Butterfly Life Cycle

Eggs

Butterfly

Caterpillar

Chrysalis

Life Cycles

Every living thing has a life cycle. A life cycle is all of the stages a living thing goes through between the time it is born and the time it becomes an adult. All life cycles have some basic stages—being born, growing and changing into an adult. A life cycle has no end because one life cycle leads to another.

Metamorphosis is a major part of the lifecycle of some animals. Metamorphosis means a complete change in form or shape. Almost all insects, invertebrates that live in water and amphibians go through some type of metamorphosis. Animals such as birds, fish, reptiles and mammals do not go through metamorphosis. They are born or hatched looking much like their parents.

An insect is a small animal that makes up 80 percent of all animals on Earth. Insects have three body parts including a head, thorax and abdomen. They have six legs and they usually have two pairs of wings.

What is metamorphosis?

All animals go through metamorphosis. Do you agree or disagree with that?

Name the three characteristics of insects.
1. __________________________
2. __________________________
3. __________________________
Painted Lady Butterflies

Butterflies go through metamorphosis. Complete metamorphosis has four stages. The four stages are: egg (ovum), larva (caterpillar), pupa (chrysalis) and adult (butterfly). We do not get to see the egg stage here at school, but you will get to observe the caterpillar (larva), pupa (chrysalis) and the adult (butterfly) stages.

Every Painted Lady is different. Your Painted Lady may not grow as quickly as your classmates, but they all eat, grow and change completely. The caterpillar to butterfly lifecycle is approximately 21 days. While in the larva stage, the caterpillar may eat its own weight in leaves each day. As it grows, it molts or sheds its skin. After about 7 to 10 days, your caterpillar will form a chrysalis by attaching to the lid of the cup. It will hang upside down in the J-form from a button of silk that it spins. Inside the chrysalis the caterpillar turns into liquid and reforms itself into a butterfly. The chrysalis stage lasts 7 to 10 days. When the butterfly (adult) first emerges from the chrysalis, its wings are soft and crumpled. The tired butterfly rests and then slowly unfolds its wings to dry. After a few hours the Painted Lady is ready to fly. These butterflies live for about two weeks. During that time, they reproduce and lay eggs so the lifecycle can begin again.

Name the 4 stages of the butterfly lifecycle.
1. ______________________
2. ______________________
3. ______________________
4. ______________________

How long does the larva (caterpillar) stage last? ________________
How long does the pupa (chrysalis) stage last? ________________
About how long does the Painted Lady live? ________________
Caterpillar Body Parts

Caterpillars do not have any bones inside, but they have a tough skin outside called an exoskeleton. The caterpillar has from twelve to fourteen body segments. Some of these parts have tiny holes for breathing located on the sides of the body. These holes are called spiracles. A caterpillar usually has six eyes on each side of its head but it still can’t see very well. It has special hair called bristles on its body. The bristles help it feel and protect it from predators. There are three pairs of true legs near the head of the caterpillar and five pairs of prolegs that are false legs further back on the body. The true legs have claws and they are used for climbing and holding food and the false legs help them move along. All together they have sixteen legs.

A caterpillar uses its mandibles (jaws) to chew leaves. Its body is nearly all stomach. There are many different types of caterpillars. Some are big and some are really little. Many have horns on their heads. Their skin may be rough or smooth. They also spin silk from a spinneret that is located below their mouths.

Label the parts of the caterpillar using words from the passage above.

1. __________________________ 4. __________________________
2. __________________________ 5. __________________________
3. __________________________ 6. __________________________
Lesson #3

Date

Name

Compare and contrast humans and caterpillars.
I'm Molting

When a butterfly egg hatches, a tiny caterpillar comes out. It is so hungry that it eats its own eggshell. Then it begins to eat the plant that it hatched on. It may eat its own weight in leaves each day. That would be like an 80 pound child eating 80 pounds of food each day. That would be impossible! The caterpillar eats so much that it outgrows its skin. Its skin will then begin to peel off. The peeling is called molting.

Molting doesn’t hurt the caterpillar. Do you know why? The caterpillar has a new skin underneath the old one. A caterpillar will molt about four or five times before it goes into its chrysalis.

Directions: Color the box yellow if the statement is true and blue if it is false. If the statement is false, write the true statement on top of the box.

1. Caterpillars can eat their body weight in leaves each day.

2. A pupa hatches from an egg.

3. Molting doesn’t hurt a caterpillar.

4. A caterpillar molts only once.

5. Butterflies lay eggs on the ground.

6. Another name for molting is peeling.
Butterfly Body Parts

All butterflies have three main body parts - head, thorax and abdomen. They also have an **exoskeleton** which is a tough outer skin.

The **head** has big, round compound eyes, which are made up of thousands of little eyes. The **antennae** are straight with knobs on top. They are mainly used for smelling and touching. Antennae can pick up odors that are much too faint for human noses. Their six **feet** are used for tasting. How weird is that! The **proboscis** is a coil tube that is used to suck nectar from flowers.

The **thorax** is the thick, middle part of the body. All four wings are attached to this part. Located on the underside of the thorax are three pairs of slender, jointed legs with tiny claws at the end.

The long, thin **abdomen** is behind the thorax. Along each side of the abdomen is a row of spiracles or breathing holes.

1. What are the three main body parts of a butterfly?

2. What is an exoskeleton?

3. What two things are the antennae used for?

4. What two things are attached to the thorax?

5. What does the proboscis look like and what is it used for?

6. What are spiracles and where are they located?
Wings and Things

More Than Pretty Wings

A butterfly has colorful wings. But a butterfly has other interesting parts too.

Start at the Top
Each butterfly has two antennae on its head. It uses its antennae to smell. It can smell things that are far away. Antennae help a butterfly find food or a mate.

A Tricky Tongue
Butterflies eat nectar. Nectar is a sweet liquid. It is found in a flower’s stem. The butterfly uses its proboscis to reach the nectar. The proboscis is a tube like a straw. The butterfly unrolls it and reaches into the flower. Then it sucks the nectar through the tube.

Fancy Footwork
A butterfly lays its eggs on a leaf. To find the best leaf, the butterfly feels the leaf with its feet. It can tell whether the leaf is the right place to lay its eggs just by feeling it.

Color Code
title = blue
subheadings = red
caption = orange
boldfaced words = green

Bonus Box: Find the picture that goes with the caption. Color the picture yellow.
Emerging Butterflies

How can you tell that a butterfly is about to emerge from a chrysalis? First, the chrysalis will begin to shake. Next, the chrysalis splits open. Then the head and legs will pop out. After that, the abdomen emerges from the chrysalis. Once it is completely out of the chrysalis, the butterfly pumps blood into the veins of its wings. Finally, the butterfly waits for its wings to dry and its feeding tube to form. Now the butterfly is ready to fly around to look for flowers that will provide them with the nectar that they like to drink.

Directions: Put the following 6 events in sequential order.

_____ The butterfly pumps blood into its wings.
_____ The head and legs come out first.
_____ The chrysalis begins to shake.
_____ The butterfly waits for its wings to dry and its feeding tube to form.
_____ The chrysalis splits open.
_____ The butterfly’s abdomen emerges from the chrysalis.

1. What does emerge mean?
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

2. Can a butterfly and caterpillar eat the same food? Why or why not?
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
Camouflage and Mimicry

Butterflies and caterpillars protect themselves from predators in many ways. Some are the same color as the plants they live near. This is called camouflage. For example, a brimstone butterflies wings look like leaves so they blend in with leaves.

Some butterflies and caterpillars look like other creatures. This is called mimicry. The owl butterfly has a large spot behind each back wing. To a bird or a lizard, the spots look like the eyes of an owl. The tiger swallowtail caterpillar can arch its back so it can look like a snake.

Directions:
Color the butterfly orange if the sentence tells about camouflage.
Color the butterfly yellow if the sentence tells about mimicry.

Some green caterpillars look like the plants they eat.

Angelwing butterflies look like dead leaves when they rest.

The viceroy butterfly looks like the bad-tasting monarch butterfly.

The swallowtail butterfly flies like a moth that tastes bad.

The wings of the blue morpho blend in with blue flowers.
Butterflies and Moths are Insects

Butterflies and moths belong to a very large group of animals called insects. They have their own insect group called Lepidoptera. Butterflies and moths are in this group because they have soft scales on their wings. Other insects do not have these soft scales. Since butterflies and moths do have some differences they belong in two separate groups. Lepidopterists are scientists that study butterflies and moths.

1. Name the very large group that both moths and butterflies are members.

2. What is the name of the insect group just for moths and butterflies?

3. Which group is largest- butterflies, Lepidoptera or insects?

4. Which group is smallest- moths, Lepidoptera or insects?

5. What do you call a scientist that studies butterflies and moths?
Butterfly or Moth?

Butterflies and moths are alike in some ways. They both belong to the insect group. They both have four wings that are covered with scales. Since they have scales, they are in the Lepidoptera group too. They each go through four stages of development. The stages are: egg, caterpillar, chrysalis and adult.

What are the differences? Butterflies have slender bodies and moths have plump bodies. The antennae of the butterfly are straight with knobs at the top. Moth antennae are feathery. Butterflies are colorful and moths are dull in color. You will see butterflies during the day (diurnal) and moths at night (nocturnal). When they rest, butterflies put their wings up and moths rest with their wings spread out.

List four ways that butterflies and moths are alike.
1. __________________________________________
2. __________________________________________
3. __________________________________________
4. __________________________________________

List 5 ways that butterflies and moths are different.

<table>
<thead>
<tr>
<th>Butterflies</th>
<th>Moths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antennae</td>
<td></td>
</tr>
<tr>
<td>Wings at rest</td>
<td></td>
</tr>
<tr>
<td>Bodies</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td></td>
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<tr>
<td>When they fly</td>
<td></td>
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</table>
## Butterfly and Moth

<table>
<thead>
<tr>
<th>Butterfly:</th>
<th>Moth:</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Image]</td>
<td>![Image]</td>
</tr>
<tr>
<td>thin body</td>
<td>plump body</td>
</tr>
<tr>
<td>slender antennae</td>
<td>feather-like antennae</td>
</tr>
<tr>
<td>wing up when it rests</td>
<td>wings flat when it rests</td>
</tr>
<tr>
<td>caterpillar makes a chrysalis</td>
<td>caterpillar makes a cocoon</td>
</tr>
</tbody>
</table>
Moths have thick furry bodies.

Butterflies have long thin bodies.

When they are resting, moths fold their wings out like an open book.

Over their back when resting, butterflies fold their wings up.

Most moths have thick, feathery antennae without knobs.

Most butterflies have long thin antennae with knobs on the end.

Most moths fly at night.

Most butterflies fly during the day.

Butterfly or Moth?

Cut and paste the matching pictures. The arrows will help you.