

How Does My Garden Grow?

Grade Level: K-3

Approximate Length of Activity:

A garden whether planted outside in a bed or in containers is an ongoing project that spans 8-12 weeks. As you plan your garden be aware of the time involved. It is a lesson of observation and caring. Tending the garden should be weekly. Gardens can be planted in the fall and in the spring, so you can choose which season would be best for your class.

Objective

Teacher

1. Help students grow a garden.
2. Encourage students to develop writing skills through a journal response.

Students

1. The student will prepare, care for and harvest a garden.
2. Record their understanding by responding through writing.

Michigan Content Standards: (Language Arts) W.GN.00.03; W.GN.00.04; W.PS.00.01; R.WS.00.10; W.GN.01.03; W.AT.00.01; W.GN.01.01; W.AT.01.01; W.PS.01.01; R.WS.01.10; W.PR.01.02 W.GN.02.03; W.PS.02.01; W.AT.02.01; R.WS.02.10; W.PR.02.03; W.GN.03.03; W.PS.03.01; W.AT.03.01; R.WS.03.08; W.PR.03.03

Vocabulary

- **Vegetable**- any plant whose fruit, seeds, roots, tubers, bulbs, stems or flower parts are used as food.
- **Garden**- a plot of ground usually near a house, where flowers, shrubs, vegetables, fruits or herbs are cultivated.
- **Seed**- a product from the plant that once set in the ground sprouts to develop another plant.
- **Fertilizer**- a substance that is used to make the crop grow better.

Background

For help in establishing a garden, contact your Michigan State University County Extension Educator. They should be able to tell you how to begin and provide literature to explain the process. They also can put you in contact with the Master Gardener program.

- **Beds**- Normally, a bed 4' x 8'. The bed must be in full sun because all vegetables need sun and must have full sun to produce the quality needed. Use containers if beds are not feasible. ("How Does My Garden Grow?" booklet for suggestions, included)
- **Seeds**- Local feed stores and garden supply centers are a good source for help, as many of them will donate seeds and plants if they know it is for a school. Students can also bring containers, seeds, and/or plants.
- **Garden Tools**-They will also need a garden tool that can be as simple as a large spoon from home. When planning where to place your garden outside, be sure to place it where water is accessible.
- **Planning**-It is a good idea to make a diagram of your garden or containers, children are usually very eager to work and tend the garden, which leaves less work for the teacher.
- **Management**-It is necessary to establish garden rules and to post them in the classroom or outside near the garden.
- **Resources**-Another source for help would be to contact your local Master Gardener program, through the County Extension Service. Many of them enjoy coming out to the schools and helping with the garden. They will also help with the planting and help instruct the students on caring for their garden.

Materials Needed

- Containers for container gardens or a garden bed for outside
- "How Does My Garden Grow?" Booklet one per student (included in this lesson)
- Hose
- Garden tools
- Gloves
- Seeds and Plants

Activity Outline

1. Introduce new vocabulary.
2. Have a class discussion to brainstorm plans about the garden, where to establish the garden and if containers should be used.
3. Decide what vegetables will be planted and which students will be planting. Put all of this information on a chart and keep it in the classroom.
4. On the day of the planting, wear appropriate clothing, have tools, seeds and plants as needed.
5. Water daily at first, then as needed.

Discussion Questions

1. Do you have a garden at home?
2. What natural resources will we use when caring for our garden?
3. Do farmers have gardens?



Related Activities

1. Keep a plant diary. Chart the growth, temperature, rainfall, and when plants begin to flower and fruit.
2. For math, measure the growth of each plant. Also, calculate the area and perimeter of the garden.
3. Read “Little House in the Big Woods” (not included), which explains the need for a large garden in pioneer times.
4. Plan a trip to a Living History farm to observe large gardens and their daily use.
5. When vegetables are ready to harvest, plan to cook vegetable soup. Have the students harvest, wash and prepare the vegetables.
6. Write a composition comparing and contrasting planting a garden and field crops.

Book Resources

1. “Gardening Wizardry For Kids” by Patricia Kite
2. “The Garden of Happiness” by Erika Tamar

Ideas and Suggestions

Designing Your Garden Plot

Planning your garden on paper is a good way to begin your growing season. Use graph paper to lay out your garden plan. Remember that gardening in beds instead of rows does not necessarily require the conventional rectangular bed. If you have a little piece of available land in a triangular or circular shape, go ahead and prepare your soil. After all, geometry doesn't mean a thing to a radish. Mark each bed on the paper, allowing room for pathways. That way, you can work around each bed easily without compacting the soil.

Put sun-lovers like tomatoes, corn, melons, peppers and cucumbers where the sun lingers. Put the shade-tolerant crops, or those that tend to bolt, in the shadier places. To conserve space in your garden, plant sprawling vegetables like melons, squash and pumpkins on the ends of the beds bordering the garden, where they can get the growing room they need while using very little bed space.

Covering the Basics

Regardless of your garden's final form, you'll need to pick a location that receives a minimum of six to eight hours of sunlight each day. Make sure it's set away from trees or other vegetation that will leach soil nutrients away from your plants. Trees can take sustenance from the soil in an area as far reaching as the tree's widest branches. Remember that vegetables planted in beds make better use of your available space. They can be tucked into most areas that get enough sun, such as flower borders, window boxes, or on trellises or fences. Cucumbers grown on a fence, for example, need a space only 2.5 feet wide.

Calculate your planting schedule and write on your garden plan the dates you will set out to seed and plant and begin harvest. Keep it as a reference for next year's planting dates and to manage crop rotation.



Raised Beds

The raised beds work well for student gardens. A system of beds allow the student gardeners to concentrate in small areas, resulting in efficient use of soil amendments, an ideal environment for vegetable growth and a whole lot less work for everyone.

Ideal size for the raised beds is 4' x 8'. This size allows the students to work from either side of the bed, without having to walk on the soil. Borders for the raised beds can be used railroad ties, landscape timbers, 2" x 8" or 2" x 10" boards.

Several raised beds can be constructed and a group of students assigned to each bed.

Soil Preparation

Soil preparation is the key to successful gardening. Soil preparation should be started in the fall by tilling to loosen the soil. It also helps to till in organic matter such as leaves, compost, grass clippings, etc. This organic matter will rot over the winter enriching the soil. A roto-tiller is the fastest and easiest way to prepare the soil. In the spring, the garden should be tilled again, making sure there are no dirt clods remaining. If a tiller is not available a spading fork can be used to work the soil and prepare a smooth, weed free, clod free and rock free seed bed. A good, all-purpose fertilizer can be worked into the soil at this time.

Planting

Check with your County Extension Educator about planting times for different vegetables. This should be done in the fall or winter for spring planted gardens. Check with neighborhood feed stores and garden supply centers. They might provide seeds and in some cases maybe even gardening tools and supplies for a school garden.

After the garden is planted, the soil should be kept moist, not wet, until the seeds sprout. Students should be given the opportunity to watch and measure the progress of their garden. They should keep it weed-free. (Make sure they know the difference between their vegetable plants and weeds.)

Your Michigan State University County Extension Educator and your local Master Gardener volunteers are great sources of advice and assistance.

Acknowledgement: Adapted from "How Does My Garden Grow?" Texas Farm Bureau Agriculture in the Classroom, Food and Fiber for the 21st Century.

What to Plant?

Let me suggest...

pumpkins

tomatoes

squash

cucumbers

peppers

After discussing the vegetables that would grow well in our garden project, we examined the seed packets to determine the specific planting directions. I have chosen to plant

_____.

I need to follow these points when planting:

What Container?

Vegetables can be grown in many types of containers. Large cans, plastic cartons or buckets can be used for larger vegetables. Small cartons or cans may be used for small vegetables such as radishes. The container should have drainage holes for water drainage.

Write a paragraph telling about the container you chose. Be sure to include the steps you took to prepare the container for planting.

How to Plant?

Most plants sowed from seeds will need to have several seeds planted per container. Vegetables started from seedlings, small plants, will need to be planted alone in one container. Most vegetables are planted $\frac{1}{4}$ to 1 inch deep. Refer to the back of the seed packet for specific planting directions.

Write a paragraph explaining the steps for planting your vegetables. Be sure to include the variety of your plant, the number of seeds planted, the depth the seeds were planted, care the plants may need, and how long it will take to grow the vegetable plants.

And watering?

When soil is dry just below the surface, the plant needs to be watered. Containers kept outdoors may need watered every other day. Water slowly and be sure to stop when the water starts to drip from the container's drainage holes.

If it does not rain for five days and your vegetables are planted outside, tell how you will take care of the plants.

And sunlight?

Many vegetables grow well in full sunlight. If the plants needs shade, they grow well in fall and early spring. Containers can be placed in a sun-filled window sill or porch.

Be sure your vegetables have plenty of sunlight. Write a descriptive paragraph telling about the appearance of your plant.

How to Feed?

Plants need food and fertilizer for good growth. The fertilizer or plant food should be mixed by package directions. Be sure to read them carefully. Mix the plant food in the top of the soil. Water the plant after feeding.

Compare your vegetable plants before fertilizing and after fertilizing. Write a contrast and comparison paragraph about their appearance. You may include a drawing on another page.

What about bugs?

If plants are infected with insects or diseases, there are many ways to treat. Pesticides can be used for plants that contact insects.

Research a common pest that can cause damage to your plant. Write a paragraph about the pest. Include a drawing of the insect in the box.

The growing time?

Chart your plant's growth.

Date	Height	Increase
3-10	½ inch	
3-16	2 inches	1 ½ inches of growth



And the harvest, at last!

Vegetables are ready to harvest after several weeks. Compare your vegetables to the ones you see in the store or at a vegetable stand.

After your plant has produced a harvest, write a paragraph describing the fruit of your plant. In a second paragraph, tell how this fruit can be used if it is grown in large amounts.
