

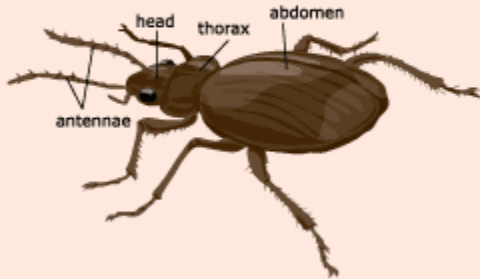


## Insects in the Garden

Many different kinds of insects visit a garden. Some can be harmful, but most are helpful.

### HOW CAN YOU TELL AN INSECT FROM OTHER ANIMALS?

All insects have 3 pairs of legs and 3 body parts (head, thorax, and abdomen). A hard outer covering protects the insect's body. This covering is called an exoskeleton.



Spiders, sowbugs, and millipedes are not insects. Can you see some differences?



### HOW DOES AN INSECT GROW?

An insect begins life as an egg and changes shape as it grows. This is called metamorphosis.



In insects such as butterflies, moths, and beetles, the egg hatches into a larva, which becomes a pupa. Then a mature adult emerges from the pupa.



In other insects, such as grasshoppers and aphids, the young insect (nymph) looks like the parent when it hatches. It sheds its exoskeleton several times as it grows.

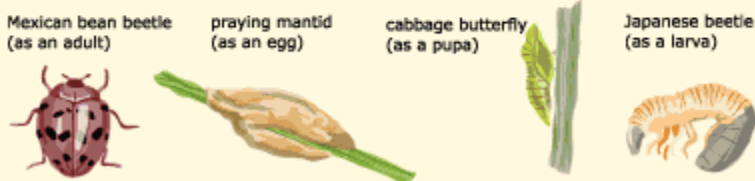


Insects are cold-blooded animals, so the rate at which they grow depends on the temperature. Cooler temperatures slow down their growth, and warmer temperatures speed up their growth.

Some insects have only one generation per year. Others have up to 12 generations per year, depending upon the temperature.



Insects do not grow in cold weather. They over-winter at different stages of metamorphosis:



## WHAT DOES AN INSECT EAT?

Lots of insects come to a garden to eat. Some come to suck nectar and eat pollen. Others chew on leaves, stems, and fruits. Some are predators and prey on insects and other small creatures. Mouthparts of most insects are specialized for a particular kind of food. Some mouthparts are adapted for biting or chewing. Others are adapted for sucking up blood, nectar, or other fluids.

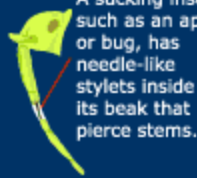
Both the adults and the larvae of ladybug beetles have chewing mouthparts for feeding on aphids.



A chewing insect has jaws called mandibles that move together when the insect is eating.



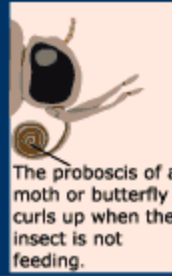
Aphids have needle-like mouthparts, which they use to make a hole in the plant stem and then suck up plant juices.



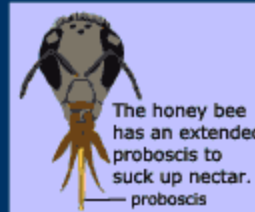
A sucking insect, such as an aphid or bug, has needle-like stylets inside its beak that pierce stems.



The cabbage butterfly larva chews on plants, but the mature butterfly has a long tube called a proboscis for sucking nectar.



The proboscis of a moth or butterfly curls up when the insect is not feeding.



The honey bee has an extended proboscis to suck up nectar.