

## Butterfly Parts and Marks

### Activity

Learn how to identify and describe a butterfly using body part names and field marks.

### Science Connections

**Observing** - Scientists use the five senses to learn about the world.

**Comparing** - Scientists see how things are alike and different by studying their characteristics.

### Can you:

Describe a butterfly to someone who has never seen it? Pick any butterfly, or try a butterfly with a detailed pattern like a Common Buckeye or Great Spangled Fritillary. Are you able to explain the colors and markings so your friend understands what the butterfly looks like?

As a citizen scientist, correct butterfly identification is important and knowing field marks helps you get it right. Where are field marks located on butterflies? You might think of the colors and markings on wings, but field marks can be on other body parts too. When you know the locations and names of the body parts, you can observe and describe the field marks with the skill of a scientist!



Common Buckeye

**Stewardship Quest**

Educating others about butterfly habitats can help us all be better stewards. What can you do to help others learn about butterfly needs?

### What are field marks?



Field marks are the characteristic colors, patterns, shapes and sizes which enable you to accurately describe and identify butterflies.

### How do you describe which side of the butterfly you are observing?



\_\_\_\_\_



\_\_\_\_\_

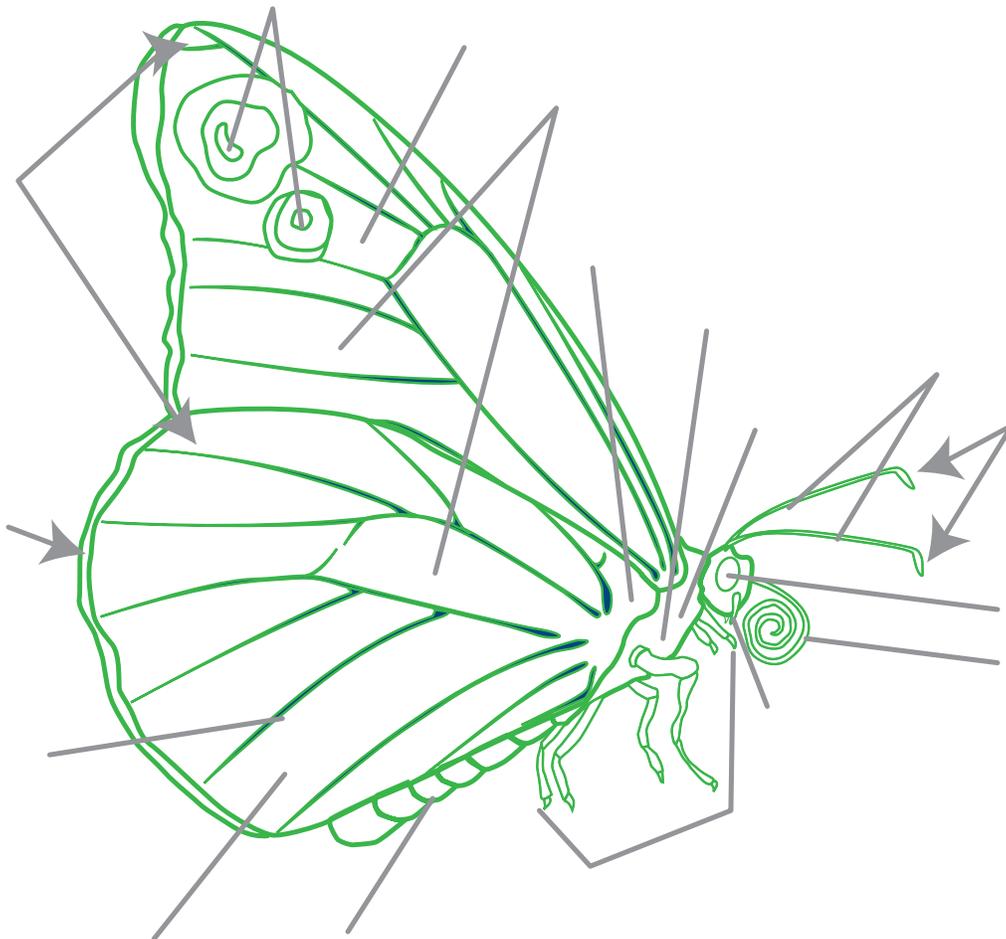


Great Spangled Fritillary

# Let's Go!

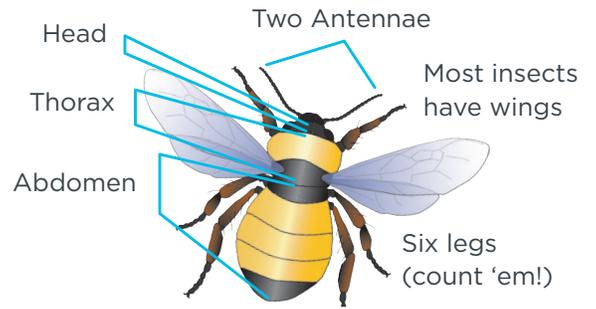
The parts of a butterfly are the same for different types of butterflies, yet butterflies do not all look alike. What makes them unique? Field marks! Become an expert in body parts to help you master field marks.

**Using the WINGS Words, label the butterfly body parts:**



**Butterflies are insects, so their bodies can be compared with those of other insects.**

### Parts of an insect



outer skeleton  
(it's called an exoskeleton)

Compare your answers to the key at the end of the activity.

## WINGS Words

**abdomen** - the rear part of the body directly behind the thorax.

**antennae** - these are attached to the head and used to smell.

**apex** - tip of the wings.

**cell** - an area bordered by veins in an insect's wing.

**clubs** - the rounded point at the tip of the antennae.

**compound eye** - enables insects to see.

**dorsal** - the upper side of the butterfly, seen from the top when the wings are open.

**eyespot** - noticeable round marking on a butterfly wing that resembles an eye to scare or fool predators.

**forewing** - the forward wing closest to the head (upper wing).

**head** - the front part of the body with the eyes and antennae.

**hindwing** - the wing closest to the rear of the body (lower wing).

**legs/feet** - these are attached to the thorax and used to taste and help find the host plant.

**margin** - the area along the edge of the wing.

**proboscis** - the "feeding tube" or straw-like tongue the butterfly uses to sip nectar.

**thorax** - the middle part of the body directly behind the head.

**vein** - thickened structures that stiffen and support the wing of an insect.

**ventral** - the underside of the butterfly, seen when the wings are closed.

**wings** - thin membranes for flight that extend from the thorax of an insect. Overlapping scales cover the transparent, cellophane-like wing of a butterfly.

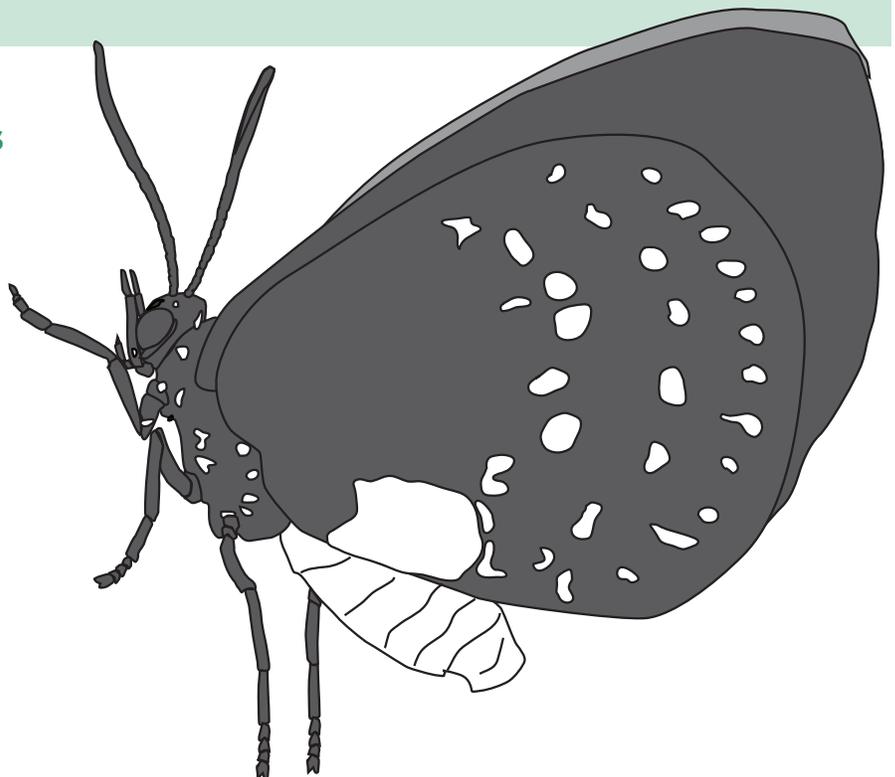
**wing base** - the area of the wing that is closest to the body.

### Color the butterfly field marks

**Directions:** Color the butterflies with their markings using the field mark clues. After you finish, compare your butterflies to the pictures at the end of this activity.

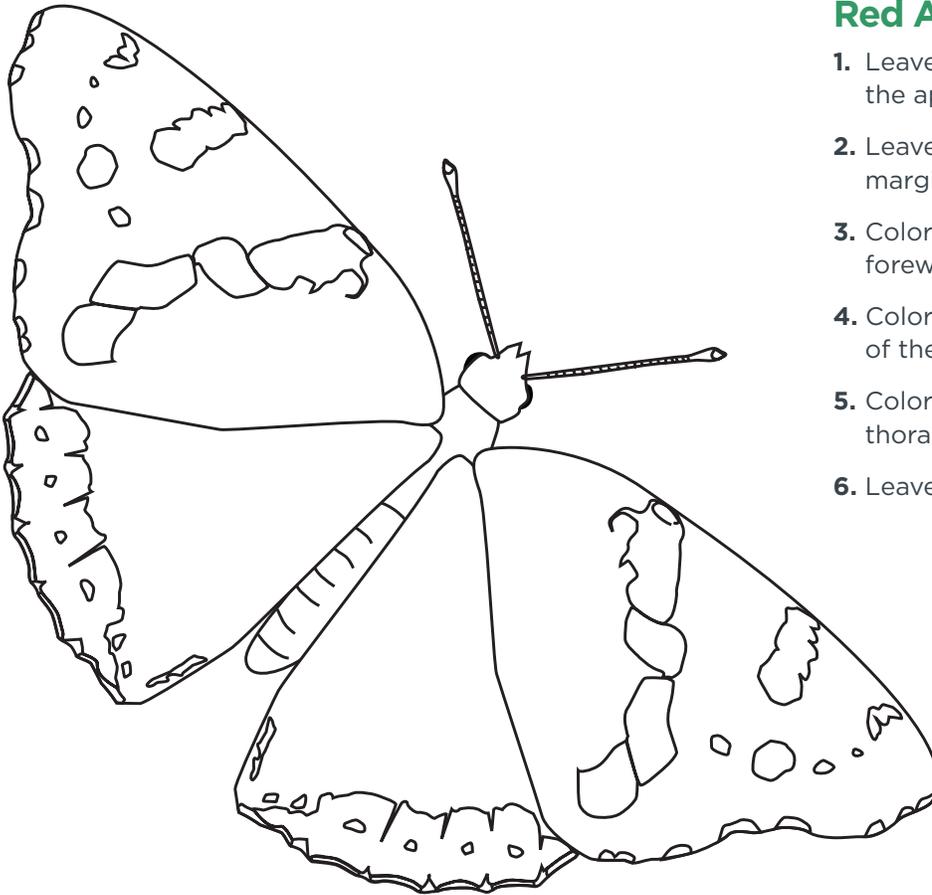
#### Atala

1. The legs, head, antennae, parts of the thorax and wings are already colored black.
2. Color abdomen red.
3. Color large spot at wing base red.
4. Color dots on thorax light blue.
5. Color dots on wing light blue.



**Red Admiral**

1. Leave large and small scattered spots near the apex of the forewing white.
2. Leave tiny spots along the forewing margin white.
3. Color connected group of spots on the forewing red-orange.
4. Color band of markings along the margin of the hindwing red-orange.
5. Color rest of the wing area, abdomen, thorax and head black.
6. Leave clubs on the antennae white.

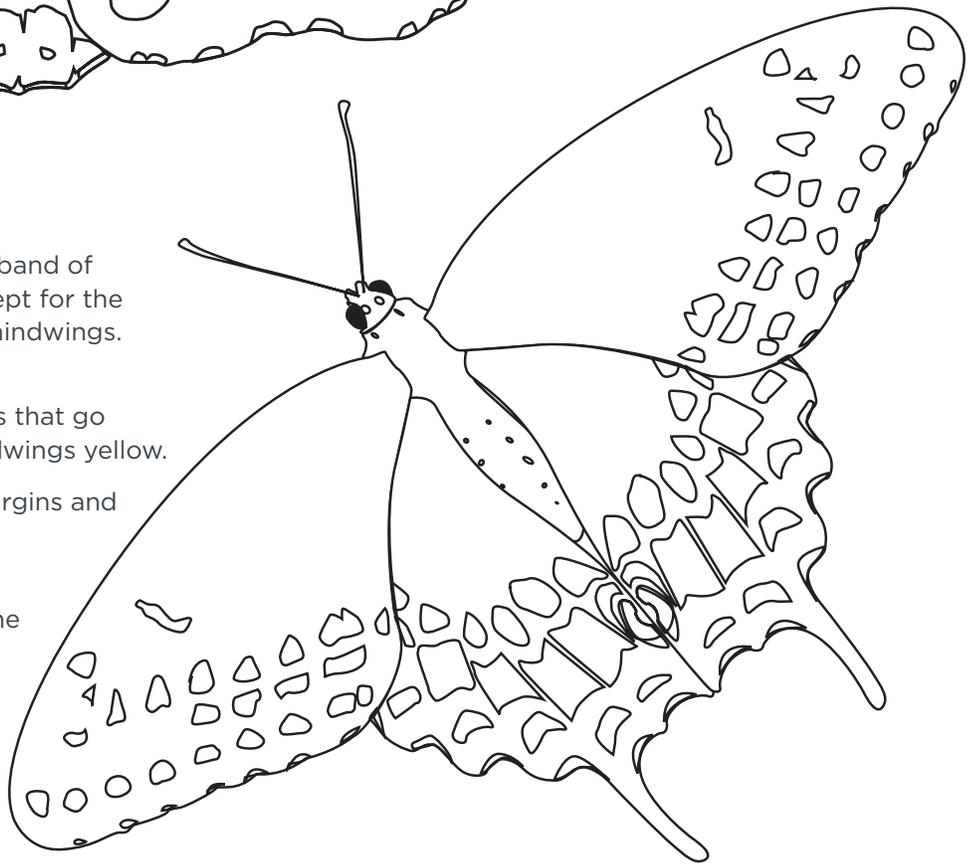


**Mystery butterfly**

1. On the hindwing, color the middle band of square-shaped cell spots blue, except for the round cell spots between the two hindwings. These should be yellow/orange.
2. Color the remaining cell spot bands that go across both the forewings and hindwings yellow.
3. Color tiny cell spots along wing margins and spots on body yellow.
4. Color the antennae, head, thorax, abdomen and remaining parts of the wings black.

Use a field guide to identify this mystery butterfly.

It is a \_\_\_\_\_ butterfly.



## Spot the field marks

**Directions:** Look closely at these butterflies. Notice the distinguishing characteristics. Match the description to the butterfly by writing the letter in the blank by the butterfly.



\_\_\_\_\_

**A** This butterfly has square-shaped forewing apices. **West Coast Lady**



\_\_\_\_\_

**B** This butterfly looks similar to the Monarch, but has a black line that runs parallel to the dorsal hindwing margin. Some people say the line looks like a smile. **Viceroy**



\_\_\_\_\_

**C** This very small sulphur has two black dots on the ventral sides of the forewings (the hindwing sometimes covers the second dot). **Dainty Sulphur**



\_\_\_\_\_

**D** This butterfly has two large eyespots on the ventral sides of the hindwings. **American (Painted) Lady**



\_\_\_\_\_

**E** This western butterfly has yellow clubs on its antennae and dots on its body. It has reddish spots along the wing margins. **Variable Checkerspot**

Compare your answers to the key at the end of the activity.

## What can I do to remember field marks?

When we first meet people, we often try to associate something we know about them with their names. For instance, we might try to remember Kathy's name by knowing she's from Kansas, and that her name begins with the first letter of "Kansas."

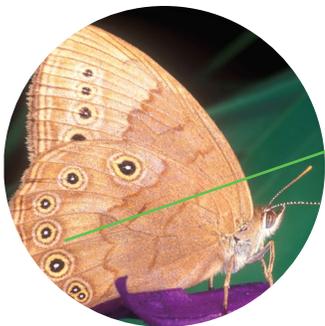
**We can remember field marks in a similar way. Here are some examples.**



● The Spicebush Swallowtail's ventral hindwing has a blue smudge where an orange dot should be. We can call it a "blue tooth" and make up something silly to help us remember. We might say to ourselves, "Spicy foods cause a blue tooth."



● The Little Yellow has two small dots by its body. This distinguishes it from other small sulphurs. We can associate the two small dots with the two "Ts" in "Little Yellow."



● The Eyed Brown has a row of small eyespots near the margins of the ventral forewings and hindwings. What would you associate with this field mark to help you remember the name of the butterfly?

### How do colors and patterns help butterflies?

Colors and patterns help butterflies in different ways. Certain markings warn predators they taste bad. Some colors can attract mates. Dull colors help the butterfly blend into its environment, and eyespots and flashy colors scare or startle predators. Dark colors help warm the butterfly's body. Sometimes the male and female of one type of butterfly have different field marks. Which defenses do these butterflies have? Color? Markings?

## Reflect and Connect



*Questions to discuss with your helper*

### **How'd it go?**

What else would you like to learn about butterfly parts and field marks?

### **Go back**

What helped you learn about the parts of a butterfly and field marks?

How does learning about field marks help you identify butterflies?

How does understanding new terms help you learn?

### **Go bigger**

How are patterns and colors important to the survival of animals?

What other organisms have field marks?

How can people help each other learn new things?

### **Go beyond**

How do other living things respond to the colors and patterns of butterflies?

### **Journal Reflection**

*Write your thoughts here*

How do your actions show that you value the differences that make each life special?

## Learn More!

### **Use field marks**

Show your helper the illustration on page 2 of this activity with the butterfly body parts labeled. Describe a butterfly to your helper, using the terms you learned. Does using scientific terms help you describe the butterfly more clearly? Do the terms help the person understand the description?

Now add field marks to your description. Explain where the field marks are located, how they make the butterfly unique and how they help identify the butterfly. Does using the appropriate terms help the person know what kind of butterfly it is?





To go deeper, find the full curriculum at [Shop4-H.org/Butterfly](http://Shop4-H.org/Butterfly)

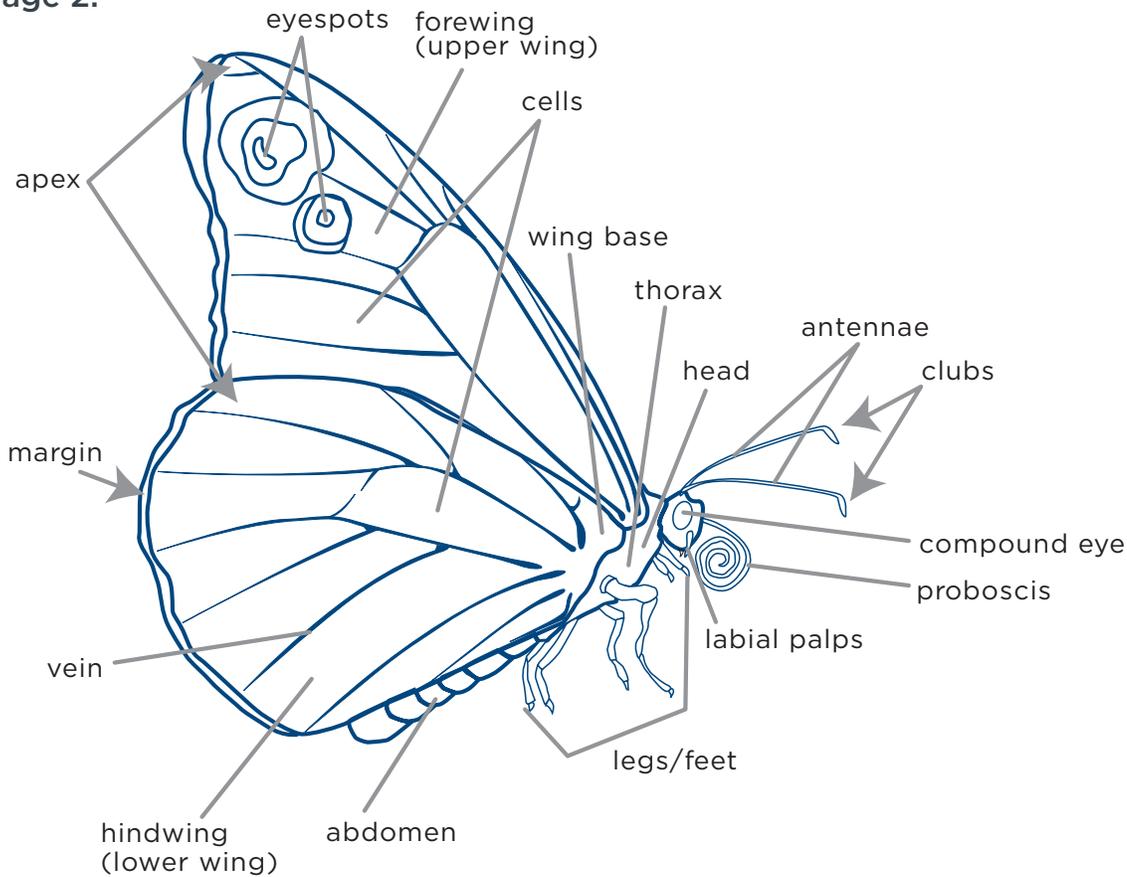
**Answer Key**

Page 1:

**Which side of the butterfly you are observing?**

The top side is the dorsal and the underside is the ventral. The ventral side shows when the wings are closed.

Page 2:



**Answer Key**

Page 3:



Page 4:

**Mystery Butterfly** - Black Swallowtail

Page 5:

**Spot the field marks** - C, D, E, B, A