LONGWOOD GARDENS

# Pollinator Math in the Gardens

**At a Glance**
Students will discover different types of pollinators while using math skills to calculate and problem solve.

**Grades**
3-8 (Modify as desired)

**Materials**
colored pencils, pencils and clipboard

**Objectives**
Students will observe various pollinators in action.
Students will record data and draw conclusions.
Students will use math skills to solve word problems.

**National Standards for Mathematics**
Standard 1: Uses a variety of strategies in the problem-solving process.
Standard 3: Uses basic and advanced procedures while performing the processes of computation.
Standard 6: Understands and applies basic and advanced concepts of statistics and data analysis.
Standard 7: Understands and applies basic and advanced concepts of probability.

**Resources**
www.coevolution.org
www.fs.fed.us/wildflowers/pollinators/index.shtml

Name_____

**Directions**

1. Search for pollinators in the garden areas listed below.
2. Spend ten minutes in each area.
3. Record your findings on each graph by shading in the boxes.
4. Use a Longwood Gardens guide map to find these locations.

**You will visit these four distinct areas**

1. Meadow Garden
2. Rose Garden
3. Idea Garden
4. Flower Garden Walk

# Meadow Garden

| Number Observed | | | | | |
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| | **Bee** | **Butterfly** | **Bird** | **Beetle** | **Fly** |
| | **Pollinator Type** | | | | |

# Rose Garden

| Number Observed | | | | | |
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| | **Bee** | **Butterfly** | **Bird** | **Beetle** | **Fly** |
| | **Pollinator Type** | | | | |

# Idea Garden

| Number Observed | | | | | |
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| | **Bee** | **Butterfly** | **Bird** | **Beetle** | **Fly** |
| | **Pollinator Type** | | | | |

# Flower Garden Walk

| Number Observed | | | | | |
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| | **Bee** | **Butterfly** | **Bird** | **Beetle** | **Fly** |
| | **Pollinator Type** | | | | |

Which pollinator was observed the most in each garden area?

Meadow_____

Forest Walk_____

Rose Garden_____

Idea Garden_____

2. Now look at your results for the Meadow Garden. How many bees did you observe in ten minutes?_____ How many bees do you think you would see in 60 minutes? Show your work.

3. How many flies did you observe in the Rose Garden?_____ If a fly visits 15 flowers in ten minutes, how many flowers will it visit in 1 hour?

4. If a honeybee beats its wings 60 times per minute, how many times will it flap its wings in 10 minutes? In 1 hour? (Fact: Honeybees beat their wings 11,400 times per MINUTE!)

5. If a butterfly lands on a flower and has enough pollen on itself to pollinate three flowers, how many flowers would get pollinated if:

The butterfly gets pollen from 5 flowers?

The butterfly gets pollen from 10 flowers?

6. A bee can travel at about 15 miles per hour visiting 75 flowers. How many miles would it travel in 12 hours? How many flowers would get pollinated in 12 hours?

7. How many miles would a bee travel in a day? Or a week?

**Follow Up**
Use the information you gathered from Longwood Gardens to write some of your own word problems. Compare the different garden areas and different pollinators you observed today. Exchange word problems with a classmate and solve.