

promoting healthy living

A child's mental and physical development is closely tied to good nutrition and healthy eating habits. Health habits also affect children's behavior and social growth. As an educator, you may use numerous teaching strategies to engage students, but you will quickly learn your efforts are ineffective if a child's diet has not met his or her basic nutritional needs. It is important for a child to consume a well-balanced diet and participate in regular physical activity if he or she is to experience success in school. In addition, developing positive eating habits during childhood contributes to optimal health, boosts self-esteem, and decreases the risk of immediate and long-term health problems.

Because children spend much of their time at school, educators like you play a powerful role in influencing students' physical activity and the food choices they make both at school and at home. You can incorporate nutrition education and physical activity throughout the curriculum and reinforce these subjects through hands-on activities that allow students to practice smart decision-making skills. A growing number of children are overweight, unfit, or both, and shortfalls in recommended nutrients and regular physical activity are contributing factors. Thus, it is important for schools to establish an environment that fosters the development of healthy lifestyles.

A healthy school environment provides students with opportunities to gain knowledge of and practice positive eating and exercise behaviors. Schools can use multiple strategies to create this environment, but the school garden has proven to be a very useful tool. It is a fun and effective way to introduce nutrition basics and provide opportunities for physical activity. Research on the health benefits resulting from school garden programs has found:

- › Students who plant and harvest their own fruits and vegetables are more likely to eat them.¹
- › Students with garden experience who participated in a nutrition education program not only ate more fruits and vegetables to begin with, but also demonstrated greater increases in consumption by the conclusion of the program.²
- › Students who participated in classroom nutrition education programs in conjunction with growing vegetables in outdoor gardens demonstrated an increase in nutrition knowledge and improved preference for vegetables.^{3,4}
- › Students participating in a full food system program ("seed-to-table") who made the greatest gains in overall understanding of ecological principles also made significantly greater gains in the number of fruit and vegetable servings they reported eating.⁵





Because of scientific research results like these as well as copious anecdotal evidence, the use of gardens in teaching nutrition has become a more frequent practice. Some of the nutritional concepts introduced and reinforced by the garden are below.

THE IMPORTANCE OF FRUITS AND VEGETABLES

Fruits and vegetables are a vital part of a healthy diet, providing many of the nutrients children need for growth, development, and prevention of chronic diseases later in life. These include essential vitamins and minerals, dietary fiber, water, and phytonutrients. Unfortunately, most children are not eating enough fruits and vegetables to meet the recommendations of the most recent Dietary Guidelines for Americans because they lack access to a variety of fresh produce and because their existing food preferences do not include fruits and vegetables. School gardens help promote fruit and vegetable consumption as a means of shaping food preferences early in children's lives and can serve as a source of fresh fruits and vegetables in children's diets. Students will try foods they would normally turn away because of the additional motivation and excitement of eating something they grew. They also learn the skills to grow their own food, offering a lifetime of potential fresh foods.

THE ORIGINS OF FOODS

Through the garden, children gain an appreciation for the origin of their food. By participating in food production, they discover that food does not magically appear on the table or at the grocery store, but rather is produced on a farm. Because of this experience, they are better able to grasp concepts related to agriculture and its importance to the social and economic makeup of Arizona. This experience also leads to students' appreciation of the work that goes into the food they eat and respect for the environment that allows it to grow.

The garden provides opportunities to teach students about the importance of the soil in the production of food, increasing their esteem for this vital natural resource. They learn how the soil provides important nutrients to ensure that the plants are healthy and productive. Fertilizing your garden replenishes the nutrient content of the soil. Increasing nutrient availability to the plants to help them grow is an essential step in raising healthy, nutritious foods.

HEALTHY FOOD CHOICES

An important part of gardening is learning to meet plants' basic needs for good growth and production. Nourishing your garden replenishes the nutrient content of the soil to grow strong plants just as eating healthy foods helps children grow up healthy and strong. If your students neglect their plants by forgetting to water them or by not providing proper fertilizer, they will immediately see the signs of stress. Compare the basic needs of plants to the basic needs of people. Teach students how important it is for them to nurture their own bodies just as they care for the plants in their garden.

FOOD PREPARATION

Students can grow fruits and vegetables in their garden, and after harvest, they can learn and practice proper food handling techniques, food preparation, and cooking skills. Although the garden will focus on fruits and vegetables, you can use recipes that teach students how to incorporate other healthy foods like whole-grain carbohydrates and low-fat dairy and protein products to achieve a balanced diet. Cooking demonstrations and hands-on cooking activities help students gain experience and confidence in their food preparation skills.

PHYSICAL ACTIVITY

In addition to encouraging good eating behaviors, gardening is enjoyable, relaxing, and a great form of physical activity. A benefit of adding gardening to a regular exercise program is that it is an activity that can be enjoyed for a lifetime. Go for Green (www.goforgreen.ca) provides the following examples of physical benefits of garden activities:

- › Digging involves weight lifting, abdominal stressing, and partial squatting.
- › Pruning makes you hold your arms up while stretching.
- › Weeding involves squats and forearm stretches.
- › Planting requires many muscles to be used, as you dig, mix soil, lift, carry, and backfill, often in a squatting position.

Other sources of physical activity in the garden include turning compost heaps, clearing out beds for a new planting, mixing potting soils, lifting planters, raking leaves, hoeing, digging fence post holes, moving soil between beds, and spreading mulch.



Western Growers Foundation



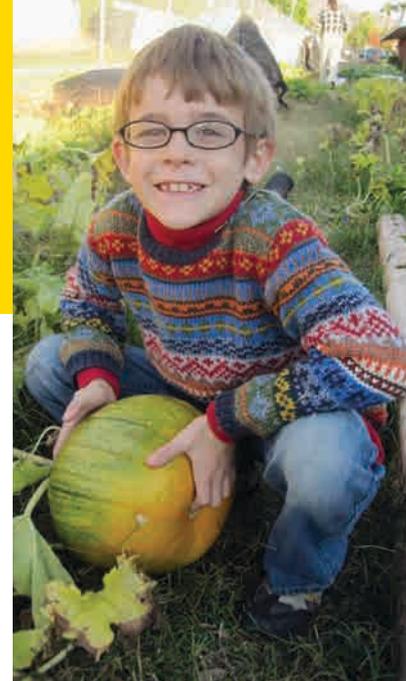
Tuscon Village Farm

United States Department of Agriculture MyPyramid.

The United States Department of Agriculture (USDA) has created many resources to help educators introduce basic nutrition education into the classroom, including the MyPyramid.gov tool. Visit www.mypyramid.gov/kids/index.html to download nutrition education classroom activities to supplement activities in the garden.

SUMMARY

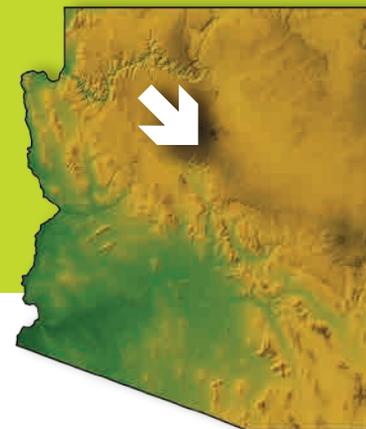
Through garden programs, students learn skills they can use throughout their lifetime to engage in physical activity and increase their consumption of fruits and vegetables. Teaching students how to incorporate hobbies like gardening into their lives will help fight food-related health problems through adoption of activities supporting better nutritional choices. Use of the garden as a health education tool will have an impact on students' choices today and well into the future. Check out the Resources section of this book (page 84) for additional ideas for using the garden to grow healthy kids.



- 1 Morris, J., K. Koumjian, M. Briggs, and S. Zidenberg-Cherr. *Nutrition to Grow On: A garden-enhanced nutrition education curriculum for upper-elementary school children*. Journal of Nutrition Education and Behavior 34(3):175-176.
- 2 Foerster, S., J. Gregson, D.L. Beall, M. Hudes, H. Magnuson, S. Livingston, M.A. Davis, A.B. Joy, and T. Garbolino. 1998. *The California Children's 5 a Day Power Play! Campaign: Evaluation of a large-scale social marketing initiative*. Family and Community Health 21(1):46-64.
- 3 Morris, J., A. Neustadter, and S. Zidenberg-Cherr. 2001. *First-grade gardeners more likely to taste vegetables*. California Agriculture 55(1):43-46.
- 4 Morris, J., and S. Zidenberg-Cherr. 2002. *Garden-enhanced nutrition curriculum improves fourth-grade school children's knowledge of nutrition and preferences for some vegetables*. Journal of the American Dietetic Association 102(1):91-93.
- 5 Murphy, J.M. 2003. *Findings from the Evaluation Study of the Edible Schoolyard*. Center for Ecoliteracy, Berkeley, CA, www.ecoliteracy.org/publications/pdf/ESYFindings-DrMurphy.pdf

program spotlight

Beans, Corn, Squash



West Sedona Elementary, Sedona, AZ

Sustainability in Sedona

Hopi dry farming techniques bring the community together through working at the school garden

“Sustainability is a big factor for us here at West Sedona Elementary,” said Principal Lisa Hirsch, where the school garden is not just about growing but a place dear to the community.

Using the Hopi dry farming methods, the school has focused growing beans, corn, and squash. At this K-8th grade campus, the students are being taught about the larger issues of Arizona agriculture and invasive species. STEM (science, tech, engineering, and math) is the core philosophy where each grade level is learning something in the garden. Even the kindergarten students are planting the seeds. The STEM program is in conjunction with Northern Arizona University.

The surrounding community has also embraced the school’s garden. Being an art community, the garden is connected to the art of Sedona and its people. Song and dance around the garden is a regular occurrence along with the elders of the community assisting with traditional Hopi dry farming techniques.

The garden is key for integrating life and science lessons at school. Linda Crawford, who teaches 2nd, 3rd, and 4th grade classes at West Sedona Elementary, helps oversee the garden while Principal Hirsch focuses on partnerships with NAU, Gardens for Humanity, and a Master’s Garden Program with tree donations to name a few.

“This visual garden centers on the themes of sustainability, community, and art,” said Hirsch.

The arts represent the Hopi side of the different backgrounds in the community along with the ethnic knowledge from the community about the actual growing process.

“Several kids have an understanding of the local lifecycle of growing from living in a ranching family,” said Hirsch.

The connection between the culture of Sedona and health can be found in the garden representing the sustainable teachings at West Sedona Elementary.

