

Bee Buzz Words

d e s h d x m a p b
 q u e e n u b y o o
 g l a r v a e n l a
 l b b r r q r h l m
 a e d y f l o w e r
 n e o r c o l o n y
 d s m o t h o r a x
 s w e e e l o k e h
 m a n d i b l e s i
 r x n e c t a r l v
 h o n e y d r o n e

honey
 queen
 worker
 drone
 hive

colony
 pollen
 flower
 mandibles
 nectar

larvae
 thorax
 abdomen
 beeswax
 glands

Bees can save the world

Besides make honey, what other things do bees do?

jungles that provide habitat for animals everywhere!

Bees are very, very important as pollinators of fruits and vegetables that we eat, or feed to livestock.

Many people don't realize the vital role bees play in maintaining a balanced eco-system.

Bees also pollinate plants we get our clothes from (cotton) as well as plants that line our rivers and streams and control erosion. Bees and other insects pollinate many plants world-wide, and these plants form the forests, grasslands and

Nobody knows the exact reason why but there has been an alarming decrease in the Bee population over the last 10 years. According to experts, if bees were to become extinct then humanity would perish after just four years.

Below are some flowers that Bees love. Plant some in your garden and help the Bees!

Apple	Comfrey	Meadow buttercup
Azelea	Daisy	Monks hood
Bluebell	Forget-me-not	Pansy
Borage	Foxglove	Primrose
Bramble	Gorse	Rhododendron
Buddleia	Heather	Rose
Catmint	Honeysuckle	Sage
Chives	Lavender	Wild thyme
	Lupin	

What is a Butterfly?

Butterflies are beautiful, flying insects with large scaly wings. Like all insects, they have six jointed legs, 3 body parts, a pair of antennae, compound eyes, and an exoskeleton. The three body parts are the head, thorax (the chest), and abdomen (the tail end). The butterfly's body is covered by tiny sensory hairs. The four wings and the six legs of the butterfly are attached to the thorax. The thorax contains the muscles that make the legs and wings move.

Flying

Butterflies are very good fliers. They have two pairs of large wings covered with colourful, iridescent scales in overlapping rows. Lepidoptera (butterflies and moths) are the only

insects that have scaly wings. The wings are attached to the butterfly's thorax (mid-section). Veins support the delicate wings and nourish them with blood.

Butterflies can only fly if their body temperature is above 86 degrees. Butterflies sun themselves to warm up in cool weather. As butterflies age, the colour of the wings fades and the wings become ragged.

The speed varies among butterfly species (the poisonous varieties are slower than non-poisonous varieties). The fastest butterflies (some skippers) can fly at about 30 mile per hour or faster. Slow flying butterflies fly about 5 mph.

Butterflies and moths undergo complete metamorphosis in which they go through four different life stages.

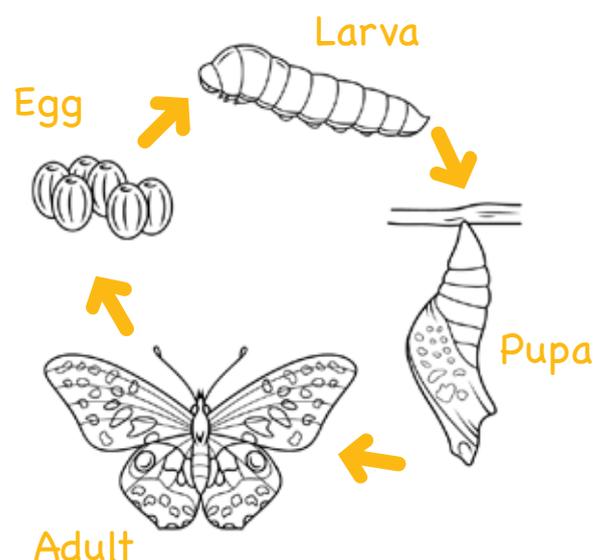
Egg - A butterfly starts its life as an egg, often laid on a leaf.

Larva - The larva (caterpillar) hatches from an egg and eats leaves or flowers almost constantly. The caterpillar moults (loses its old skin) many times as it grows. The caterpillar will increase up to several thousand times in size before pupating.

Pupa - It turns into a pupa (chrysalis); this is a resting stage.

Adult - A beautiful, flying adult emerges. This adult will continue the cycle.

Life-cycle of a butterfly



What is a Butterfly?

Diet

Caterpillars spend most of their time eating leaves using strong mandibles (jaws). A caterpillar's first meal, however, is its own eggshell. A few caterpillars are meat-eaters; the larva of the carnivorous Harvester butterfly eats woolly aphids.

Butterflies and moths can only sip liquid food using a tube-like proboscis, which is a long, flexible 'tongue.' This proboscis uncoils to sip food, and coils up again into a spiral when not in use. Most butterflies live on nectar from flowers. Some butterflies sip the liquid from rotting fruits and a rare few prefer rotting animal flesh or animal fluids (the Harvester butterfly pierces the bodies of woolly aphids with its sharp proboscis and drinks the body fluids).

Habitat

Butterflies are found all over the world and in all types of environments: hot and cold, dry and moist, at sea level and high in the mountains. Most butterfly species, however, are found in tropical areas, especially tropical rainforests.

Many butterflies migrate in order to avoid adverse environmental conditions (like cold weather). Butterfly migration

is not well understood. Most migrate relatively short distances (like the Painted Lady, the Red Admiral, and the Common Buckeye), but a few (like some Monarchs) migrate thousands of miles.

Classification

Butterflies and moth belong to the order Lepidoptera. Lepidos is Greek for 'scales' and ptera means 'wing'. These scaled wings are different from the wings of any other insects. Lepidoptera is a very large group; there are more types of butterflies and moths than there are of any other type of insects except beetles. It is estimated that there are about 150,000 different species of butterflies and moths (there may be many more). There are about 28,000 butterfly species worldwide, the rest are moths.

Butterfly Fossils

Butterfly fossils are rare. The earliest butterfly fossils are from the early Cretaceous period, about 130 million years ago. Their development is closely linked to the evolution of flowering plants (angiosperms) since both adult butterflies and caterpillars feed on flowering plants, and the adults are important pollinators of many flowering plants. Flowering plants also evolved during the Cretaceous period.

Bees are amazing

- A honey bee is an insect that carries pollen from flower to flower and produces honey.
- There are three types of bees in a colony- a queen bee, worker bees, and drones.
- The worker bee and the queen are both female bees but only the queen is allowed to reproduce. The drones are the male bees.
- The worker bees have many jobs including cleaning, finding pollen, building new comb, taking care of baby bees (called larvae) etc.
- The drones only job is to mate with the queen and the queen's only job is to lay eggs.
- The honey bee has three basic body parts - a head, an abdomen, and a thorax.
- On the head, a bee has five eyes, a pair of antennae, a tongue, and jaws called mandibles.
- Bees use their tongue to suck up water, nectar, and honey.
- They use mandibles (jaws) for moving around pollen and shaping beeswax.
- The thorax is the middle portion of the bee and it contains muscles.
- The bee has two pairs of wings and three pairs of legs.
- On the legs of a honey bee are special structures and hair that help the bee clean itself and carry pollen.
- The abdomen is the longest part of a honey bee and has most of the important organs. It is covered with hard segments that protect the bee and also help keep it from drying up.
- The bee sting (found only in female bees) is on the tip of the abdomen.
- A worker bee will visit about 50-100 flowers during each collection trip.
- Bees communicate by 'dancing.' Honey bees do a dance which alerts other bees where nectar and pollen are located. The dance explains direction and distance. Bees also communicate with pheromones.
- A honey bee can fly about 15 miles per hour.
- A honey bees must tap around two million flowers make one pound of honey.
- A hive of bees will fly over 55,000 miles to bring you one pound of honey.
- The average worker honey bee makes around 1/12 teaspoon in her lifetime.

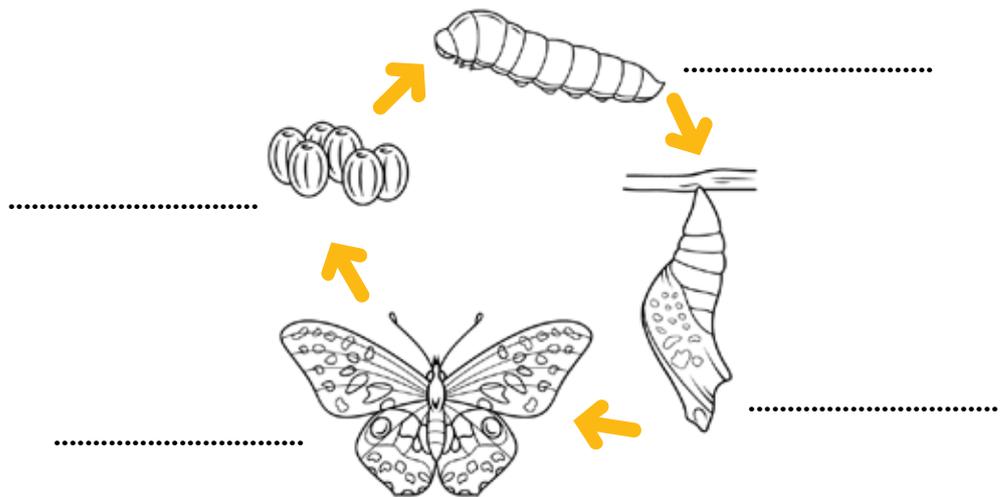
Label the Butterfly Life Cycle Diagram

Butterflies undergo complete metamorphosis. The larva (caterpillar) hatches from an egg that the female usually lays on the underside of leaves.

forms a protective chrysalis and metamorphoses into a winged insect - the adult butterfly. After mating, the female lays eggs and the cycle begins again.

After growing, it enters the seemingly inactive pupal phase during which it

Read the definitions below, then label the butterfly life cycle diagram



adult - the winged adult which will mate and reproduce. Adults do not eat, they only sip liquids through a straw-like proboscis.

pupa - the stage in a butterfly's life when it is encased in a chrysalis and undergoes metamorphosis into the adult, winged form.

larva - (also called the caterpillar) this stage hatches from the egg. The larva spends its time eating, growing and moulting (shedding its outgrown exoskeleton).

egg - the tiny orb laid by a female butterfly. Eggs are usually laid on the underside of leaves - they hatch into larvae.

Life of a Butterfly

Fill in the blanks using words from the Word Bank below

Butterflies are beautiful, flying that have large scaly wings. Like all insects, they have jointed legs, three body parts, a pair of antennae, compound and an exoskeleton. The three body parts are the head, thorax (the), and abdomen (the tail end).

The butterfly's body is covered by tiny sensory hairs. The four wings and the six legs of the butterfly are attached to the thorax. The thorax contains the muscles that make the legs and wings move.

Butterflies and moths undergo complete in which they go through four different life stages.

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Larva - The larva (.....) hatches from an and eats leaves almost constantly. The caterpillar molts (loses its old) many times as it grows. The caterpillar will increase up to several thousand times in size before pupating.

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Word Bank

metamorphosis	six	caterpillar
insects	flying	egg
eyes	adult	chest
leaf	butterfly	skin

Bee Anatomy and Life Cycle

Fill in the blanks using words from the Word Bank below

Honeybees are insects that live in hives. Like all, bees have legs, a three-part body, a pair of antennae, compound, jointed legs, and a hard exoskeleton. The three body parts are the, thorax, and abdomen (the tail end).

Bees can fly about 15 mph (24 kph). They eat nectar (a sweet liquid made by) which they turn into honey. In the process of going from flower to flower to collect nectar, pollen from many plants gets stuck on the bee's pollen baskets (hairs on the hind legs). Pollen is also rubbed off on

flowers. This pollinates many flowers (fertilizing them and producing seeds). All the members of the hive are related to each other. There are three types of honey bees: the (who lays eggs) workers - females who gather food, make honey, build the six-sided honeycomb, tend eggs, and guard the hive drones - males who mate with the queen.

Bees undergo complete The queen lays in a cell in the wax comb (all the immature bees are called the Each tiny egg hatches into a worm-like, which eventually pupates into an bee.

Word Bank

metamorphosis

six

social

eyes

adult

queen

insects

brood

larva

head

flowers

eggs