

INSECT FACTS

The study of insects is called **entomology**.

Insect Numbers: There are more insects on earth than all other kinds of creatures combined, over 900,000 known species.



Insect Pests: Insects can hurt people by damaging food crops and forest trees, spreading diseases like malaria and yellow fever, or just biting and stinging painfully. Examples of insect pests are mosquitoes, caterpillars and fire ants.

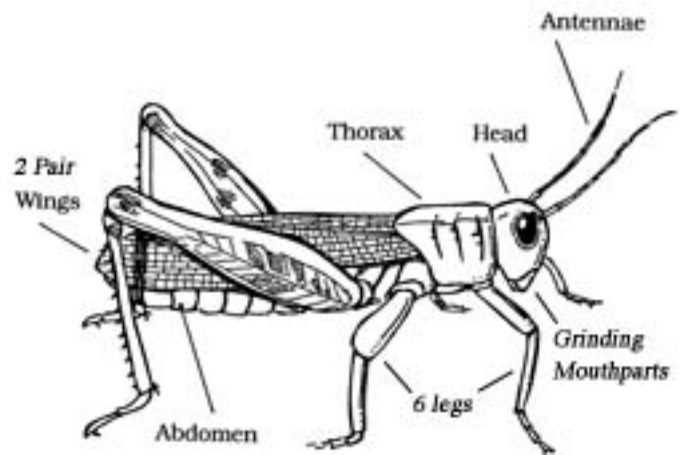
Insect Helpers: Insects can also help people by pollinating food crops, making products like honey, supplying animals with food (like song birds, turtles, frogs and bats) and ridding us of other pests like aphids and such. Examples of helpful or beneficial insects are honey bees, praying mantis, and predatory ladybugs.



Looking at Insects: It is fun to collect insects that you find (that are already dead) and study them. Or just see insects outside and watch what they do. To understand insects and make watching them more interesting there are some things you should know about them.

What makes a bug an insect?

- 1) 3 body parts; a head, thorax and abdomen
- 2) 1-2 pairs of wings attached to the thorax
- 3) 3 pairs of legs attached to the thorax
- 4) 1 pair of antennae attached to the head
- 5) Mouth parts that bite, suck, pierce, lap, sip or rasp.



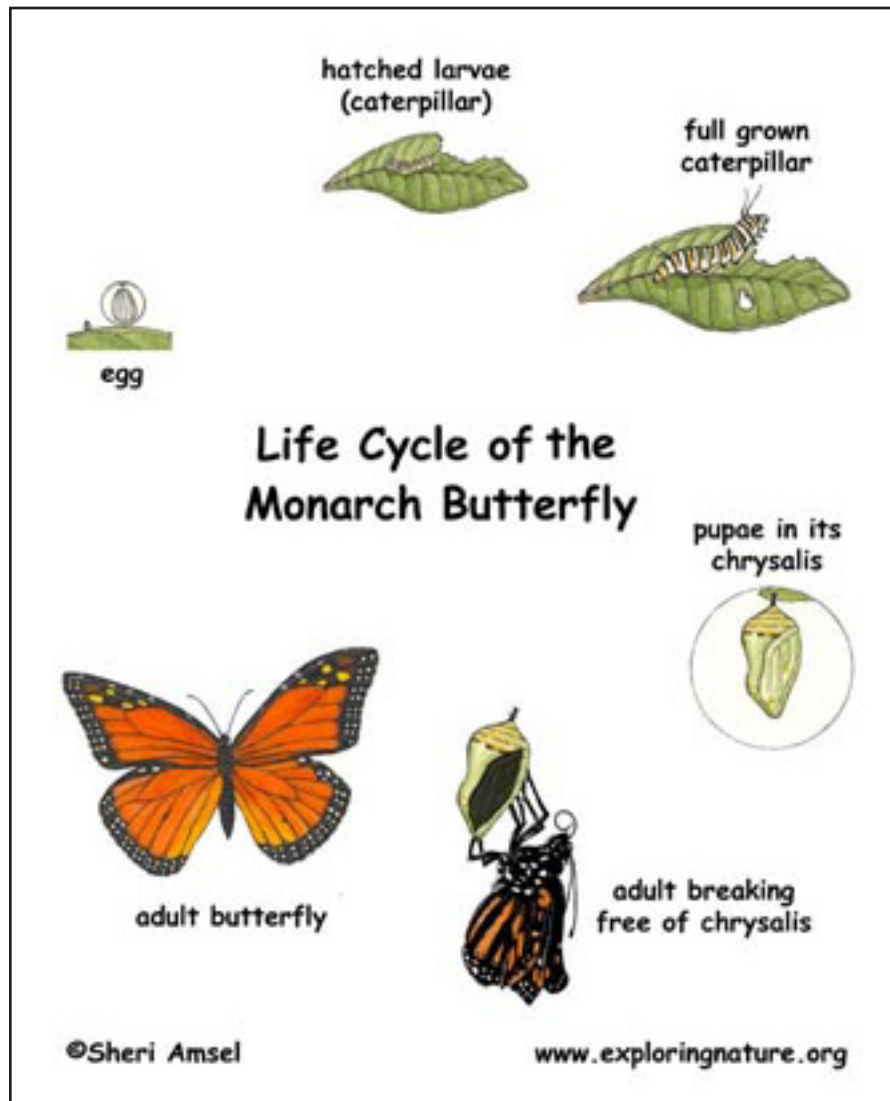
Looking at Insect Traits: A good sample insect is the grasshopper. It has all the traits of a typical insect plus some other interesting features.

- 1) They listen with a type of eardrum on its sides.
- 2) They have grinding mouthparts for eating grass and a grinding gizzard to further breakdown its food.
- 3) They have small openings all over its body called spiracles through which it breathes.
- 4) They go through what is called “incomplete metamorphosis” which means that they hatch out looking somewhat like an adult but smaller (this is called an instar) and gradually shed their hard outer layer (exoskeleton) as they grow (several times) into its adult size and form.

Other Insects, like butterflies and moths, go through “**Complete metamorphosis**” where they go through a complete change from birth to adulthood.

- 1) A butterfly hatches as a caterpillar (wormlike larvae) with mouthparts for eating.
- 2) Then it cocoons itself up to form a pupa, where it goes through a complete physical change.
- 3) Then it emerges from the cocoon or chrysalis as an adult insect.

One purpose of this change allows the insect to use several food sources. Early on as a caterpillar, it can eat leaves. Then by the time the adult butterfly emerges, the plants have flowered and they can collect nectar. They can also survive the winter in their pupal phase and try again next summer.



Things that are NOT Insects: Some things may be bugs, but are not true insects. These include spiders and centipedes – who are really in a group with crabs and lobsters and slugs and snails – who are really in a group with clams and oysters. Look for the insect traits you have learned to decide whether a bug is really an insect or not.