

# JUST FOR U.S.\*

GRADES 4-5

\* Understanding Science

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## Monarch Migration



What is a migration?

Why do Monarch butterflies migrate?

How can you help the Monarchs?

## How can you help the Monarchs?

An animal's habitat is the environment where the animal lives. The habitat contains everything the species needs to survive. Unfortunately, the Monarchs' habitat is being destroyed by people. Here are some things that threaten the Monarch.



Housing developments are replacing farms and ranches.



Farmers are growing new crops on Monarch habitat.



When grass along roadsides is cut to make commuting easier, milkweed plants are destroyed.

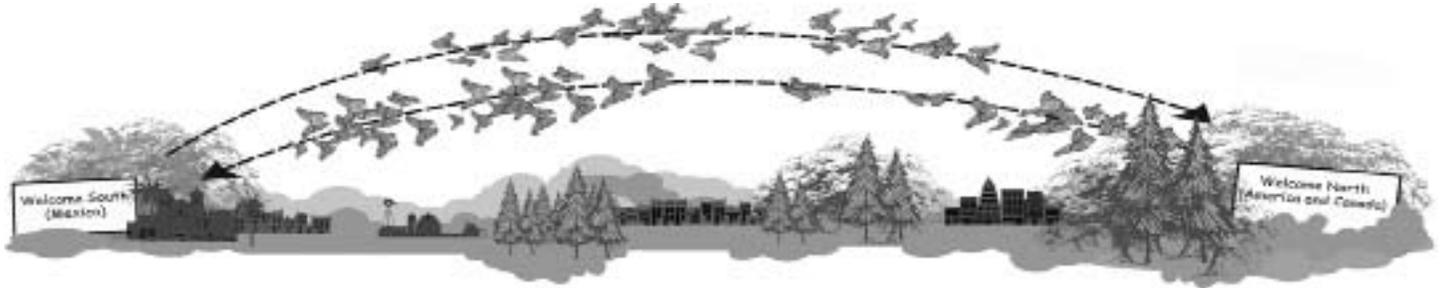
Herbicides are killing roadside plants, including milkweed.



You are helping the Monarch butterfly just by reading this newsletter. Tell your friends and family members about these amazing animals. Monarchs Across Georgia is a group that teaches about Monarchs and their migration. Their website is [www.monarchsacrossga.org](http://www.monarchsacrossga.org).

# What is a migration? Where do Monarchs go each year?

To migrate means to move to a new place.



When animals migrate, they move to a new place, and then move back again—each year! In winter, millions of Monarchs fly south to Mexico. In spring, they fly back north. Monarchs can travel 3,000 miles without getting lost. They ride on air currents and soar like birds, which saves energy because they do not need to flap their wings.

## Why Do Monarchs Migrate?

Scientists have different ideas, or theories, about why Monarch butterflies migrate. They know that migration follows the seasons of the year.

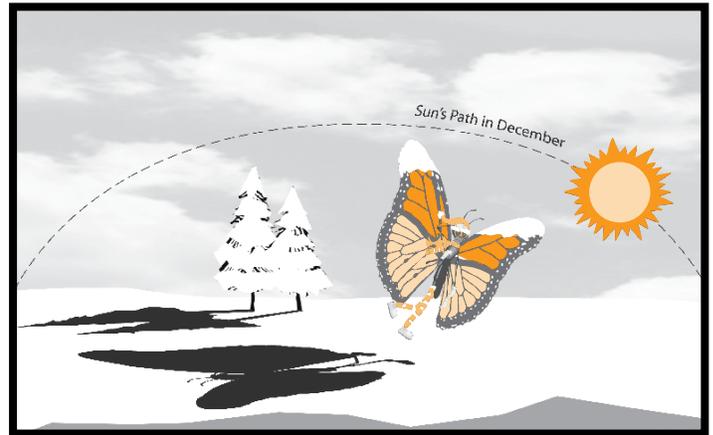
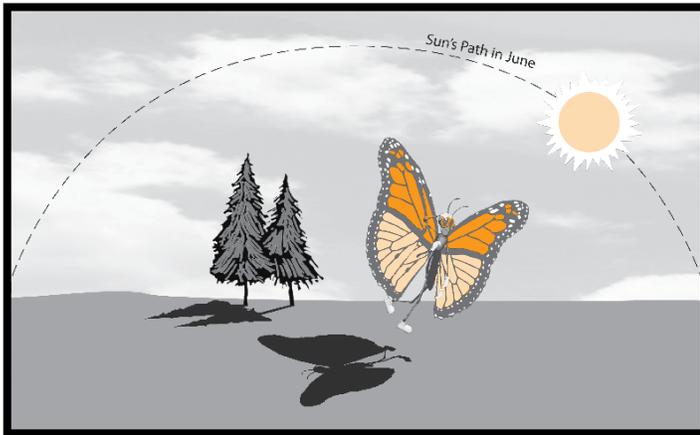


One idea is that Monarchs “follow” their food. They eat plants that contain nectar, a sweet liquid.

Plants with nectar grow in the warm Mexican winter even when the weather is cold in the United States.

Perhaps Monarchs look for a habitat with just the right temperature, humidity and amount of water. Monarchs cannot fly if the temperature is lower than 55°F. When they feel the chill in the air, they head south!

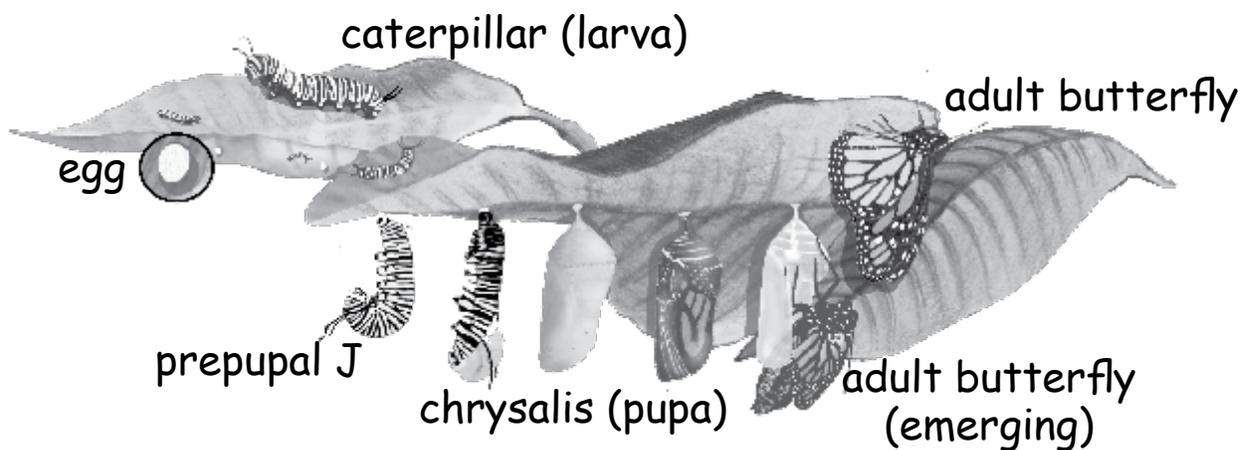
Another idea is that Monarchs follow the angle of the sun, which changes as winter approaches. The sun looks lower in the sky in winter than in summer.



What do scientists do when they don't understand why something happens?\*

\*Answer: Research.

## Life Cycle of the Monarch Butterfly



An organism's life cycle is a series of changes the organism passes through from birth to adulthood. Organisms look different and have different needs at different stages of their life cycles.

Insects have four stages in their life cycle: egg, larva, pupa, and adult. Female Monarchs lay their eggs on milkweed plants. One female can lay as many as 400 eggs! The mother Monarch lays only one egg on each milkweed plant. The eggs will hatch in about four days.

The larva is a caterpillar. When it leaves the egg, it is only about 2 mm long. How long is that?\*

Right away, it sits down to dinner—it eats its own egg case! After that, Monarch larvae eat only milkweed leaves. Milkweeds are very important to Monarchs.



Monarch instars

For the next few weeks, the Monarch caterpillar grows. This is the instar stage. As it grows, it sheds its outer layer. This is called molting. Monarchs can grow to be 2,000 times their original size! If a human baby grew that much, it would be as big as a school bus!

Next, the Monarch caterpillar makes a silk pad. It hangs upside down in a "J" shape. Inside, big changes are going on as butterfly organs start to form. Now the Monarch is a pupa.

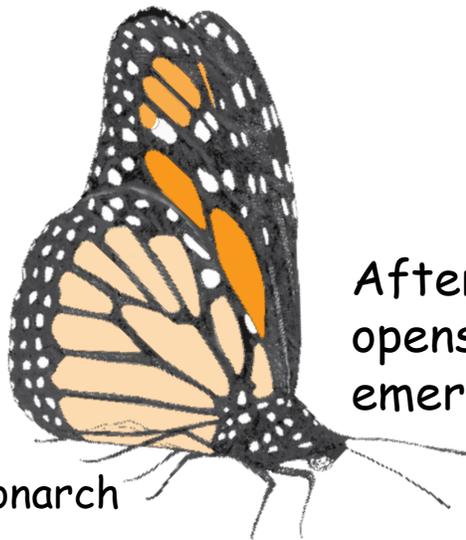


Caterpillar in "J" shape

The chrysalis forms very quickly. If you don't watch carefully, you might miss it!



Monarch in chrysalis



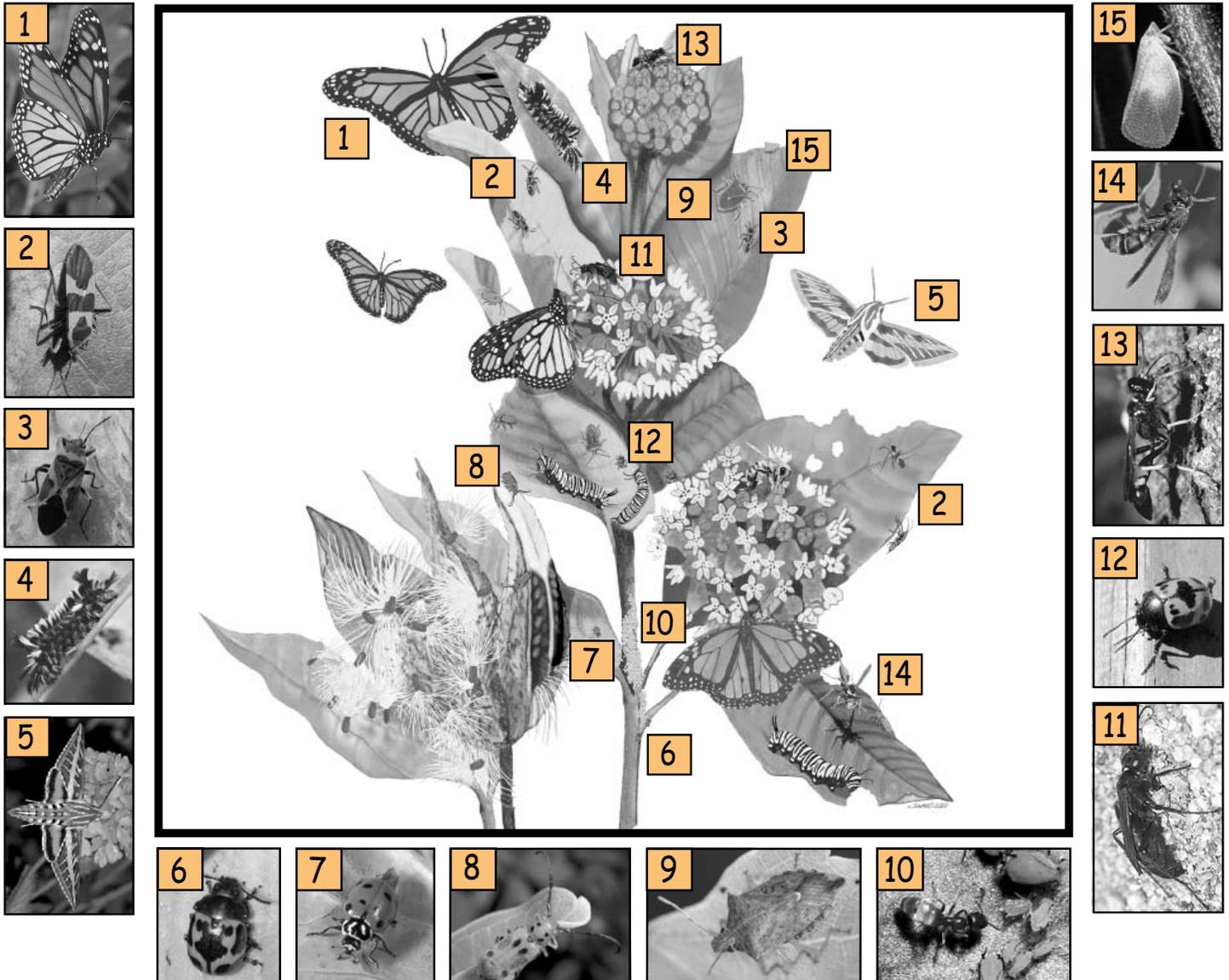
Adult Monarch

After two weeks, the chrysalis opens and a beautiful adult Monarch emerges. It is ready to migrate!

\*Answer: About as long as the horizontal line on this letter "t".

# Monarchs and the Milkweed Community

Many kinds of insects live on milkweed plants. How many different insects do you see? Pick five insects from the list and draw a line from the name of each insect to its picture. Then see if you can find the insect on the milkweed plant.

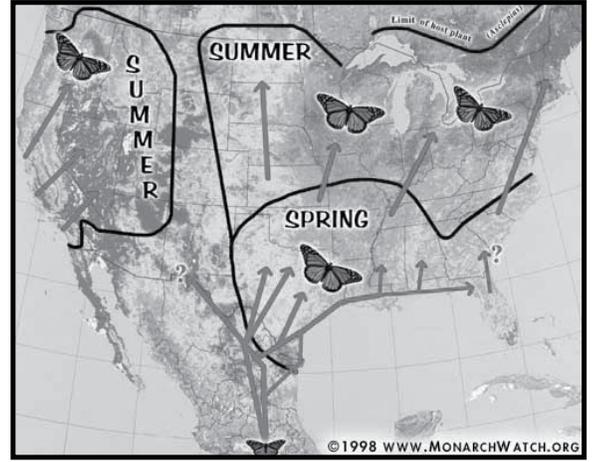


- |                                    |                                      |
|------------------------------------|--------------------------------------|
| 1. Monarch Butterfly               | 9. Spined Solder Bug                 |
| 2. Large Eastern Milkweed Bug      | 10. Aphids and Aphid-tending Ants    |
| 3. Small Eastern Milkweed Bug      | 11. Blue Mud Dauber Wasp             |
| 4. Milkweed Tiger Moth Caterpillar | 12. Swamp Milkweed Leaf Beetle       |
| 5. White-lined Sphinx Moth         | 13. Yellow and Black Mud Dauber Wasp |
| 6. Milkweed Leaf Beetle            | 14. Paper Wasp                       |
| 7. Convergent Ladybug Beetle       | 15. Plant Hopper                     |
| 8. Red Milkweed Beetle             |                                      |

# Teachers' Corner

## Track the Monarchs!

The new migration season began on February 8, 2008. The Monarchs started north in March. Your students can follow this spring's Monarch migration at <http://www.learner.org/jnorth/monarch/News.html>.



Journey North is a group that studies Monarchs and follows their migrations.

You can report Monarch sightings at <http://www.learner.org/cgi-bin/jnorth/jn-sightings>.

### Monarch Predators

Both vertebrates and invertebrates eat Monarch eggs, instars and adult Monarchs. The invertebrates are insects such as ants, stink bugs and wasps, while the vertebrates are mice and birds.



A stink bug eating a Monarch instar.

But Monarch butterflies can protect themselves! They have poison in their bodies that can make a predator sick. How does this help the Monarchs?

### New Words

migrate

theory (theories)

nectar

life cycle

egg

larva

pupa

adult

instar

caterpillar

molting

chrysalis

habitat

species

herbicides

pollinators

# Parents' Corner

## Visit the Butterfly and Hummingbird Garden at Fernbank Science Center!

Our garden is Pollinator Certified, which means butterflies, bees, hummingbirds, and other pollinators can call it home. We are a Monarch Waystation, which is a place where Monarchs can find the milkweed and nectar that they need to continue their migration.

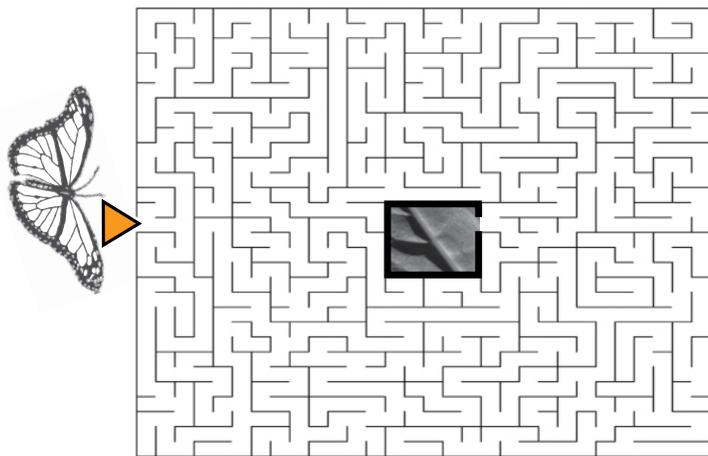


Fernbank Science Center  
Butterfly and  
Hummingbird Garden

### Create your own Monarch Waystation!

Milkweeds and nectar plants are threatened. To help Monarchs migrate successfully, you can order a Monarch Waystation Seed Kit from [http://www.monarchwatch.org/waystations/seed\\_kit.html](http://www.monarchwatch.org/waystations/seed_kit.html). The kit contains seeds for 6 milkweeds and 6 nectar plants, as well as the instructions you need to get started. Fernbank Science Center also has milkweed plants for sale at the spring and fall plant sales.

This Monarch is ready to lay her eggs. Help her find the milkweed plant.



This issue addresses the following GPS:

Science	Math	Lang Arts
S4CS7	M4G1	ELA4R3
S4CS8	M5G1	ELA5R4
S4E2		
S4L1		
S4L2		
S5CS7		
S5CS8		
S5L1		

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*Monarch Instars* photograph by Karen Oberhauser, <http://fwcb.cfans.umn.edu/personnel/faculty/oberhauser.php>.

*Stink bug eating an Instar* photograph by Anurag Agrawal, <http://www.nbb.cornell.edu/neurobio/BioNB321/spring07/agrawal.html>

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