

Connecting Gardening to School Curricula – Some Ideas to Get You Started - Shelley Mitchell, Ph.D.,
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Math

Measure the thickness of a seed, circumference of a fruit, length of a root, perimeter of a garden.

Weigh a handful of beans, a cup of potting soil (wet vs. dry), a pumpkin.

Calculate the area of a raised bed, the volume of a raised bed, the average strawberry weight, the gallons/minute of a faucet at different settings, the percentage of the whole school garden planted in tomatoes, the percentage of seeds that germinated.

Graph the growth rate of a seedling, the number of days from seed to mature fruit for different plants.

Fractions – use a paper towel (usually 12" x 12") and fold it to show how to evenly space seeds for planting (16 radish or carrot seeds per square foot---fold in half 4 times to get 16 spaces, plant one seed per space; 9 bean or spinach seeds per square foot; 4 bok choy or lettuce seeds per square foot; 1 squash seed per 4 square feet!

Rank the popularity of vegetables in a class.

Look up the length of time it takes different crops to bear mature fruit. If you want to eat tomatoes (potatoes, lettuce, beans, etc.) on August 1st, when should you plant them?

Language Arts

Come up with a list of rules for the garden, then create a poster for display.

Keep a garden journal—What did you do today? What are your plans? What is the weather like? What is growing the fastest?

Read a book related to gardening, such as *Plantzilla*; *Water, Weed and Wait*; *Nibbles: A Green Tale*; *The Secret Garden*; *Weslandia*; *The Gardener*

Describe a day in the life of a vegetable plant at your school.

Social Studies

Use pieces of history or culture to garden—plant a garden in a wagon wheel or an old wheelbarrow

Grow something from another culture -- plant rice (it doesn't have to grow in water, but water keeps the weeds from growing—use clay soil to build a little rice paddy, or plant rice where water is always standing), try a '3 Sisters' garden (squash, beans, corn), determine what crops people in the Middle Ages would have grown and plant them

Grow potatoes and study the Irish Potato Famine—cause and effects

Grow rye and study ergotism – ergot is a fungus that grows on rye, and ergotism is most likely what caused all the bizarre behavior that led to witch trials around the world (like Salem)

Grow wheat and separate the wheat from the chaff. Just cut the heads off, have the students 'knead' through all the wheat heads, and then take it outside and hold handfuls of it over a bowl, and let drop. On a windy day, the chaff will blow away while the wheat falls into the bowl. Kids LOVE this.

Grow corn and pound it into cornmeal. Mix together cornmeal, water, and salt in a medium saucepan. Cook over medium heat, stirring frequently, until mixture thickens, about 5 to 7 minutes. To use as cereal, spoon mush into bowls and serve with milk and sugar, if desired.

Research how farming methods have changed over millennia and on different continents.

Look through a farmer's almanac. What is the purpose of it? What information can you find?

Find some bits of garden wisdom (putting banana peels under rose bushes, adding Epsom salt when planting, etc.). Where did these originate? Try some of them and see what happens!

Science

Look for evidence of insects on leaves, under rocks, etc. See if you can find eggs, larvae, nymphs/adults, etc. Are these beneficial insects to have in the garden or not? How can you safely control them?

Grow one type of plant in different conditions (very wet, very dry, in the shade, in full sun, fertilizer or no fertilizer, etc.) and see what happens.

Start a compost pile. Watch to see what visitors appear (insects, birds, mammals, worms, etc.). Time how long it takes different materials to decompose. Take the temperature of the compost pile every day—what happens? Why?

What kinds of animals are attracted to different kinds of plants and flowers?

Plant a seed and draw what you observe every day.

Dissect some flowers and label all of the parts. What does each part do?

Art

Design seed packets and collect seeds for next year's crops.

Take everyday objects and make wind chimes for the garden.

Paint rocks and use them to make a garden border.

Take a piece of painter's tape (about 6 inches long) and collect flower petals on it. Put the tape on watercolor paper (with the flower petals sandwiched between the tape and the paper) and use a rubber mallet to pound on the tape. Watercolor painting via pounding!

Collect paint chips from a hardware store. See if you can find matching colors in and around the garden.

Music

Plant a garden that makes sound. Ornamental grasses rustle in the wind. Dried seed pods make good shakers (especially honey locust tree seed pods). Dried gourds turn into maracas.

Place wind chimes in the garden, or hang tin pans and spoons for music play (try wooden and metal spoons for variation).

Make bird feeders to attract natural musicians!

Family and Consumer Sciences

Learn how to preserve the garden harvest – canning, drying, pickling, etc.

Make a salad from the garden harvest to share.

Determine the nutritional content of different vegetables in the garden.

Try growing your own fresh herbs for use in the kitchen.

Learn about the different vitamins provided by different vegetables—what do the different vitamins do for our bodies?

Not all plant parts are edible, and some are edible only after cooking or when ripe. Research solanine and find out why you shouldn't eat green potatoes.

Tomatoes were assumed to be poisonous by some people for a long time because they are in the nightshade family. What other foods are in the nightshade family? Why do plants make poisons?

Find out what plants were used by early settlers for medicinal purposes. Plant a medicinal garden to showcase those plants. Make signs explaining what each was used to treat.

Luffas that people use during bathing are actually a type of gourd. You can grow your own luffas! Directions on making them ready for use are online at <http://www.luffa.info/luffaharvest.htm>

Physical Education

Learn about different tools used in the garden, and research ergonomic versions. How do these modified tools help prevent injury?

How can you adapt a garden to help those with disabilities participate? (Elevated beds, metal rods delineating growing spaces for each crop, longer tool handles, etc.)

Which muscles are you using when you hoe, dig, plant, etc.?