

CATEGORY: LANDSCAPES FOR HEALTH: DESIGNED LANDSCAPES

School Gardens

School gardens, numbering 5,000 in the U.S. in 2021, continue to grow in number due to the diverse benefits they offer (USDA, 2021). While many are food gardens, school gardens have different designs with a variety of purposes. School gardens can be used to provide access to nature, as enabling accessible green space on school grounds, and as therapeutic, recreational, and community gardens used by students, staff, parents, community members, & volunteers. Newer initiatives tied to school gardens include garden to cafeteria programs, food procurement programs from local growers, programs combining physical activity with nutrition literacy, as well as integration of academic curriculum, services related to social & emotional well being, food security, equity and inclusion, and environmental stewardship. Social emotional learning (SEL) in school gardens is becoming more prevalent (Lohr et al., 2022; Pollin & Retzlaff-Furst, 2021).

Related resources may be found in category Populations – youth section.

Key Organizations

[Children & Nature Network](#)

Florida Extension, Florida School Gardens, [Florida Agriculture in the Classroom](#)

[Green Schoolyards America](#)

[Kids Gardening](#)

[Life Lab](#)

[National Garden Support Organization Network](#)

[School Garden Network](#)

[The Edible Schoolyard Project](#)

[Whole Kids Foundation](#)

Books, journals & epublications on school gardens

Christopher, K.R. (2019). *The school garden curriculum: An integrated k-8 guide for discovering science, ecology, and whole-systems thinking*. New Society Publishers.

Earl, L., & Thomson, P. (2021). *Why garden in schools?* Routledge.

Gamson Danks, S. (2021). *Asphalt to ecosystems design ideas for schoolyard transformation*.

Hunter, D., Gee, E., & Olsen Lauridsen, N. (2020). *Growing for the future: A new book on school gardens*. Routledge.

Hunter, D., Monville-Oro, E., Burgos, B. et al. (Eds.). (2020). *Agrobiodiversity, school gardens and healthy diets*. Routledge.

James, C. (2015). *The garden classroom: Hands-on activities in math, science, literacy, and art*. Roost Books.

Journal of Agriculture, Food Systems, and Community Development [Winter 2022-2023: Justice and equity approaches to college and university student food \(In\) security](#).

[Junior Master Gardener curricula](#)

Larson, N. (2015). [Teaching in nature's classroom: Principles of garden-based education](#).

Sands, R., & Summer, W. (2017). *Growing sustainable children: A garden teacher's guide*. Lindisfame Books.

Slow Foods USA. (2015). [Clean school garden curriculum for grades K+up](#).

Research & articles on school gardens

Recently published selected research & articles:

- Akpınar, A. (2016). How is high school greenness related to students' restoration and health? *Urban Forestry & Urban Greening*, 16, 1–8.
- Alexander, G.K., & Grannum, D.R. (2022). School garden benefits: Health promotion and environmental conservation. *NASN Sch Nurse.*, 37(2), 79-82.
- Austin, S. (2022). The school garden in the primary school: Meeting the challenges and reaping the benefits. *Education*, 50(6), 707-721.
- Bates, C.R., Bohnert, A.M., & Gerstein, D.E. (2018). Green schoolyards in low-income urban neighborhoods: Natural spaces for positive youth development outcomes. *Frontiers in Psychology*, 9.
- Bikomeye, J.C., Balza, J., & Beyer, K.M. (2021). The impact of schoolyard greening on physical activity and socioemotional health: A systematic review of experimental studies. *Int J Environ Res Public Health.*, 18(2), 535.
- Bishop, C., Beale, J., & Bruce-Low, S. (2023). The autistic experience of exercising within nature-based environments: An interpretive phenomenological analysis. *Physical Activity and Health*, 7(1), 115-131.
- Burt, K.G., Luesse, H.B., Rakoff, J. et al. (2018). School gardens in the United States: Current barriers to integration and sustainability. *Am J Public Health.*, 108(11), 1543-1549.
- Burt, K.G., Koch, P., & Contento, I. (2017). Development of the GREEN (Garden Resources, Education, and Environment Nexus) tool: An evidence-based model for school garden integration. *J Acad Nutr Diet.*, 117(10), 1517-1527.e4.
- Carlsson, L., Williams, P.L., Hayes-Conroy, J.S. et al. (2016). School gardens: Cultivating food security in Nova Scotia public schools? *Canadian Journal of Dietetic Practice and Research*, 77(3), 119-124.
- Chan, C.L., Tan, P.Y., & Gong, Y.Y. (2022). Evaluating the impacts of school garden-based programmes on diet and nutrition-related knowledge, attitudes and practices among the school children: A systematic review. *BMC Public Health*, 22(1), 1251.
- Chawla, L., Keena, K., Pevac, I., & Stanley, E. (2014). Green schoolyards as havens from stress and resources for resilience childhood and adolescence. *Health & Place*, 28, 1-13.
- Davis, J.N., & Spaniol, M.R., (2015). Sustainance and sustainability: Maximizing the impact of school gardens on health outcomes. *Public Health Nutr.*, 18(13), 2358-67.
- Davis, J.N., Pérez, A., Asigbee, F.M. et al. (2021). School-based gardening, cooking and nutrition intervention increased vegetable intake but did not reduce BMI: Texas sprouts - a cluster randomized controlled trial. *Int J Behav Nutr Phys Act.*, 18(1), 18.
- Davis, J.N., Nikah, K., Landry, M.J. et al. (2022). Effects of a school-based garden program on academic performance: A cluster randomized controlled trial. *J Acad Nutr Diet.*, S2212-2672(22)00931-5.
- Day, K., Tsupros, M.M., & Schober, D.J. (2022). To plant a garden is to believe in tomorrow: A case study of a Chicago community-based organization focused on health education through school gardens. *J Prev Interv Community.*, 50(1), 72-88.
- DeCosta, P., Møller, P., Frøst, M.B., & Olsen, A. (2017). Changing children's eating behaviour - A review of experimental research. *Appetite*, 113, 327-357.
- Dring, C.C., Lee, S.Y., & Rideout, C.A. (2020). Public school teachers' perceptions of what promotes or hinders their use of outdoor learning spaces. *Learning Environments Research*, 23(3), 369-378.
- Eugenio-Gozalbo, M., Aragón, L., & Inés Ortega-Cubero, I. (2020). Gardens as science learning contexts across educational stages: Learning assessment based on students' graphic representations. *Frontiers in Psychology*, 11.
- Evans, A., Ranjit, N., Hoelscher, D. et al. (2016). Impact of school-based vegetable garden and

- physical activity coordinated health interventions on weight status and weight-related behaviors of ethnically diverse, low-income students: Study design and baseline data of the Texas, Grow! Eat! Go! (TGEG) cluster-randomized controlled trial. *BMC Public Health*, 16(1), 973.
- Figueroa-Piña, D.G., Chávez-Servín, J.L., de la Torre-Carbot, K. et al. (2021). Evaluation of the effect of a school garden as an educational didactic tool in vegetable and fruit consumption in teenagers. *Nutr Res Pract.*, 15(2), 235-247.
- Fischer, L.K., Brinkmeyer, D., Karle, S.J. et al. (2019). Biodiverse edible schools: Linking healthy food, school gardens and local urban biodiversity. *Urban Forestry & Urban Greening*, 40, 35-43.
- Gonsalves, J., Hunter, D., & Lauridsen, N. (2020). School gardens multiple functions and multiple outcomes. In *Agrobiodiversity, school gardens and healthy diets*. Routledge.
- Holloway, TP., Dalton, L., Hughes, R. et al. (2023, Feb). School gardening and health and well-being of school-aged children: A realist synthesis. *Nutrients*, 15(5), 1190.
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- Hoover, A, Vandyousefi, S., Martin, B. et al. (2021). Barriers, strategies, and resources to thriving school gardens. *Journal of Nutrition Education and Behavior*, 53(7), 591-601.
- Ingram, E., & Keshwani, J. (2021). Nebraska school gardens and the potential for science, technology, engineering, and math learning. *Journal of Extension*, 58(6).
- Kato, U., & Boules, C. (2022). Pandemic gardening: Variant adaptations to COVID-19 disruptions by community gardens, school gardens, and urban farms. *Journal of Urban Affairs*.
- Lam, V., Romses, K., & Renwick, K. (2019). Exploring the relationship between school gardens, food literacy and mental well-being in youth using photovoice. *Nutrients*, 11(6), 1354.
- Lanza, K., Durand, C.P., Alcazar, M. et al. (2021). School parks as a community health resource: Use of joint-use parks by children before and during COVID-19 pandemic. *Int J Environ Res Public Health.*, 18(17), 9237.
- Leo, E., Patterson, K., & Reese, A. (2020). [Cultivating job skills through a school gardening enterprise: Special educators work with students with disabilities from elementary through high school to launch and run a business while teaching vocational skills](#). *ASHA Wire*.
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- Li, D., & Sullivan, W.C. (2016). Impact of views to school landscapes on recovery from stress and mental fatigue. *Landscape and Urban Planning*, 148, 149–158.
- Lindemann-Matthies, P., & Kohler, K. (2019). Naturalized versus traditional school grounds: Which element do students prefer and why? *Urban Forestry & Urban Greening*, 46, 126475.
- Loftus, L., Spaulding, A.D., Steffen, R. et al. (2017). Determining barriers to use of edible school gardens in Illinois. *J Am Coll Nutr.*, 36(7), 507-513.
- Lohr, A.M., Drause, K.C., McClelland, K.J. et al. (2021). The impact of school gardens on youth social and emotional learning: A scoping review. *Journal of Adventure Education & Outdoor Learning*, 21(4), 371-384.
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- Turner, L., Eliason, M., Sandoval, A., & Chaloupka, F.J. (2016). Increasing prevalence of US elementary school gardens, but disparities reduce opportunities for disadvantaged students. *J Sch Health.*, 86(12), 906-912.
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Examples of school gardens

Atlantic Highlands Elementary School outdoor garden.

<https://www.youtube.com/watch?v=PGoPtkNFybk>

BicycleSPACE DC School Garden Tour introduces several school gardens, promoting community connectiveness, & different models of school gardens.

<https://www.youtube.com/watch?v=l3cYcNASsJU>

Kids Making Student Gardens in Santa Monica.

<https://www.youtube.com/watch?v=Agqphbmh7No>

Million Orchid Project at Fairchild Tropical Botanic Garden (FL) has partnered with 100 schools to conserve and grow orchids in classrooms, schoolyards, parks. A massive science project focused on native orchids educates, informs, promotes citizen science.

<https://fairchildgarden.org/science-and-education/science/million-orchid-project/>

Rosa Parks Elementary School's green schoolyard video demonstrates turning asphalt into green space – turning nature into classrooms, integrating education into gardens, outdoor time & recess.
<https://www.greenschoolyards.org/inspiring-precedents>

St Martin de Porres school garden in Moseley, Birmingham, UK.
https://www.youtube.com/watch?v=3Zc_pjCC26o

The Ecology School (with videos focused on nature, compost & more).
<https://www.youtube.com/c/TheEcologySchool/videos>

Videos, webinars & websites on school gardens

Asphalt Jungle – Living Schoolyards Podship Earth: Episode 13.
<https://www.podshipearth.com/podcast>

Big Green resource database.
<https://biggreen.org/thegreenhouse/>

Building School Culture in school gardens solution session examines a different facet of what school gardens can provide.
<https://www.sgsonetwork.org/webinars/>

Changing the Nature of Education- School Gardens.
<https://www.youtube.com/watch?v=hmmkEc6GcXw>

Cultivating Resiliency in Youth with Deep Nature Connections video.
<https://youtu.be/ppWSeB8EEKY>

Equity & Inclusion in Garden Settings has a list of topics & resources with this theme
<https://www.sgsonetwork.org/promising-practices/>

Florida School Garden Guide
https://www.fdacs.gov/content/download/41801/file/Garden_Guide_Web.pdf

[Food Safety for School + Community Gardens A Handbook for Beginning + Veteran Garden Organizers: How to Reduce Food Safety Risk](#) pdf developed by North Carolina universities, NC Cooperative Extension & other organizations.

Gardening for Grades School Garden Planning Guide. http://faitc.org/book/gardening_for_grades/

[Garden Layout](#) – creating an accessible, interesting and effective outdoor learning space with a focus on the design elements; accessibility, shade options & sourcing materials. On-line resource links to School Garden Guide, Greenhouse Manual, Convert-a-Bench, Green Schoolyards Covid Outdoor Learning Initiative.

Grow to Learn Florida School Garden Guide.
<https://familynutritionprogram.org/improve-community-health/#>

[Growing Minds Farm to School Program: Middle & High School](#) resources like curricula FoodSpan from Johns Hopkins Center for a Livable Future, interdisciplinary curriculum from Kentucky Farm 2 School, books *The American Way of Eating: Undercover at Walmart...*, *The Botany of Desire: A Plant's-Eye View of the World*, *French Fires and the Food System: A Year-Round Curriculum Connecting Youth with Farming and Food*.

Life Lab Organization offers resources for school gardens with a mission of cultivating children's love of learning, healthy food and nature through garden-based education
<https://www.lifelab.org/partner-schools>

School Food Service and School Gardens case studies re program funding, staffing, & policies
<https://www.sgsonetwork.org/webinars/>

School Garden Forum from Florida Horticulture for Health Network in 2022 raises topics where these settings can promote health & education.
<https://www.youtube.com/watch?v=kh9yNZEIDic>

Schoolyard Habitats Planning Guide features instructions, hands-on activities, green STEAQM connections.
<https://www.nwf.org/Eco-Schools-USA/Pathways/Schoolyard-Habitats/schoolyard-habitat-planning-guide>

THAD (Therapeutic Horticulture Activity Database) offers TH activities across populations & settings including school gardens (plan/plant & eat the rainbow, field trip to community garden).
<https://hort.ifas.ufl.edu/therapeutic-horticulture-activities-database/-design/>

The Environmental Media Association EMA School Garden Program
<https://www.green4ema.org/programs/ema-school-garden-program>

Related organizations

[Big Green](#)

[Slow Food USA – School Garden Network](#)

[University of Florida IFAS Extension Family Nutrition Program](#)

[Wisconsin School Garden Network](#)

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