

THE GARDEN

Teaching Guidelines

Subject: Mathematics

Topics: Algebra—Expressions and Equations

Grades: 4 - 8

Concepts:

- Understands the concept "variable"

Materials: None

Procedure: This activity is best done by students individually.

Review the concept of “variable,” then distribute the handout. Discuss it with the class and ensure that students understand what they are being asked to do.

- 1. The area covered by the garden
- 2. The number of people who visit the garden each day
- 3. The amount of sunlight that falls on the garden each day
- 4. The number of hours the garden is open each day
- 5. The amount of water in the pond
- 6. The amount of plant food the gardeners use each week
- 7. How much money each person pays to visit the garden
- 8. The length of the path through the garden
- 9. The number of bees in the garden
- 10. The amount of rain that falls on the garden each day

*The amount of water in the pond is a variable if evaporation and rainfall are considered. However since it stays almost the same at all times some students may feel it is not really a variable. This is a good point for discussion.

†There is not enough data given to know if the gardeners give the plants a different amount of plant food each week. Students with experience in gardening will probably realize that this is not likely to be constant and so would label this as a variable. But one might also assume that the amount is the same each week, and so this is not a variable. Either of these answers might therefore be considered correct, but the most correct answer is “don’t know.”

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The Garden

The garden in the picture below is open every day from 10:00 a.m. to 5:00 p.m. It costs \$2.00 per visitor to walk through the garden.



Which amounts are variables? Write a "V" next to them.

- ___ 1. The area covered by the garden
- ___ 2. The number of people who visit the garden each day
- ___ 3. The amount of sunlight that falls on the garden each day
- ___ 4. The number of hours the garden is open each day
- ___ 5. The amount of water in the pond
- ___ 6. The amount of plant food the gardeners use each week
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