From: http://www.english-online.at/biology/insects/insects.htm

INSECTS

About 75% of the world's animals are insects. They have been living on earth for over 400 million years, long before **humans appeared**. Insects have changed a lot and **adapted** to new climates in order to **survive**. Today, there are about one million different **species** of insects and **scientists** are **discovering** new groups daily. Insects have different sizes and body forms. Most of them are very small but they can grow as large as 30 cm. Among the most **common** insects are flies, **beetles**, bees, butterflies, **moths** and **wasps**.

Where insects live

Insects live in every region of the world. They can survive in any type of climate, from tropical rainforests to **icy** polar regions, as long as they can find food. The oceans are the only places where few insects live. Because they are so small, they can live in places where other animals cannot survive, some even live in underground **caves**.

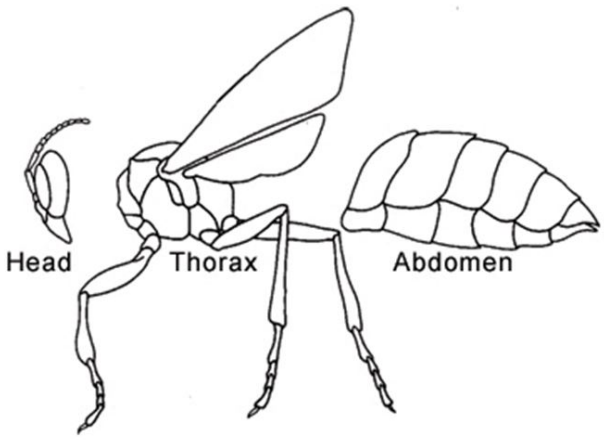
Physical features

Insects belong to a group of animals called arthropods. They do not have a **skeleton** but a kind of **shell** that **protects** them. This exoskeleton is very **tight** and does not grow with the insect. When an insect becomes too large for the shell it breaks open and a new shell **develops**.

Insects have three major body parts: head, **thorax** and **abdomen**. They have six legs and at least one pair of feelers.

An insect's **antennae**, mouth and eyes are located in the head. The **compound** eyes **consist** of up to 4,000 **separate lenses** that combine images inside an insect's brain. Such a **complex** eye gives it extremely good **eyesight**. Insects use antennae to smell and feel. If their feelers are **damaged** they become helpless. The thorax has three pairs of legs and two pairs of wings, **however**, some insects have no wings at all.

The abdomen is the largest part of an insect. It **contains organs** that **digest** food, **release waste** and let insects **reproduce**.



Body parts of an insect

How insects behave

Insects protect themselves from **enemies** in many ways. Some can **blend** into their **surroundings** by changing their colors. Others, like beetles, have a hard shell that **protects** them. Some insects produce **poison** and inject it into enemies by biting or **stinging** them.

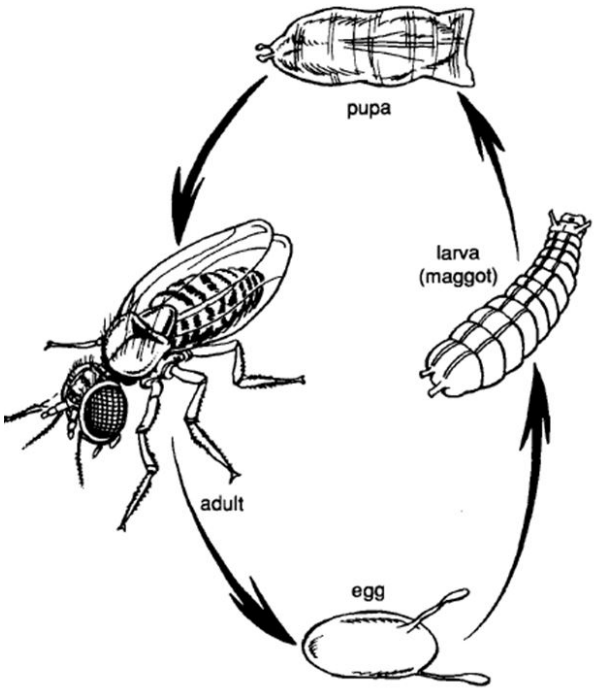
Most insects live alone but there are some **social** insects that live in **colonies**. **Termites**, ants and bees are examples of insects that live in groups of thousands or even millions, in which everything is organized and each insect has a certain **task**. Such a society is **headed** by a leader, a queen or a king, whom others **follow**.
Insects eat plants, animals and other **organisms**. They also live on other animals and get food from their body. Such insects are called parasites.

Certain insects **migrate** during the wintertime. The monarch butterfly, for example, flies south to tropical and subtropical areas. In spring they come back to their original **habitat**.

Life cycle of insects

Most insects are born from eggs. Their **covering** or shell cannot grow and they break out of it after a certain time. After that an insect grows a new shell. This process is called molting. An insect can **molt** many times until it becomes a fully-grown **adult**. This **process**, from **hatching** out of an egg to becoming an adult, can take between a few days and many years. As an adult, most insects live only for a short time. But there are a few, like the queen of a termite colony, which can live for many years.

Some insects change **completely** during the different **stages** of their life. This is called metamorphosis. After hatching from an egg they become a larva, which takes on a wormlike **shape**. A larva eats a lot and **molts** several times during its **development process**. After growth an insect becomes a pupa. It **spins** a protective covering around itself. During this **resting stage** an insect **develops** wings and legs and other body **features**. In the final **stage** an adult **emerges** from the pupa. Bees and butterflies grow in this way.



How a fly develops

Insects and humans

Insects can be helpful to humans in many ways. They eat other insects and dangerous animals that may **endanger** fields and **crops**. They keep our **environment** clean by eating animal waste and other unwanted **substances**. Some produce **valuable** products like honey and **silk**. Flowers, fruits and other plants **depend on** insects to help **spread pollen**. On the other side, insects are an important **source** of food for birds, frogs and other animals.

There are very few **harmful** types of insects, but they can do a lot of damage. Some of them spread diseases by **stinging** and biting people. In tropical regions insects are the main **carriers** of malaria or the **plague**. They **injure** pets and animals and do damage to trees and crops.

Vocabulary

- **adapt** to = get used to
- **adult** = here: fully grown animal
- **antenna** = one of two long thin parts on an insect's head, which it uses to feel
- **appear** = show up; come to life
- **beetle** = an insect with a round hard back, which is usually black
- **blend into** = to match with the world around you so that you cannot be seen
- **carrier** = here: animal or plant that can spread things to other places
- **cave** = a natural hole in the side of a hill or under the ground
- **certain** = special
- **colony** = group of animals that live together
- **common** = widespread
- **completely** = totally
- **complex** = consisting of many different parts
- **compound** = consisting of many parts
- **consist of** = are made up of
- **covering** = hard skin
- **crops** = a plant, like wheat and rice, which is grown by farmers and sold as food
- **damage** = destroy
- **depend on** = need
- **develop** = grow
- **development process** = here: the time during which something grows
- **digest** = change food into substances the body can use
- **discover** = find for the first time
- **emerge** = come out of
- **endanger** = put in danger
- **enemy** = here: animals that want to hurt them
- **environment** = the world around us
- **eyesight** = the ability to see
- **feature** = part

- **follow** = go after
- **habitat** = living area
- **harmful** = dangerous
- **hatch** = break out of a shell
- **head** = lead
- **however** = but
- **humans** = people
- **icy** = very cold
- **injure** = hurt
- **lens** = the clear part inside your eye that focuses so you can see things clearly
- **migrate** = move to live and eat somewhere else
- **moth** = an insect that is related to the butterfly; it flies at night and eats holes in cloth
- **molt**= to lose old skin and grow new skin
- **organ** = part of the body that has a certain job to do
- **organism** = here: living things
- **plague** = disease that causes death and spreads quickly to a large number of people
- **poison** = substance that can lead to death or a serious illness
- **pollen** = fine powder which plants produce and which is carried to other flowers and plants by insects
- **process** = development , way of growing
- **protect** = guard, defend
- **release** = let free
- **reproduce** = to have babies
- **resting stage** = time during which it does not grow
- **scientist** = person who works in a laboratory and is trained in science
- **separate** = different
- **shape** = form
- **shell** = hard skin
- **silk** = smooth soft cloth made from material that is produced by the silkworm
- **skeleton** = structure consisting of all the bones of the body
- **social** = group
- **source** = where something comes form
- **species** = a group of animals or plants that are almost the same and can have babies together
- **spin** = here: to produce skin
- **spread** = here: bring from one place to another
- **stage** = phase, period, time
- **sting** = to make a very small holes in your skin and you feel a sharp pain
- **substance** = material
- **surroundings** = the world around us
- **survive** = live on, exist
- **task** = job
- **termite** = insect that eats and destroys wood from trees and buildings

- **thorax** = the part of an insect's body between its head and abdomen
- **tight** = stiff, fixed, not flexible
- **valuable** = expensive
- **wasp** = a thin black and yellow insect that can sting you
- **waste** = the solid material that comes out of your body

Multiple Choice Questions

1. Insects make up

   A. ? only a small group of the world' animals

   B. ? most of the world's animals

   C. ? a group of animals that only live in the tropical regions

2. A larva

   A. ? has a set of strong bones

   B. ? rests and does not eat

   C. ? eats a lot and grows many layers of skin

3. Very few insects live

   A. ? in deserts

   B. ? above oceans

   C. ? in cold places

4. Insects have at least

A. ? four legs

B. ? eight legs

C. ? six legs

5. Insects have good eyesight because the eyes

A. ? are below the feelers

B. ? are made up of many lenses

C. ? are very large

6. The abdomen

A. ? is connect to the wings

B. ? is the largest part of an insect

C. ? helps an insect fly

7. Insects help

A. ? spread pollen to other plants

B. ? to grow food and crops

C. ? to cure diseases

8. An exoskeleton

A. ? are all the bones of an insect's body

B. ? is a hard shell that protects an insect

C. ? is a thin covering that an insect spins around its body

9. The monarch butterfly

A. ? flies to warm places in the winter

B. ? only lives near oceans and coastal regions

C. ? always stays in tropical regions

Fill in the Blank

Insects have a hard shell called _____ .

Their body consists of three major parts : head, thorax and _____ .

The eyes of an insect consist of many seperate _____ . This gives it a good eyesight.

An insect has at least three pairs of _____ .

A _____ is an insect that can eat up a lot of wood.

Insects that live on other insects and get food from them are called _____ .

When an insect _____ it loses its old skin and develops new skin.

After growing, an insect becomes a _____ .

Flowers and other plants depend on insects to spread _____ .

In tropical regions insects are the main carrier of _____ .