

Meet the Monarchs!

Look inside to discover why these little insects are a **big deal** in Madison County!



New! From Madison County Resource Education Program

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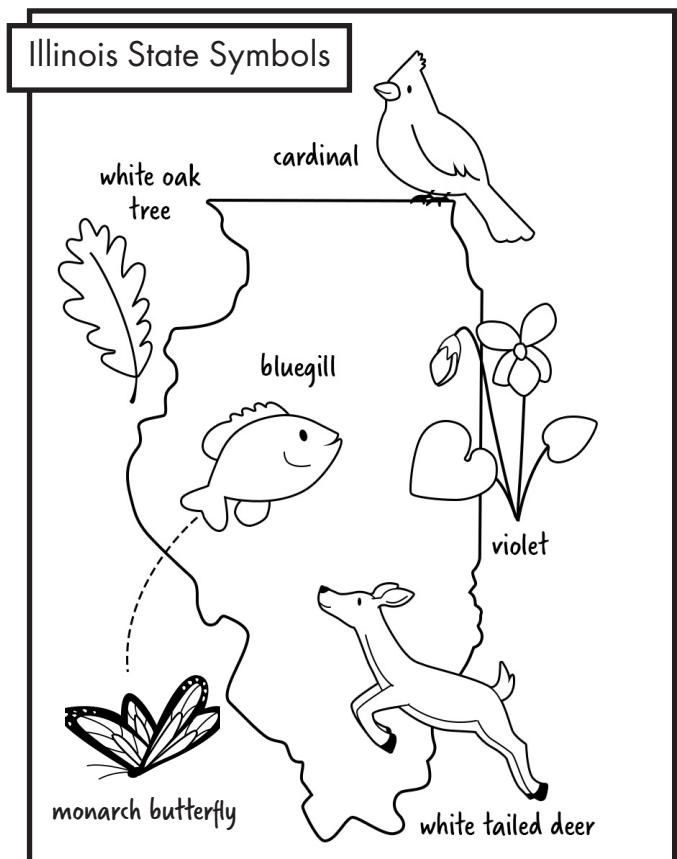


Written and illustrated by Eve Drueke for the Madison County Resource Education Program.

Introduction

Illinois has chosen many symbols to represent its important **natural resources**. Perhaps you know that Illinois' state mammal is the white tailed deer and the state tree is the white oak. As you read, you will discover more about our state insect, the beautiful **monarch** butterfly.

A little over forty years ago, a third grade class in Decatur, Illinois, contacted their state Senator to ask that the monarch butterfly be named the state insect of Illinois. Their Senator took the idea to the Illinois Senate and, in 1975, the monarch was voted the state insect of Illinois.



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If you walked through an Illinois prairie two hundred years ago, you would have seen hundreds of monarchs flitting from flower to flower. We still enjoy seeing monarchs today, but in the last thirty years, scientists are counting fewer monarchs.

Monarchs face several new challenges to survive, but there are people in Illinois who are helping monarchs by creating habitats with the special food they need to survive.



Photo: Scientists carefully place an identification tag on the wing of a monarch butterfly. Tagging butterflies helps scientists keep track of the insects and learn more about the paths they take when they fly south in winter.

The Monarch Is An Insect

The monarch butterfly we see flying in our yards and school playgrounds is an adult insect. Because it is an insect, it has three body parts: **head, thorax, and abdomen.**



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To become an adult butterfly, the monarch goes through four life stages (complete metamorphosis):

Egg: about the size of a grain of salt

Larva: as a caterpillar, the monarch larva sheds its skin five times as it grows bigger

Pupa: the caterpillar forms a beautiful **chrysalis**

Adult: the butterfly is ready to search for plant nectar



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How can you tell that you have found a monarch? Look for their beautiful orange and black wings! Monarch wings are dark orange in color with black lines running throughout them. The outside edges of their wings and their abdomens are also lined in black spotted with white dots.

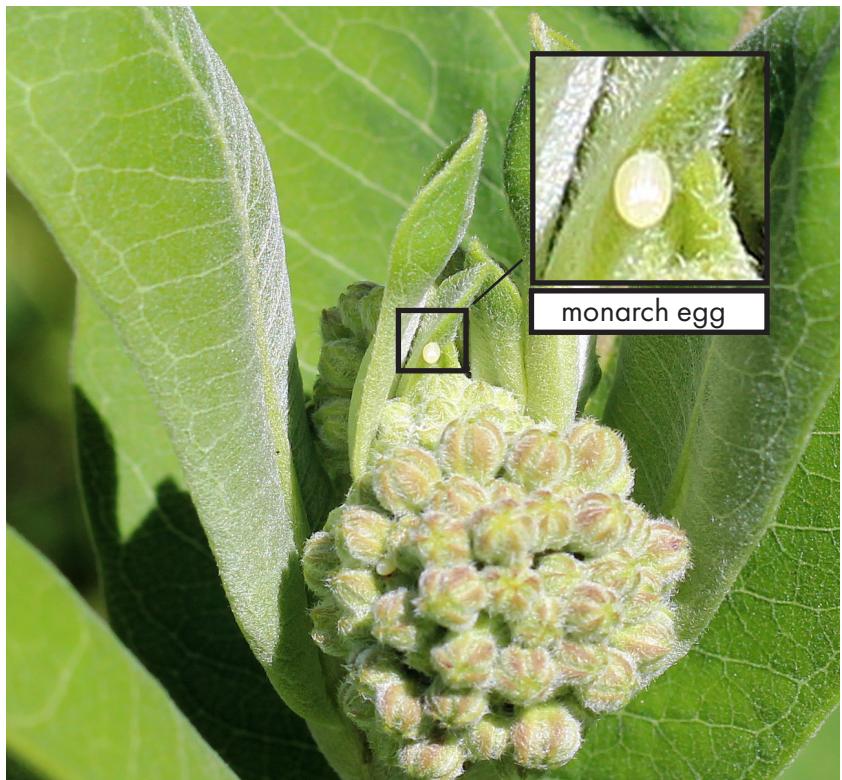
Male monarchs are usually a little larger in size than females. You can easily identify a male because he will have one black dot on each of his bottom wings. Like all insects, monarchs have six legs. Sometimes it's hard to see their two front legs because they hold them very close to their bodies.



Photo: A clue on some monarchs' wings tells you whether the insects are male or female. What can you tell from the picture above? Look back at the information in your reading, if you need to.

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Monarchs are called **"brushfooted"** butterflies because they have spiky hairs on their front feet that help them find the right kind of plants to lay their eggs on. Could you live by eating nothing but grass? Of course not, and neither can monarchs! When female monarchs are looking for plants to lay their eggs on, they know that their caterpillars can eat only one kind of plant. The female monarch searches to find a plant that is in the **milkweed** family. When the baby caterpillar emerges from its egg, it will be very hungry, but it will starve if it is not on a leaf of a milkweed plant.



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Milkweed plants taste awful! The caterpillars don't mind the taste, but a bird who tries to eat a monarch caterpillar will quickly learn that the little larva tastes bad. Birds will even stay away from adult monarchs because they want to avoid the bad taste left from milkweed.

When monarchs are adults, they no longer need milkweed to survive. As adults, monarchs search for flowers in bloom to find food called **nectar**. Nectar is a sweet liquid found in many different kinds of flowers. Nectar provides food for butterflies as well as for other insects such as moths and bees. Hummingbirds use their long tongues to gather nectar from flowers, too.

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Photo: Adult monarchs drink nectar for energy. They use a straw-like body part called a proboscis (pro-BOSS-kiss) to sip nectar.

Monarchs Migrate

An **adaptation** is a special skill or a body part that helps an animal to survive. One of the monarch's adaptations is called **migration**.

To migrate means to move to another habitat that will make it easier to survive. Because butterflies are **cold-blooded**, they cannot live through cold winter weather. When the seasons change and the weather gets colder during Fall, it's time for monarchs to migrate.

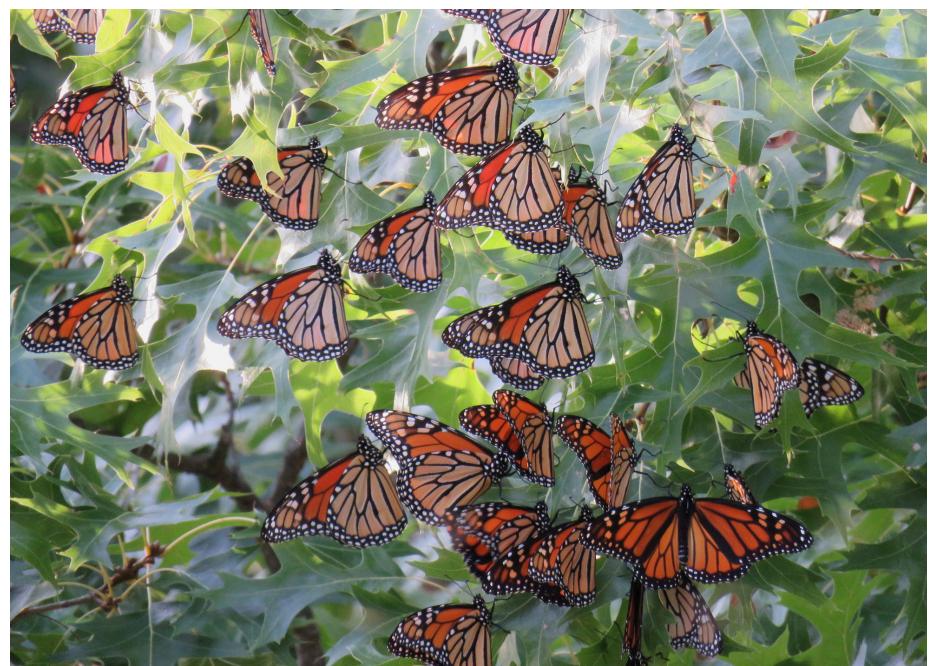


Photo: A group of migrating monarchs stop to rest in an oak tree.

Population and Habitat Loss

In September, when you are on the playground at school, look up at the sky. You will probably see some monarchs who are flying south where the weather will be warmer. As they fly, monarchs need extra energy to stay strong on their long journey. Monarchs will stop along their flight south to find flowers that are a good source of nectar. At night, groups of monarchs will sleep in trees because it is too cold at night to maintain their body temperature.

The photograph above shows thousands of monarchs that have reached Michoacan, Mexico after a long journey south.



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Photo: Monarch butterflies rest on the branch of an evergreen tree during their long flight south. Why do you think these monarchs are resting together? Look back at the text to find evidence for your answer.

It is a fact that there are not as many monarchs as there used to be. Some scientists estimate that the number of monarchs has dropped by 90%.

One problem with the monarchs' survival is changing weather patterns. Plants need rain to grow, and Texas, where the monarchs first land when they are returning from Mexico, has had many years with little rainfall. Mexico, where the monarchs gather to **overwinter**, has had more snowfall than usual, making it more difficult for monarchs to keep warm.



Photo: A tagged adult monarch stops to sip nectar for energy. Food from flowers becomes harder to find in cooler months.

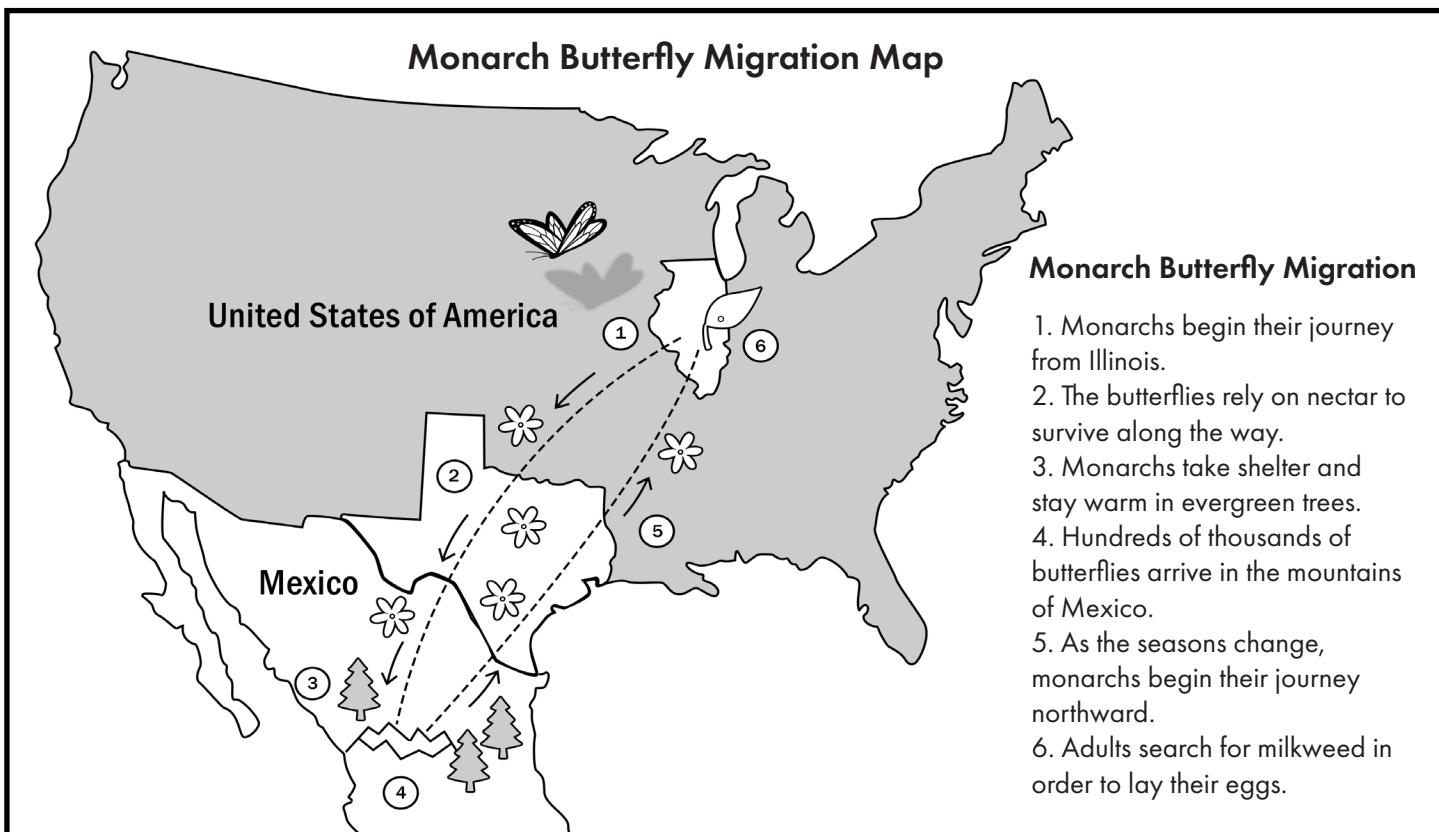
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Photo, left: A monarch caterpillar gains energy from milkweed leaves, its only source of food. Right, a caterpillar has formed a **chrysalis** in its **pupa** stage. It will soon emerge as an adult butterfly.

Another problem monarch butterflies face is that there are fewer milkweed plants than in the past. As farm fields grow larger, and more roadsides are mowed, it is a greater challenge for monarchs to find milkweed to lay their eggs on. When monarchs fly south in the cooler fall months, fewer flowers with much-needed nectar are in bloom.

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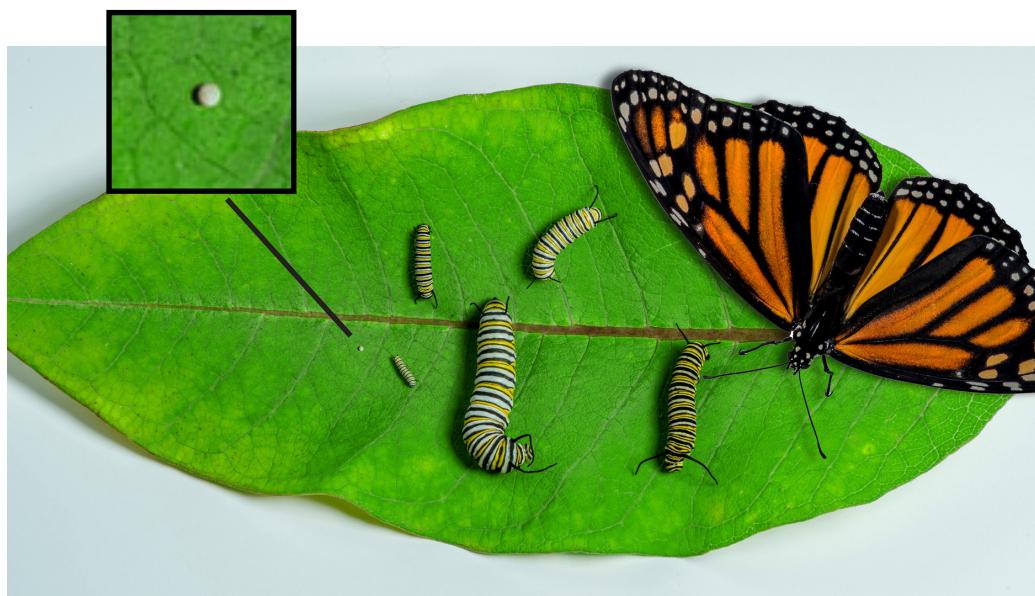


Photo: This image shows some of the stages of a monarch butterfly's life. Can you see the tiny egg in the center left of the leaf?

Monarchs flying through Illinois are probably on their way to Mexico. They have a long way to fly, all the way from Illinois to Texas and then to a safe place in the mountains of Mexico. Throughout the cold winter, the monarchs will huddle together to keep warm in forests of evergreen trees. In Spring, when the weather gets warmer, monarchs will fly back to North America and begin laying eggs to make new monarchs.

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What You Can Do



Far left: A monarch caterpillar feeds on milkweed leaves.
Left: An adult monarch sips nectar from milkweed flowers. Humans can support monarchs by planting milkweed and other flowers that provide food and shelter for the butterflies.

Recently, a Girl Scout troop from Springfield asked Illinois lawmakers to name milkweed as Illinois' state wildflower. The Scouts talked to State Representatives and convinced them that people need to learn more about monarchs. In August, 2017, the governor of Illinois signed a **proclamation** naming milkweed our state wildflower.

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Here are some steps you can take to help monarchs in Illinois:

- 1) Plant some milkweed plants. Visit a local nursery or plant store and buy plants in the **asclepias** family that will feed the monarch larvae. You can find lists of plants that will provide food for monarch caterpillars and adults by searching monarch sites on the internet.
- 2) Make a Monarch Way Station for migrating butterflies. Plants some flowers such as asters and goldenrod that will provide plenty of nectar for hungry monarchs flying to Mexico in autumn. You can get a certificate for creating a monarch habitat.
- 3) Teach other people about the problems monarchs face. Talk to your parents about planting a small garden. Create posters or a bulletin board to teach students at your school. Share what you know about monarchs during a school assembly.

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Glossary

adaptation: a body part, feature, or behavior that helps a living thing survive in its environment

asclepias: a type of milkweed plants

brushfoot: a word used to describe some butterflies with spiky hairs on their feet

chrysalis: the pupa of a moth or butterfly

cold-blooded: having a body temperature that changes depending on the temperature of the environment

complete metamorphosis: changes that happen in some insects; insects that go through complete metamorphosis look completely different as they change from larva to adults

emerge: to come out of

evergreen: plants, such as pine trees, that keep their green leaves throughout the year

habitat: the natural home of a plant, animal, or other living thing

larva: the young or immature form of an insect, especially one that changes in form as it becomes an adult

migration: the seasonal movement of animals from one area to another

milkweed: a plant with milky sap

natural resources: materials that occur in nature, such as forests, minerals, water, and land

nectar: a sweet, sugary liquid made by plants

overwinter: spend the winter in one area

proclamation: an official announcement

pupa: an insect in the stage between larva and adult

Photo Credits

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Page 5: "Transformation of common tiger butterfly emerging from cocoon with chrysalis", by Sutisa Kangvansap. Copyright: mathisa / 123RF Stock Photo

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Page 13, left: "Monarch larvae (caterpillar) eating butterfly leaf" by Rick Hansen/USFWS Midwest is licensed under Creative Commons 2.0 (CC BY 2.0). Original file located at <https://www.flickr.com/photos/usfwsmidwest/11221488975/in/faves-128997097@N08/>

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Page 16, left: "Monarch Caterpillar on Common Milkweed" by Photo by Joanna Gilkeson/USFWS Midwest is licensed under Creative Commons 2.0 (CC BY 2.0). Original file located at <https://www.flickr.com/photos/usfwsnortheast/28273604424/in/faves-128997097@N08/>

Cover, Page 16, right: "Monarch Nectaring on Showy Milkweed Seeskdadee NWR" by Tom Koerner/USFWS is licensed under Creative Commons 2.0 (CC BY 2.0). Original file located at <https://www.flickr.com/photos/usfwsmtnpairie/16041524524/in/faves-128997097@N08/>

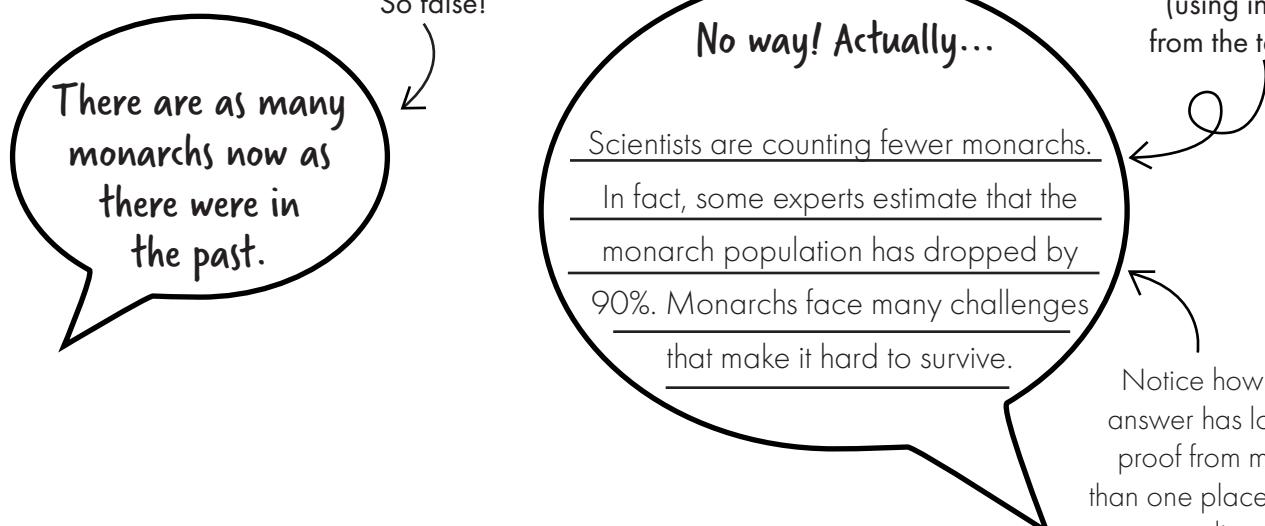
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Meet the Monarchs! Prove It! Comprehension Quiz

Name: _____

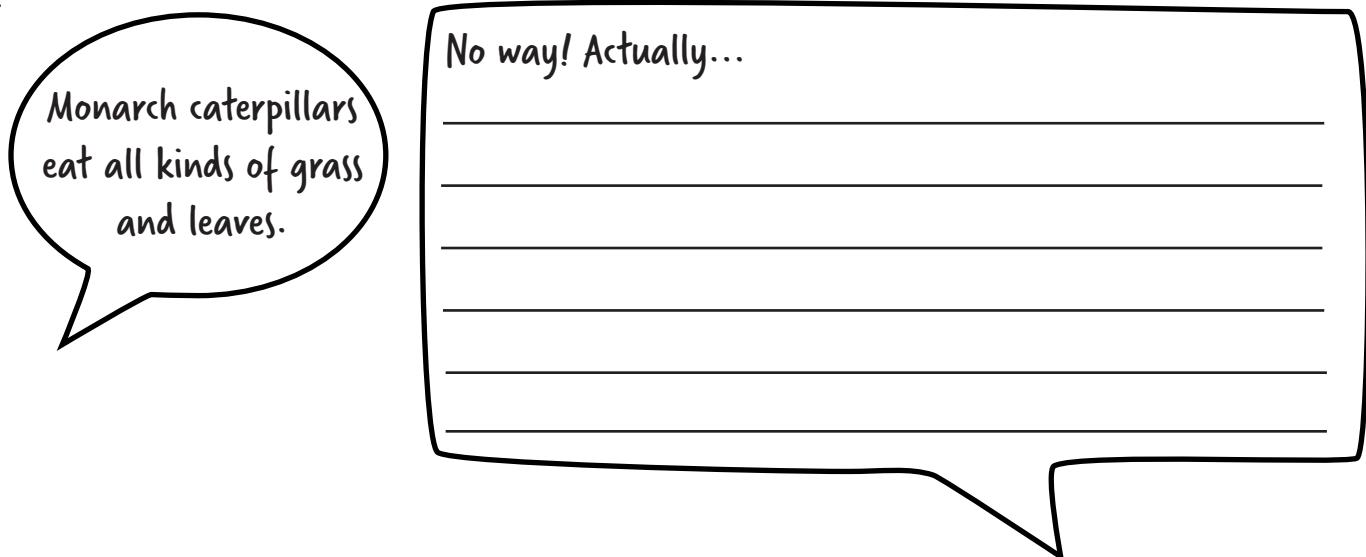
This comprehension quiz is **full** of false statements. It's your job to use information from the text to show that each statement is wrong, wrong, wrong! Be sure to use details and evidence from your reading for extra-convincing proof. Read the example to get started.

Example:



Notice how the answer has lots of proof from more than one place in the reading.

1.



2.

Monarch butterflies don't have any ways to help themselves survive.

Um, nooo...

3.

No one really knows what adult monarch butterflies look like.

Wow. Just...nope.

4.

An adult monarch eats the same way it did when it was in its larva stage.

You're joking, right?

5.

Monarchs stay in the same place for most of their adult lives.

Don't look now, but your pants are on fire...

6.

Cold weather does not have an impact on how monarchs behave.

(Sigh) Where do I begin?

7.

There aren't many things people can do to help monarchs survive.

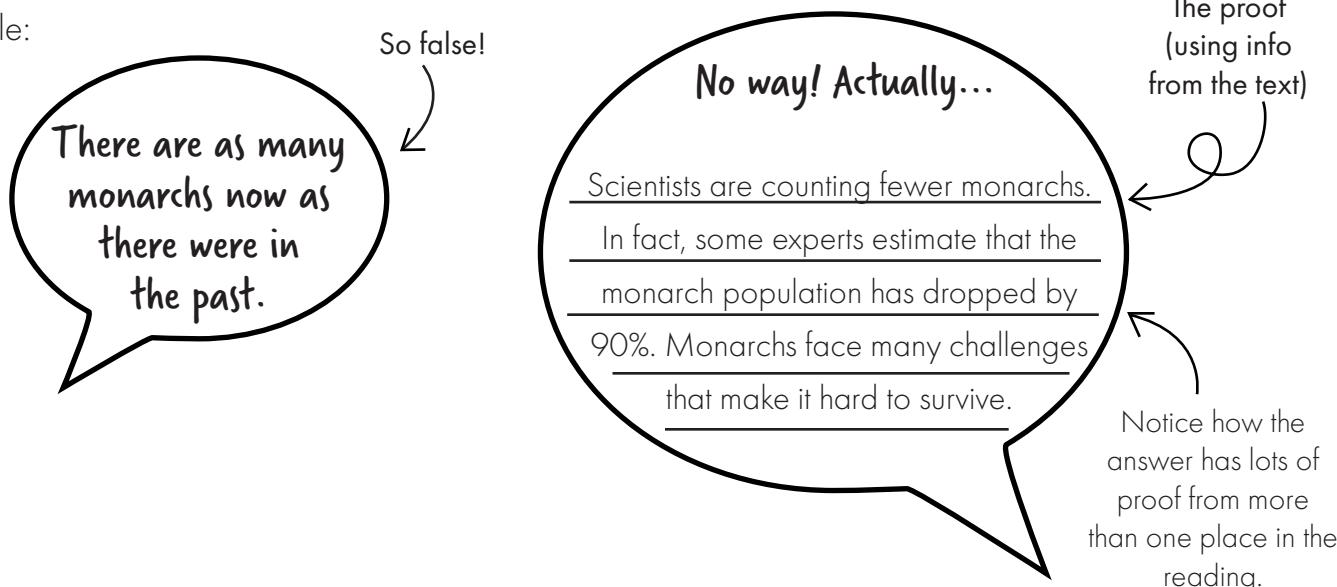
Don't say I didn't warn you...

Meet the Monarchs! Prove It! Comprehension Quiz

Name: Answer Key

This comprehension quiz is **full** of false statements. It's your job to use information from the text to show that each statement is wrong, wrong, wrong! Be sure to use details and evidence from your reading for extra-convincing proof. Read the example to get started.

Example:



1.

A speech bubble on the left contains the statement: "Monarch caterpillars eat all kinds of grass and leaves." An arrow points from this statement to a larger rectangular box on the right. The box contains the text "No way! Actually..." at the top, followed by a detailed explanation in red: "When female monarchs are looking for plants to lay their eggs on, they know that their caterpillars can eat only one kind of plant. The female monarch searches to find a plant that is in the milkweed family. When the baby caterpillar emerges from its egg, it will be very hungry, but it will starve if it is not on a leaf of a milkweed plant (page 7)."/>

2.

Monarch butterflies don't have any ways to help themselves survive.

Um, nooo...

Birds will even stay away from monarchs because they want to avoid the bad taste left from milkweed (page 8). One of the monarch's adaptations is called migration...monarchs move to a habitat that will make it easier to survive (page 9). At night, groups of monarchs will sleep in trees because it is too cold to maintain their body temperature (page 10). Other acceptable answers include: spiky hairs on feet to attach to plants, use of a proboscis to obtain nectar, or the ability to fly away from predators.

3.

No one really knows what adult monarch butterflies look like.

Wow. Just...nope.

The monarch butterfly...has three body parts: head, thorax, abdomen (page 4). Monarch wings are dark orange in color with black lines running throughout them. The outside edges of their wings and their abdomens are also lined in black spotted with white dots. Male monarchs are usually a little larger in size than females. You can easily identify a male because he will have one black dot on each of his bottom wings. Like all insects, monarchs have six legs (page 6).

4.

An adult monarch eats the same way it did when it was in its larva stage.

You're joking, right?

Acceptable answers include a comparison of the physical features of a monarch caterpillar and an adult monarch butterfly. Answers should demonstrate an understanding that a caterpillar is the larva stage of a monarch.

5.

Monarchs stay in the same place for most of their adult lives.

Don't look now, but your pants are on fire...

One of the monarchs' adaptations is called migration (page 9). Monarchs have a long flight south (page 10). Monarchs flying through Illinois are probably on their way to Mexico (page 14). See also "Monarch Butterfly Migration Map" (page 14).

6.

Cold weather does not have an impact on how monarchs behave.

(Sigh) Where do I begin?

Because butterflies are cold-blooded, they cannot live through cold winter weather. When...weather gets colder during Fall, it's time for monarchs to migrate (page 9). At night, groups of monarchs will sleep in trees because it is too cold at night to maintain their body temperature (page 10).

7.

There aren't many things people can do to help monarchs survive.

Don't say I didn't warn you...

...there are people in Illinois who are helping monarchs by creating habitats with the special food they need to survive (page 3). Other acceptable answers include planting milkweed or other butterfly-friendly plants, make a "Monarch Way Station" or other monarch habitat, or teaching others about the problems monarchs face (page 16).