

# Butterfly Presentation for Youth

This presentation meets Minnesota Academic Standards for Science:

Kindergarten: IVB2

Grade 1: IIA1, IVB1, IVD1

Grade 2: IVB1, IVC1, IVF1

Grade 3: IVC1, IVC2

## Visual Aids

### I. History and Scientific Classification

#### A. What is a butterfly?

##### 1. insect

- a. an insect has 6 legs, 3 main body parts, 2 antennas and most have wings.

#### B. How did it get the name “Butterfly”? Why is *butter* in the name?

##### 1. “Buterfloege”

- a. Olde English for “butter” and “flying creature”
- b. Believed to be named for the butterfly-yellow butterflies common in England

Vocabulary list (underlined words)  
Either write out the words in advance or have an assistant write them down as you discuss them.

Show 2 photos of yellow butterflies

#### C. Do you have a family name? Scientists give insects a family name, too.

##### 1. The family name or scientific name for butterflies is

##### Lepidoptera.

- a. It means “scaly winged”
- b. It includes butterflies and moths
- c. A Lepidopterist is a scientist who studies butterflies
- d. Can you guess how many kinds of butterflies there are?
  - 1. There are 15,000-20,000 different species
  - 2. What’s another word for “species”?
    - a. “kind” or “type”

### II. Habitat

#### A. Where do butterflies live?

- 1. They live in mountains, deserts, forests, prairies
  - a. Everywhere but Antarctica (show on map)
- 2. Which area of the world do you think has the most butterflies?
  - a. The rainforest (show area on map)

World map

### III. Physical Features/Anatomy

- |   |  |
|---|--|
| <p>A. Many colors and patterns<br/>(pass out cardboard butterflies)</p> <ol style="list-style-type: none"> <li>1. Ask kids to describe what they see</li> <li>2. There are many different colors and patterns, but the patterns are all <u>symmetrical</u> <ol style="list-style-type: none"> <li>a. Symmetrical means the same on each side (ask kids if they can see the difference between the 2 posters)</li> </ol> </li> <li>3. Here are some more butterflies (open up the tri-fold poster). Notice how there are many colors and patterns but they are all symmetrical.</li> </ol>   | <p>Cardboard butterflies (36)</p> <p>Small posters of symmetry and asymmetry</p> <p>Big, tri-fold poster of butterflies with plants on the side panels</p> |
| <ol style="list-style-type: none"> <li>4. Butterflies come in many different sizes, too           <ol style="list-style-type: none"> <li>a. Largest is the Queen Alexandra               <ol style="list-style-type: none"> <li>1. Lives in Papua New Guinea</li> <li>2. 11 inch wingspread (show on ruler)</li> </ol> </li> <li>b. Smallest is Western Pygmy Blue               <ol style="list-style-type: none"> <li>1. Southern U.S.</li> <li>2. 3/8 inch (1cm) wingspread (show on ruler)</li> </ol> </li> </ol> </li> </ol>   | <p>Photo of Queen Alexandra, Ruler</p> <p>Photo of Western Pygmy Blue, Ruler</p>   |
| <p>C. Anatomy</p> <ol style="list-style-type: none"> <li>1. Like all insects, a butterfly has 3 main body parts       <ol style="list-style-type: none"> <li>a. <u>Head</u></li> <li>b. <u>Thorax</u></li> <li>c. <u>Abdomen</u></li> </ol> </li> <li>2. Legs       <ol style="list-style-type: none"> <li>a. 3 pairs of legs (So how many total legs? 6)</li> <li>b. Feet called <u>tarsi</u></li> </ol> </li> <li>3. Wings       <ol style="list-style-type: none"> <li>a. 2 pairs (So how many total wings? 4)           <ol style="list-style-type: none"> <li>1. hindwings and forewings</li> </ol> </li> <li>b. Covered with thousands of tiny scales           <ol style="list-style-type: none"> <li>1. overlapping like shingles on a roof (demonstrate with hands overlapping)</li> <li>2. 120,000 scales per square inch</li> </ol> </li> <li>c. Their wings are delicate. We can damage them if we touch them.</li> </ol> </li> </ol> | <p>Big poster of Monarch with body parts labeled</p>   |

- 4. Proboscis
    - a. coiled, but stretches out to drink nectar (demonstrate with prop)
    - b. works like a straw
  - 5. Eyes
    - a. compound
    - b. thousands of tiny lenses, so see everything as many little pictures (pass around prism props)
    - c. 180 degrees of sight, bulging out to see further on each side than humans can
  - 6. Antennae
    - a. thin with knobs at ends
    - b. help with balance and orientation
- D. Differences between moths and butterflies
- 1. Moths have a plumper body
  - 2. Moths are nocturnal vs. diurnal
    - a. active at night vs. active during day
  - 3. Moths rest with wings down (vs. up in butterflies)
    - a. have kids demonstrate (split room in half)
  - 4. Moths make a cocoon vs. chrysalis in butterfly
  - 5. Moths antenna are feathery at the end vs. thin knobs in butterflies
  - 6. Moths tend to be less colorful (but not always)
  - 7. Many more types of moths than butterflies
  - 8. 90% of Lepidoptera are moths

#### IV. Life Cycle

- A. Complete metamorphosis (change) -4 stages
- 1. Eggs
    - a. single egg on bottom of leaf
    - b. approx. 1 mm in size
    - c. “glued” on with special substance
  - 2. Larva/caterpillar
    - a. growing stage – “munch a bunch”
    - b. eat shell first, then plant they are on
    - c. molting (shedding skin when outgrow it)
    - d. instar
      - 1. interval between molts
      - 2. Monarchs have 5

“Proboscis”  
prop

Prism props

2 small  
posters  
contrasting  
moths vs.  
butterflies

Posters of  
life cycle (use  
whichever  
best fit your  
class’s age) or  
use stuffed  
animal props  
“eggs”, etc...

3. Pupa/Chrysalis
4. Adult Butterfly
5. Monarch development from egg to adult is 30 days
6. Let's see if we can put these stages in the correct order. (Hand out the 5 cards to 5 different students and ask their classmates to help them get in the right order in front of the class. There are 3 different sets of cards so you could have several groups).

5 cards  
with  
photos  
of life-  
cycle  
stages

#### B. Lifespan

1. How long do butterflies live?
  - a. Monarch
    1. summer generations live 2-5 weeks
    2. early autumn generations live 8-9 months

#### V. Behavior

- A. How do butterflies eat?
  1. caterpillars have chewing mouthparts
  2. adult butterflies have sucking mouthparts
    - a. sip flower nectar which is rich in necessary sugars
- B. With what part of their body do they smell?
  1. antennae
- C. With what part of their body do they taste things?
  1. many taste leaves with feet
- D. How do they see?
  1. eyes made of many simple eyes, mass of tiny pictures, bulging shape to see toward the sides
- E. Flying
  1. 2 pairs of wings
  2. wings need to be warm and dry to fly
- F. Basking
  1. Cold-blooded, so need sun to warm wings
  2. Bask in sun on warm rocks
- F. Social Behavior
  1. puddle clubs
    - a. congregate at edges of mud puddles or wet sandy areas
    - b. receive fluids rich in salts, minerals and nutrients
- G. Survival/Protection
  1. protective coloration/ camouflage (show poster)
  2. warning coloration/chemical defenses
    - a. Monarch tastes terrible to birds and can actually be poisonous, so birds avoid

Small poster  
of camouflage  
examples

3. mimicry

a. Viceroy mimics Monarch (look very similar) so birds avoid it, too.

1. Viceroy has a stripe

Monarch does not

2. Show 3<sup>rd</sup> photo. Which is this?

(Monarch – no stripe)

b. Some moths look like other things to scare predators away (show photo of “eye”)

Photos of Viceroy and Monarch

Photo of moth that looks like big eye

H. How do butterflies in cold climates prepare for winter?

1. hibernation

a. hibernate means to shut down, slow down

b. may hibernate in any stage. In which stage do you think they usually hibernate?

1. pupa stage

c. produce glycols (like antifreeze in our cars)

2. migration

a. migrate means to move or change locations

b. Monarch migration

Monarch migration map or big map

1. autumn generations live longer than summer ones

2. travel up to 2000 miles

3. From Canada and northern U.S. to Florida, California and Mexico

4. Monarchs, Painted Lady, Cabbage Butterfly, Red Admiral and Clouded Yellow all migrate

VI. Interdependence of Life (Human/Plant/Butterfly Interactions)

A. Changes in butterfly populations

1. Many butterfly populations are decreasing. Why?

a. facing challenges of chemical use (pesticides) and decrease in their food sources

B. Why do we want butterflies to stay around? Beneficial insect

1. pollination necessary for many plants to produce fruit and seed

Hand puppet, silk flowers

2. pollen grains cling to butterfly and are distributed when they fly to another flower, which helps the flower reproduce and multiply (demonstrate butterfly flying from one flower to another with hand puppet and silk flowers)

C. Caterpillars can do some damage, however

1. chewing mouthparts, can damage cabbage, etc...

D. Pesticides or other chemicals

1. can make butterflies sick or kill them

E. Human behavior/ means of attracting butterflies. How can we help butterflies and attract them to our yards or parks or schools?

1. Plant host plants

- a. many butterflies have one kind of plant that they really like or need
- b. natives are especially attractive
- c. leave “weeds” like milkweed which Monarchs need

2. Other Habitat requirements

- a. shallow water with gravel for puddle clubs and necessary minerals
- b. rocks in sunny places to warm wings
- c. shelter from winds
- d. put out over-ripe fruit

3. Reduce or eliminate chemical use

Poster of favorite plants,  
Poster of Alfalfa butterfly on Aster,  
Small poster of Monarch caterpillar on Milkweed

VI. Butterfly Identification Activity if time available

- A. Review Monarch vs. Viceroy on poster

Matching poster and/or small plastic butterflies

VII. Read book if time available

Several book options

VII. Hand-outs

- A. Butterfly Garden Suggestions
- B. Coloring Sheet
- C. Life cycle activity sheet
- D. Butterfly vs. Moth: Do you see the difference?

Note: This outline was prepared by Robyn Swenson. Feel free to call with questions.

