

Examples of Integrating the School Garden in the Iowa Core

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Science – Life Science

- What are the differences between living and non-living things?
- How does a plant grow? Observe the lifecycle of plants.
- What do plants need to grow? Do all plants need the same thing?
- How do plants use energy from the sun to make food? Discuss photosynthesis.
- Research adaptations of seeds for dispersal and adaptations of flowers for attracting pollinators.
- Observe pollinators in the garden.
- Investigate functions of different plant structures.
- Investigate the impact of environmental changes on plants.
- Study wildlife and insects and their habitats. Where do certain creatures live in the garden? Why?
- Investigate how plants are the primary source of energy for all food chains.

Science – Earth Science

- Create a garden weather station. Record daily measurements and compare conditions with plant growth.
- How are some soils different from others? Compare and contrast the properties of different types of soils (density, air spaces, presence of living organisms, composition, texture, smell, appearance).
- Look for signs of soil erosion in the garden. Simulate soil erosion.

Science – Physical Science

- What is pH? How does it affect plants? Use litmus paper or a test kit to test the pH of different soils. Investigate how plants respond to soils with different pH levels.
- Simulate the water cycle in the indoor garden by covering it with a “dome” of clear plastic. Study and observe the transpiration, evaporation, and condensation of water.
- What are the properties of different types of light? Cover pots with cellophane of different colors to screen out all but one wavelength of light from plants. Observe plant growth.

Math

- Measure the growth rates of plants and display results on different types of graphs. Make predictions regarding future growth.
- Using information from seed catalogs, predict dates of germination and maturity.
- Plan backward from a desired harvest date to determine when each crop should be planted.
- Measure your garden perimeter and calculate the area. Use graph paper to make a map to scale of your garden.
- Calculate amounts of fertilizer to use per quart and per liter of water.
- Count the number of seeds planted and the number of seeds that sprout and calculate the germination rate.
- Measure the height of a group of plants and determine the mean, median, and mode.
- Make a recipe that uses fruits and vegetables from the garden and requires various measuring techniques.
- Chart temperatures of the air and soil in your garden in Fahrenheit and centigrade.
- Determine the weight and volume of soil mix when wet and dry. Determine the volume of soil in a rectangular window box.
- Investigate vegetable prices in a supermarket. Track the amount of produce harvested in your garden and use the market prices to determine the value of your harvest.

Social Studies

- Research on cultural or ethnic differences in food consumption and gardening.
- Research agricultural history and create a timeline of important events.
- Interview local farmers about choice of crops, growing practices, and farm history.
- Study the contribution of Native American foods and other cultures' foods to our history and diet. Grow samples in the school garden.
- Research the histories of classroom garden plants. Discover where they originated, how today varieties differs from the original plants. Locate their origin on a map.
- Create a map of the school garden noting important features and directions.
- Trace the path of a fruit or vegetable from the field to the table.
- Use the classroom garden to complement a study of the influence of climate on food production.

Language Arts

- Keep daily garden journals documenting observations, weather conditions, and classroom activities.
- Research the growing habits of the school garden plants using the Internet and reference material. Create a planting schedule based on the information.
- Write letters to local merchants explaining the school gardening project and asking for donations.
- Write thank you notes to volunteers and garden sponsors.
- Brainstorm different adjectives to describe each plant in your garden.
- Study new vocabulary that relates to plants and gardens.
- Publish a class newsletter with student articles about the garden and distribute it to other classrooms and parents.
- Write step-by-step instructions for common garden activities.

Resources

ISU's Connecting Living & Learning

<http://www.extension.iastate.edu/4h/page/curricula-info-ordering>

National Ag in the Classroom

<http://www.agclassroom.org/teacher/matrix/>

Edible School Yard

<http://edibleschoolyard.org/resources-tools>

Iowa Ag Literacy Foundation

<http://www.iowaagliteracy.org/educator-resources.aspx>

