

Monarch Butterfly Unit

Adaptable for 4th-5th Grade



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Lesson 1:

Basic Needs and Endangered Animals

Learning Goals: I can identify the basic needs of animals.
I can explain the primary reasons that animals become threatened or endangered.



Part I: Basic Needs

**What do animals need to
survive?**

Animals need certain things in their habitat to survive:

1. Food



2. Water



3. Shelter



4. Air



5. Space



- Move around
- Find food
- Have babies
- Play

Endangered Animals

We know what animals need.

What happens if they don't get what they need?



What does “endangered” mean?

any type of plant or animal that is in danger of disappearing forever (**extinct**)

Take a look at
some
endangered
species that live
at the OKC Zoo!

Asian Elephant
📷 Jennifer D.



African Spurred Tortoise
📷 Andrea J.

Endangered Animals (OKC Zoo)



African Painted Dog



Black Rhino
📷 Lena K



Sumatran Tiger
📷 Dr. Jenn



Western Lowland Gorillas
📷 Jennifer D.



Whooping Crane



Red Panda

Endangered Animals (OKC Zoo)



Addra Gazelle
© Andrea J.



Radiated Tortoise
© Emma W.



Chimpanzee
© Jennifer D.

Endangered Animals (OKC Zoo)



Guatemalan Beaded Lizard
📷 Rae K.



Okapi
📷 Jennifer D.



Orangutan
📷 Andrea J.

Did you know?



Over 40,000 species of animals around the world are threatened with extinction!

Endangered Animals (OKC Zoo)

In July 2022, the International Union for the Conservation of Nature ([IUCN](#)), declare the migratory monarch butterfly endangered.

The OKC Zoo is working with partners to help them and you can help too!



Monarch Butterfly



Conservation

There are many animals that are endangered that need our help. We can do a lot to fix this by conservation.

Conservation is the protection of things found in nature.

Conservation



Did you know...

Monarch butterflies are **pollinators**.

This means when they stop on a flower to sip on the nectar, the pollen sticks to their bodies. Then the butterfly moves to another flower. The pollen brushes off onto the new flower. This helps flowers make seeds, which grows in new plants. Bees are pollinators, also!



Pictures provided by OKC Zoo

Busy
spreading
pollen!



📷 Emily G.

Did you know...

Monarch butterflies help other animals live.

They are an important part of the **food chain** for many animals. That means animals like birds, other insects, and small animals eat them to survive.

Did you know...

Monarchs are also a symbol of **inspiration** for some partly because of their remarkable migration journey. They can symbolize endurance, change, hope, and life.



Optional

Monarchs appear in Mexico at the same time every year and people living there believe the monarchs represent the souls of their ancestors returning to visit them for Dia de los Muertos (Day of the Dead).



Lesson 2:

Monarch Butterfly Life Cycle

Learning Goal: I can identify and put in order the stages of the monarch butterfly life cycle.

Introduction

1. What do you already know about butterflies?
2. What do you know about a butterfly's life cycle?
3. Do you know the link between a caterpillar and a butterfly?

We will focus on a special group of butterflies called **monarch butterflies**.

Monarch Butterflies

Monarch markings include bright orange wings covered with black veins and rimmed with a black border and white dots.

These markings deter predators.



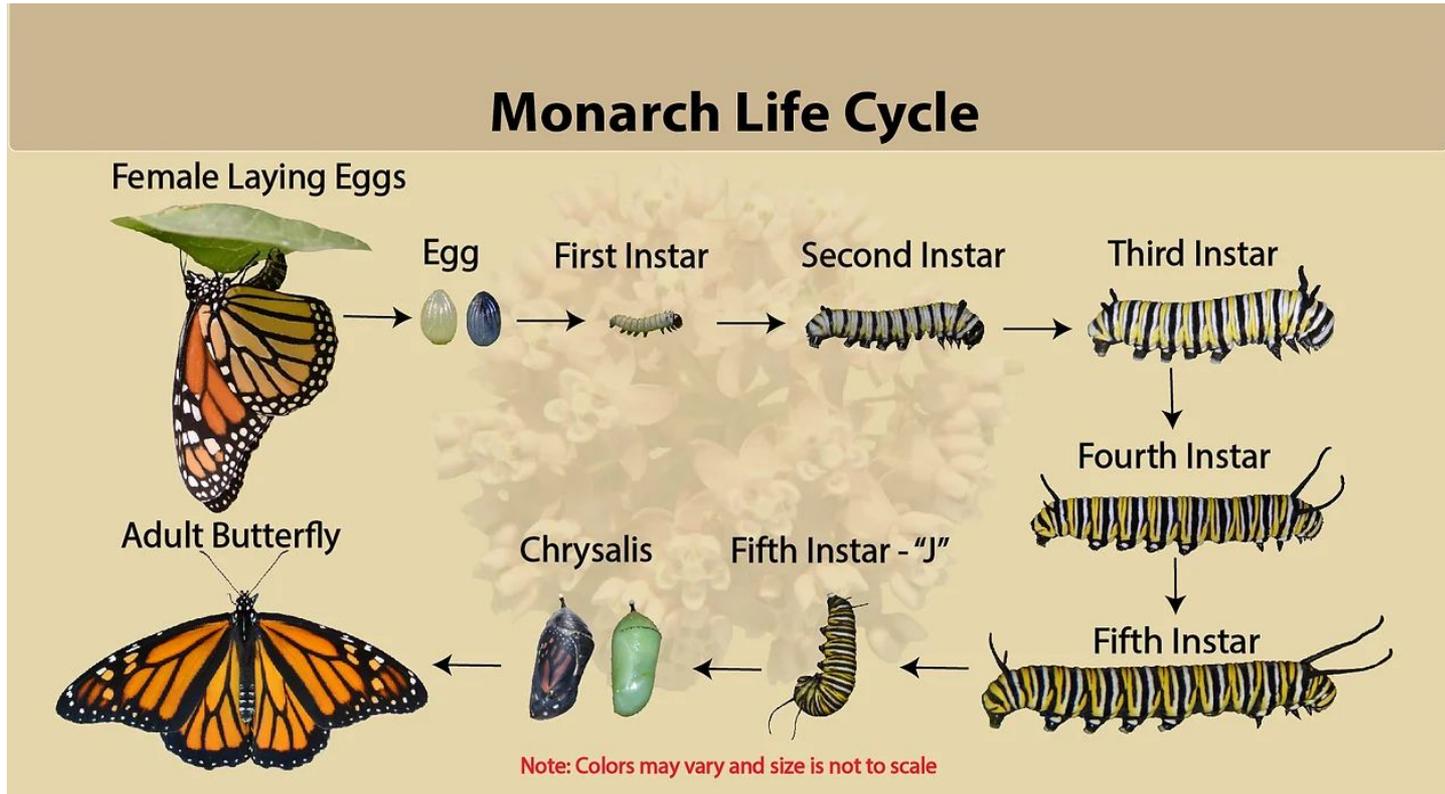
Monarch butterfly  Jennifer D.



Vocabulary

- **life cycle**- a series of changes that happens to all living things as it grows and develops
- **caterpillar** - the young version of a butterfly or moth, also known as larva
- **chrysalis**- the hardened protective case around the caterpillar before it emerges into a butterfly, also known as pupa
- **milkweed**- plant with milky juices and clusters of flowers; milkweed is important to the monarch butterfly's life cycle

Monarch Life Cycle



Life Cycle Video Option #1



Life Cycle Video Option #2



Life Cycle- Egg

- Monarch butterflies lay their eggs on the undersides of **milkweed** leaves.
- They will lay one egg per leaf but will lay between 300-500 in its lifetime.
- Eggs are the size of a pencil tip and are yellow or off-white.
- They hatch about 4 days after being laid.



Life Cycle- Caterpillar

- The egg will hatch into a **caterpillar**.
- The caterpillar has yellow, black, and white stripes.
- Notice the two sets tentacles at both ends.
- The caterpillar eats milkweed nonstop for two weeks.



Life Cycle- Caterpillar continued

- The caterpillar will outgrow its skin 5 times total.
- They will shed their skin in a process called molting.
- The time between each molt is known as **instar**.



Life Cycle- Pupa (Chrysalis)



- The caterpillar changes into a **chrysalis**.
- The monarch stays in the chrysalis for 9-14 days.
- The chrysalis will darken when it's time to become a butterfly.

Life Cycle- Pupa (Chrysalis)



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Life Cycle- Adult

- The monarch's wings are wrinkled and wet when it comes out of the chrysalis.
- The butterfly inflates them with liquid drawn from its abdomen.
- The new butterfly will hang for several hours for the wings to dry before flying off.



Life Cycle Stages



Can you spot the egg?

Time-lapse of life cycle

Take a look at the complete life cycle of a Monarch butterfly.



Lesson 3:

Monarch Migration Part I

Learning Goal: I can describe the migration patterns of the monarch butterfly.

Discuss

What do you know about migration?

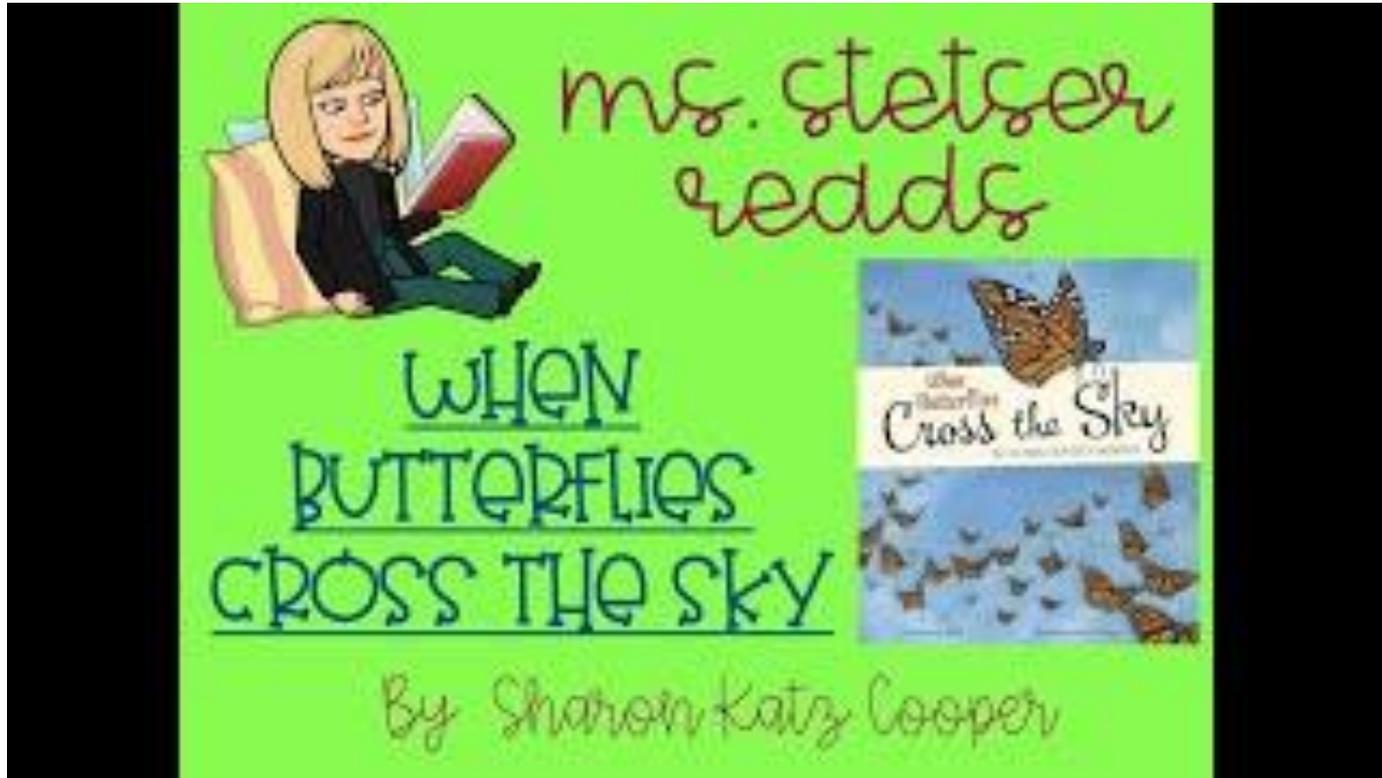
Vocabulary

migration- the traveling of long distances in search of a new habitat

habitat- home of an animal or plant

roost- when butterflies group together for warmth

When Butterflies Cross the Sky



Facts to focus on:

- Migration happens when:
 - Days get shorter and temperatures get colder (fall) OR
 - Days get longer and warmer (spring)
 - Milkweed starts dying and there are fewer nectar sources
- Some Monarchs can fly almost 100 miles in one day and like to travel together. For reference, that is the distance between OKC and Tulsa!
- They stop along the way for nectar and shelter in harsh weather.

Facts to focus on:

- Even though they've never been to Mexico, they somehow know the way.
- They migrate to Mexico which provides cool temperatures, water, and shelter and allows them to conserve energy to survive the winter.
- They start their journey back north in March.
- There are four generations of butterflies needed to complete the migration journey.

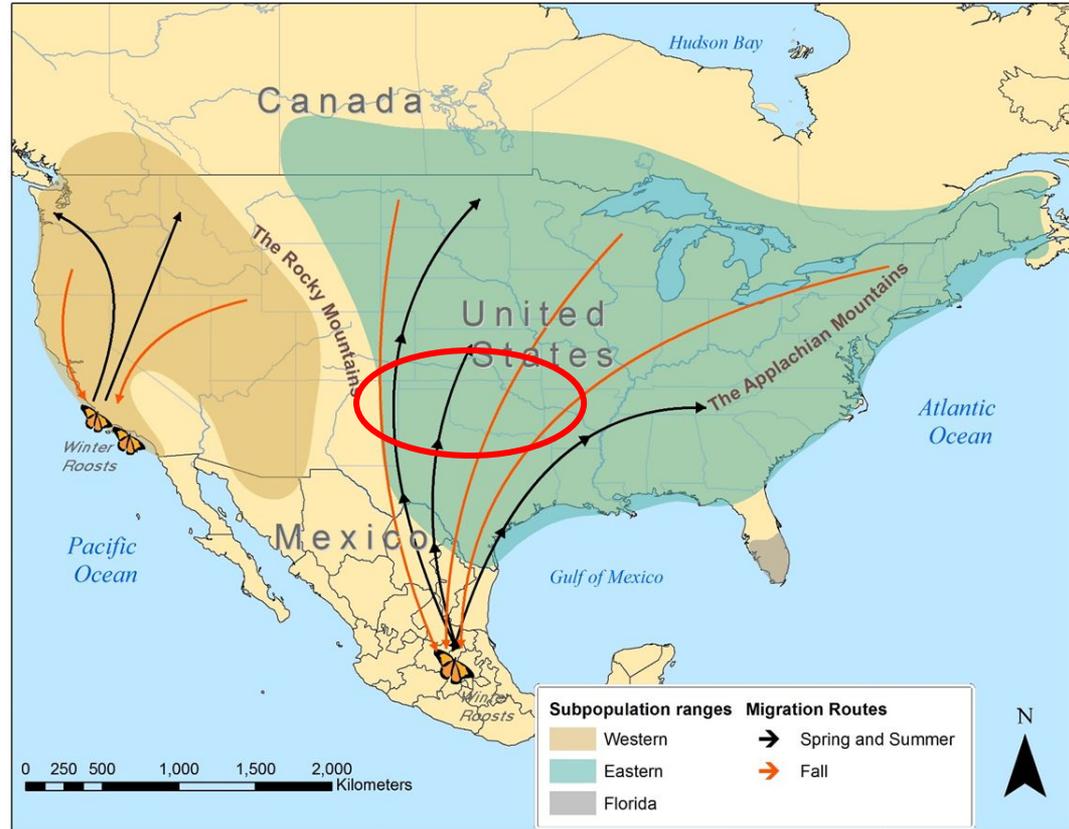


Monarchs roost
together to stay
warm.



Migration Map

Notice when butterflies migrate, they travel right through Oklahoma!



Graphic provided by Dr. Geest (OKC Zoo)

Website resource

Click below to go to an interactive map showing the migration patterns of the Monarch butterfly:

[Interactive Migration Map](#)

News 9 Story



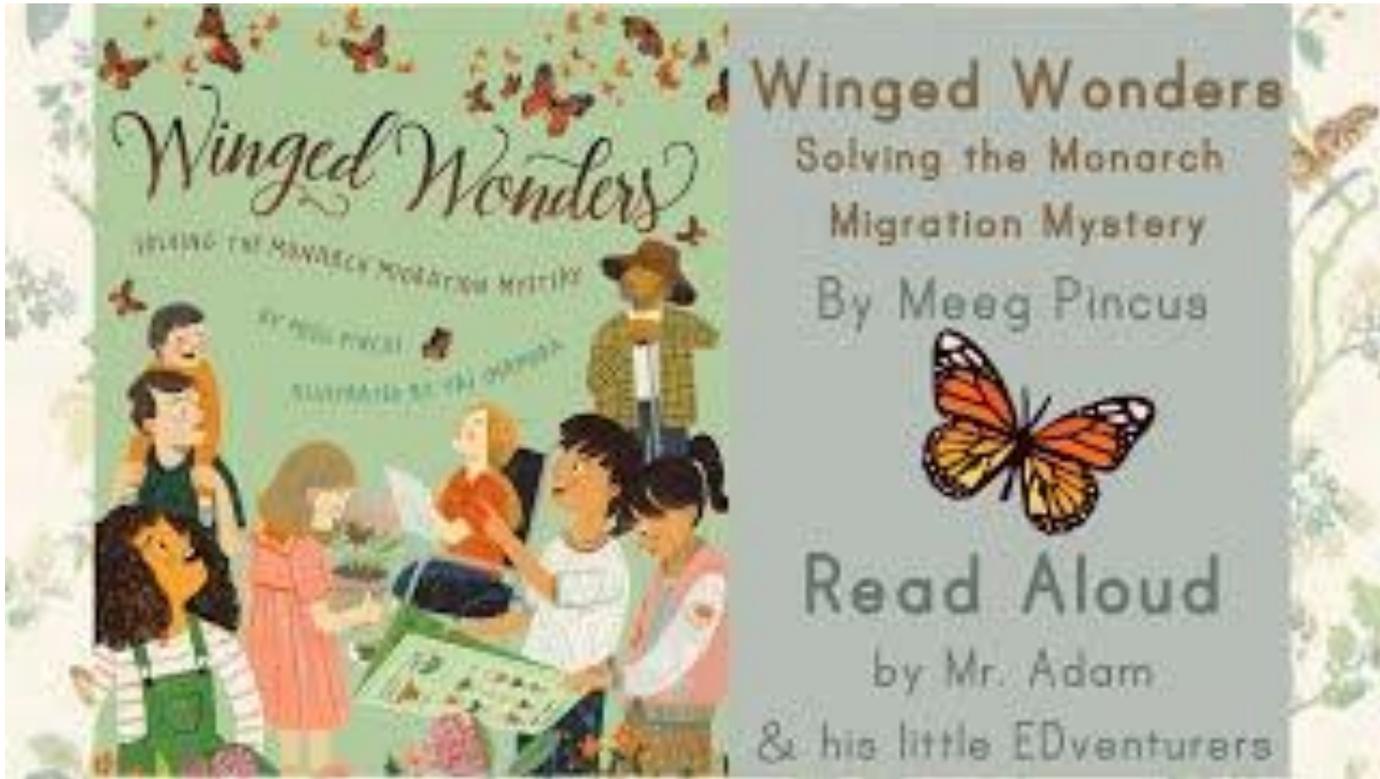
Lesson 4:

Monarch Migration Part II

Learning Goal: I can describe the migration patterns of the monarch butterfly.



Winged Wonders: Solving the Monarch Migration Mystery



Tagging monarch butterflies in Oklahoma

MONARCH BUTTERFLIES FROM OKC ZOO COMPLETE
1,295 MILES JOURNEY TO WINTER HOME IN MEXICO!



Lesson 5:

Monarch Conservation

Learning Goal: I can identify and sequence the stages of the monarch butterfly life cycle.

What's happening?

For the past few decades, people have noticed that the number of Monarch butterflies has decreased (gone down).

Why do you think monarch butterflies are disappearing?

Endangered Migration: A Monarch Butterfly Story



Why are they disappearing?

- **Loss of habitat**
 - Trees in Mexico are being cut down.
 - Habitats are being destroyed in America.
- **Loss of food resources**
 - Milkweed and nectar plants are disappearing because of development and chemical use.
- **Climate change**
 - Extreme weather causes the Monarch's migration to get off track.

What is conservation?

Conservation means to protect our environment and the wildlife that lives in it.

We can work together to conserve the population of the Monarch butterfly.

What can we do to save them?

OKC Zoo Pollinator Plants

One way we help is to make sure they have enough to eat by planting pollinator plants. The OKC Zoo has planted many of these special plants across their grounds. Take a look at these pictures taken at the zoo!



Pollinator Gardens in Oklahoma



Nicoma
Park
Elementary

Take a look at some pollinator gardens across Oklahoma!



Davis Elementary



Pollinator Gardens in Oklahoma



Yukon, OK



Special Care, OKC

Okies for Monarchs

The OKC Zoo helped found and is involved with [Okies for Monarchs](#). This organization is dedicated to helping Monarch butterflies live for a long time.



(Optional) *Juniper's Butterfly Garden* by Autumn Heigle



OKC Living Classroom Grant

The Oklahoma City Zoo is helping schools plant their own gardens.
Check out the grant process and apply today!

[OKC Living Classroom Grant Program](#)



Credits

Title Slide Photo provided by the OKC Zoo taken by Jennifer D.

Lesson 1-

- The Touring Teacher- Conservation for Kids video
- SciShow Kids- Pollinators! video
- Endangered species pictures- OKC Zoo

Lesson 2-

- Naturedigger.com- life cycle graphic
- Ana C Wydeven- Monarch Butterfly Life Cycle video #1
- Royal Ontario Museum- Monarch Butterfly Life Cycle video #2
- Pic4Learning and Unsplash- Life cycle pictures
- USFWS- life cycle stages photograph
- Joshua Russo- time-lapse life cycle

Credits

Lesson 3-

- Butterfly Garden Preschool- *When Butterflies Cross the Sky* read-aloud
- Dr. Emily Geest (OKC Zoo)- migration map graphic
- Rawpixel- roosting pictures
- News 9- Monarch migration package
- Cgee-hamline.org- interactive migration map

Lesson 4-

- Mr. Adam's EDventures- *Winged Wonders* read-aloud
- OKC Zoo- monarch tagging video

Credits

Lesson 5-

- Natural Habitat Adventures- Endangered Migration video
- Okies for Monarchs- pollinator garden pictures and video
- OKC Zoo- *Juniper's Butterfly Garden* read-aloud
- OKC Zoo- Grant program link