INTEGRATING THE GARDEN INTO YOUR CURRICULUM

Scientific Method

Students at all grade levels can use the Scientific Method to perform experiments in the garden laboratory. Review the Investigation and Experimentation Standards in Science to meet specific expectations for the grade level.
A brief version of the Scientific Method for different age groups is presented below:

Preschool Scientific Method

- Guess "what if" you changed something plants need.
- Test your idea.
- Share what happened by telling about your experiment or drawing a picture.

Primary Scientific Method

- Observe in the garden
- Ask a question, "What if…"
- Make a guess as to what will happen.
- Test your idea, changing only one thing.
- Record data in a journal.
- Report your findings.

Intermediate, Middle and High School Scientific Method

- Observe and/or research in the library
- Form a hypothesis
- Design an experiment to test your hypothesis
- List materials needed
- Give steps for method, testing only one variable at a time and using controls
- Record the data
- Show the data on a graph
- Analyze the data
- Draw conclusions
- Make comparisons with other similar experiments
- Accept or reject your hypothesis
- Suggest a new hypothesis

Some Ideas to Experiment With in the Garden

- Record growth rates of plants receiving different watering frequencies or amounts.
- Test the effects of using mulch vs. no mulch.
- Observe for changes in the growth rate of plants in response to varying sun exposures.
- Compare the benefits, growth rate, or vigor of plants started from seed vs. those planted from transplants.
- Record plant growth rate and vigor using no fertilizer versus different chemical and organic fertilizers.
- Compare plant responses to varying strengths of fertilizer or time of application.
- Grow plants in different mediums such as soil, sand, water, different potting soils, etc.
- Test organic pest controls identifying and counting insects, etc. before and after use.
- Test the vigor of plants by removing weeds vs. leaving weeds among the test plants.
- Change the environment in a creative, experimental way such as growing half the plants upside down.
- Treat seeds differently prior to planting to see which germinate fastest.
- Determine which plants can be grown hydroponically.
- Use the garden to conduct erosion tests, measure run-off, determine best watering method, etc.

Results from experiments are more reliable if sample size is increased by using multiple seeds or plants for the control and each variable tested and if several test trials are run. The averages and range of results can then be compared and analyzed. Results may be shared as Science Fair exhibits, written science reports, or oral presentations. While experiments are being run, interest in the garden and science can be promoted by setting up signs to share the purpose and design of the experiment with others.

The activities provided in this chapter barely scratch the surface of possible ways the garden can be incorporated into school curriculums. Through research and imagination teachers and students are encouraged to develop new ways to learn to share with others the joy of gardening. Click this link http://www.csgn.org/curriculum.php to go to the California School Garden Network Curriculum for more detailed lessons that are tied to the California State Standards.