

Monarch Butterfly



<https://static.onecms.io/wp-content/uploads/sites/20/2020/08/28/monarch.jpg>

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*This unit is intended for middle
school and high school.*

WIDA Level: 3 Developing

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At the end of this unit, students will be able to:

1. Students will be able to define new academic vocabulary words.
2. Students will be able to recognize the cause and effect of the threats to monarch butterflies from their reading and videos.
3. Students will be able to identify ways that threaten and can help monarch butterflies.
4. Students will be able to discuss ways to help Monarch Butterflies in small groups and as a whole class.

Day 1 Introduction to the topic

Warm-up

- *What do you know about butterflies?*
- *Do you recognize this butterfly? Have you ever seen it before?*



https://news.uchicago.edu/sites/default/files/styles/full_width/public/images/2019-06/monarch-butterfly-stock.jpg?itok=kMlv36TJ

- *What observations do you have from looking at the picture of the butterfly?*
- *What do you think of when you hear "migration"? Have you ever heard of this word?*

What are monarch butterflies?



The monarch butterfly is a well-known butterfly in North America. They are known for their long yearly migrations, where they travel about 3000 miles south for the fall starting in August. Once the temperatures start getting warmer and the days get shorter, the monarch butterflies know that it is time to head south for the winter. They will migrate to the mountain city in Mexico called Michoacán because freezing temperatures will kill the butterflies. For the monarch butterflies, this process is called overwintering.

In Mexico, the monarch butterflies huddle on the Oyamel Fir trees to keep each other warm. Protecting the mountains are very important to help the monarch survive. The Mexican government also knows how important it is to protect the trees in the forest the monarch butterflies live in during the winter months. The Mexican government created the Monarch Butterfly Biosphere Reserve in 1986.

Do you know what a Reserve is and why they are so important? Briefly talk to the person next to you and see what they think about what a reserve is and why they are important. We will come back together to discuss as a whole class.



Once the days start to get longer and warmer, the monarch butterflies migrate north to North America. During their journey, they mate and lay eggs on milkweed plants. After a few days, these eggs hatch caterpillars. These monarch caterpillars are called larvae and eat a large amount of milkweed. They form a cocoon and transform into butterflies, and these newly born butterflies are called a new generation.



It can take up to 5 to 4 generations to complete migration to the north until they reach Canada. The butterflies continue the process again each year.



Vocabulary Activity

With a partner, pair each Vocabulary word with a definition to the best of your abilities. There are images underneath each term to give you hints on the definitions.

1. Migration or Migrate _____



2. Abandon _____



3. Breeding _____



4. Overwintering _____



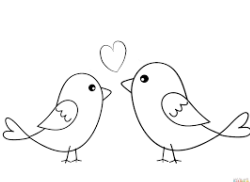
1. Huddle _____

6. Microclimate _____



7. Mate _____

8. Milkweed _____



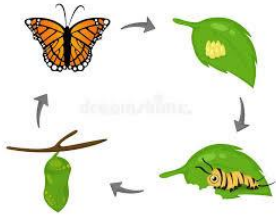
9. Larvae _____

10. Cocoon _____



11. New Generation _____

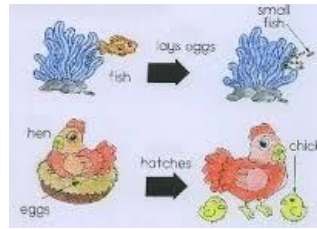
12. Reproduce _____



13. Habitats _____



15. Poisonous _____



14. Nectar _____



16. Toxins _____



- a) Leave (a place or vehicle) empty or uninhabited, without intending to return
- b) The active immature form of an insect, especially one that differs greatly from the adult and forms the stage between egg and pupa, also known as a caterpillar or grub
- c) Live through the winter (of an insect, plant, etc.)
- d) The natural home or environment of an animal, plant, or other organisms
- e) (of animals) Mate and then produce offspring
- f) Seasonal movement of animals from one region to another
- g) An antigenic poison or venom of plant or animal origin
- h) A sugary fluid secreted by plants, especially within flowers, to encourage pollination by insects and other animals
- i) The climate of a small area
- j) An herbaceous American plant with milky sap
- k) (of a substance or plant) Causing or capable of causing death or illness if taken into the body
- l) A new group of offspring of the Monarch Butterflies
- m) Crowd together; nestle closely
- n) Come together for breeding (of animals or birds)
- o) (of an organism) Produce offspring by a sexual or asexual process
- p) A silky case spun by the larvae of many insects for protection

Wrap-Up

For the last few minutes of class, let's talk about a few key points in today's lesson you found interesting or if you have a comment on monarch butterflies. Any volunteers that would like to share, please raise your hand.

Day 2 Reading and Writing

Warm-Up

<https://www.bing.com/videos/search?q=pbs+monarch+butterfly&docid=608052556471731054&mid=C793F153D97B4D17A696C793F153D97B4D17A696&view=detail&FORM=VIRE>

You will read the article two times today. First, you will read independently, and then you will read it a second time in pairs or groups of three. As you are reading, you will work on your 'During Reading Assignment.' You can start the assignment during your first reading and can finish with your partner or group.

Reading

Monarch Butterflies

The monarch butterflies are the most common and widely seen butterflies on the planet. They live from six to eight months and are orange with black lines and bordered with white dots. What are the most famous for, you may ask yourself? The monarch butterflies are most famous for their seasonal migration, where millions of monarchs migrate from the United States and Canada south to California and Mexico for the winter.

As the days become shorter and the temperatures become colder each fall, they abandon their breeding grounds in the northern United States and Canada and travel south to mountains in central Mexico. The migration is about a 3,000-mile journey for the monarch butterflies. This process is called overwintering. Once in Mexico, the monarch butterflies huddle together on oyamel fir trees. They huddle in millions on the branches of this tree. The monarch butterflies huddling together helps the butterflies because it creates a microclimate that protects them from getting too hot or too cold. Here in the oyamel fir tree, the monarch butterflies wait out the winter.

Once the days start getting longer, the butterflies start traveling back north to warmer areas such as Texas. Here they mate and lay eggs on milkweed plants. After a few days, these eggs hatch into striped caterpillars. The monarch larvae eat a large amount of milkweed before they form a cocoon and transform into butterflies, and these newly born butterflies are called a new generation. The new generation of monarch

butterflies continues migrating north to repeat finding milkweed and laying eggs. The whole process is repeated over four or six generations before the monarch butterflies reach Canada.

There are significant threats to the survival of monarch butterflies. One of the big reasons there is a decline in monarch butterflies from the disappearance of milkweed. Milkweed is the only plant the monarchs will lay their eggs on and the only food that caterpillars will eat. Milkweed used to grow in and around agricultural crops; however, there has been an increase in removing milkweed from fields over the years. There has been an increase of mowing alongside roads and ditches, which is another area milkweed can grow, which has also reduced the amount of milkweed.

Another major threat to the monarch butterflies is climate change. Monarch butterflies use the change in temperature and weather changes to know it is time to migrate and when to reproduce. The difference in climate affects the overwintering habitats, how available milkweed, and if it gets too hot or too cold, then the monarch butterflies can die.

You must wonder why monarch butterflies are so important to the ecosystem. Monarch butterflies visit a large number of wildflowers looking for nectar. Here on the wildflowers, the monarch butterflies transfer pollen from one plant to another. This process helps other species' reproduction process. The Monarch butterflies and caterpillars are poisonous to many predators because of the toxins found in milkweed. However, there are some animals who can still eat them, such as Orioles, grosbeaks, ants, wasps, flies, and spiders.

You must be thinking of a few ways to help monarch butterflies survive. Here are a few things you can do:

1. Planting milkweed is the easiest thing a person can do, but you must plant milkweed that is native to your area. Planting milkweed will help the monarchs lay their eggs and the caterpillars to eat.
2. Plant nectar-rich plants for the monarch butterflies to feed on.
3. There are many scientific organizations that keep track of the monarch migration, milkweed growth, and caterpillars. Submitting sightings will help the scientist get a better understanding to help the monarch butterflies.
4. Raise awareness of the declining numbers of monarch butterflies, milkweed growth, and climate change.

During Reading Activity

As you read, you will take note of four details of the reading. It can be a fact you find interesting, a detail about monarch butterflies you want to remember, or something you think is important. In the "I wonder..." section, you will write out questions you have as you are reading. These questions can be things you want to ask me because you did not understand something, a general question you want to discuss with the whole class, or a simple question about monarch butterflies. In the "New word" section, you will write a word you found in the article that is new to you, these words can be words that are in our vocabulary list or a term that is not on the list, and we can talk about it as a whole class at the end of course.

I take note...

I wonder....

1. Detail #1

1. Question

2. Detail #2

2. Question

3. Detail #3

3. Question

New words

1.

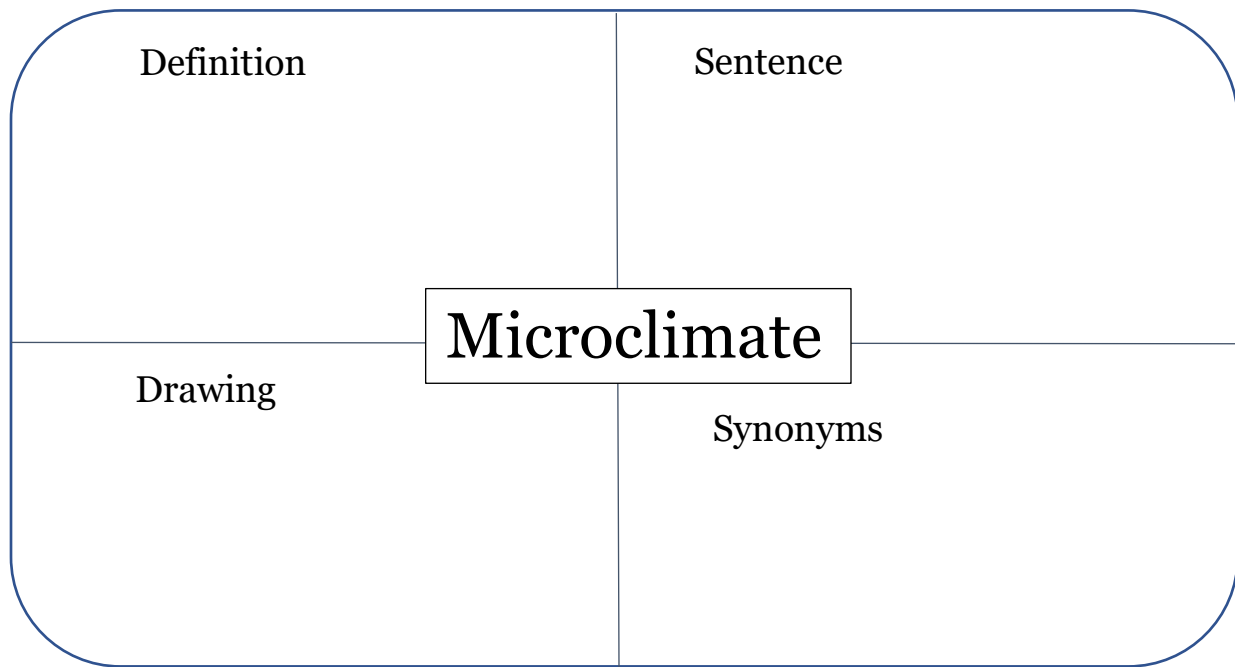
2.

Vocabulary Activity

During this activity, we will recap on a few vocabulary words that I chose. Here you will write the definition for the word in the box, write a sentence using that vocabulary word, draw a picture to represent the vocabulary word, and finally write at least two synonyms.

Definition	Sentence
Migration	
Drawing	Synonyms

Definition	Sentence
Overwinter	
Drawing	Synonyms



Wrap-up

This wrap-up will take a little longer than our typical 5-minute wrap-ups. Here we will use the time to discuss the reading. We will use the 'During Reading' assignment as a starting point. We will be talking about the things you noted in the reading and the questions you had during it. We will take up the rest of the class period to discuss the activities.

Day 3 Speaking:

Warm-up

We will watch these two videos about the monarch butterfly's survival when migrating to Mexico or back north for the warmer months.

<https://youtu.be/Rko78QktS9A>

<https://youtu.be/DKjqD-ceQMQ>

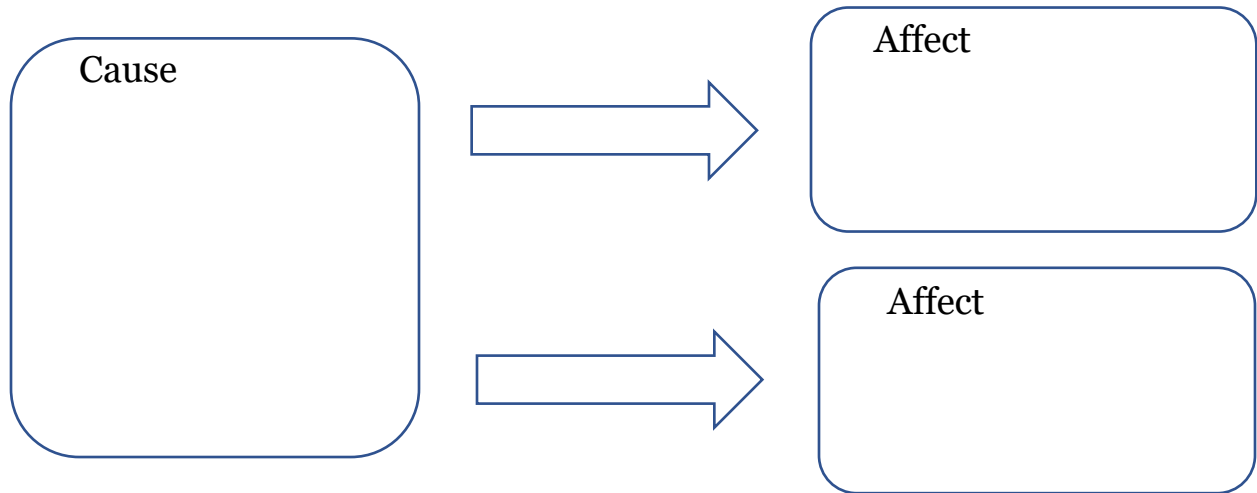
What did you see or hear in the videos that are affecting the Monarch Butterflies?

Cause and Effect Writing Activity

First, what did we learn from our reading and the videos of how climate change is a danger for the monarch butterflies? There were two things mentioned in the reading that threaten the butterflies' survival, and we know climate change is one. Do you recall the second one? How are climate change and the declining of milkweed intertwined, meaning how is one affecting the other? First, discuss with your classmate next to you for about 5 to 8 minutes, then we will come back as a whole class.

For this activity, we will discuss what causes are affecting the survival of the monarch butterflies. As was discussed in the reading, which you can use while doing this activity, a few reasons can cause the butterflies from surviving, such as climate changes and milkweed decreasing. For the last one, you will think of another cause and effect. (Hint, another effect is mentioned in one of the videos) You will work on your own for the first 10 minutes, then will work in pairs or groups of three to finish any parts of the activity together.

Cause	→	Affect
	→	Affect
Cause	→	Affect
	→	Affect



Ways to Help Monarch Butterflies

Now that we know what affects the monarch butterflies, how do we help them survive their migration back south to Mexico? First, let us watch these two short videos, and we will come up with a list of how to help them.

<https://youtu.be/6JpLR2hpfSk>

<https://youtu.be/UXDpZvdBqNY>

At the end of the reading, we have an idea of how we can help the monarch butterflies. Let's get into pairs or groups of three, and we will each make our lists. Try to think of other ways to help them, not just from the videos or reading. Let those be a helping guide to come up with at least one or two more creative ways to help monarch butterflies. Maybe you come with a way to see if we can plant milkweed at school or nectar-rich flowers. Or you can perhaps you people in your community, whether it is at home, at school, or a sports team, to make a fundraiser donate to scientific organizations that dedicate their work to monarch butterflies.

Kahoot Game

Now let's play a friendly game of Kahoot! We will wrap up the lesson, and the day by playing Kahoot will be an opportunity to recap all the information we have taken in the past three days on monarch butterflies. This game will go over the reading, activities, and lectures we have had. We will play in groups.

<https://create.kahoot.it/share/monarch-butterflies/2edb1038-8a0b-445b-a41a-foe0a21f6154>

Reference

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