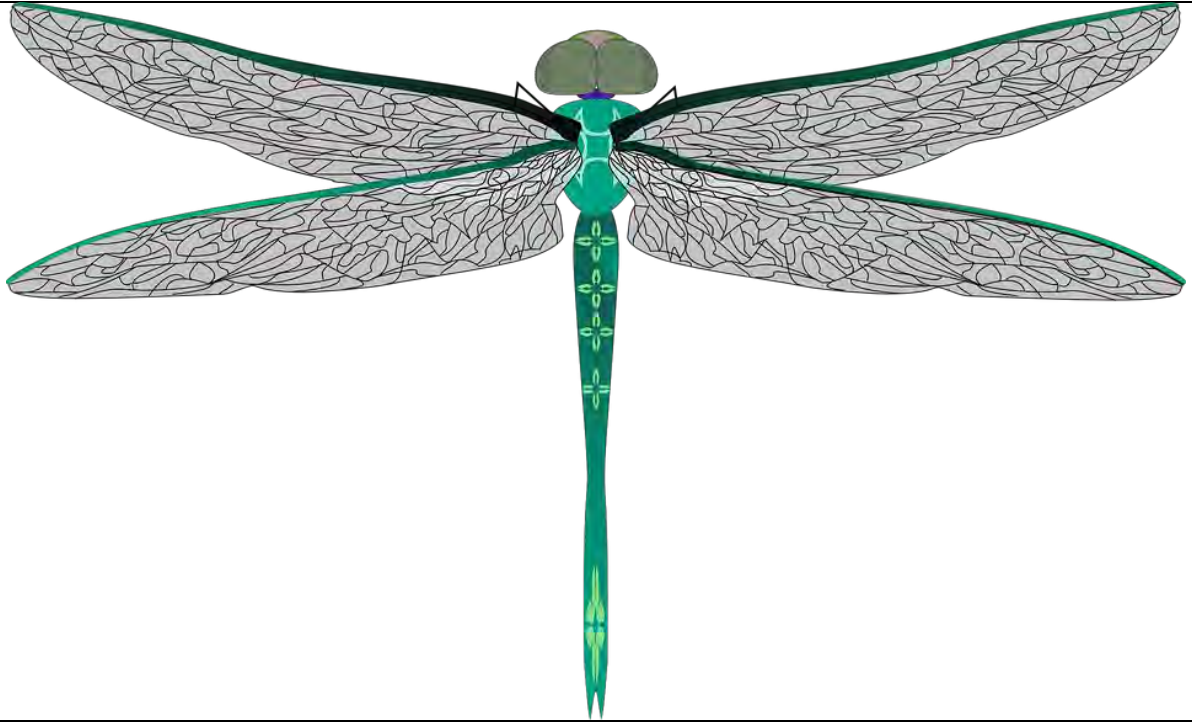


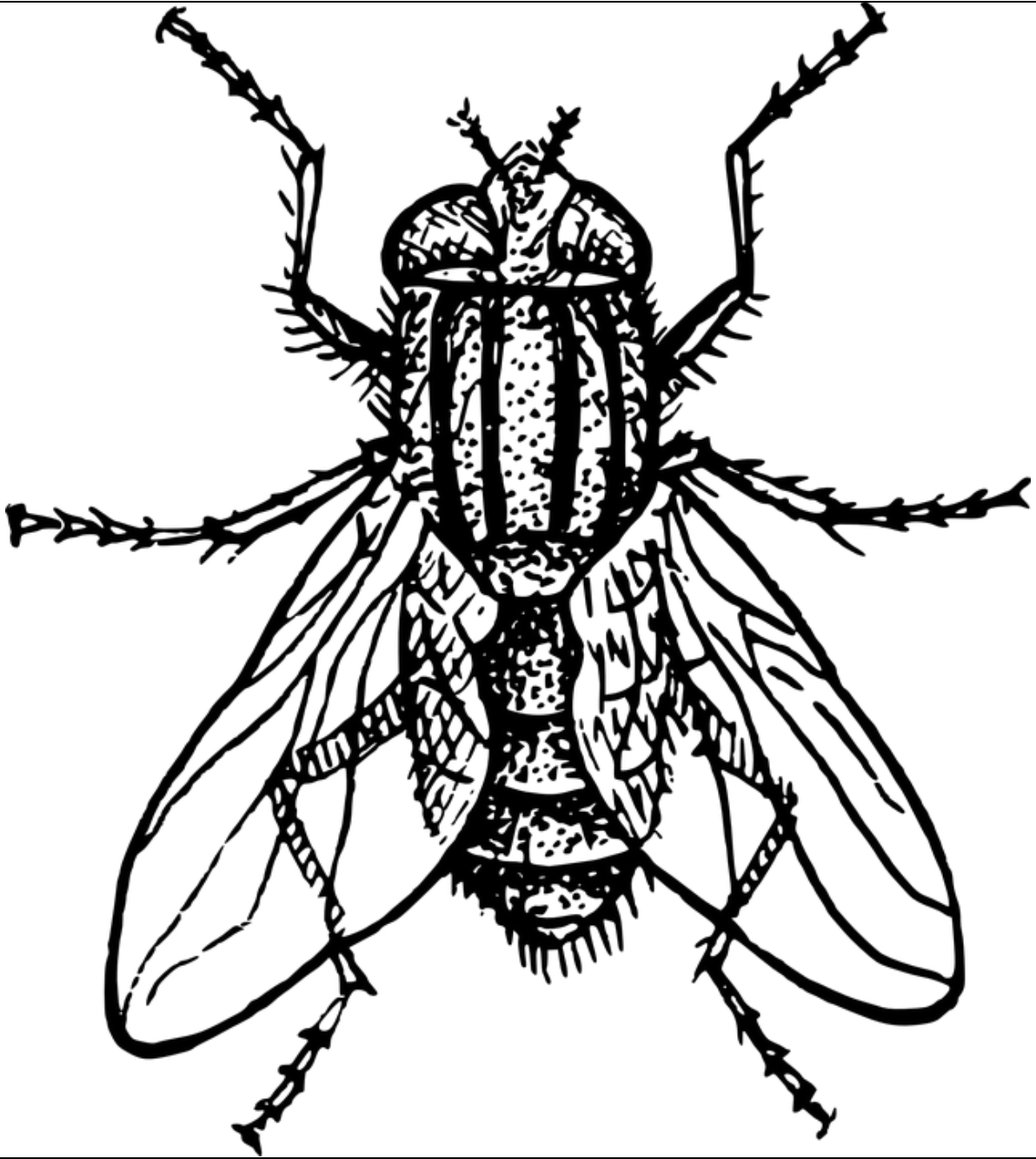
# Insects



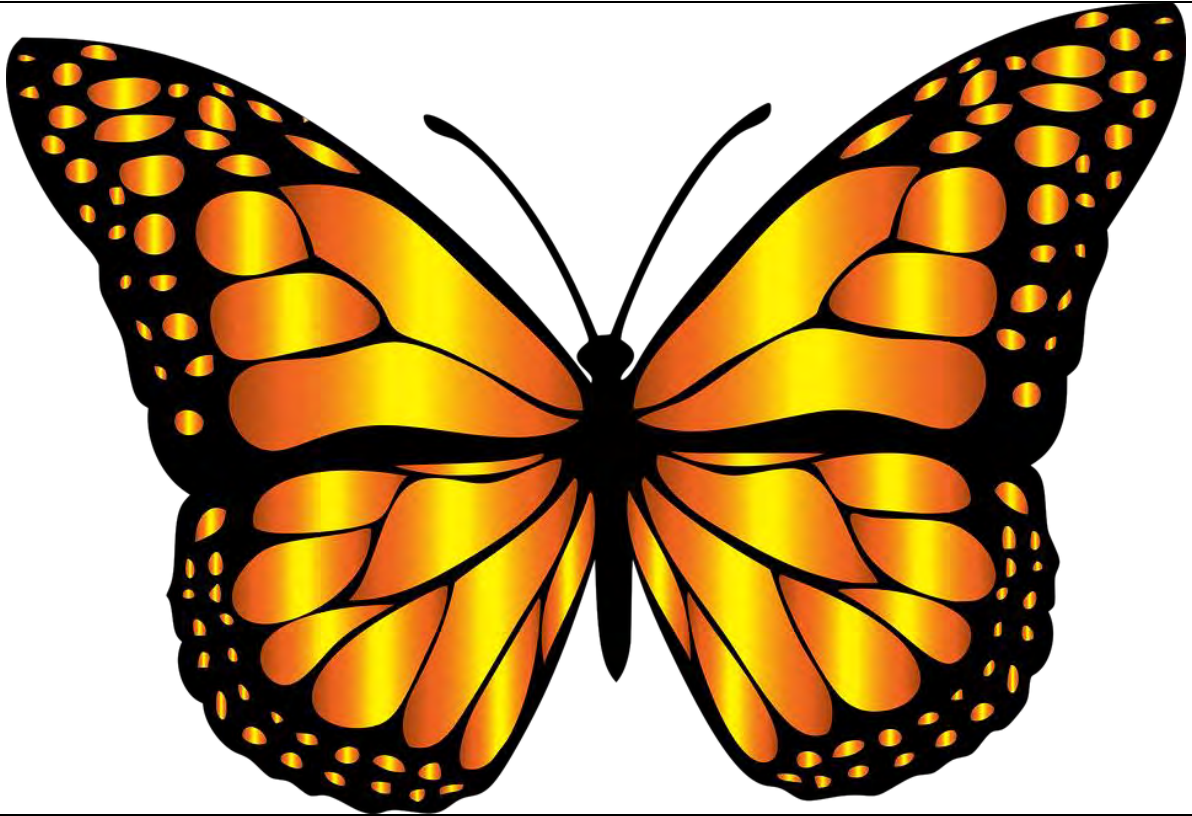
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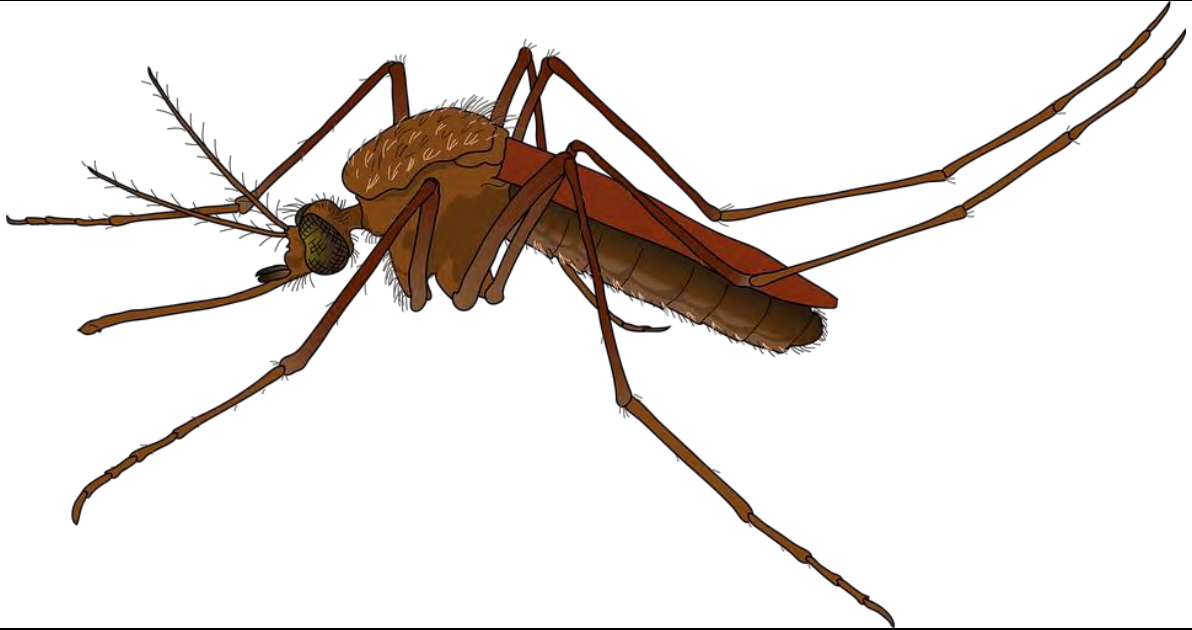
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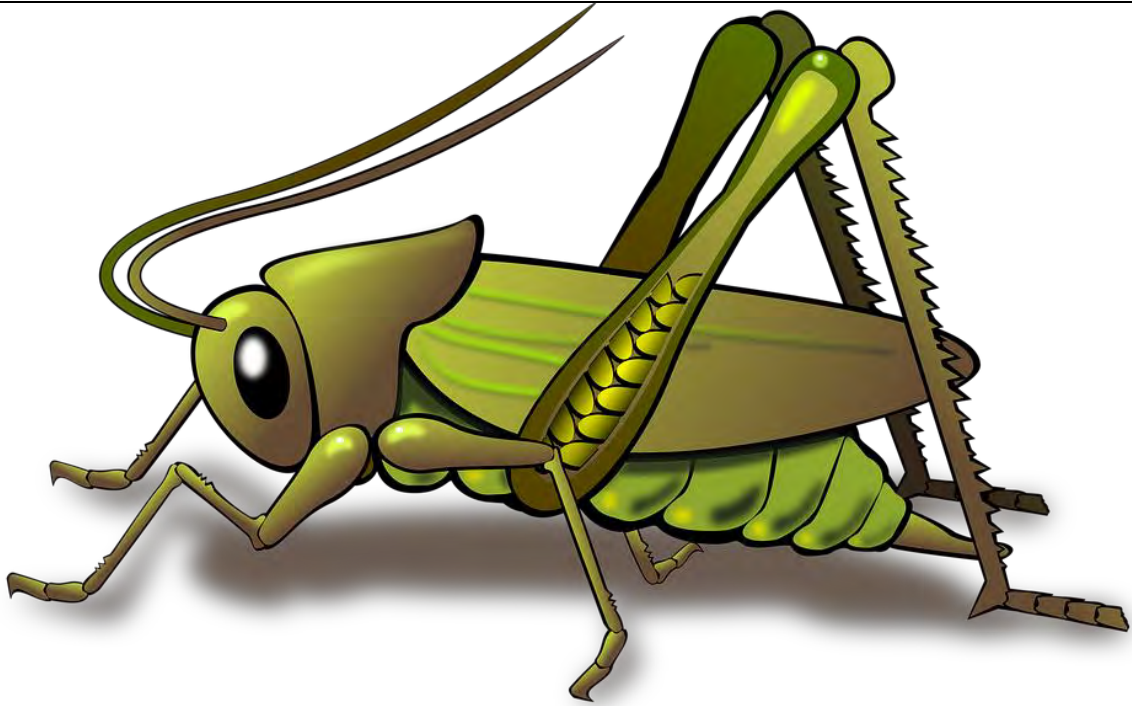
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butterfly



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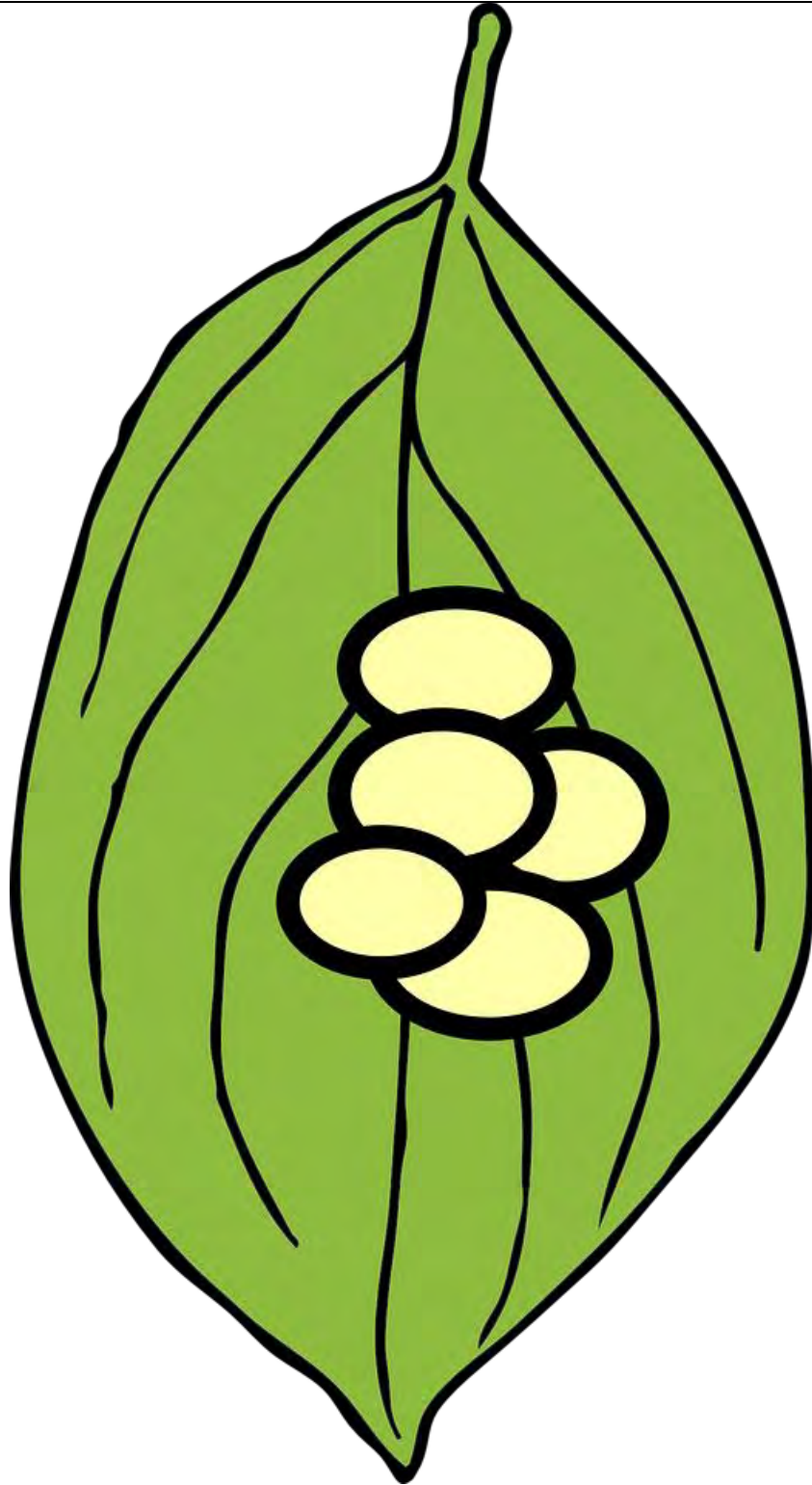


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ladybug

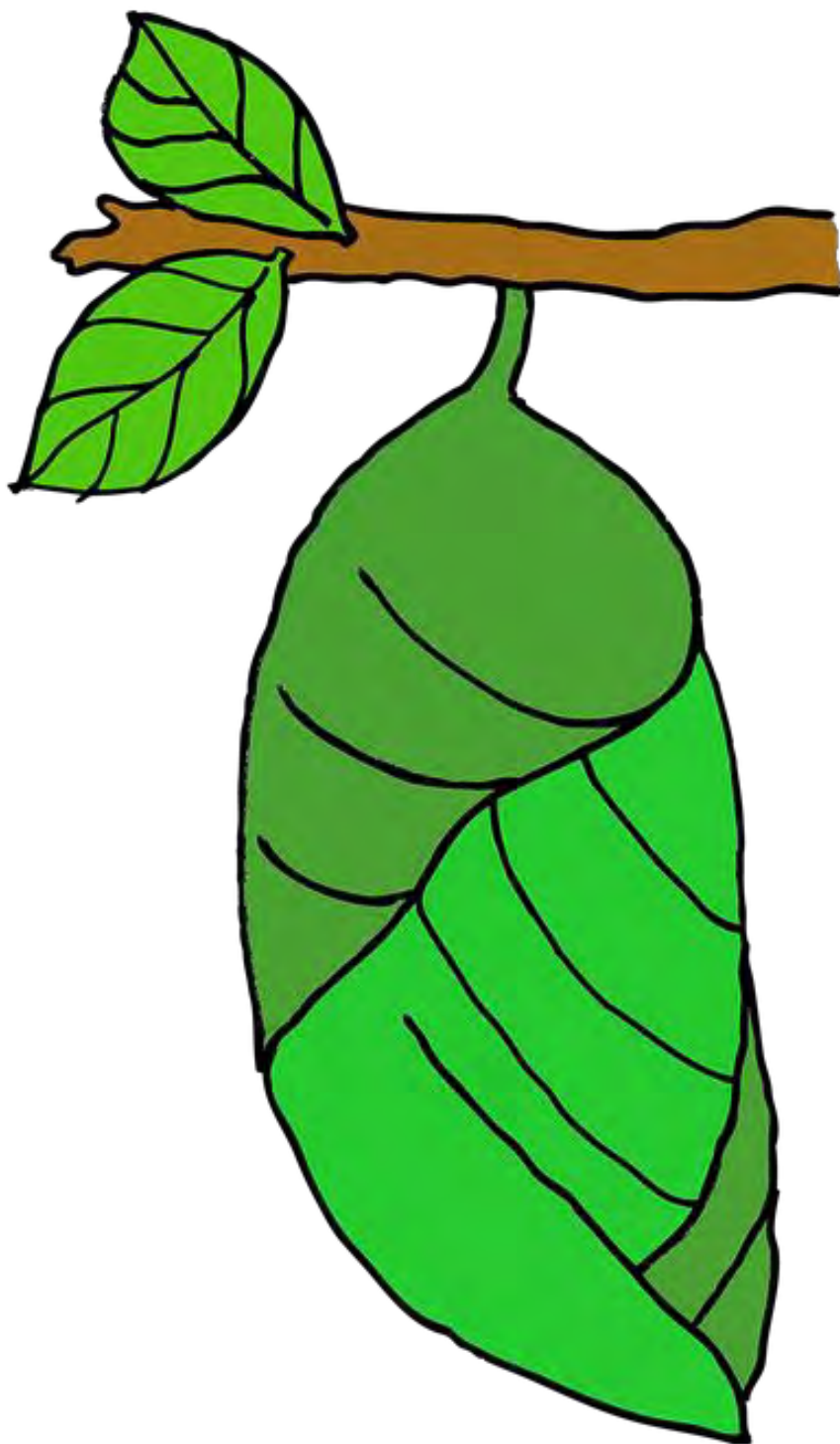




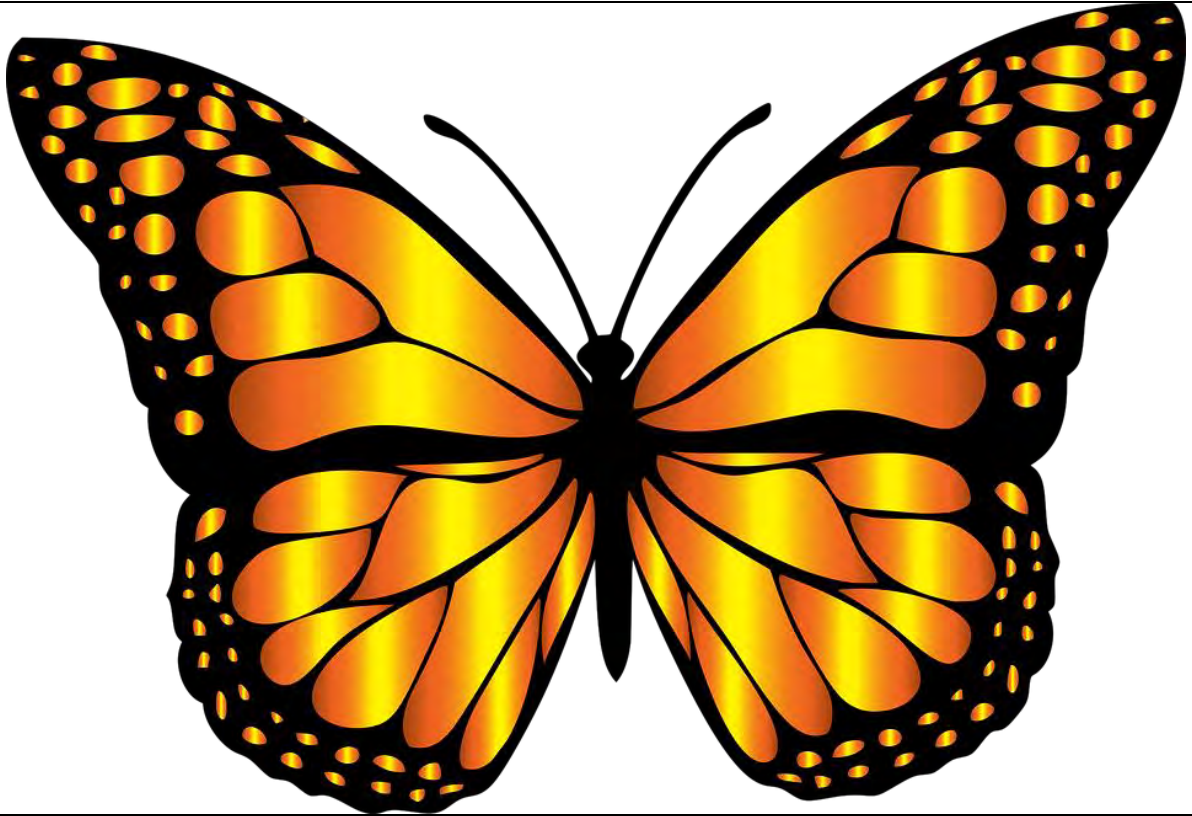
egg



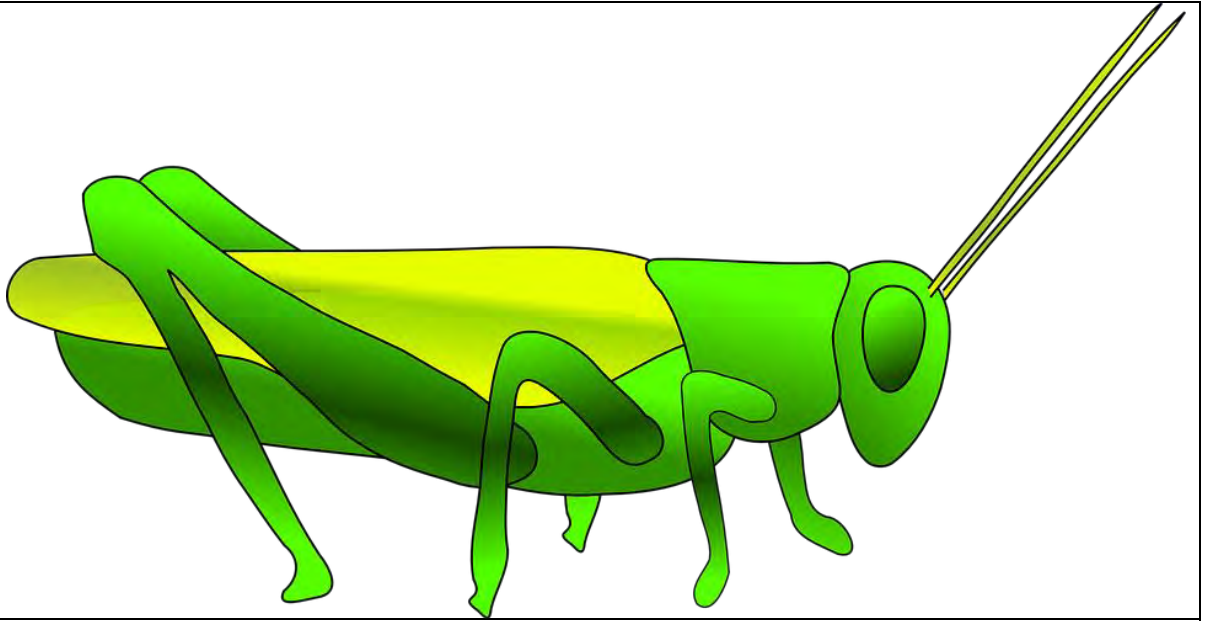
larva



pupa



imago



nymph



## **Insects**

Insects are sometimes called “little critter”. But not all of those little critters are actually insects. Spiders, snails, and worms are not part of the insect species.

Insects represent the vast majority of the known species on earth. They can be found on all the continents. This is due to their ability to adapt. They represent an extraordinary successful example of evolution. And their impact on the environment is far more important than some might think.

Insects are part of the invertebrate. That means that they don't have a spinal column. But they do have an armour – an exoskeleton made of chitin. Their bodies consist of 3 different parts: the head, the thorax and the abdomen. On the head they have eyes (compound eyes), two antennae and lifestyle fitting mouthparts. The thorax features 3 pairs of jointed legs and often times one or two pairs of wings. The abdomen contains their digestive system and part of the circulation. Some species of insects have a stinger on their abdomen.

Directly after hatching from the egg, insects often do not resemble their adult counterparts. The larvae have to pass several stages of maturing in their lifespan – that is called metamorphosis. That process is not identical for all of the different species. Some larvae or nymphs even live in the water, even though in their adult form they might live on land.

Some insects go through what is called an “incomplete metamorphosis”. In those species, the hatched nymph somewhat resembles the adult form. Examples are locusts and praying mantises.

Other insects go through what is called a “complete metamorphosis”. In those species, the hatched larvae first have to go through another phase before reaching the adult form. That stage is the pupae form of their species. The adult insect hardly resembles the larva after that. Examples of a complete metamorphosis are butterflies.

## **Benefits of insects**

Insects are often perceived as pests. Some of them sting, others transmit diseases or feed on the crops of humans. In reality, insects perform very important duties in nature.

Insects are very important for recycling in nature. Without them, the natural cycle of matter would miss an important piece, and materials would be bound in waste and not be available for other organisms.

Another important task insects perform in nature is pollination. Lots and lots of plants rely on insects to help them reproduce. A prominent example are the bees. By flying from blossom to blossom they spread pollen and support plants in reproducing and spreading.

Insects are a very important source of food for several animals. Birds and bats often get their required nutrition by eating insects. Even humans can use insects as a source of food.

**Snails and slugs**

Snails and slugs, or gastropods, are molluscs. Snails have a shell which they use for protection. Slugs do not have a shell and have to find a shelter for protection. Snails and slugs move around by moving their body in rhythmic patterns. They produce a slime which helps them to move around on surfaces. They do not possess any legs. But they do have two pairs of antennae. One pair functions as their eyes and one pair is used for their sense of taste and smell.

Land snails need to protect themselves from drying up. Because of that they try to stay hidden from the sun. On wet days they can be seen while the sun is up. Sea and freshwater snails live in water and do not need to be protected from drying up. Some of them use gills to breathe while others need to surface regularly to breathe oxygen in the air.

**Spiders**

Spiders, or arachnids, do not belong to the insects. The body of a spider consists of only two parts – the cephalothorax and the abdomen. Arachnids also have four pairs of legs while insects have three pairs. The eyes also differ from those of insects. While insects possess compound eyes, spiders do have simple eyes.

Besides the well known spiders, scorpions and ticks also belong to the family of arachnids.