



Suggested Interdisciplinary Extensions

Resource Sheet

The following lists different ways to integrate your garden into various disciplines. Some of the following suggestions are covered more in depth in our curriculum (found at: www.dug.org/school-garden-curriculum)

Math

Teaching math in the school garden provides hands-on interactions with the theories taught in the classroom in a fun experience that students will remember.

- Measure plots and layout planting areas.
- Estimate and then measure the time of plant growth. Include graphs or charts of results.
- Estimate the space needed between transplants or direct-seeded crops.
- Further develop students' understanding of fractions by using measuring cups and spoons and having the class cut fruits and veggies into fractions (e.g. cut the apple into eighths).
- Create math problems while learning how to read nutrition labels.
- Sort seeds and determine the percentage/fraction of each seed in a mix.
- Look for geometric shapes and lines of symmetry in the garden.
- Graph how many of certain types of plants there is in the garden/school yard.
- Calculate germination rates.
- Adapt recipes for different amounts of people.
- Create a budget for the garden or a recipe. Create a list of needs for the garden or recipe and research prices in a catalog to determine the costs.
- Have a plant sale or farmers' market where the students learn money management skills.

Literacy

Relating literacy to the school garden adds a hands-on learning element and provides opportunities for practical application.

- Read stories about garden and nutrition (e.g. The Gardener, Farrar, Straus & Giroux; City Green, HarperCollins; Seed Folks, Paul Fleischman; Good Enough to Eat, Lizzy Rockwell).
- Have students journal on garden observations, charting plant growth, recipes they prepared, thoughts on what they learned, stories they created about working in the garden.
- Create vocabulary words from each lesson.
- Use narrative, descriptive, expository and persuasive styles to write about the garden.
- Compare and contrast different types of seeds and plants. Use a Venn diagram or a chart.

Art

Use the school garden to inspire budding artists to create works of art, music and drama.

- Paint garden murals to mount on the garden fence.
- Paint or draw garden flowers as they bloom in the spring.
- Make crafts out of garden materials (e.g. birdhouses from gourds, wreathes from dried grape vines and flowers, bookmarks or magnets with pressed flowers).
- Create edible food art. Have the class make faces or bugs or other designs with their food before eating them. Create squash carvings, similar to jack-o-lanterns.
- Paint rocks to be used as garden labels.
- Dramatize the life cycles of garden vegetables.

Social Studies

Gardening activities can be used to teach historical events and cultures.

- Many cultures have flowers, herbs and vegetables that are unique to specific cultural traditions, medicines, foods, ceremonies and holidays.
- Grow vegetables, prepare food and learn about different ethnic foods such as:
 - Southern US: collards, mustards, turnips, okra
 - Mexican: chilies, peppers, cilantro
 - Italian: oregano, basil, roma tomatoes
 - Native American: sage, maize, corn, squash, beans
- Grow plants or prepare snacks that correlate with historical events:
 - Immigration – potatoes
 - First Thanksgiving – corn and herbs
 - Age of Exploration – peppers
- Learn about where plants originated from and locate them on the map.

Science

Teaching science curriculum in the school garden is a natural fit. Students are able to hone their scientific skills by observing, classifying, inferring, measuring, predicting, organizing, and interpreting data; forming hypotheses; and identifying variables.

- Earth Sciences:
 - Seed starting in the winter covers plant life cycles, needs of plants and lays the groundwork for spring.
- Recycling and the Environment:
 - Compost is a wonderful, black, sweet smelling soil that crops thrive in. Compost is made from organic material such as leaves, grass clippings and vegetable scraps.
 - Separate lunchroom waste into paper and vegetable scraps (exclude any milk, fat, cheese or meat products) for composting.
 - Collect organic materials such as leaves, grass and twigs for composting.
 - Start classroom worm boxes in the fall, utilizing leaves and newspaper as bedding. Feed worms weekly with non-meat food scraps.

SUGGESTED INTERDISCIPLINARY EXTENSIONS

DENVER URBAN GARDENS' HEALTHY BODIES, HEALTHY GARDENS CURRICULUM

- Utilize washable cutlery and dishes for nutrition and cooking lessons.
- Discuss organic agricultural methods versus chemical herbicides and pesticides.
- Water Conservation:
 - Building soil helps conserve water. Compost helps retain water when added to your soil. Soil amendments also help loosen clay soil and help sandy soil hold water.
 - Digging can aerate your soil and create gaps and cavities to gather moisture. Do not work your soil when it is wet—it will cause rock hard clods. To test soil, dig up a handful and squeeze it, then tap it, if it falls apart easily, it is ok to dig.
 - Discuss water conservation methods such as soaker hoses instead of lawn sprinklers, watering at the base of plants and not on leaves and watering early morning or late evening when water evaporation rates are lower.

Health and Nutrition

The school garden can be used as a hands-on tool to teach nutrition lessons, including the importance of healthy eating and proper food preparation techniques.

- The garden has a natural connection to health and nutrition.
- Use the garden to reinforce increasing consumption of fruits and vegetables.
- Bringing the youth outside to work in the garden provides physical education.
- Study the nutritive values of various fruits and vegetables found in the school garden.
- Conduct a blindfolded taste test between produce harvested from the garden and produce purchased from the supermarket.

Additional Topics

- Sensory exploration by conducting lessons that discuss plants that relate to our senses.
- Taste education
- Working in the garden together provides a great time for students to develop conflict resolution skills, responsibility, team building skills and cultural competency.

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