

Butterfly Wingspan Graphing

Grade Level: 4-8

Lesson Overview

Students will use data from a chart to make a bar graph. They will also work with fractions, decimals and percentages.

Student Objectives

1. Create a bar graph using information provided in chart form.
2. Use calculations to answer questions.
3. Convert numbers from fractions to decimals and percentages.
4. Design a problem of their own using the given data.

Materials

- ✓ Butterfly Wingspan Graphing Worksheet
- ✓ graph paper

Vocabulary

- **wingspan** - the linear distance between the tips of wings in a fully extended position.

Background Information

A butterfly has four wings, two forewings and two hindwings. They are attached to the second and third thoracic segments. Strong muscles in the thorax move the wings up and down in a figure-eight pattern during flight. The wings are covered with scales, which are responsible for the butterfly's coloring. If the fragile wings fray or are torn, they do not repair themselves.

Procedure

1. Allow students time to complete Butterfly Wingspan Graphing Worksheet.
2. Utilizing student questions from #5 on the worksheet, put together a new worksheet to distribute to students.

Additional Resources

- <http://gardenswithwings.com/identify-butterflies.html> easy to use site on butterflies

- https://www.nisenet.org/site/default/files/catalog/uploads/3408/ZoomButterfly_Poster_May10.pdf Monarch butterfly wing in microscopic detail
- <http://www.agintheclassroom.org/TeacherResources/TeacherResources.shtml> Illinois Agriculture in the Classroom interactive Pollinator Ag Mag & Reader

Standards

Illinois Mathematics Standard

7.NS.2b – 2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

Illinois English Language Arts Standard

RI 1 Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

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These mAGic lessons are designed to bring agriculture to life in your classroom. They address the Illinois Learning Standards in math, science, English language arts and social studies.

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Name _____

Butterfly Wingspan Graphing

Using the information on insect wingspans, make a bar graph showing the different wingspans. When your graph is completed, answer the questions below, remember to show your work.

Butterfly Name	Wingspan in inches
Monarch Butterfly	4.0
Viceroy Butterfly	2.8
Red Spotted Purple Butterfly	1.0
American Painted Lady Butterfly	2.0
Western Pigmy Blue Butterfly	0.6
Spice Bush Swallowtail Butterfly	3.5
Giant Swallowtail Butterfly	4.4

- List the butterflies in order from largest to smallest wingspan.
 - a.
 - b.
 - c.
 - d.
 - e.
 - f.
 - g.
- What is the difference between the wingspan of the Giant Swallowtail and the Viceroy?
- How many of the Western Pigmy Blue Butterflies would need to be lined up wing to wing to measure 12 inches?

4. Show the ratio of the butterfly wingspans by filling out the chart below:

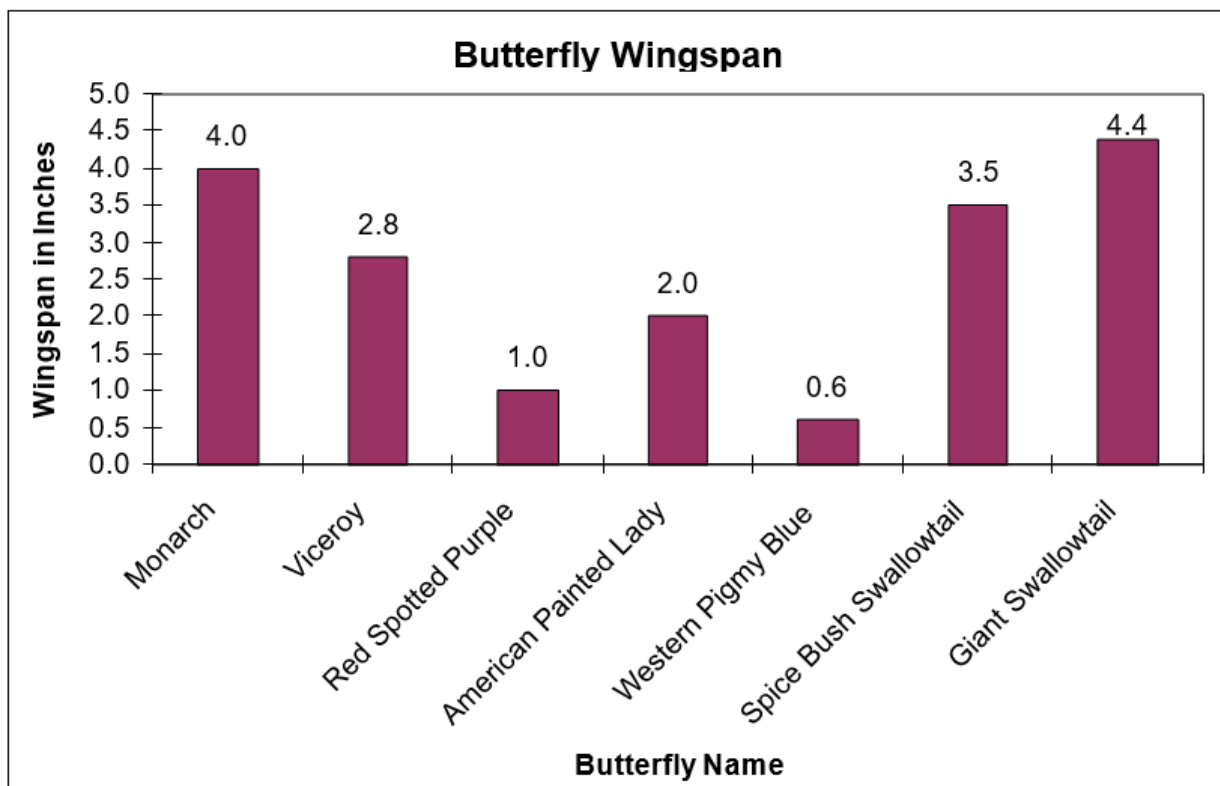
Butterflies	Fraction/Ratio	Decimal	Percentage
Red Spotted Purple to the Monarch			
American Painted Lady to the Monarch			

5. Write your own problem using the butterfly data. Be sure to answer your problem and show your work.

Butterfly Wingspan Graphing ANSWER KEY

Using the information on insect wingspans, make a bar graph showing the different wingspans. When your graph is completed, answer the questions below, remember to show your work.

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Western Pigmy Blue Butterfly	0.6
Spice Bush Swallowtail Butterfly	3.5
Giant Swallowtail Butterfly	4.4



1. List the butterflies in order from largest to smallest wingspan.
 - a. **Giant Swallowtail**
 - b. **Monarch**
 - c. **Spice Bush Swallowtail**
 - d. **Viceroy**
 - e. **American Painted Lady**
 - f. **Red Spotted Purple**
 - g. **Western Pigmy Blue**

2. What is the difference between the wingspan of the Giant Swallowtail and the Viceroy?

4.4 – 2.8 = 1.6 inches

3. How many of the Western Pigmy Blue Butterflies would need to be lined up wing to wing to measure 12 inches?

12 / 0.6 = 20 butterflies

4. Show the ratio of the butterfly wingspans by filling out the chart below:

Butterflies	Fraction/Ratio	Decimal	Percentage
Red Spotted Purple to the Monarch	1/4	.25	25%
American Painted Lady to the Monarch	2/4	.50	50%

5. Write your own problem using the butterfly data. Be sure to answer your problem and show your work.

Answers will vary.

Name _____

