

Frequently Asked Questions



What are butterflies and moths?

Butterflies and moths are a group of insects called *Lepidoptera*. They have a head, thorax, abdomen, two antennae, four wings and six legs. There are, of course, exceptions; some moths have wingless adults or lack a proboscis.



How many kinds of butterflies and moths are there?

Butterflies and moths are found on all continents except Antarctica. Scientists estimate that there are ~12-15,000 species of butterflies and 150-250,000 species of moths. In the US and Canada, more than 750 species of butterflies and 11,000 species of moths have been recorded. Many species of moths and some butterflies are being discovered to this day!



What is the difference between butterflies and moths?

Most butterflies are brightly coloured, day-flying insects with long, clubbed antennae. Most moths fly at night and lack clubbed antennae. In otherwords, butterflies are “fancy moths”!



Where can I find butterflies and moths?

These insects are found during the warmer months of the year in many different environments. In most regions, May to August are the best months. They love sunny, exposed places with low plants. Many national parks, wildlife refuges, or other wild places are usually rich in species. Your local city park may have planted a butterfly garden to attract them in the summertime.



How do butterflies fly?

Butterflies have strong muscles in their thorax that force their wings up and down on a fulcrum basis. They actually move in a slanted figure 8 motion that propels them forward through the air in the same principle as an airplane.



How high and how fast do butterflies fly?

Some fast-flying skippers can fly around 50 km per hour or faster! Slow-flying butterflies fly approximately 10 km per hour.

During fall migration, Monarchs have been seen flying by tall buildings such as the Empire State Building at 1000+ feet. Butterflies can be picked up by storm fronts and moved hundreds of miles and can sometimes rise to altitudes of several thousand feet.



Why are wings so delicate? How are they made?

Lepidopteran wings are made of thin layers of chitin - the same hardened protein that makes up the outside of their body - and are covered in thousands of tiny scales that give colour to their wings. The wings are strengthened by a system of veins. They have to be strong enough to support the body in the air, but flexible enough for flight movement.



Do butterflies have brains and hearts?

Yes, like all other insects, they do! The butterfly has a long, chambered heart that runs the length of its body on the back side. It pumps hemolymph (not red like blood) from the rear of the insect forward to bathe its internal organs.



How long do butterflies live?

Each butterfly species has a different potential adult life span. On average, butterflies have an adult life span of 2 weeks. One butterfly in Costa Rica can live only 2 days! Monarchs that migrate to Mexico can live up to 6 months. No butterfly can live for more than a year.



How can you tell male and female butterflies apart?

The colour pattern on the upper wing surface often differs. The male abdomen has a slit at the tip, while females have a round hole to lay eggs. Behaviour helps too: females fly around more.



Are butterflies poisonous?

Not all butterflies are poisonous but there are some (e.g. the Monarch and Pipevine Swallowtail) whose larvae eat poisonous plants like milkweeds or pipevines which can cause the birds who eat them to vomit or spit them out.



Why do caterpillars turn into butterflies?

Caterpillars are the eating and growing stage for the butterfly, but they can't mate or reproduce and lay eggs. Adult butterflies can do all of this, and they can fly across sometimes long distances to colonize new areas with new food or to escape the winter.



How do caterpillars “know” when to pupate?

Caterpillars have a chemical called juvenile hormone (JH) in their bodies that is made by the brain. Whenever a caterpillar sheds its skin and the JH level is high, it goes to the next caterpillar stage. When JH is low, the caterpillar wanders to find a site to make a chrysalis (or a cocoon if it's a moth).



Do caterpillars have ears and teeth?

Caterpillars don't have ears (only some moths do), but they do have opposable toothed mandibles to chew their food! These can be seen with a magnifying glass.



Do caterpillars drink water?

Caterpillars don't drink water. They normally get all they need from the plants they feed on.



What do butterflies eat?

With few exceptions, butterflies eat only various liquids to maintain their water balance and energy stores. Most butterfly adults sip flower nectar, but others imbibe fluids from sap flowers on trees, rotting fruits, bird droppings, or animal dung. Many adult butterflies are found drinking fluids at wet sand or mud, especially along streams or the edges of dirt roads or trails. The caterpillars of almost all butterflies eat various parts of plants, though each species may specialize in only a few kinds of plants or plant parts.



How do butterflies go to the bathroom?

Butterflies don't go to the bathroom. Caterpillars do all of the eating and almost continuously defecate. Sometimes, butterflies drink so much that they must emit a fine liquid spray from the tip of their abdomen, but this is almost pure water.



Where do butterflies go when it rains?

Butterflies hide when it rains! They typically go to the same places they do overnight. Some butterflies hide under large leaves, some crawl down into dense leaves or under rocks, and some just sit head down on grass stems or bushes with wings tucked tightly close to their body. If it rains really hard or for a long time, butterflies become tattered or die.



How do butterflies communicate?

They can communicate with each other (same or different species) by colour, chemicals, sounds, and physical actions. Colour patterns can signal their gender or species. Chemical pheromones are used by both sexes to signal courtship and/or attraction. A few species use clicking sounds to protect their space. Physical actions like aggressive flight or postures are used in courtship or to protect food resources.



Do butterflies sleep?

Butterflies become quiescent when they can't maintain their body temperatures, when it's cloudy, or at night. They don't sleep like humans do - they always have their eyes open since they don't have eyelids!