



How Does My Garden Grow?



So, here is the issue: I have a circular garden around a tree. Each year, when I edge the garden (cut around the edge with a shovel to neaten it up) my husband, Mr. Walker, says that I add another 3 inches to the diameter, and if I keep on going in this manner, my garden will soon be over 20 feet around!

I told him he was full of hooey. It would take a long time for that to happen. I should know, I teach math! (Plus, don't mess with me when I am gardening!)



Here are the facts:

In 2005, the garden had a diameter of 50 inches and a circumference of about 13 feet.



Here are the questions:

1. What year will my garden be, or exceed, 20 feet in circumference?
2. What will the diameter be at that time?

Create a data table with the year, the diameter, and the circumference of my garden from the year 2002 until my garden is gargantuan.

Graph this information, using the year and the circumference. Space the years equally apart on your graph. Which variable is dependent? Which is independent?



Turn in:

- ✓ Your data table.
- ✓ Your graph.
- ✓ You may include pictures if you desire
- ✓ A friendly, and polite, letter to Mr. Walker explaining your findings.

For the Teacher

First and foremost, solve this problem yourself. Be ready to support your students.

Consider the questions:

- How will I be engaged and monitor the progress of my students while they complete this problem.
- Who is likely to need more information or individual guidance? How can I provide that guidance without taking away their joy of accomplishment and autonomy?
- Decide how you will grade, score, or deem successful completion of this project. Share this criterion with students BEFORE they begin.
- How can this project be even more enjoyable?
- Who can we share the results with or engage with the process?
- How open am I to a variety of results and solutions?

Main content:

- Measurement inches and feet
- Elements of a circle: radius, diameter, circumference
- Formula for circumference based on both radius and diameter

Minor content

- Graphing
- Dependent and independent variables
- Constructing a data table
- Modeling
- Organization of work

Students should have exposure at some level to all content above. The teacher should be prepared to teach mini-lessons on areas that appear to be in need of refreshing.