Insects and Spiders

Animals without backbones are called **invertebrates**. Insects and spiders belong to a group of invertebrates called **arthropods**.

Insects

There are almost one million known kinds of insects-more than all other kinds of animals combined. Insects come in many different shapes, colors and sizes. They include ant, flies, butterflies, fleas, grasshoppers, beetles, wasps and bees. These creatures may seem very different from one another, but they all share certain features.

The Body of an Insect

The tough covering on the outside of an insect is its skeleton. It is called an ***exoskeleton*** because it is outside. The exoskeleton gives the body its shape. It protects the soft parts inside and it also keeps the body from drying out. An insect's exoskeleton cannot grow. So when an insect grows or changes its shape, it must molt. This means it sheds its exoskeleton and grows a new, bigger exoskeleton.

The body of an adult insect is divided into three parts. They are the ***head, thorax*** and ***abdomen***. The **head** is the front part. On the head are the eyes, a pair of antennae, and the mouth parts. Most insects have two large compound eyes. Compound eyes makes it easier for an insect to see even the slightest movement. The **antennae** may look feathery or they may look like threads. On the antennae are various sense organs.

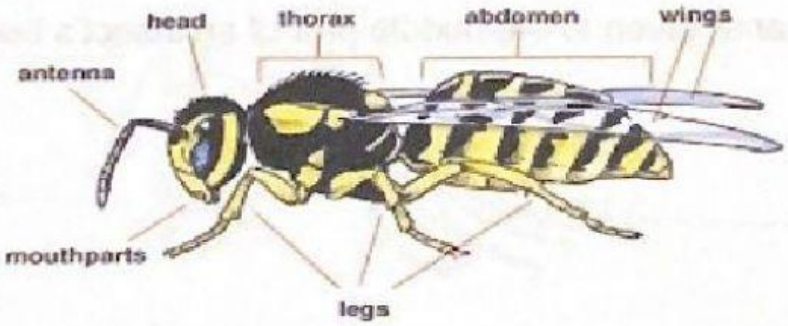
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Insects have different kinds of mouth parts depending on what they eat. They eat solid foods such as leaves and other insects. Some insects have chewing mouth parts. They eat solid foods such as leaves and other insects. Some insects have mouthparts shaped like a straw. They sip nectar from flowers. Insects that have sharp, tube-like mouthparts that can pierce the skin.

The *thorax* is the middle part of the body. It contains the powerful muscles needed for moving the wings and legs. But some have one pair, a few have no wings at all. All insects have three pairs of legs-six legs in all.

The *abdomen* is at the end of the insect's body. It contains the heart, the digestive, respiratory, excretory and reproductive systems.

Parts of an Insect



Stages of Life

All insects hatch from eggs. In a few kinds the young look exactly like adults, except they are much smaller. But in most kinds of insects, the young do not look like adults. They have to go through metamorphosis before they become adults. There are two kinds of insect metamorphosis. They are incomplete and complete metamorphosis has three stages-the egg, nymph and the adult.

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Many insect are helpful to people. Some pollinate plants we grow for food. They carry pollen from one flower to another. Without this work, many plants such as apple, pear and cherry trees cannot make fruit and seeds. Insects are also useful to humans because they produce **honey, silk, wax** and other products.

Questions

A. Choose the correct answer.

1. What is the tough covering on the outside of an insect called?

a. Mass
b. Exoskeleton
c. Antenne

2. What is the name given to the middle part of the insects body?

a. Thorax
b. Abdomen
c. Head

B. Write true or false.

3. Insects come in many different shapes, colors and sizes. _____

4. All insects have eight legs. _____

5. All insects hatch from eggs. _____

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C. Write an answer from below to complete each sentence.

Compound eyes.	Molt	pollen.

6. Insects carry _____ from one place to another.

7. _____ makes it easier for an insect to see even the slightest movement.

8. _____ is when an insect sheds its exoskeleton and grows a new, bigger one.

D. Answer the following questions.

9. What are the THREE parts of an insect?

_____, _____ and _____

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