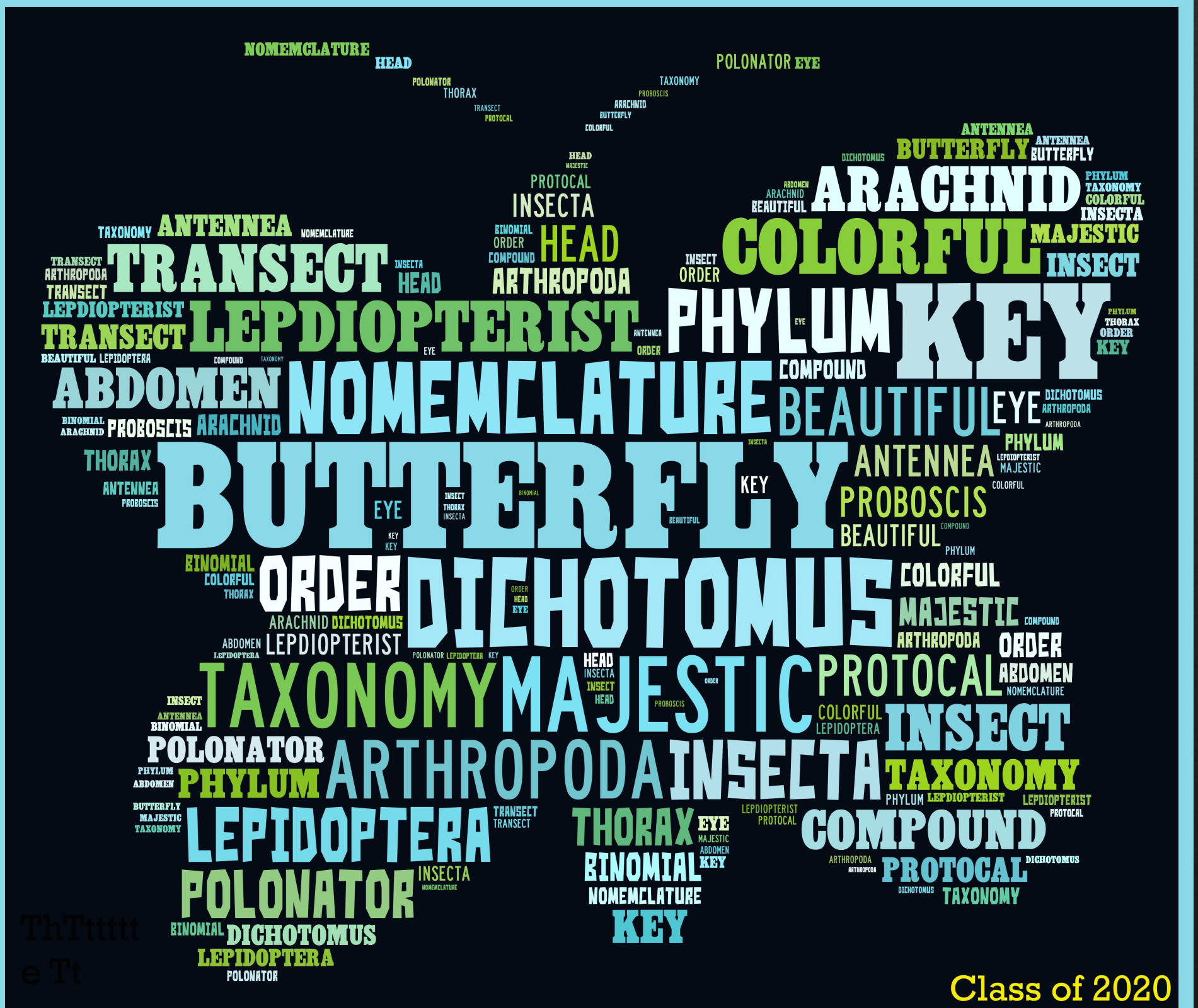


Nebraska



Copyright 2015

Class of 2020
tagxedo.com

Why Butterflies



Butterflies conjure up images of sunshine, the warmth and color of flowery meadows, and summer gardens giving life. Butterflies are unique creatures because there is nothing like them in the whole animal kingdom. We study butterflies in science to know how they help us and the environment; we are like **lepidopterists**. A lepidopterist is someone who studies butterflies and moths. Even though butterflies seem really small, they still make a difference in this massive world. Beside the basic information we already understand about butterflies, there is still more we need to learn about the importance of butterflies in our world.

Their **habitats** have been destroyed on a massive scale, and now patterns of climate and weather are shifting

unpredictably in response to pollution of the atmosphere, but the disappearance of these beautiful creatures is more serious than just a loss of color in the countryside. Butterflies are a highly diverse group over 250,000 **species** and make up around one-quarter of all named species. Butterflies can teach humans so much about ecosystems and pollinate all the producers in our ecosystem. If we didn't have these creatures we would probably not exist today. These cute little **insects** fluttering around in your garden makes you never want to stop exploring them.

Classification



A. Butterfly has orange and black on it - Proceed to step 2

B. Butterfly has brown or black spots on it - Proceed to step 3



A. Butterfly has black on outer edge - Monarch

B. Butterfly has blue on it - Black Swallowtail



A. Butterfly has black spots on it - Orange Sulphur

B. Butterfly has white on it - Cabbage White



With all the many gorgeous butterflies in Nebraska, the question becomes how do we identify them? There are a many species of butterflies to be classified and identified for this we use **taxonomy**. These majestic butterflies are classified under these levels. The levels start with **kingdom**-animilia, **phylum** arthropoda, **class** insecta, **order** lepidoptera. The last levels are different for depending on the butterfly species.

family, **genus**, and the last level is **species**. Each butterfly is given a name using **binomial nomenclature**, this is a two name system which consists of the genus and species. A **dichotomous key** may seem very hard to understand, but actually it's easy to comprehend. To explain, it is a type of key. With this key, you pick your butterfly, then you start identifying it by answering a few "yes" or "no" questions. As you answer these questions on the key you continue to

work your way until you find the name of your butterfly. This is the formal system of giving a specific species a name. The first one indicating the genus and the second one the specific species.

There are different types of dichotomous keys to help you identify butterflies in Nebraska. Some use pictures, others use words, and some will use both. Select the dichotomous key that you understand best. With a little practice you will be identifying these beautiful Nebraska butterflies.

Butterfly Classification

Cabbage White "*Pieris rapae*"



This is a female Cabbage White "*Pieris rapae*". The female Cabbage White has 2 less spots than the male Cabbage White. The Female one has a lighter body not counting the wings.

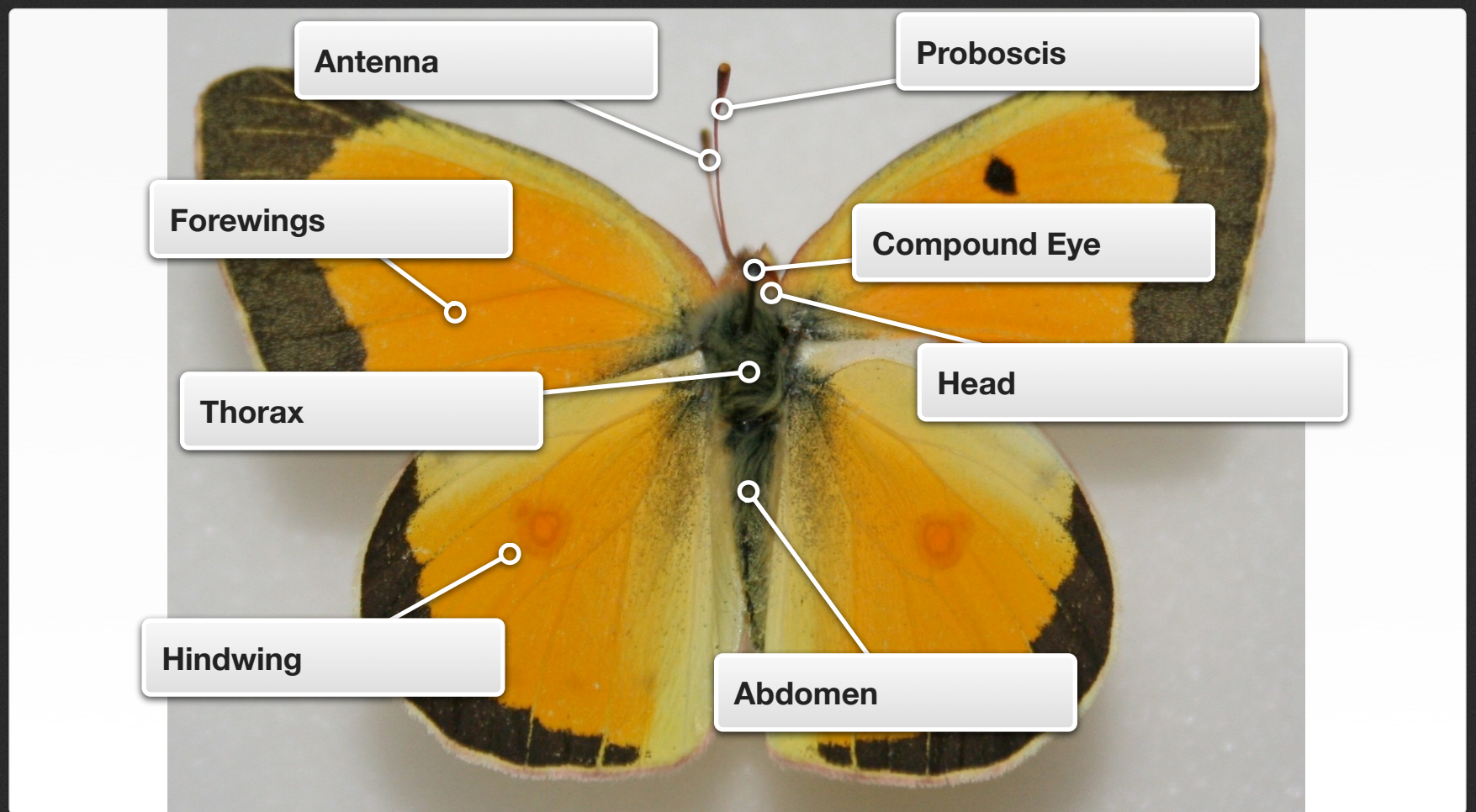
This is a male Cabbage White "*Pieris rapae*". It has 2 more spots than a Female Cabbage White "*Pieris rapae*". The Male one also has a lighter body not counting the wings.

As you can see, the Cabbage White Butterfly has brown spots and in the corner of its wing it is also brownish. It is mostly white. As I told you the bodies are different. The size of the wingspan is 30-50 mm. The larva length is up to 35 mm. An interesting fact about this type of butterflies is that it has other names like European Cabbage White Butterfly and Small White.

Kingdom= Animalia (Animals)
Phylum= Arthropoda (Arthropods)
Class= Insecta (Insects)
Order= Lepidoptera (Butterflies and Moths)
Family= Pieridae (Whites, Sulphurs, Yellows)
Genus= *Pieris*
Species= *Pieris rapae*

Butterfly Anatomy

INTERACTIVE 2.1 Butterfly Anatomy



The anatomy of a butterfly is made up of many parts. It has three main sections to its body, **head**, **thorax** and **abdomen**. Let's begin our discussion of a butterfly's anatomy with its head. On the butterfly's head you will discover its **antennae**, the proboscis, and compound eye. The antennae is a sensory organ that helps with sense of smell and balance. The proboscis is an interesting organ, it is a flexible straw

like organ that butterflies use to sip up liquid food, such as **nectar** or juices from rotten food. The proboscis uncoils when a butterfly is eating then coils or rolls back up when the butterfly is not. You will also find the butterfly's compound eyes on the head. The compound eye is different from a human eye, it has many lenses that capture light from all around the butterfly's view. This allows the butterfly to have a wider

field of view and sense motion better. Their compound eyes also allow them to see more colors. Located behind the head is the thorax. The thorax contains the muscles that help the butterfly move. The wings and legs are attached to the thorax. The final segment of a butterfly is the abdomen. The major organs of the butterfly are located in this section. The simple heart, the breathing pores, reproductive organs and the digestive system.

Butterflies and Moths

You may think they are the same but butterflies and moths have some differences. Butterflies and moth are both insects, not an arachnid. In the following paragraphs, I will explain the these little differences, so you will be able to identify which organism is a butterfly and which is a moth .

Even though, butterflies and moths seem alike have a few key differences to help you tell the difference between them. The first difference is that butterflies have brighter colors on their wings while moths have duller colors on their wings. The next, is the resting stance of a butterfly and moth. Butterflies wings are upright and straight while they are resting. A moth's

INTERACTIVE 2.2 Butterfly Spot the Difference



wings are open and folded over its back during its resting stance. Another difference is location you will find their pupa. For a butterfly you will find their pupa on leaves. The moths pupas are located on the ground. Next, we find some more differences on the body of butterflies and moths. The body of a moth appears to be hairier or furrer than the body of a butterfly. Continue and you'll also notice some differences on their antennae. The butterflies have a little round tip on the end of their antennae which is called a club. This adaptation on the antennae is not found on a moth's antennae. A final difference is that butterflies are diurnal which means that are active during the day. The moth is nocturnal, meaning it is active at night. By spotting these differences you will be able to tell butterflies from moths.

Butterflies

Color: usually bright

Antennae: long, thin, and swell at end

Resting Stance: wings closed

Pupa: makes its progress hanging from a branch or other support

Active: active during the day

Diet: plants, nectar, and fruit

Predators: birds, spiders, and dragonflies



Moths

Color: usually less bright than a butterfly

Antennae: short and feathery

Resting Stance: wings open

Pupa: A cocoon usually can be found underground or ground

Active: active at night

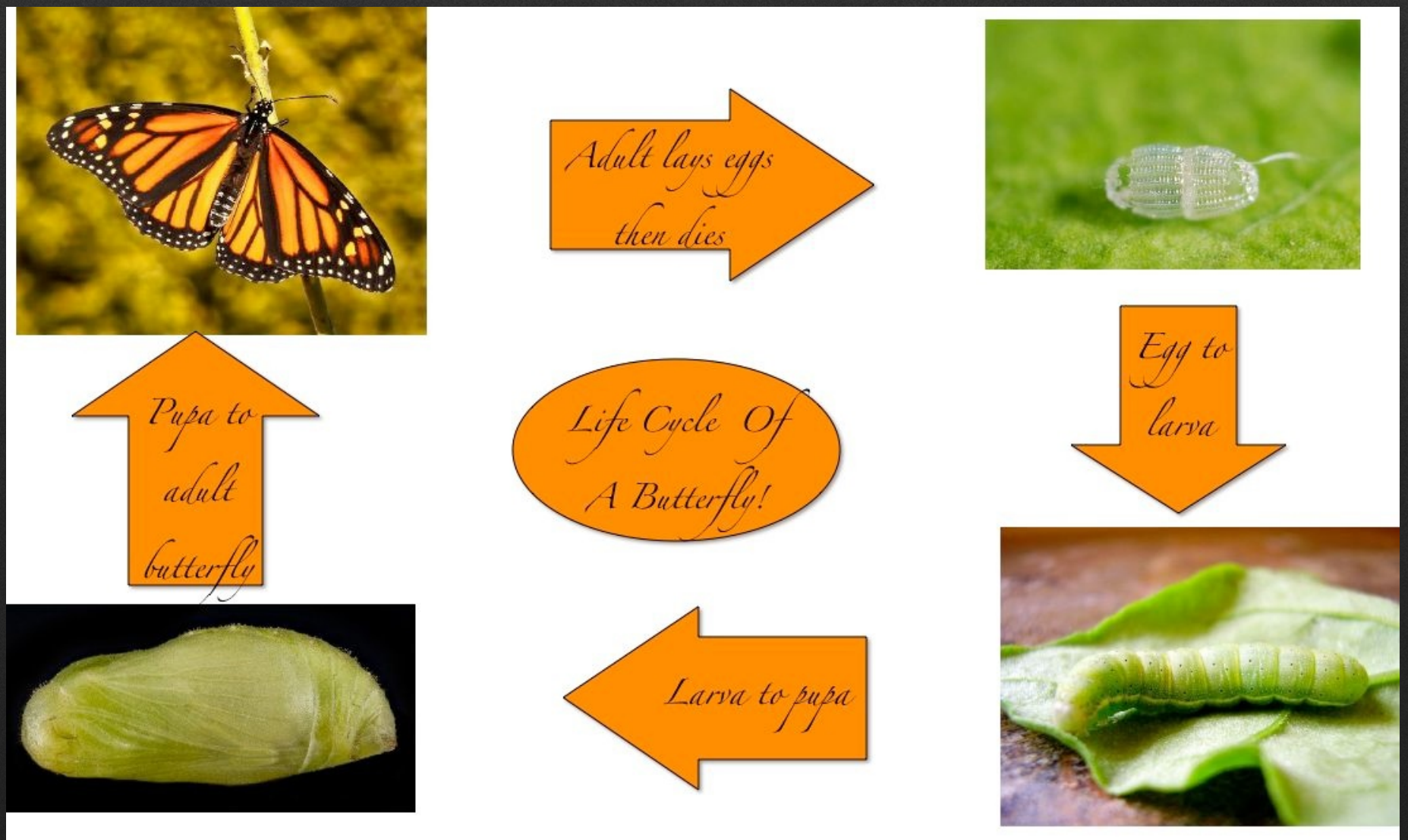
Diet: plants

Predators: birds, bats, and owls



Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do tempor incididunt ut labore et dolore magna aliqua.

Life Cycle



As you know, butterflies go through many stages in order to become beautiful butterfly. Caterpillars go through a fascinating metamorphosis to become a butterfly. In my opinion, it's just like us as humans. We start out as a baby and come to be mature adults. A butterfly starts out as an amazing, fragile egg. Each stage of development is interesting.

The first stage of a butterfly's life is the egg. A Butterfly will lay hundreds of delicate eggs. To begin, this stage usually lasts about five days. Their survival rate is a very about five percent. There are at least three places where butterflies like to lay they their eggs. The main place is on a host plant. A host plant is plant that the caterpillar will feed on after it hatches. The other two places are crevices in tree bark and flower heads.

The egg is the size of a pinhead and usually pod-shaped and spherical. The eggs will appear green, yellow or white. Even though the egg has a thin shell, it is a very tough shell.

The second stage is the caterpillar which is also called the larva stage. To begin, the caterpillar only eats one type of plant. This plant is called the host plant. However, an interesting fact is that the newly hatched caterpillar's very first meal would be its own eggshell! Amazing! Caterpillars eat until they're four times the size they started and grow up to 3 inches in about two to three weeks. Not all caterpillars are the same. Each butterfly's caterpillar has its own design, so by understanding a caterpillar's design you can identify which butterfly it will be as an adult. They are mostly green and can have stripes or other patterns on them. Another difficulty, is the survival rate which is about two percent. That is a really low percentage!

The third stage is the pupa and this stage is also called the chrysalis. You might know of this stage where a caterpillar wraps itself into a cocoon. First, I will describe the colors a pupa can be. The colors include brown, gold, yellow, and green. Interestingly, the pupa can sometimes protect itself from

dangerous predators by wiggling to scare them away. It can also make hissing noises when it feels it is in danger from a predator. This stage in the cycle can be two weeks to even over a year. The chrysalises may go dormant if the weather conditions are not favorable for the adult. Finally, I would like to mention the survival rate for chrysalises and where they can be found. Again Their survival rate is low about five percent. You can find chrysalises on twigs or around the host plant.

INTERACTIVE 3.1
Life Cycle of a Butterfly

B K J S P N
E V B E Q L
D C D A T P
R W O R D H
V S T C O N
H G F H Y L

The fourth and final stage is the beautiful and colorful adult butterfly. There are over 18,000 different species of butterflies in the world. We can find over 65 different species in Nebraska. Adult butterflies meet a mate and the cycle starts all over again. The life span of an adult butterfly can be as short as a week and as long as 9 months. This depends on size of butterfly and

environmental conditions. It's a shame these beautiful creatures don't have a long life span like humans or other animals.

I have gone from the egg to the marvelous butterfly explaining breathtaking facts about each stage. Learning about the life cycle of a butterfly is truly interesting.

Butterfly Pollination



Like bees, butterflies also pollinate, flying from flower to flower, eating nectar, and creating **diversity** in plant life. Butterflies have such an important role in our human lives by pollinating to help create the fruit that we eat, flowers that we smell, and vegetables that we love. Do you know the parts of a flower? You need to know them if you want to understand the **pollination** process. The parts of a flower are interesting,

although there're a truck load of them.

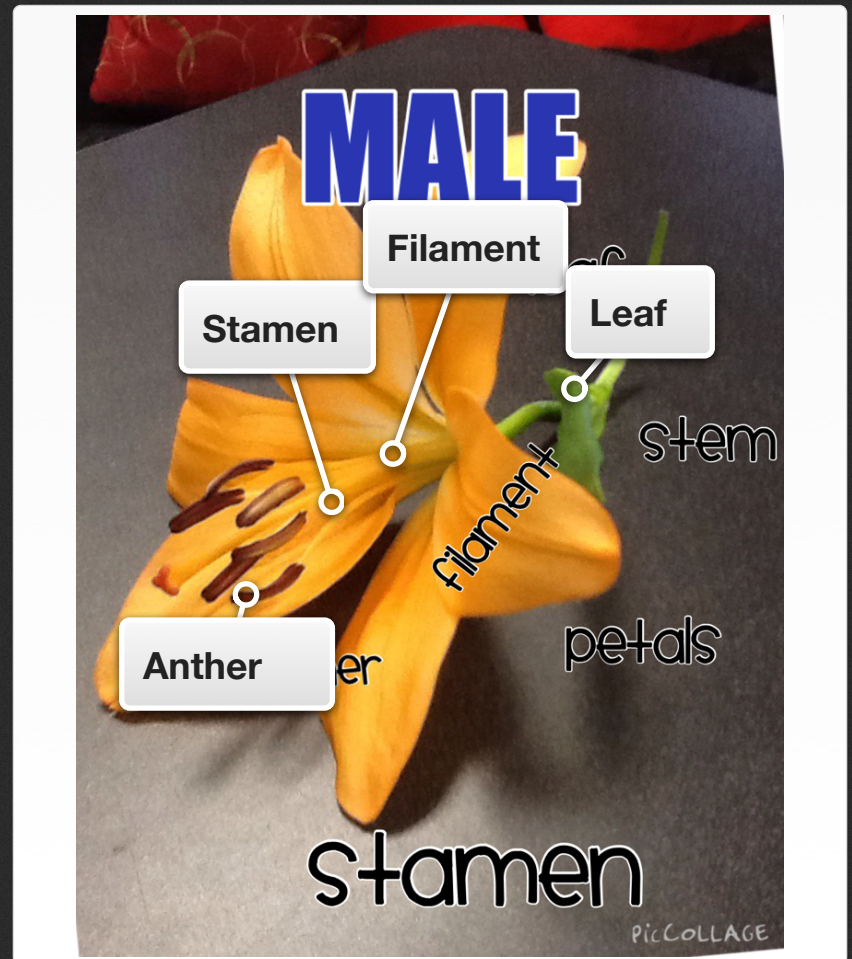
First, you should know that there is a male reproductive part as well as a female reproductive part. The male parts are called the **anther** and filament which, together, is called the **stamen**. This stamen is where the **pollen** is contained. The female part of the system includes the **stigma**, **style**, and an ovary.

Together, the female parts are called the

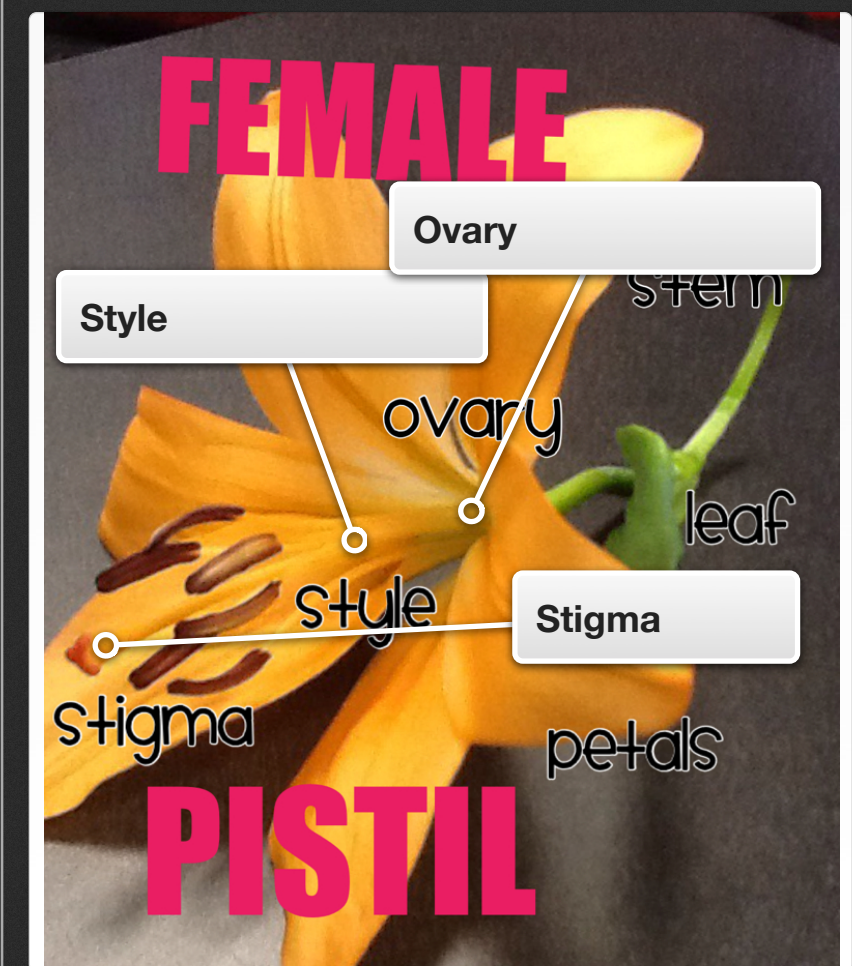
pistil. The stigma is the part of the pistil that receives the pollen during pollination. The style is a narrow, typically elongated extension of the ovary connecting to the stigma. Nectar is the sugary fluid within the plant. The pollen is the fine powder substance in the flower. Weird but true, nectar is usually just clear. Everyday, butterflies visit a variety of wildflowers. While butterflies drink the nectar, they stand on the head of the flower, and pick up the pollen on their legs. Which they will carry to other flowers. When we humans pollinate a flower, it is called hand pollination. We can't forget about **cross pollination** or self pollination, either! A flower pollinating itself is called self-pollinating. **Self-pollination** is the pollination of a flower by getting pollen from the same flower or plant. Cross pollination is when a butterfly or other source moves pollen from one plant to another.

There are a million ways pollination can happen. Although butterflies collect a little less pollen than bees, they're still very important and effective pollinators.

INTERACTIVE 4.1 Male Flower Anatomy



INTERACTIVE 4.2 Female Flower Anatomy



MOVIE 4.1 Flower Anatomy



(Mr Hanson-room210)

Butterflies In The Ecosystem

GALLERY 5.1 Butterflies In The Ecosystem



Common Name: Monarch Butterfly

Scientific Name: *Danaus plexippus*



In an ecosystem there are four levels such as the producers, primary consumer, secondary consumer, and tertiary consumers. First, there is the producer. Producers are the first in a food web and they get their energy from the sun. These are typical plants. An example would be a milkweed that a Monarch Butterfly caterpillar would eat. Then there are the primary consumers that eat the producers. The caterpillar

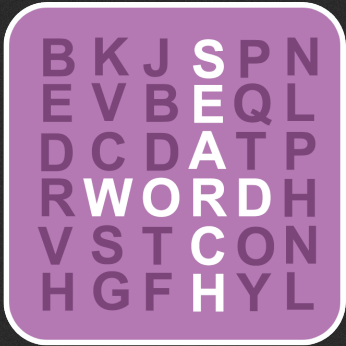
eating the milkweed would be an example of a primary consumer. Next are the secondary consumer. They eat the primary consumer. The secondary consumer would be like a robin eating a butterfly. Lastly, is the tertiary consumer. They are on the top level. They eat the secondary consumer, and sometimes the primary consumer. A butterfly's diet would consist of nectar and fruit.

There are many facts to learn about the importance of a butterfly in an ecosystem. The biotic and abiotic factor of an ecosystem are important to learn about. The nonliving factors in an ecosystem are called abiotic. This would include rocks, soil, minerals, and water. The living factors of an ecosystem are called biotic factors. This would include plants and animals.

In addition, butterflies move from one place to another so they interact with many different ecosystems. They have enemies as well, called predators! Butterflies are important to the ecosystem because they pollinate flowers and provide a food source for other organisms. The lose of butterflies would harm an ecosystem. Butterflies help pollinate plants which are the producers of an ecosystem. With a the loss of plants in the producer level this increases competition for food and weakens an ecosystem. With the lose of butterflies this also creates a shortage of available food in the primary consumer level. Furthering the damage to the ecosystem. Because of this importance to the ecosystem, butterflies are often used as indicators on the health of an ecosystem. The butterfly pollution within and ecosystem warns scientist, and allows them to take measures to

help the ecosystem return to a healthier state before to much damage is caused. This is why butterflies are more than just a beautiful creature, but are an important part of our world.

INTERACTIVE 5.1
Butterflies and Ecosystems



The Great Migration

INTERACTIVE 6.1 Monarch Migration



Butterflies are not able to survive the cold winters of North America so they migrate south. A butterfly's environment is changing on a continuous basis. Migration is never easy for these butterflies. They have to go through the tough places and avoid the predators and other things that might kill them. When butterflies migrate, they go all the way from Canada to the US to Mexico. They make the trip to Mexico where

there are about 12 mountains that provide what the butterflies need to reproduce. Habitat degradation and climate change are altering the distribution and abundance of animals and plants throughout the world, and butterflies just happen to be one of them. The fall migration begins in late August ending in the months of November and December. The destination of the butterflies lies in

Central Mexico. The monarchs then fly east and later reach the Gulf of Mexico followed by the coastline in a continuous stream. The butterflies continue in a southwest direction eventually reaching the Transvolcanic Plateau of Mexico. Approximately 300 million monarch butterflies spend their winter there. This establishes the start of the spring migration for the monarchs. The spring migration starts out with roughly about half of the original population. Forty to sixty percent of the monarchs die during their stay in Mexico. During the spring migration, the monarch butterflies return to their homes in Canada and the United States. Along the way they reproduce, giving rise to new butterflies that will continue their spring flight back. Butterflies fly such a long distance full of scary things for them. It's very amazing that butterflies know or sense they have somewhere else to be than where they are. Does it just pop into their head? Do butterflies get a sign telling them to leave? No one knows for sure what goes on in a butterfly's mind.

What Can I Do?



It's very important to understand butterflies because they are in danger. It's important for everyone to help out in this massive crisis. Help is needed all around the world to save these one of a kind creatures. When you read this, try to help out as much as you can! There many ways you can help save our butterflies. By helping butterflies you are also helping us, because butterflies are

important to our environment. It keeps the ecosystem stable. If we don't help the butterflies soon we will lose a beautiful creature. We might not see them ever again and this would be tragic.

How can we help butterflies? First, butterflies have helped us more than we realize and now its our time to act and help them. For centuries butterflies have been lovely creatures who helped our

environment through the pollination process. There are countless of ways of helping. One way is by tagging butterflies. What is tagging a butterfly? Tagging is a little sticker you put on a butterfly's wing to track their location. By tagging butterflies we can identify where they travel. For example, if you start off in Canada, tagging a Monarch Butterfly before its start its migration, you could trace the route it travels. Since the Monarch Butterflies migrate through

GALLERY 7.1 Butterflies



This is a picture of a butterfly that has been tag. For more information on please visit [Monarch Watch](#)

Nebraska, you could tag or maybe find some Monarchs with the tag and give feedback to the [Monarch Watch](#), an organization that is dedicated to education, conservation and research of Monarch butterflies.

Another way you can help the butterflies is by providing butterfly gardens for

them. You could create this in your backyard, talk to your school about creating one in an open space, or even talk to your city administration about adding one to a community park. By providing them with plants they need, like milkweed for Monarch Butterflies, you provide them a place to lay eggs and for the caterpillars to live and thrive. How do I get started with making a Butterfly Garden? First, you need to research the butterfly or butterflies you want to help and attract. You will learn the plants or flowers they like, this will lure them to your garden. Next, make sure that there are no predators close to your garden spot, also you want a good space for plants and butterflies. Gardens are important to butterflies because they provide that habitat that is being destroyed. You need to plant **host plants** for caterpillars to eat. This garden also needs to provide a **nectar source** for the adult butterfly. With everything included in your garden you will soon see various of butterflies in your garden. If we don't take care of them, butterflies will slowly become extinct and this will cause problems within the ecosystems they play a significant role.

As you can see, there are many ways you can help protect the butterflies of

our world. Providing or protecting their habitat is very important. Our hope is that you see the value in butterflies. They are much more important than we may realize. We need butterflies, not just because they seem lovely, but to keep our ecosystem strong and healthy.

Image Attribution

Cover Photo: by Haylie Horton, tagxedo

Chapter 1:

Male and Female Differences: by- Julia,Valeria,Maritza

Butterfly Classification: By-Julia

Female Large White (*Pieris brassicae*) by David Wright is licensed under CC-Attribution-SA 2.0

Pontia protodice by Megan McCarty is licensed under CC BY 3.0

Protographium Marcellus is by Meganmccarty is licensed under Public Domain

Orange Sulphur (Alfalfa Butterfly) by Kathy, Flickr, is licensed under CC by 2.0

Female Black Swallowtail is by Megan McCarty is licensed under Public domain

Black Swallowtail *Papilio polyxenes* by Derek Ramsey is licensed under GNUL Free Documentation License

Free to use texture/background is by Tanakawho, Flickr, is licensed under CC By 2.0

Dichotomous Key: By Julia Romero

Photograph of A Monarch Butterfly by Kenneth Dwain Harrelson is licensed under CC BY-SA 3.0

Counting Math Numerals One 1 by OpenClips, Pixabay, is licensed under CCo Public Domain / FAQ

Counting Math Numerals Two 2 Funny by OpenClips, Pixabay, is licensed under CCo Public Domain / FAQ

Counting Math Numbers Numerals Three Funny 3 is by OpenClips, Pixabay, is licensed under CCo Public Domain / FAQ

Butterfly by David Blaikie, Flickr, is licensed under CC By 2.0

Spot the difference: Mario Bernal,

Monarch and Thistle by TexasEagle is licensed under CC BY-NC 2.0

Chapter 2:

Moths and Butterflies differences, Comic Life By Esmeralda Mendez

Butterfly by Lee Ruk is licensed under CC by SA 2.0

Polydamas Swallowtail (*Battus polydamus*) photographed at the Butterfly Alive Exhibit at the Santa Barbara

Museum of Natural History by Kevin Cole is licensed under CC by 2.0

Be-Jeweled Monarch (Butterfly) Chrysalis by Linda Tanner is licensed under CC by 2.0

Butterfly by Walt Stoneburner is licensed under CC by 2.0

Moth with Segments and Brown Dipped by John Tann is licensed under CC by 2.0

Resting by Charles Lam is Licensed CC by SA 2.0

Southern Armyworm, pupae, side_2014-06-04-21.10.13 ZS PMax By USGS Bee Inventory and Monitoring Lab is licensed under CC by 2.0

Antennae by Martin Fisch is licensed under CC by SA 2.0

interactive 2.1: by Maritza Calmo

Male Orange Sulphur Megan McCarty18 is by Meganmccarty is licensed under public domain

Americana 1920 Butterfly - Butterflies and Moths (color) is by Unknown artist, The Encyclopedia Americana, v. 5, 1920, between pp. 88 and 89 (1st plate), is licensed under Public Domain

Velvetbean Caterpillar Moth, Back_2014-06-06-11.21.58 ZS PMax by USGS Bee Inventory and Monitoring Lab, Flickr, is licensed under CC BY 2.0

Butterfly, Wings, Insect, Antenna - Free Image on Pixabay - 40234 by Nemo, Pixabay, is licensed under CCo Public Domain / FAQ

Tetragonus catamitus India by L. Shyamal is licensed under cc-by-2.5

Agrius convoluli (pupa) by Сделал сам is licensed under public domain

Monarch Butterfly Chrysalis by Files with no machine-readable is licensed under CCA-SA 3.0 Unported

Viceroy Butterfly by PiccoloName, English wikipedia is licensed under Uploaded to English Wikipedia under GDFL-self by the author

Monarch Butterfly by David Slater, Flickr is licensed under CC BY 2.0

Acherontia lachesis by Eric G Gagnon (Tobrook), Montreal, Canada is licensed under Creative Commons Attribution-Share Alike 2.0 Generic

Butterfly by Vernon Swanepoel, Flickr, is licensed under CC BY 2.0

DSC_6598 - Butterfly taking a break by Dennis Jarvis Source, Flickr is licensed under CC BY-SA 2.0

Actias artemis by Koichi Oda, Flickr is licensed under CC BY 2.0

Butterfly by Subwave_Photography, Flickr, is licensed under CC BY-SA 2.0

Velvetbean Caterpillar, moth, back_2014-06-06-11.21.58 ZS PMax by unknown, Flickr, licensed under CC BY 2.0USGS Bee Inventory and Monitoring Lab

Farfalla a pois by Andrea, Flickr, is licensed under CC BY 2.0

Podalirio-09848 by Bazar del Bizzarro, Flickr is licensed under CC BY 2.0

Honey Bee & Gray Nickerbean by Bob Peterson, Flickr is licensed under CC BY-SA 2.0

The Common Kingfisher by Antony Grossy, Flickr is licensed under CC BY 2.0

Butterfly Pollination - Psychophily by Natesh Ramasamy, Flickr is licensed under CC BY 2.0

Large Skipper Author by Tom Bech, Flickr, is licensed under CC BY 2.0CC BY 2.0

Monarch Butterfly Resting Stance on fennel by Ekabhishek is licensed under CC BY 2.0

A Moth Resting on its Abdomen and Legs by TristramBrelstaff is licensed under CC BY-SA 3.0

Soldier Butterfly – Danaus Eresimus by Bob Peterson, Flickr, is licensed under CC BY-SA 3.0

Antheraea polyphemus by Kadoka is licensed under CC BY–SA 3.0

Cabbage White Butterfly Pieridae by Division, CSIRO is licensed under CC BY 3.0

Attacus atlas by Quartl is licensed by CC BY-SA 3.0

Danaus plexippus pupa by Martin Lagerway, Flickr is licensed under CC BY-NC-SA 2.0

Agrius convoluli (pupa) by Сделал сам is licensed under Public Domain

Pieris Rapae by Sarefo is licensed under CC BY-SA 3.0

Chapter 3:

Butterfly life cycle

Papilio ulysses ambiguus Rothschild, 1895 Rabaul New Britain by Notafly is licensed under CC BY-SA 3.0

Butterfly life cycle by: Valeria and Jessica

Egg- Gary Foster, Gary Foster Eggs, about 48 hours after they were laid, on a leaf of a bay tree is licensed under CC BY-SA 3.0

Caterpillar CSIRO, CSIRO, Caterpillar of Danaus plexippus plexippus by Wanderer butterfly/Monarch butterfly is licensed under CC BY 3.0

Danaus plexippus pupa by Martin Lagerway is licensed under CC BY-NC-SA 2.0

Cover photo: By Fernando & Garrett

Proclossiana eunomia : 2 hatched eggs by Gilles San Martin is licensed under CC BY-SA 2.0

Karner blue pupae, U, _2013-04-30-13.52.35 ZS PMax by USGS Bee Inventory and Monitoring Lab is licensed under CC BY 2.0

Caterpillar by Aleksandar Cocek is licensed under CC BY-SA 2.0

Chapter 4:

First Butterfly In May by tducas5000 is licensed under CC BY 2.0

Flower_1 by Sam Berry is licensed under CC BY 2.0

Cover photo Monarch Life Cycle — 20 of 20 by Sid Mosdell is licensed under movie 4.1

Chapter 5:

Gallery 5.1: Monarch Butterfly By U.S. Fish and Wildlife Service Northeast Region is licensed under CC BY 2.0

Drink up By USFWS Mountain-Prairie is licensed under CC BY 2.0

Clouded Sulphur By, U.S. Fish and Wildlife Service Northeast Region is licensed under CC BY 2.0

Photo of the Week - Swallowtail butterfly on coneflower by MA By, U.S. Fish and Wildlife Service Northeast Region is licensed under CC BY 2.0

Butterfly By David Williss is licensed under CC BY 2.0

Chapter 6:

Cover Photo interactive 6.1: Butterfly Migration Map: Gabriella Jimenez & Bethzy Canales

Chapter 7:

Cover Photo By: James villatoro

Monarch Butterfly Winkipedia

Zebra Swallow tail By Winkipedia is licensed under CC by 2.0

Gallery 7.1: Tagged Monarch Butterfly by Katja Schulz is licensed under CC by 2.0

Later visitor to the garden by Andrea_44 is licensed under CC by 2.0

Butterfly Picture at the end of the book: by Maritza Calmo and Julia Romero

Butterfly by Peter Weemeeuw, Flickr.com, is licensed under CC BY 2.0

Tiger Swallowtail by Shenandoah National Park, Flickr.com, is licensed by CC by 2.0

look at me! by MICHAEL BROWN, Flickr.com, is licensed under CC by 2.0

Bronze Copper butterfly (Lycaena hyllus) - female by Andy Reago & Chrissy McClarren, Flickr.com, is licensed under CC by 2.0

Free Illustration: Monarch, Butterfly, Large - Free Image on Pixabay - 213712 by PublicDomainPictures, pixabay.com, is licensed under CCo Public Domain / FAQ

Pearl Crescent by Greg Gilbert, flickr.com, is licensed under CC by 2.0

Red Admiral by Laurence Livermore, flickr.com, is licensed under CC by 2.0

Common Buckeye (Junonia coenia) by Franco Folini, flickr.com, is licensed under CC by-SA 2.0

Eastern Comma by Seabamirum, flickr.com, is licensed under CC by 2.0

Butterfly Flight Montage by Dwight Sipler, flickr.com, is licensed under CC by 2.0

About The Authors

The authors of this book are seventh graders from my 8th period Life Science class in Lexington, Nebraska. During this class period we took the opportunity to write about what we had learned. Each student wrote a chapter then those chapters were combined to form the one chapter for our class book. The students collaborated on the editing and organizing process of their book. Some students were selected as editors of each chapter and took on the added responsibilities of that chapter. The editors for each chapter are listed first with the following students as contributors. We are excited to share our work with you. We hope you enjoy.

Introduction

Anita Lopez, Maritza Calmo, Ean Bailey, Julia Romero, Mario Bernal

Chapter 1

*Julia Romero, Gabriella Jimenez, Haylie Horton, Jocelyn Rebolorio,
Rosa Hernandez, Jessica Virgilio, Valeria Quintero*

Chapter 2

*Maritza Calmo, Julia Romero, Mario Bernal, Jose Guerrero,
Esmeralda Mendez, Jocelyn Rebolorio, Jessica Virgilio*

Chapter 3

*Fernando Arias, Garrett Woehrle, Coral Garcia, Maritza Calmo,
Julia Romero, Bethzy Canales, Jessica Virgilio, Valeria Quintero*

Chapter 4

*Ean Bailey, Ilhan Mohamed, Taeton Amos, Gabriella Jimenez,
Coral Garcia, Julia Romero, Anita Lopez, Jocelyn Rebolorio*

Chapter 5

*Jocelyn Rebolorio, Coral Garcia, Maritza Calmo, Julia Romero,
Esmeralda Mendez, Anita Lopez, Rosa Hernandez*

Chapter 6

*Gabriella Jimenez, Ilhan Mohamed, Julia Romero, Gavin Strauss, James Villatoro,
Willmer Lainez, Bethzy Canales, Fernando Arias*

Chapter 7

*Bethzy Canales, Julia Romero, Gavin Strauss, Jose Guerrero,
Esmeralda Mendez, Wilmer Lainez*

GALLERY

Nebraska.1 Room210 Class Period 8



Abdomen

The most posterior, near the bottom, portion of the three segments
sect.

Related Glossary Terms

Drag related terms here

Index

Find Term

Chapter 2 - Butterfly Anatomy

Antennae

Specialized, segmented, receptive, sensory organs found on the head of many invertebrates and some vertebrates.

Related Glossary Terms

Drag related terms here

Anther

The part of the flower (specifically found on the stamen) that houses

Related Glossary Terms

Drag related terms here

Binomial nomenclature

The system of assigning scientific names to organisms.

Related Glossary Terms

Drag related terms here

Cross pollination

The transfer of pollen from the flower of one plant to another.

Related Glossary Terms

Drag related terms here

Dichotomous key

A key used to identify organisms. The user goes through a series of questions that narrow down possible species until the organism is identified.

Related Glossary Terms

Drag related terms here

Diversity

The state of being different.

Related Glossary Terms

Drag related terms here

Family

The major subdivision of an order when classifying organisms, which contain several genera.

Related Glossary Terms

Drag related terms here

Genus

A principal taxonomic category that ranks above species and below

Related Glossary Terms

Drag related terms here

Habitats

The natural environment of an organism or the type of location where it is generally found.

Related Glossary Terms

Drag related terms here

Head

The most superior segment of an insect, containing the antennae and cranial organs.

Related Glossary Terms

Drag related terms here

Host plants

The specific plant that the larvae of an insect may use as a food source and a growing site.

Related Glossary Terms

Drag related terms here

Insects

Any member of class Insecta, which has six segmented legs, three body segments, and one or two pairs of wings.

Related Glossary Terms

Drag related terms here

Lepidopterists

A person who studies butterflies and/or moths.

Related Glossary Terms

Drag related terms here

Nectar

The sugary fluid produced by some plants that helps attract pollinators and other animals.

Related Glossary Terms

Drag related terms here

Nectar source

A flowering plant that produces nectar (a sugary liquid that often attracts pollinating insects and other animals).

Related Glossary Terms

Drag related terms here

Pistil

The female organ of a flower, which is made-up of a stigma, style, a

Related Glossary Terms

Drag related terms here

Pollen

Microscopic grains produced by the male reproductive organs (anthers) of some plants that are used to carry male reproductive cells in order to reach the female reproductive organs (pistils) of plants of the same species.

Related Glossary Terms

Drag related terms here

Pollination

The depositing of pollen in order to allow for fertilization.

Related Glossary Terms

Drag related terms here

Self-pollination

The transfer of pollen from the flower of one plant to either the same or another flower on that same host plant.

Related Glossary Terms

Drag related terms here

Species

A group of living organisms consisting of similar individuals capable of interbreeding. The species is the principal natural taxonomic unit, ranking below the genus.

Related Glossary Terms

Drag related terms here

Stamen

The male, pollen-producing reproductive organ of a flower.

Related Glossary Terms

Drag related terms here

Stigma

The receptacle for pollen, found at the top of most pistils (the female reproductive organs of plants).

Related Glossary Terms

Drag related terms here

Style

The portion of the pistil (the female reproductive organs of plants) fers pollen from the stigma to the ovary.

Related Glossary Terms

Drag related terms here

Taxonomy

The science of naming organisms. The process of classifying animal groups based on similar features and genetics.

Related Glossary Terms

Drag related terms here

Thorax

The middle portion of the three segments of an insect.

Related Glossary Terms

Drag related terms here