



California 4-H Project Sheet Series

Food Waste Busters



Figure 1. A girl and boy placing food waste into a green recycling container. Photo: KatarzynaBialasiewicz/Shutterstock.com

The 4-H Food Waste Busters Project increases awareness of food waste reduction practices and their importance. Youth will develop the knowledge, skills, and attitudes necessary to promote environmental sustainability. They will begin thinking about how making little changes can make a difference in their home, club, or community by

- describing what food waste means
- explaining the benefit of reducing food waste
- conducting a food waste audit in their home, club, and community
- designing solutions to reduce food waste in their home, school, and community

Project levels

Starting out: Beginner

- Describe what food waste is.
- Learn how much food is wasted each year in the United States.
- Discover what happens to wasted food.
- Understand why reducing food waste is important.
- Learn about food waste in your household and how to do a food audit at home.
- Describe solutions for food waste reduction at home.

Learning more: Intermediate

- Tour a local food waste recycling or compost facility.
- Attend a food preservation workshop or demonstration.
- Read more about the benefits of reducing food waste, ways to reduce food waste, and how to support a sustainable food system.
- Conduct a food audit at your 4-H club or project meeting. Observe how much food has been wasted during the meeting or event and record your observations.
- Develop 4-H meeting policies on food waste.

Exploring in depth: Advanced

- Learn about youth-led, school-based food waste reduction projects.
- Discover food waste reduction toolkits for farms, schools, stores, and community gardens.
- Learn how a food waste reduction toolkit can be used in your school cafeteria or community.
- Develop your own food waste plan.
- Present your plan to your school or community leader.
- If possible, implement your plan as a community service project.

Note: The activities above are ideas to help inspire further project development. This is not a complete list.



Expand your experiences!

Science, technology, engineering, and mathematics (STEM)

- Build a compost bin for food and yard waste.
- Partner with Master Food Preservers to learn about the process of preserving food, such as canning, freezing, or drying.
- Discover how biological processes, such as composting and feeding worm cultures, breakdown food waste, and learn how to apply these methods in gardening practices with Master Gardeners.

Healthy living

- Learn how food waste contributes to climate change.
- Explore the meaning of food date labels to prevent unnecessary food waste.
- Discover what other countries do to prevent food waste.

Civic engagement

- Learn what your community does with food waste.
- Explore policies and practices your community can adapt from others and learn how to utilize.
- Volunteer with organizations that recover food from farms, restaurants, grocery stores, farmers markets, and neighborhood gardens to boost access to nutritious food in your community.

Leadership

- Serve as a Junior or Teen Leader with your 4-H project.
- Organize a food waste reduction event and invite other 4-H members or members of the community.
- Deliver a presentation on food waste reduction.

College and career readiness

- Research the types of careers available in the food system and share your findings.
- Visit with a professional to learn more about their work and career path.
- Meet with a school counselor to learn about what education is available for a career in the food system.

Connections and events

Presentation Days—Share what you've learned with others through a presentation.

Field Days—At these events, 4-H members may participate in a variety of contests related to their project area. Contact your county 4-H office to determine additional opportunities, such as a county resource fair.

Curricula

- 4-H Food Waste Busters (for 4th–6th graders). Contact Yu Meng, PhD, at ucmeng@ucanr.edu for lesson plans.
- Adapted from Be a Food Waste Warrior (for K–12th graders): <https://www.worldwildlife.org/teaching-resources/toolkits/be-a-food-waste-warrior>

Supplemental Curriculum

- 4-H Introduction to Composting: <https://4-h.org/clover/activities/introduction-to-composting/>
- 4-H Food Preservation: <https://ucanr.edu/sites/colusa/files/322962.pdf>

4-H record book

4-H Record Books give members an opportunity to record events and reflect on their experiences. For each project, members document their experiences, learning, and development.

4-H Record Books also teach members record management skills and encourage them to set goals and develop a plan to meet those goals.

What did my 4-H members learn?

Sometimes what our youth members *actually* learn is different from what we *intend* for them to learn. Do some of these activities to check how your project is going:

- **Clover diagrams:** Print out blank 4-H clovers and have the members label them with the four “H’s.” Ask members to write how they will apply what they learned during the project to each “H.” For example, they could write “I learned to care for the hungry through our food bank service project” under Heart.
- **Muddiest point:** At the end of the meeting ask each member to write down one thing you covered that they do not fully understand yet.
- **Plus/delta sheets:** You can do this on your own as a leader reflection or with your whole group after a meeting or activity. Make two columns on a sheet of paper and label one with a “+” and one with a “Δ.”



Write down everything that went well under “+” and everything that should be changed for next time under “Δ.”

- **Quiz games:** Check content knowledge with a round of Jeopardy or other fun quiz!

Resources

- Additional food waste curriculum: ag.purdue.edu/extension/nature/Pages/Food-Waste-Lesson-Plans.aspx
- Where does my food go? pathways.mste.illinois.edu/curriculum/food-waste
- Teaching about food waste: humaneeducation.org/12-resources-teaching-food-waste/
- Food waste prevention guide for community educators: ucanr.edu/sites/Test1/files/347664.pdf
- Food waste audit resource: calacademy.org/educators/lesson-plans/food-waste-audit
- A Guide to Conducting Student Food Waste Audits—A Resource for Schools: epa.gov/sustainable-management-food/guide-conducting-student-food-waste-audits-resource-schools
- “How a school’s food waste can feed the community,” a TEDxEastMecklenburgHighSchool talk by Hanna Wondmagegn: [youtube.com/watch?v=qaM0s1wiC4Y&list=WL&index=48](https://www.youtube.com/watch?v=qaM0s1wiC4Y&list=WL&index=48)
- “How to end the food waste fiasco,” a TEDxTeen talk by Rob Greenfield: [youtube.com/watch?v=w96osGZaS74](https://www.youtube.com/watch?v=w96osGZaS74)
- US Environmental Protection Agency—Tools for Preventing and Diverting Wasted Food: epa.gov/sustainable-management-food/tools-preventing-and-diverting-wasted-food
- Kids Go Undercover to Discover Food Waste in their Homes: [youtube.com/watch?v=mn_dsgG0vKs](https://www.youtube.com/watch?v=mn_dsgG0vKs)

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4-H thriving model of positive youth development

Gemma M. Miner, MS

4-H programs that are done well will help youth thrive. Regardless of what project or activities are offered, the project leader should prioritize youth engagement by focusing on the following three contexts:



Figure 2. A food scrap and yard debris collection in Portland, Oregon, in 2010. Photo: Tim Jewett

Facilitate youth sparks

A *spark* is something youth are passionate about; it fires them up and provides them joy and energy. Youth use their spark to make the world a better place.

Sparks create action and motivate youth to grow their knowledge and skills. Sparks also grow a young person’s networks.

Program quality matters

Research shows that youth programs must be done well if they are to make a positive difference in the lives of youth.

Quality programs ensure

- physical and psychological safety
- appropriate structure
- supportive relationships
- opportunities to belong
- positive social norms
- support for mattering
- opportunities for skill building
- integration of family, school, and community

To learn more: <https://tinyurl.com/yxg27m3j>



Fostering developmental relationships

Caring, supportive adults are clearly connected to positive youth development. Throughout their childhood years, youth will need evolving support from adults as they learn, grow, and self-regulate. The following, however, should remain constant from all adult volunteers and staff:

- expressing care through listening, warmth, and dependability
- providing support
- sharing power
- expanding possibilities
- challenging growth by expecting youth to do their best

To learn more: <https://tinyurl.com/y6434ntw>

Engagement drives the thriving

Authentic youth engagement in 4-H empowers young people to take an active role in their community, helping them build confidence, self-efficacy, and a sense of responsibility. When youth have a voice in planning and decision-making, they are more likely to stay involved, develop lifelong civic habits, and experience long-term personal growth. 4-H programs can increase youth engagement by including

- youth-led project planning and decision-making
- participation on advisory boards or planning committees
- peer-to-peer teaching and mentorship
- opportunities for public speaking or presenting
- community service or civic engagement projects designed by youth
- feedback loops where youth ideas are heard and acted upon

To learn more, search helping-youth-thrive.extension.org/tip-sheets/ by the 4-H Program Leaders Working Group (PLWG) Standing Committee on Positive Youth Development.

Experiential learning: Learn-by-doing

Steven Worker, PhD

Successful 4-H programs provide learning opportunities that are direct and hands-on, invite discussion, involve active reflection, and make connections between the activity and the real world.

Experiential learning

Facilitate learning experiences through a three-part cycle:

- **Experience:** Hands-on experiences that involve youth moving around and handling materials that engage them in an investigation, observation, experiment, or scenario.
- **Reflection:** Seamless movement through three distinct phases whereby the facilitator guides the learners to *share* thoughts and feelings with others in order to *process* and *generalize* their experience using broad questions that invite interaction.
- **Application:** An opportunity for learners to apply new knowledge to authentic situations in order to help deepen and extend their understanding.

Active learning

4-H projects should involve youth in active learning where they plan, explore, build, and work with minimal instruction from the volunteer. Youth need to learn to seek their own answers to questions rather than having answers provided for them. While using active learning, youth will engage in the following practices:

- asking questions and defining problems
- developing and using models
- planning and carrying out investigations
- using simple equipment or tools to gather data
- analyzing and interpreting data
- using math and computational thinking
- constructing explanations and designing solutions
- engaging in argumentation from evidence
- obtaining, evaluating, and communicating information

Extend the learning

Extend learning through a variety of leadership opportunities, field days, presentations, and record-keeping activities.





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