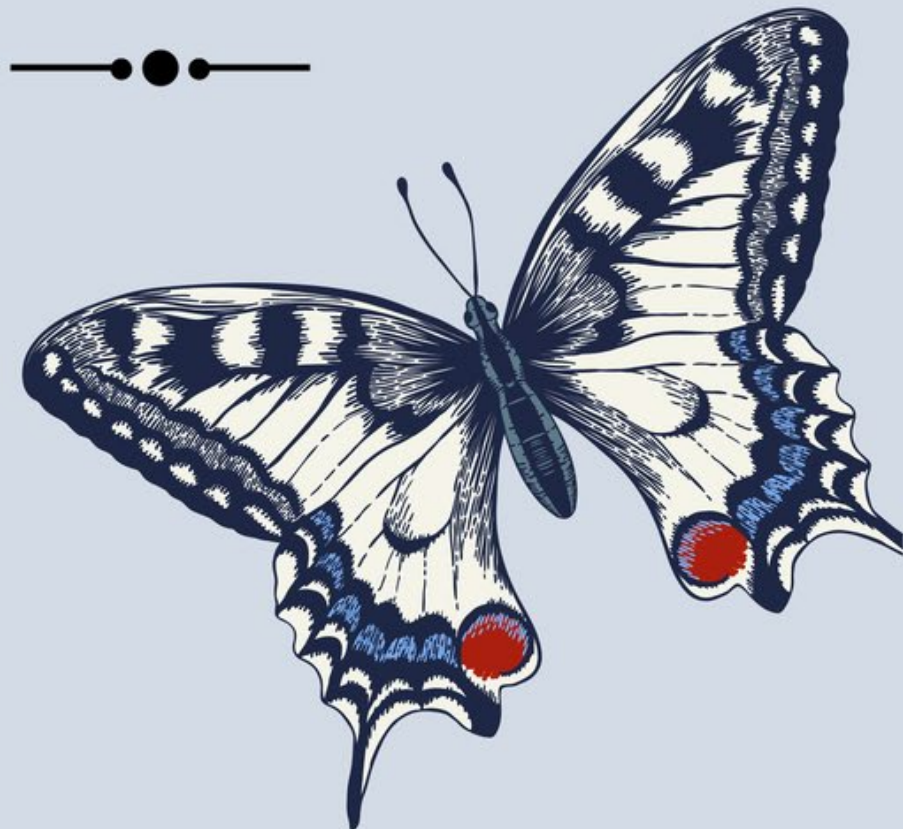




—● NATURE STUDY ●—

BUTTERFLIES

Types of butterflies, plants that attract butterflies, butterfly anatomy & more





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Butterfly Anatomy

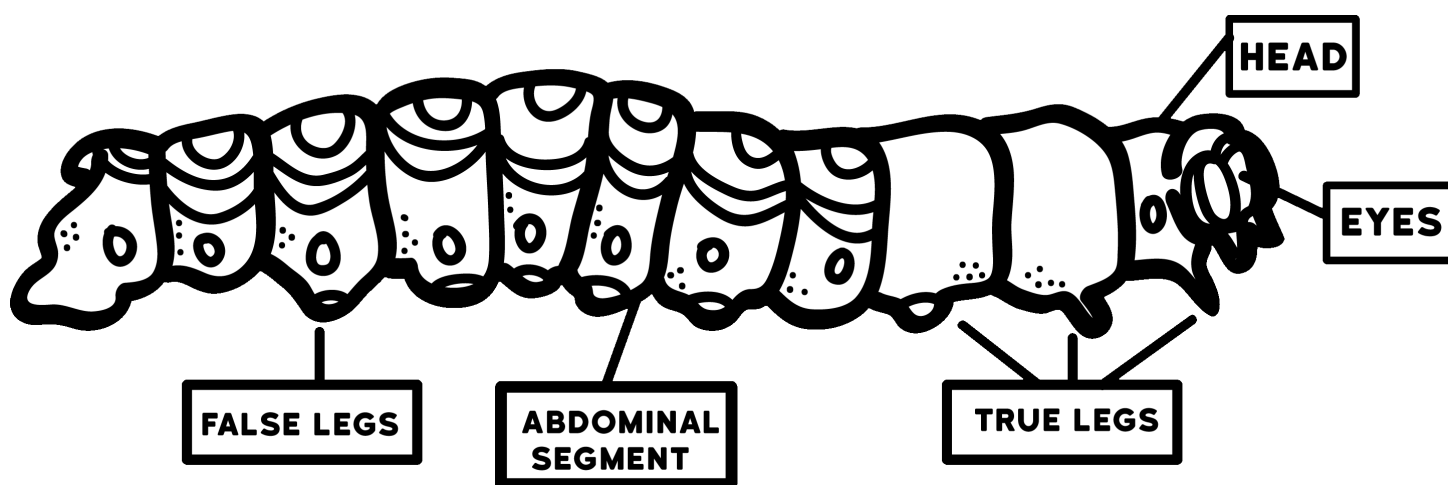
Are you ready to learn a lot about butterflies? Good, because they are fascinating creatures. After all, how many creatures that are smaller than your hand can travel hundreds or thousands of miles to migrate?

As you have probably learned before, butterflies don't start out with wings. They begin life as eggs. When they hatch, they are caterpillars called larvae. The caterpillar has one main job—eat. Most caterpillars eat green plants, though some types eat aphids, insects, or insect larvae.

Even though you can't see them all in the picture, the caterpillar's body has 14 parts called segments. The first segment is called the head, and it includes the caterpillar's mouth, two antennae, and six small eyes on each side.

Together, the next three segments are called the thorax. These segments are where the caterpillar's legs attach. They are jointed legs and have sharp claws. The caterpillar can use them to move and to pull food closer to its mouth.

The last section is called the abdomen, and it includes the final ten segments. This is where legs called prolegs, or false legs, attach. These legs have tiny hooks on them to help the caterpillar hold on to plants and to move.

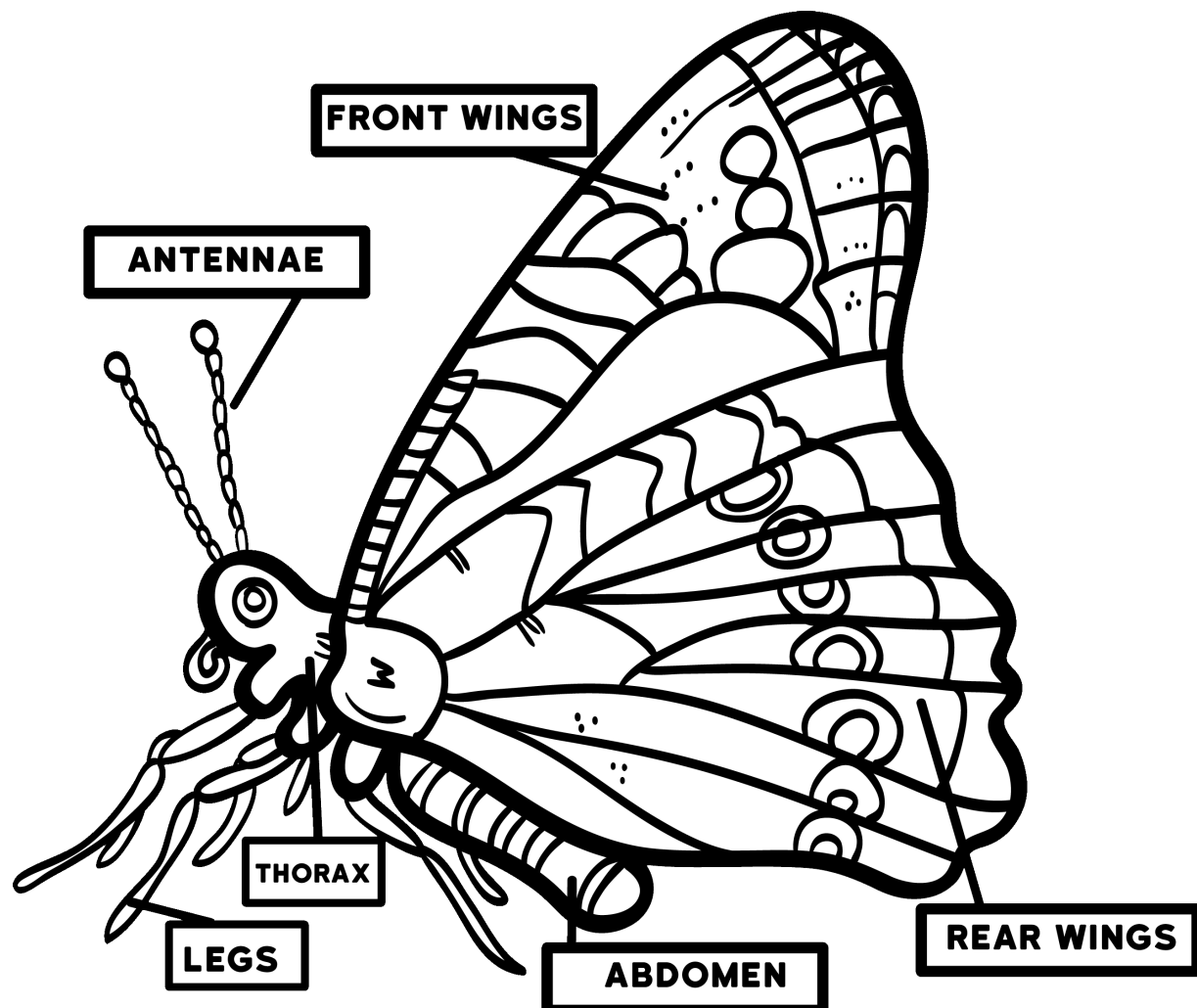


When it is ready and has stored lots of energy from the food it has eaten, the caterpillar builds a chrysalis, which is a hard, protective case where it can finish growing. While it is inside the chrysalis, it is called a pupa. When it has finished its change, called a metamorphosis, it comes out as a beautiful butterfly.

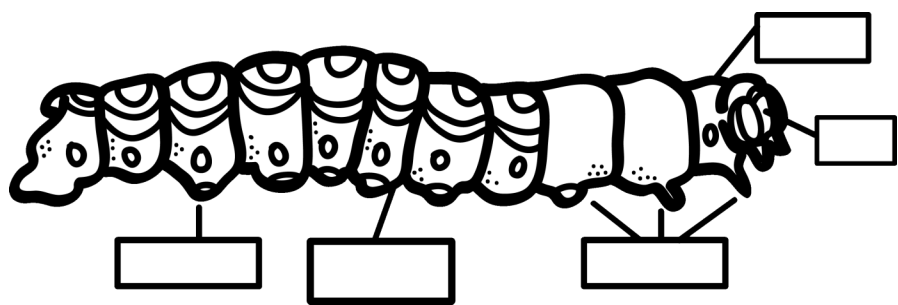
Like the caterpillar, the butterfly's body is made of three sections—the head, thorax, and abdomen. The head includes its two compound eyes, which are eyes with many lenses, to help it see. It also includes its mouth and two antennae. The butterfly uses the antennae to smell, which allows it to find the food it needs.

The thorax is where the wings and legs attach. The butterfly has two pairs of wings, a front pair and a rear pair. Its legs are too weak to do much walking, but they include claws that help it hold onto surfaces and little hair-covered pads that help the butterfly taste or sense its food.

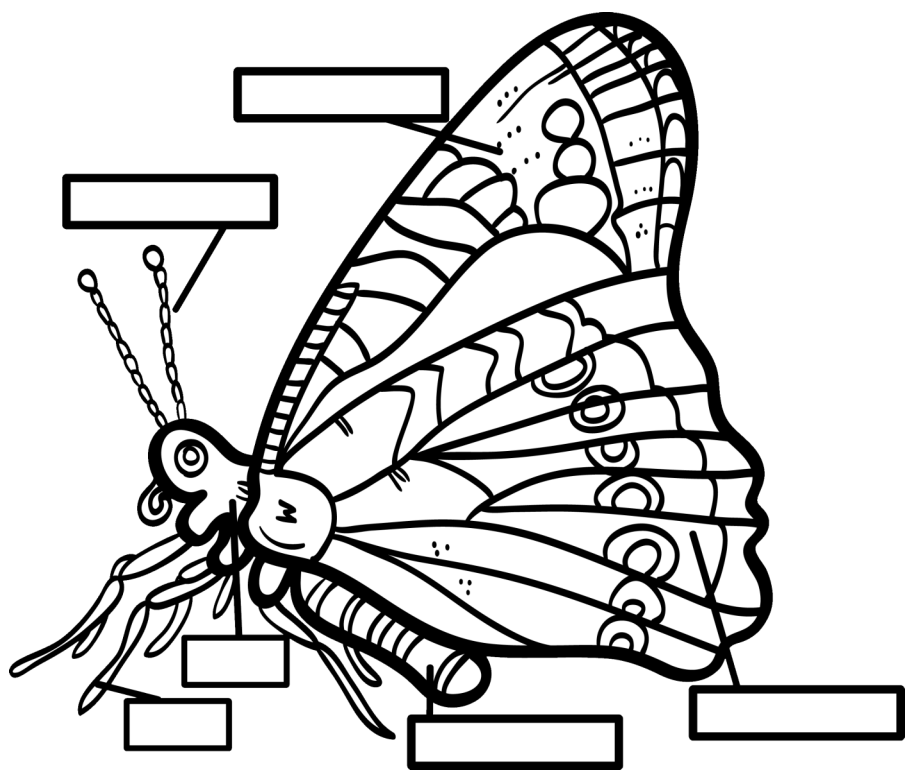
The abdomen is where the butterfly's digestive and other systems are located which allow the butterfly to break down its food, absorb the nutrients it needs, and get rid of waste.



Label the parts of a caterpillar and adult butterfly.



- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____



- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____

Moths vs. Butterflies

Now that you know a little bit more about how butterflies live, let's talk about the difference between a moth and a butterfly. The main differences between them are:

1. Moths are usually nocturnal (active at night) instead of being active during the day like butterflies.
2. Moths have a special piece on their bodies called a frenulum that connects their front wings and rear wings so they can work together. Butterflies don't have this.
3. Moths grow from pupa to adult inside a cocoon, but most butterflies grow inside a chrysalis. A chrysalis is usually harder and stronger than a cocoon.

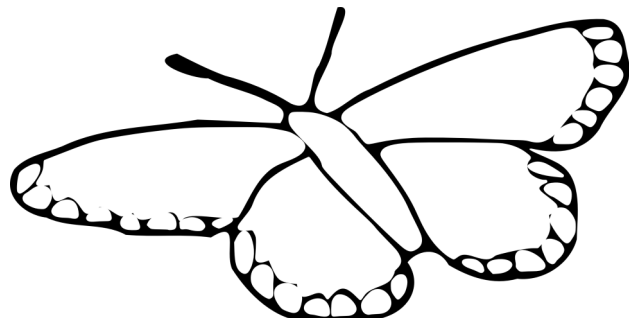
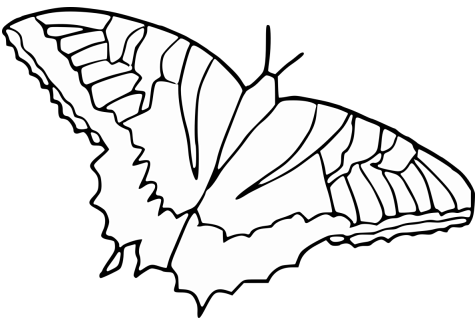
Many Different Types

Scientists don't think we've discovered all the different types of butterflies, but they think there could be 20,000-30,000 different kinds! They sort them into groups to make them easier to study.

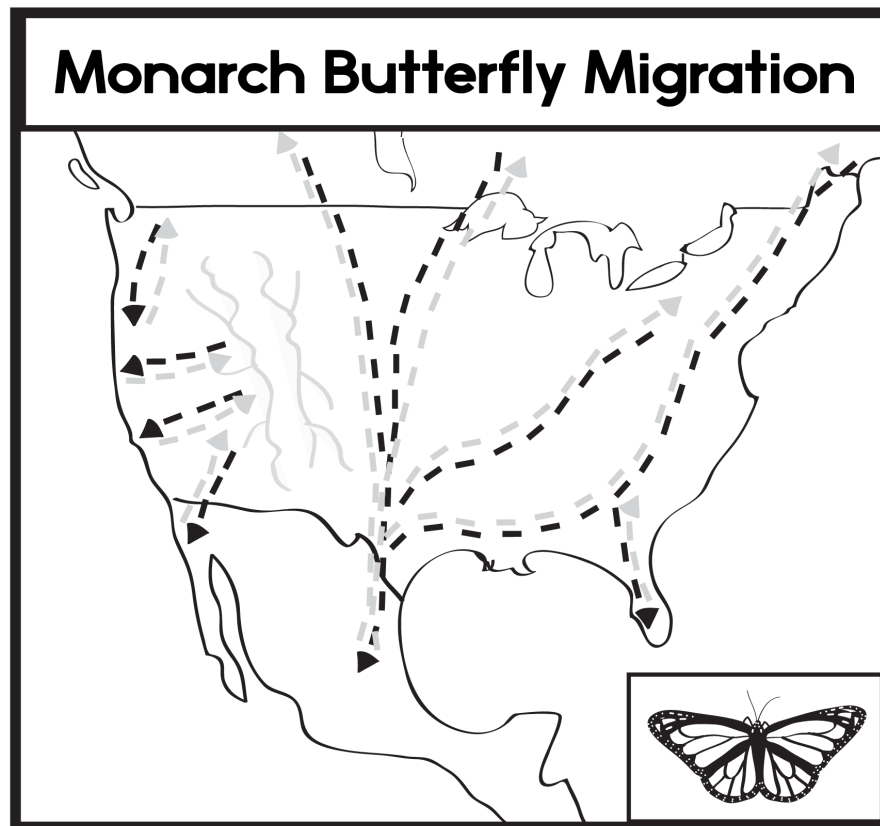
Some types, like hairstreak butterflies and swallowtails, get their names from the "tail" they have on their wings. The Eastern tiger swallowtail (below on the left) is the state butterfly of Alabama.

Some types of butterflies get their names from their color. Blues are a type of butterfly that are usually blue or violet. The Karner blue butterfly is an endangered insect and is the state butterfly of New Hampshire.

Another type of butterfly is the brush-footed butterfly, like the Baltimore checkerspot butterfly (below on the right). These butterflies use their tiny front legs, called brush feet, to help them find food.



Milkweed butterflies make up another group. They have short front legs, are usually large, and fly slowly. Milkweed plants are the only food their caterpillars eat, which gives the group its name. The monarch butterfly is known for its long migration each year. Some travel up to 2,000 miles (3,200 km) from Canada to Mexico, which is the longest migration of any butterfly.



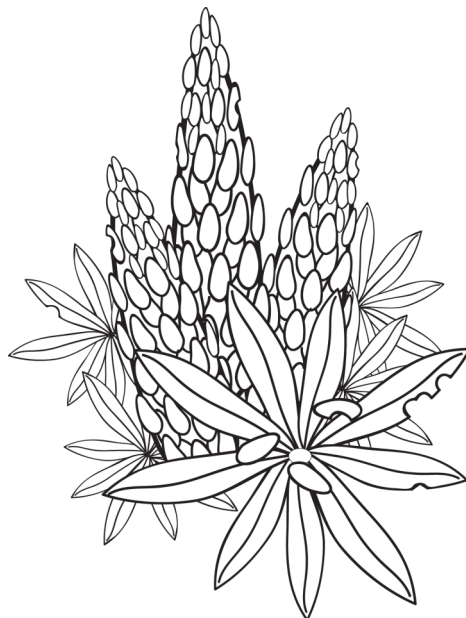
Morphos are a tropical butterfly that actually look iridescent because of the way the light refracts off their wings. Satyrs and wood-nymphs are other types of tropical butterflies. Many of them have dark eyespots on their wings. Some have eyespots that look like owls, giving them the name owl butterflies.

Butterflies and Plants

As we learned earlier, a caterpillar's main responsibility is to eat. Many are fond of violets, milkweed, and asters.

Most adult butterflies need plant nectar to survive. There are many different types of plants that attract various kinds of butterflies. Here are just a few:

- Bee balm
- Blueberries
- Cornflower
- Daylily
- Fleabane
- Goldenrod (below on left)
- Hollyhock
- Lavender
- Lilac (below on right)
- Lupine (below in middle)
- Milkweed
- Mint
- Phlox
- Shasta daisy
- Snapdragon
- Zinnia



Butterflies Around the World

Butterflies live in nearly all parts of the world, and most types live in more than one country. Let's look at just a few types of butterflies and where they live.

The Sandia hairstreak lives in parts of the United States and Mexico. The viceroy lives in the United States, Canada, and Mexico. Label those three countries on the map below.



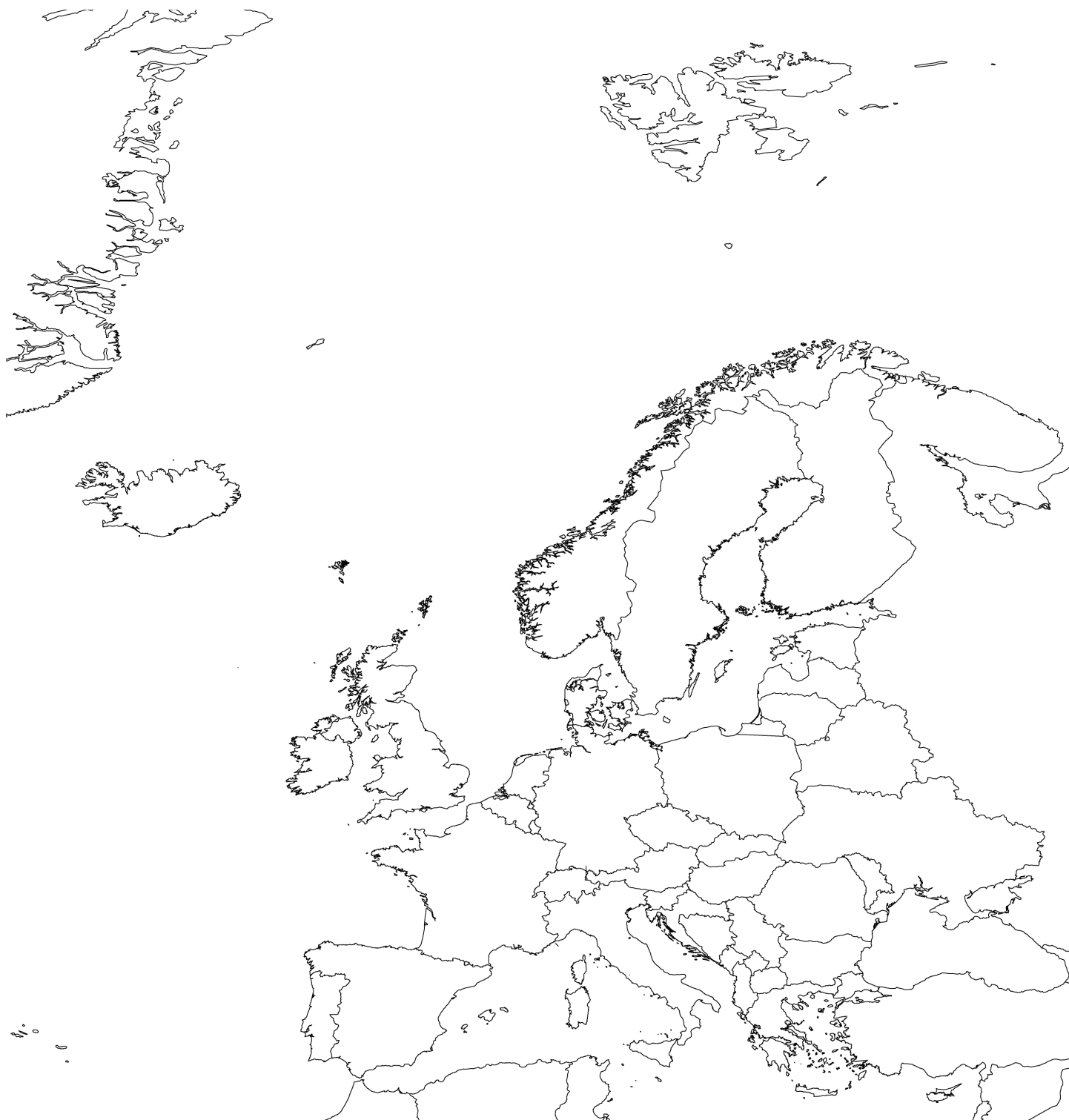
The zebra longwing butterfly lives in the United States, Mexico, and the countries of Central America. Label the Central American countries of Belize, Honduras, Costa Rica, Panama, and Nicaragua on the map.



The morphos is a butterfly that lives in Mexico, Central America, and parts of South America including Venezuela, Colombia, Ecuador, and Peru. Label those four South American countries on the map below.



The woodland brown butterfly is found in parts of Europe including Switzerland, Hungary, and Croatia. Label those three countries on the map below.



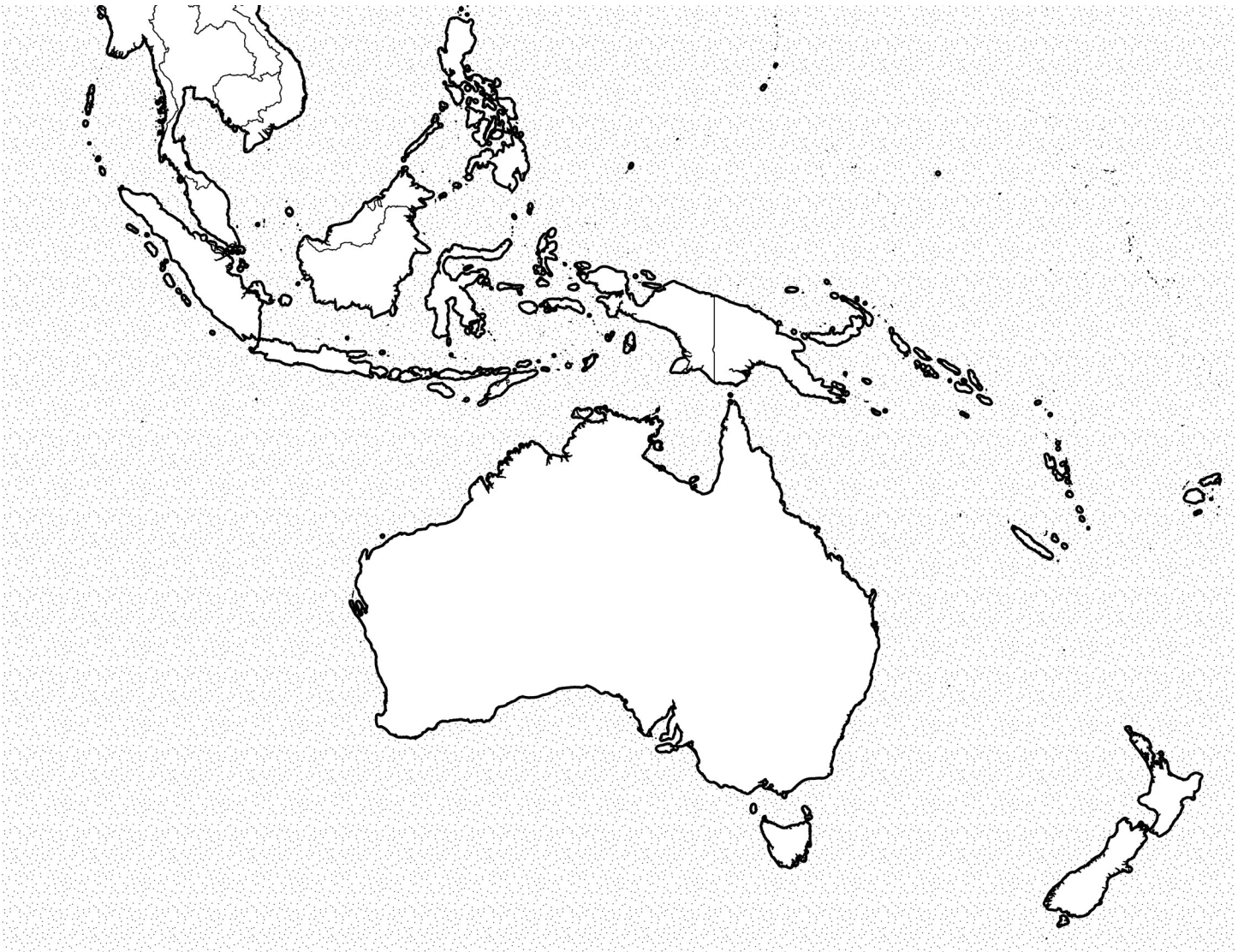
The common forester butterfly is found in parts of Asia including Nepal, India, Bhutan, Thailand, Laos, and Vietnam. Label those six countries on the map below.



The range of the Janetta forester butterfly in Africa reaches from Sierra Leone to the Democratic Republic of the Congo and the Central African Republic. Label those three countries on the map below.



The Red Admiral lives in many countries all over the world, including parts of North America, Europe, Northern Africa, Asia, and New Zealand. Label New Zealand on the map below.



Butterflies of All Sizes

Butterflies come in many different sizes. Many are small, but some can have a wingspread of up to 10 inches (25 centimeters) or more. Let's look at the average wingspread of some different types of butterflies. We've rounded the numbers to make them easier to work with in the next exercise.

Sandia hairstreak	.4 to 1.2 inches	1 to 3 centimeters
Karner blue	1 inch	2.5 centimeters
Baltimore checkerspot	1.75 to 2.75 inches	4.4 to 7 centimeters
Diana Fritillary	3.5 to 4.5 inches	8.75 to 11.25 centimeters
Mourning cloak	1.25 to 4 inches	3 to 10 centimeters
Pulelehua	2.5 inches	6.25 centimeters
Viceroy	2.5 to 3.25 inches	6.25 to 8 centimeters
Red Admiral	1.75 to 3 inches	4.5 to 7.6 centimeters
Monarch	4 inches	10 centimeters
Cabbage whites	1.75 to 2.75 inches	4.4 to 7 centimeters
Eastern tiger swallowtail	2.5 to 4.5 inches	6.25 to 11.25 centimeters
Zebra swallowtail	2.5 to 3.5 inches	6.25 to 8.75 centimeters
Morphos	8 inches	20 centimeters
Zebra longwing	2.75 to 4 inches	7 to 10 centimeters

Using the chart above, answer these questions:

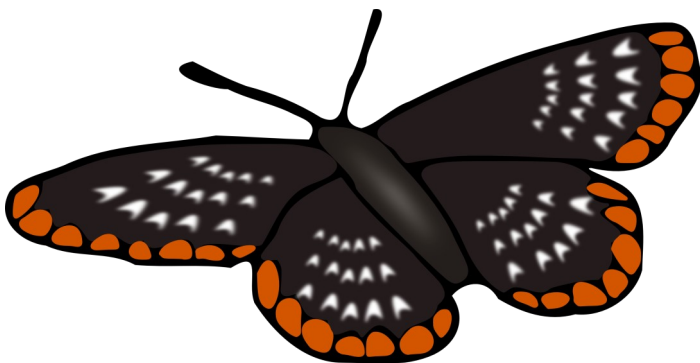
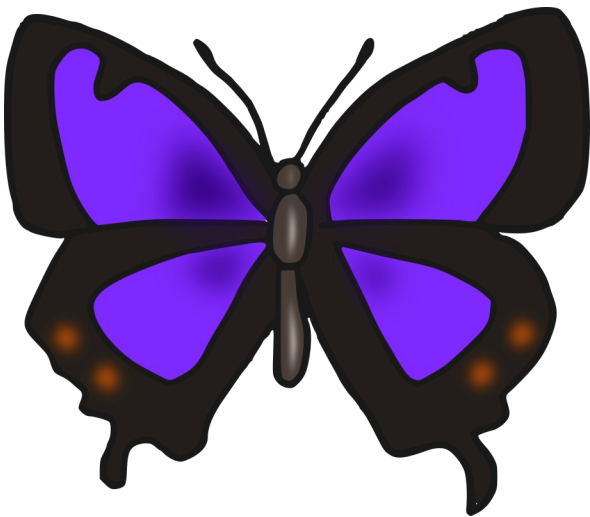
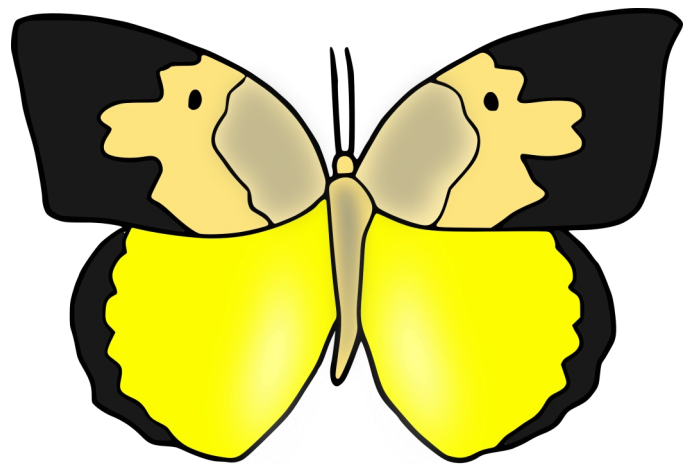
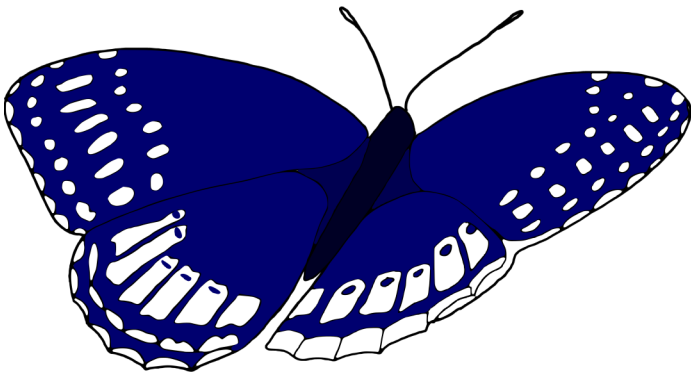
1. How many butterflies have an average minimum wingspread of less than 1 inch or 2.5 centimeters?
2. How many butterflies have an average minimum wingspread of 1 inch to 2 inches or 2.5 to 5 centimeters?
3. How many butterflies have an average minimum wingspread of 2.1 inches to 3 inches or 5.25 to 7.5 centimeters?
4. How many butterflies have an average minimum wingspread of more than 3.1 inches or 7.75 centimeters?

Create a bar graph to show the data you have gathered.

Butterflies of All Colors

Many times, we use easy words when we want to describe something instead of being specific. For example, instead of "blue," you could say turquoise, sky blue, light blue, aquamarine, etc.

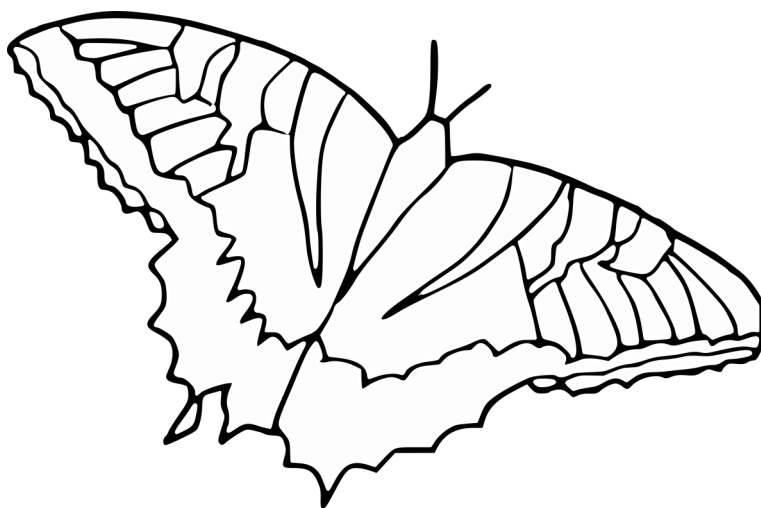
On a separate sheet of paper, write down as many color words as you can think of. Use these pictures of butterflies to inspire you and get you started. Can you think of 25 color words? Can you think of 50?



The Caterpillar

By Christina Rossetti

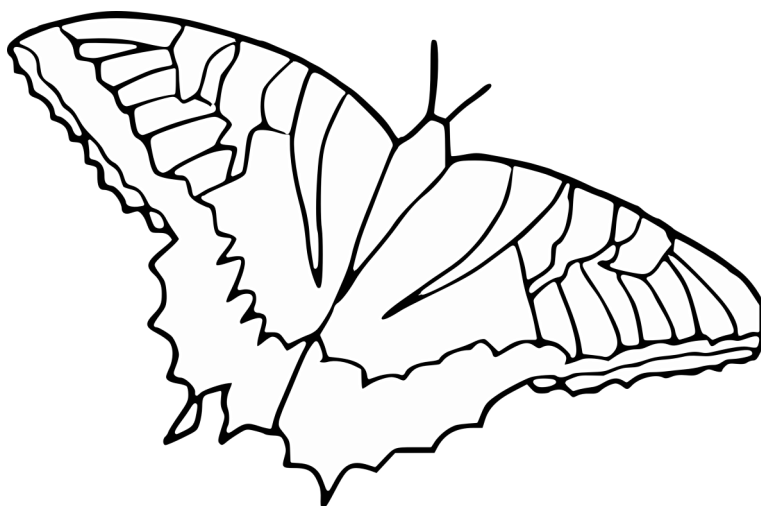
Brown and furry
Caterpillar in a hurry,
Take your walk
To the shady leaf, or stalk,
Or what not,
Which may be the chosen spot.
No toad spy you,
Hovering bird of prey pass by you;
Spin and die,
To live again a butterfly.



The Caterpillar

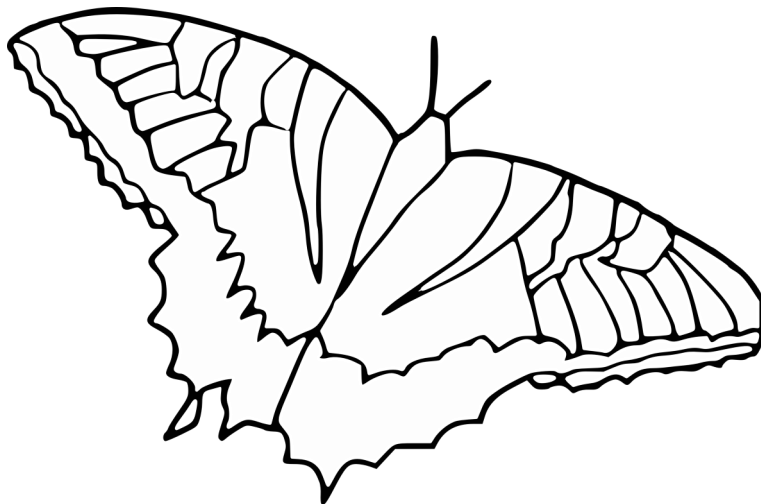
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The Caterpillar

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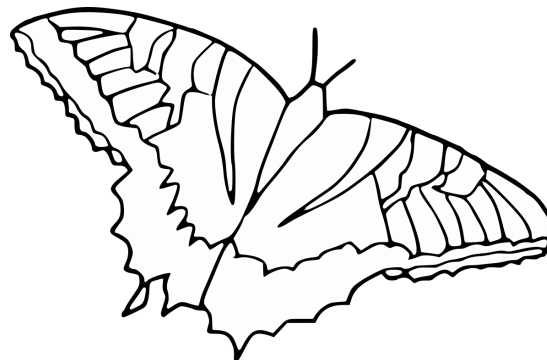
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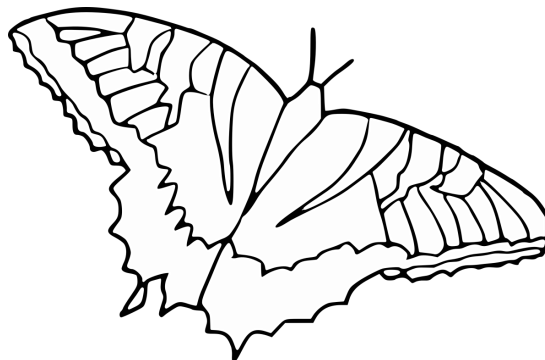
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The Caterpillar

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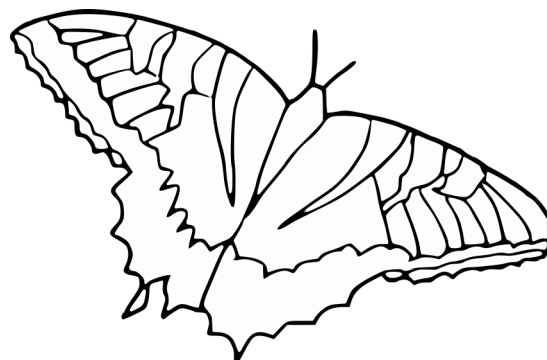
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The Caterpillar

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Handwriting practice lines consisting of multiple sets of three horizontal lines (top solid, middle dashed, bottom solid) for writing practice.

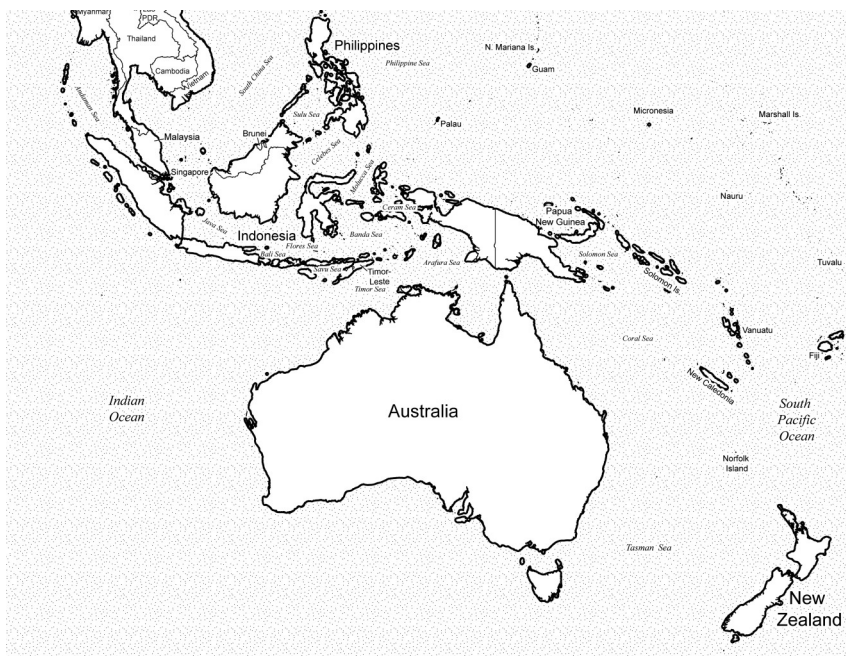


Butterflies Around the World Answer Key









Butterflies of All Sizes Answer Key

Chart can use English or metric measurements.

5				
4				
3				
2				
1				
	Less than 1 inch	1 inch-2 inches	2. 1 inches to 3 inches	More than 3.1 inches