

The “Healthy Gardens, Healthy Youth” People’s Garden School Pilot Project is an Extension partnership that aims to engage more than 4,000 elementary school students in creating food gardens in 54 low-income schools as part of a 2.5-year research study. The partners in this multi-state study are:

- Washington State University Extension
- Cornell University Cooperative Extension
- Iowa State University Extension and Outreach, and
- University of Arkansas Extension

Project Goals

Goal 1. Increase Fruit and Vegetable Consumption

Goal 2. Empower Youth in Their Communities

Goal 3. Contribute Toward a Sustainable Environment and Food System

Goal 4. Build a Nationwide Network

Follow the Project:

Project website:

<http://peoplesgarden.wsu.edu>

Facebook:

<http://www.facebook.com/HealthyGardensHealthyYouth>

YouTube channel:

<http://www.youtube.com/user/ExtSchoolGarden>



Core Strengths and Philosophy

Healthy Gardens, Healthy Youth builds on the unique strengths of our nation’s Land Grant Universities and their Cooperative Extension (LGU-CE) programs to:

- Plan, develop, and implement a pilot People’s Garden program that is national in scope, impact, and reach, yet is locally adaptable;
- Combine the theory and practices associated with positive youth development and leadership in 4-H programs with those of the nutrition education programs (e.g. SNAP-Ed, EFNEP) into a holistic garden-based learning model in conjunction with developing school and community gardens;
- Leverage the LGU-CE system of a physical or programmatic connection to nearly every county in the United States, with access to a suite of programs, and accompanying educators, such as:
 - a) 4-H youth development;
 - b) SNAP-Ed/EFNEP nutrition education;
 - c) Master Gardener or other community horticulture programs; and
 - d) Production level agricultural programs.
- Continue providing research-based information and programming adapted to the local needs and opportunities in their communities.

Leadership for Healthy Gardens, Healthy Youth is provided by Washington State University Extension, in collaboration with the Cooperative Extensions of Cornell University, Iowa State University and University of Arkansas. The project director, Brad Gaolach, Ph.D. can be reached at gaolach@wsu.edu.

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Research Design & Methods:

This study is a randomized controlled trial examining effects of school gardens on fruit and vegetable (FV) consumption and other outcomes among children in grades 2-6. Schools were randomly assigned to either the intervention group (gardens start in Spring 2012) or the waitlist control group (gardens start in late Spring 2013). The project's first year of data collection has involved 2nd, 4th and 5th grade classes; Year 2 will follow the same cohort as they enter into the 3rd, 5th and 6th grades. Data are collected from all schools (intervention and control).

Name _____ Age _____ Date _____

What Foods Did You Eat?

Instructions: We would like to know how much of each fruit and vegetable (FV) listed below you ate in the last week at home. The FV can be fresh, frozen, canned or dried. Check the column that best describes how often you had each item. For instance, if you had an orange twice in the last week, you would check "1-3 servings each week".

→ A serving of **fruits** is equal to: 1 medium piece of fresh fruit, ½ cup of fruit salad, ¼ cup of raisins or other dried fruit

→ A serving of **vegetables** is equal to: 1 medium carrot or other fresh vegetable, 1 small bowl of green salad, ½ cup of fresh or cooked vegetables, ¼ cup of vegetable soup

Fruit					
	None	1-3 servings last week	4-6 servings last week	7 servings last week	8 or more servings last week
 Apple	<input type="checkbox"/>				
 Banana	<input type="checkbox"/>				
 Cantaloupe	<input type="checkbox"/>				
 Grapes	<input type="checkbox"/>				
 Oranges	<input type="checkbox"/>				
 Pear	<input type="checkbox"/>				
 Plums	<input type="checkbox"/>				
 Kiwi	<input type="checkbox"/>				
 Strawberry	<input type="checkbox"/>				

Based on Baranowski (2003) BS-FJV-A Page 1 of 4

Research Questions:

The research is designed to address whether each of the following occur as a result of involvement with the garden:

- R1 – Did students consume more FV at school?
- R2 – Did students consume more FV at home?
- R3 – Did students' preference for FV increase?
- R4 – Do students show improvement in educational outcomes?

Constructs and Measures (Administered by Extension Educators at school)

- **FV consumption:** At each data collection period, 3 days of photographs are taken of children's lunch trays before and after they eat. These are later analyzed for FV consumption.
- **FV availability at home:** Children complete a questionnaire which lists 39 FV and asks whether each was "in your home in the last week?" (Baranowski et al., 2003a).
- **FV preference:** Children complete a questionnaire indicating how much they like (3 point scale) each of 39 FV (Baranowski, 2003b).
- **FV taste:** Children respond, "I have tasted this," or "I have never tasted this" to determine what FV they have tasted.
- **Nutritional knowledge:** Informed by the curriculum, children answer 7 multiple-choice questions about plant parts and nutrients.
- **STEM skills:** Children answer 15 questions about their science and math abilities (adapted from Iowa 4-H Program).
- **FV consumption (at home):** A Food Frequency Questionnaire is sent home for parents to fill out with the child (Baranowski, 2003c).

Dr. Nancy M. Wells, Dept. of Design and Environmental Analysis, Cornell University is leading this study to examine the effects of school gardens on the students' fruit and vegetables consumption, and other educational outcomes.

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Educational Toolkit

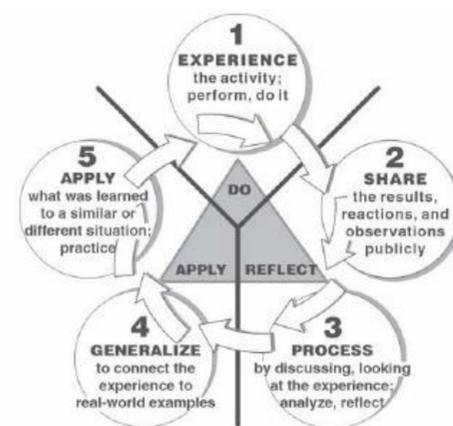
A “Healthy Gardens, Healthy Youth” Educational Toolkit contains hands-on, fun lessons and learning activities to use in the classroom and garden. Designed for students in grades 2 and 4 during the pilot project’s first year, and grades 3 and 5/6 during the second year, participating students will be gardening for two years. The Educational Toolkit provides a road map for successful school gardens and learning experiences.

Extension specialists in Nutrition, Youth Development and Horticulture from Cornell, Iowa State and Washington State Universities’ Cooperative Extension Service reviewed 17 curricula, numerous garden implementation resources and other materials from across the nation to select appropriate resources to support this project.



Inclusion criteria

- Experiential learning
- Age-appropriate gardening, nutrition and food content and skills
- Research-based content and standards alignment
- Science, Technology, Engineering and Math or STEM areas focus
- Enrich classroom instruction
- Support the school garden



Toolkit components

- Lesson plans, snack suggestions/recipes
- Webinars
- School Garden Implementation and Beyond Guide, covering
 - Starting, planning , planting and maintaining the garden through the school year
 - Gardening during the summer
 - Engaging volunteers
 - Building community capacity
 - Sustaining and growing a school garden program
- School food services resources
- Food safety in the garden resources



The Toolkit is available online for Extension Educators and teachers from current pilot intervention schools. The project website provides the Toolkit’s lessons to use during the course of the school year, resource materials such as healthy snacks, and multiple orientation and training webinars that include demonstration videos.

If you have any questions for the Content & Delivery Team, please contact HealthyGardensHealthyYouth@gmail.com.

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The Garden:

Students participate in all stages of garden creation, including: planning, building, planting and maintaining their school garden. This process creates a sense of ownership among the students and serves as a valuable learning experience. Students help select garden crops, learn to amend the soil, take responsibility for watering the garden and harvest their own produce. Produce harvested from the garden is served in the cafeteria, eaten in the classroom, donated to local food banks or sent home to families.

The Classroom:

Classroom teachers and extension educators work in partnership to deliver an interdisciplinary garden curriculum covering topics such as:

- Soil health
- Pest control
- Natural resources
- Nutrition
- Plant sciences
- Seasonality and weather

In addition to the garden curriculum, teachers use the garden as an instructional tool to support and enrich curriculum across disciplines.



At recess, I caught students nibbling leaves from the garden

– Paraeducator, Fern Hill Elementary

The Community:

Partnerships with families, community volunteers and local organizations are paramount to the project's success and sustainability. Extension Educators and school administrators work locally to create unique partnerships between schools and their communities. Community partnerships provide the project with:

- Donations of gardening and educational materials
- Gardening expertise and guidance
- Assistance with garden construction and maintenance

Students are trying new fruits and vegetables, starting to grow their own gardens at home and showing excitement to learn.

– Kerri Wilson, WSU Extension Educator

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Healthy Gardens, Healthy Youth Participating Schools



Arkansas

- Central Elementary, Forrest City
- Dermott Elementary, Dermott
- Eudora Elementary, Eudora
- Junction City Elementary, Junction City
- Kipp Delta Elementary, Helena
- Lakeside Upper Elementary, Lake Village
- Lincoln Middle Academy of Excellence, Forrest City
- Noble/Albritton Elementary, Hamburg
- Stewart Elementary, Forrest City
- Townsend Park Elementary, Pine Bluff

New York

- Deposit Central School, Deposit
- Downsville Central School, Downsville
- Dr. Martin Luther King Magnet School, Schenectady
- Grandview Elementary, Monsey
- Hempstead Elementary, Spring Valley
- Jessie T. Zoller Elementary, Schenectady
- Kelley Elementary, Newark
- Lafrancis Hardiman Elementary, Wyandanch
- Margaretville Central School, Margaretville
- Perkins Elementary, Newark
- Summit Park Elementary, New York
- Riverhead Charter School, Calverton
- Roberto Clemente School #8, Rochester
- William C. Keane Elementary, Schenectady
- Yates Magnet School, Schenectady

Iowa

- Clarke Elementary, Osceola
- Dunkerton Community Elementary School, Dunkerton
- East Union Elementary, Afton
- Eldora-New Providence Elementary, Eldora
- Hiawatha Elementary, Hiawatha
- Hunt Elementary, Sious City
- Kittrell Elementary, Waterloo
- Lenox Community School, Lenox
- Lowell Elementary, Waterloo
- Madison Elementary, Muscatine
- Mark Twain Elementary, Iowa City
- Mount Ayr Elementary, Mt. Ayr
- Poyner Elementary, Evansdale
- Rue Elementary, Council Bluffs
- Sunset Heights Elementary, Webster City
- Walnut Grove Elementary, Council Bluffs
- West Liberty Elementary, West Liberty

Washington

- Bow Lake Elementary, SeaTac
- Cedar Valley Elementary, Covington
- Daffodil Valley Elementary, Sumner
- Dick Scobee Elementary, Auburn
- Fern Hill Elementary, Tacoma
- Franklin Elementary, Tacoma
- Mary Lyon Elementary, Tacoma

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