



Food Rescue



WASTE REDUCTION AND RECYCLING

Project Guide

Waste Reduction and Recycling

Generation Earth Program

Generation Earth is a Los Angeles County Public Works environmental education program presented by TreePeople. Our goal is to educate and empower teens in Los Angeles County to be an active part of the solution to environmental concerns in their community. We offer do-it-yourself environmental projects that help youth make a positive difference at school, at home and out in the world. Our programs are built to support the needs of teachers, students, schools and community youth groups.



Generation Earth Project Guides

Generation Earth Project Guides are designed to assist students in the completion of an environmental project. These guides provide the instructions, tools and support materials needed to learn about the subject and take the steps to complete a project that positively impacts the community.

What Is Food Waste?

In the United States, food waste is estimated at between 30-40 percent of the food supply.¹ In 2017 alone, more than 40 million tons of food waste was generated, with only six percent diverted from landfills and combustion facilities. The EPA estimates that more food reaches landfills and incinerators than any other single material in our everyday trash, constituting 22 percent of discarded municipal solid waste.² Instead, it can be rescued to feed animals, be composted for fuel or soil amendments and most importantly, to feed people who don't have enough to eat.

Food Rescue Laws in California

In California, laws have been passed to fight food waste, such as Assembly Bill (AB) 1826 Mandatory Commercial Organics Recycling Law. It requires regulated entities to implement an organic waste recycling program to divert food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.³ In September 2016, Governor Brown signed Senate Bill (SB) 1383, setting statewide targets to reduce the amount of organic waste disposed of in landfills, such as food and plant materials to 50% of the 2014 level by 2020 and to 75% by 2025.⁴

Food Waste at School

Since April 1, 2016, a commercial or public entity (such as a school or hospital) that generates a specific amount of organic waste, is required to divert its organic solid waste. Reducing the amount of organic materials sent to landfills and increasing the production of compost and mulch are part of Assembly Bill (AB) 32 (California Global Warming Solutions Act of 2006) Scoping Plan.⁵ Schools are an ideal setting for food recovery efforts. Even with careful planning, most cafeterias have leftover food that cannot be reused. The federal Bill Emerson Good Samaritan Food Donation Act and the California Good Samaritan Food Donation Act⁶ protects food donors from liability, making it legal to safely donate food, while local health departments oversee guidelines on safe food donations for schools.

Food Rescue Project Guide

This guide explores the edible food waste on a typical school campus – from what can be found in the trash cans after each meal served to classrooms that serve breakfast and snacks. This exploration will help your group recover food waste on campus by creating a plan, establishing relationships with key stakeholders, finding resources and implementing a sustainable program.



The Steps

1. Check This Out

Students explore the subject of food waste by working in teams to learn a specific topic related to food waste reduction and share what they have learned through the creation of an infographic.

2. Food Waste Audit

Using a map of the site, students indicate where edible food is being disposed of on campus. They continue the process by conducting a Food Waste Audit to identify the different types of food waste found.

3. Get More Information

The site assessment and waste audit are just part of the waste picture at a site. Students add more information by conducting research and interviews with key stakeholders, including the Principal, Cafeteria Manager and more.

4. Choose a Project and Get Started

Using the site assessment, waste audits and interview information, students determine which food rescue project is most appropriate and follow the guidelines to get started.

7. Evaluation

Students complete their project by answering questions that serve to evaluate the process and offer next steps for potentially taking on additional waste reduction projects.

8. Resources

Resources are provided on food laws and regulations, and other support.

CHECK THIS OUT

Students explore the subject of food waste by working in teams to learn a specific topic related to food waste reduction and share what they have learned through the creation of an infographic.

Procedure

1. Divide students into four working groups. Groups should be as close to equal in size as possible.
2. Pass out a different topic sheet to each group.
3. Each group has 15 minutes to:
 - Learn and discuss the topic
 - Use poster paper and markers to create an infographic answering the questions listed on the topic sheet
4. Each group shares and explains its infographic with the rest of the class.
5. As a class, discuss the need for food waste reduction, at home and in the community.

Materials

- Topic sheets (pages 5 - 8)
- Poster paper or dry erase board – one per group
- Markers – one set per group



Food Waste in the Environment

Start Here!

Food is the largest single source of waste in California, comprising 15.5% of the total amount of stuff that gets thrown away. In fact, about 40% of all the food produced in the United States is never consumed.⁷

Create an infographic that answers the following questions:

- How does wasting food affect the environment?
- What percent of this waste is at the processing/production level and why?
- What is something that can be done to reduce food waste?



- When we throw food in the trash, we dispose of much more than food. Wasting food wastes water, gasoline, energy, labor, pesticides, land and fertilizers used to make the food.⁸
- On average, farms around the world account for 70% of all water that is consumed annually. Of that 70% used by farmers, 40% is lost to the environment due to poor irrigation systems, evaporation and overall poor water management.⁹
- 40% of all food waste occurs during harvesting and processing. Food is wasted due to multiple reasons such as low market value, “imperfect” foods that don’t look good, or crops lost to pests or bad weather.¹⁰
- Farmers, manufacturers, wholesale markets, backyard gardeners and fruit tree owners can help combat food waste through “gleaning” – taking surplus or unharvested food and donating it to agencies that feed the hungry.

Food Waste in the Economy

Start Here!

Food is the largest single source of waste in California, comprising 15.5% of the total amount of stuff that gets thrown away. In fact, about 40% of all the food produced in the United States is never consumed.⁷

Create an infographic that answers the following questions:

- What is the cost of food waste?
- What percent of this waste is at the consumer level and why?
- What is something that can be done to save money and reduce food waste?



- The total cost of wasted food in the United States exceeds \$165 billion dollars a year. The average U.S. household of four spends an estimated \$1,350 to \$2,275 per year on food that is ultimately thrown away.¹¹
- Approximately 40 to 50 percent of food waste happens at level of the consumer.¹² Reasons for this waste include spoilage, uncertainty of expiration dates, food packaged in bulk, oversized portions served and undervalued foods due to cheap prices.
- Donating healthy, safe and edible food to hungry people is not only a tax write-off, but is also protected from legal liability under the federal Bill Emerson Good Samaritan Food Donation Act and the California Good Samaritan Food Donation Act.¹³
- To combat food waste at home, plan out meals for the week before buying unnecessary groceries, eat leftovers for lunch and only purchase food that will be eaten.

Food Insecurity in the Community

Start Here!

Food is the largest single source of waste in California, comprising 15.5% of the total amount of stuff that gets thrown away. In fact, about 40% of all the food produced in the United States is never consumed⁷

Create an infographic that answers the following questions:

- What is food insecurity?
- How many people are food insecure?
- What is something that can be done to reduce food insecurity?



- Food insecurity is the state of being without reliable access to enough affordable, nutritious food. It is defined by people who must skip meals, cut back on the quality or quantity of what they eat or rely on emergency food.¹⁴
- In 2018, 37.2 million people lived in food insecure households.¹⁵ In Los Angeles County, about 1 in 7 people (and 1 in 5 children) are food insecure.
- If we collectively work together to ensure that 25% of all food lost today was consumed, it would be sufficient to feed 870 million people.¹⁶
- Without access to healthy foods, a nutritious diet and good health are out of reach for millions of people.¹⁷ Donating just a small amount of surplus food, including fresh fruit, vegetables and grains, can help feed hungry families and help contribute to a balanced diet.

Food Waste at School

Start Here!

Food is the largest single source of waste in California, comprising 15.5% of the total amount of stuff that gets thrown away. In fact, about 40% of all the food produced in the United States is never consumed.⁷

Create an infographic that answers the following questions:

- How much money is wasted on school food in the US?
- What are some of the causes of this food waste?
- What is something that can be done to reduce food waste at school?



- An estimated \$1.2 billion dollars' worth of school lunch food is wasted nationally every year.¹⁸
- The availability of junk food, known as "competitive foods," contributes to food waste in school cafeterias. Students pass over healthier lunch options in favor of chips and candy found in vending machines.¹⁹
- There are a variety of ways to encourage students to select and eat the healthiest foods in the school lunchroom. For example, offering sliced fruit can increase student consumption by over 70%.²⁰
- Students that experience growing fruits and vegetables in a garden are more likely to eat fruits and vegetables.²¹
- Similar to grocery store samples, doing "taste tests" for fruits, vegetables and other healthy foods can be offered before they are served in the cafeteria. By familiarizing students with new foods, taste tests can help ensure that an item is marketable before it's offered on the menu.²²

FOOD WASTE AUDIT

Using a map of the site, students indicate where there are specific waste-collection elements and conduct a Food Waste Audit to identify the different types of food waste found.

Procedure

1. Divide students into working groups.
2. Do the following to create a map of site:
 - Use an existing map, remove any unnecessary information.
 - Download a map of the site from online.
 - Create your own map using a large sheet of paper.
3. Choose which type of audit(s) your group will conduct and ask permission from the Principal, Cafeteria Manager and /or Custodial Manager to conduct it.
 - **Classroom Audit:** Ask teachers and students to save the leftover breakfast food from their classroom for one day.
 - **Cafeteria Audit:** Collect food waste for one lunch period for the entire school.

Plan to:

 - Promote the collection through announcements beforehand.
 - Have monitors at each collection location to assist in food collection and separation.
 - Choose collection locations near cafeteria exits or where students eat or roam the area with collection baskets.
 - **Dumpster Audit:** Conduct a visual waste audit of the contents of the school dumpster.
4. Make sure each group has the necessary materials.
5. Using gloves or trash pickers, look through trash cans in chosen audit areas. Mark these areas on the map.
6. Identify and mark possible locations to create a food collection station. Look for classroom tables, cafeteria exit points or bins where students discard their food waste.
7. After the audit, have groups share their findings.
8. Create a combined map of all that was found, representing the site as a whole.

Materials

- Map of site
- Food Waste Audit Tally Sheet (page 10)
- Trays, baskets and/or coolers
- Clipboard
- Pencil
- Gloves or a trash picker

Helpful Hints

Break the site maps into different parts of the campus for each group.



Food Waste Audit Tally Sheet

Name(s)

Date

Location

1. Put on gloves or use a trash picker before checking trash cans.
2. Under each column tally each item that is found. Place additional items under "Other."
 - You may choose to audit compostable food unfit for sharing or donating.

Food To Donate	Items	Quantity	Notes
	Unopened packaged food		
	Whole produce		
	Other		
Compostables / Green Waste			
	Food Scraps		
	Grass clippings/ Landscape waste		
	Other		

GET MORE INFORMATION

The food waste audits are just the first step in understanding waste at a site. It is important to find out more information by researching policies and protocols online and interviewing key site stakeholders. In this case, stakeholders are people who may be affected by the food rescue program.

Procedure

1. Review questions as a team. Look online for answers.
2. Set up interview opportunities with the appropriate contacts for answers to questions you can not find online. Feel free to add/subtract interviewees depending on the site.
 - Principal
 - Local Health Department Official
 - Cafeteria Manager/Food Service Manager
 - School District Food Services Administrator
3. For reference, bring along a copy of a typical monthly breakfast/lunch menu and information about local and federal laws and policies on food share and food donation. See Resources on page 22.
4. Divide students into groups to conduct the research and interviews.
5. Once research and interviews are complete, instruct groups to share what they learned.

Materials

- Interview questions for each group (pages 12 - 16)
- Pencil/pen

Helpful Hints

Cities with their own health departments:

- Long Beach
- Pasadena
- Vernon

All other cities and unincorporated areas of the County are a part of the Los Angeles Department of Health.

Campus Food Waste Interview

Name(s)

Date

Principal

1. Are there any food donation programs of wasted beverages, fruits and packaged foods from breakfast and/or lunch happening on campus?
2. Would a decrease in food waste help save the school or district money in garbage disposal or cleaning costs?
3. Do we have your permission to have a food share table for students?
4. Do we have permission to have a food donation program if we plan the procedure and find an approved nonprofit organization to receive food donations?
5. What do you think could help reduce food waste on campus and how can we help you make it happen?
6. Are there any additional comments or concerns we can address?

Campus Food Waste Interview

Name(s)

Date

Cafeteria Manager/Food Service Manager

1. Which meal generates the most food waste?
2. What foods or drinks are wasted the most?
3. What currently happens to food that is returned from breakfast or that doesn't get served at lunch?
4. Is there any leftover or unserved food that gets thrown away that could be donated to a nonprofit organization?
5. What would be the best day and time for a food donation pickup?
6. Who should arrange pickups?

7. Are there any unused refrigerators or space for a new designated refrigerator or cooler in the cafeteria to store food for donation?
8. Where would be the best place to have a share table at lunch for unwanted foods for other students to take?
9. Are there any additional comments or concerns we can address?
10. What do you think could help reduce food waste on campus and how can we help you make it happen?

Campus Food Waste Interview

Name(s)

Date

Local Health Department Representatives for Pasadena, Vernon, Long Beach or Los Angeles County Health Department

1. Which particular school foods and menu items can be:
 - Reused at another meal?
 - Offered on a share table?
 - Donated to a nonprofit charitable organization?
2. What temperature do cold or hot foods need to be kept and for how long before they can no longer be re-served or donated?
3. How else can we make a share table or donation program safe?
4. Are there any resources or guides you can offer?

Campus Food Waste Interview

Name(s)

Date

School District Food Service Administrator

1. Does the district have a policy on food share tables and/or food donation? If so, what is it?
2. Are there any resources available to support these programs like refrigerators, posters, trays or toolkits?
3. Is there a specific list of nonprofits that can receive food donations from the school?
4. Are there any other schools in the area that have, or may be interested in starting, a food donation program?

CHOOSE A PROJECT AND GET STARTED

Using all the information gathered, have the group answer specific questions to determine project readiness and then follows the guidelines to get started.

Procedure

1. Answer the questions below to help build a plan.
2. Use the waste audit quantities, site maps and the interview results to support the plan.
3. Once the group has answered the questions, follow the guidelines for the type of project chosen.

Which project would you like to do?

You can always start small with a classroom food share table or basket and grow the project with more support.

Consider:

- **Food Share Project:** Feeding students with unwanted food on campus is the most sustainable first step of any food rescue project. Share tables are situated in classrooms or student common eating areas where students can place their unwanted pre-packaged non-perishable foods and leave the items for other students.
- **Food Donation Project:** Excess foods can be donated to appropriate nonprofit organizations that help feed the hungry.
- **Glean Team Project:** In some communities, there are fresh fruits and vegetables that would normally go to waste from backyard fruit trees, public orchards and farmers markets. This produce is recovered and donated to appropriate nonprofit organizations that feed the hungry.

Materials

- Site map
- Food Waste Audit Tally Sheets
- Research and interview answers

Where will your project take place?

If conducting a food share or food donation project, mark collection sites on a map and share with campus stakeholders (The Principal, site maintenance staff, teachers, etc.). This also includes your Generation Earth Facilitator who will give additional recommendations.

Do you have a local nonprofit organization to work with?

If doing a food share, food donation or glean team project, identify and contact organizations that can receive the food. Make sure that they are registered as a 501(c)3 nonprofit. Search online at 211.org/food-1 or call 211 for local emergency food pantries, or identify local domestic violence shelters, elderly housing or community groups. Make sure they have adequate refrigeration for the foods you will donate to them and check which types of food donations they can receive.

Do you have the materials or money to complete the project?

Depending on the type of project, you may need to purchase baskets, coolers, gathering containers, signage materials, or more. Consider holding a fundraiser or ask for resources from your school administration or the local community. See Resources on page 22 and discuss this with your Generation Earth Facilitator.

Do you have permission?

It is extremely important that the group has permission to do the project. Look to the research or interview responses to inform the group on the type of permission necessary. Make sure you have the support of an adult to assist your group through this part of the project.

Are you willing to commit to the care of the project?

It is important to consider the amount of time and commitment it will take to continue this project. Make sure that the project is sustainable and that there is a plan in place.



MAKE IT HAPPEN

Setting up a Food Share Project

- Use your research and interview answers to identify the foods you want to collect and the safety measures necessary to keep it healthy.
- Use your map to identify the food share table/area in the cafeteria where all students pass by and it is visible to the cafeteria manager.
- Use your map to identify the food share table/area to place a container in each participating classroom.
- Gather needed materials, including collection baskets, signage, tables and tablecloths. Identify where these resources come from, any costs incurred and where they will be stored and cleaned. Contact your Generation Earth Project Facilitator or see Resources on page 22.
- Create a promotion plan to educate the student body on the project.
- Create a sustainability plan. Determine who will be responsible for maintaining the project this year and following years.
- Decide what happens to leftover foods at the end of the eating period.
This includes:
 - Who is picking up the food for donation, composting or disposal?
 - Where will cold foods and beverages be stored?
- Create a plan for evaluating the program, making necessary changes and celebrating the successes.



Food Temperature

California Health and Safety Code Section 27601 requires cold food to be held at 41° Fahrenheit or below and hot food to be held at 135° Fahrenheit or above until the school releases the donated food to a nonprofit organization.²³

Setting up a Food Donation Project

- Follow your school district's guidelines on establishing a partnership with the agencies you choose. Confirm time and days for pickup with both agency and cafeteria contact.
- Contact other nearby schools that might want to participate in a combined food donation program.
- Recruit volunteer teachers, parents and students to transport donations if the recipient agency is unable to pick up.
- Make food safety a priority. Train volunteers, staff and students on the food safety procedures for your program.

- Create and display posters and signs that show what foods can be donated or shared.
- Keep records of how much food is donated every day/week.
- Create a promotion plan to educate the student body on the project. Plan to make announcements, take turns standing by the collection points during lunch, hold assemblies or create educational posters and videos. Make sure students know that they only donate food they would have otherwise thrown away, but not what they would have eaten, in order to help the food insecure.
- Create a backup plan. Ensure there are backup volunteers to make donation deliveries and alternative agencies to receive the donations.



Setting up a Glean Team Project

- Find nearby properties with fruit trees willing to donate their fruit.
- Harvest fruit together as a group one to two times each month.
- Create a relationship with a local food pantry to receive donations.
- Have at least two committed adults or persons over the age of 16 to be present at all harvests.
- Secure a storage area for gleaning equipment and volunteer driver to pick up and drop them off.
 - Food Forward, a nonprofit organization, provides all the training and equipment needed.
 - Email harvest@foodforward.org to learn more.

Food Forward

Food Forward's mission is to rescue fresh local produce that would otherwise go to waste, connecting this abundance with people in need and inspiring others to do the same. 100% of the produce recovered is donated to hunger relief agencies across 8 counties in Southern California.²⁴

EVALUATION

Once your Food Rescue Project is underway, answer the following questions to evaluate the project.

QUESTIONS

1. What was the most successful part of the project?
2. What was the least successful?
3. What would you do differently next time?

What's Next?

Another Project Guide?

Are you interested in doing another project?

Consider:

- E-Waste Collection Event
- Composting
- Community Swap Event

Share!

Generation Earth would love photos and/or videos of the complete project!

- Send them to your Generation Earth, at generation.earth@treepeople.org

RESOURCES

LAWS, POLICIES AND GUIDES

- **Bill Emerson Food Donation Law 104–210**
gpo.gov/fdsys/pkg/PLAW-104publ210/pdf/PLAW-104publ210.pdf
- **Food Donation Act and the Health and Safety Code 114079**
codes.lp.findlaw.com/cacode/HSC/1/d104/7/4/7/s114079
- **CA Dept of Education Guidance on the Donation of Leftover Food**
cde.ca.gov/ls/nu/sn/cnp022018.asp
- **CA Dept of Education Guidance on the Use of Share Tables**
cde.ca.gov/ls/nu/sn/mbcnp032018.asp
- **LAUSD Food Donation Policy**
achieve.lausd.net/Page/847
- **Reducing food waste in cafeteria practices with offer vs. serve**
fns.usda.gov/tn/offer-versus-serve-national-school-lunch-program-posters
fns.usda.gov/tn/offer-vs-serve-lunch-program-tip-sheet

MICELLANEOUS

- **Free tracking app**
foodrescue.net
- **EPA Resources**
epa.gov/sustainable-management-food
- **USDA Reducing Waste at K-12 Schools**
usda.gov/foodlossandwaste/schools

CURRICULUM

- **Just Eat It movie and curriculum**
foodwastemovie.com/schools/

REFERENCES

1. usda.gov/foodwaste/faqs
2. epa.gov/sustainable-management-food/wasted-food-programs-and-resources-across-united-states
3. calrecycle.ca.gov/recycle/schools/laws6
4. calrecycle.ca.gov/climate/slcp
5. calrecycle.ca.gov/recycle/commercial/organics/
6. gpo.gov/fdsys/pkg/PLAW-104publ210/pdf/PLAW-104publ210.pdf
7. facebook.com/notes/andrew-williams-jr/food-is-the-largest-single-source-of-waste-in-california-comprising-155-of-the-s/10153189753704436/
8. epa.gov/sustainable-management-food/sustainable-management-food-basics
9. htt.io/water-usage-in-the-agricultural-industry/
10. foodprint.org/issues/the-problem-of-food-waste/
11. environmentreports.com/waste-not-want-not/
12. foodprint.org/issues/the-problem-of-food-waste/
13. gpo.gov/fdsys/pkg/PLAW-104publ210/pdf/PLAW-104publ210.pdf
14. ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement.aspx
15. hungerandhealth.feedingamerica.org/2019/10/food-insecurity-poverty-rates-improve-pre-recession-levels-2018-1-9-people-still-risk-hunger/#:~:text=Though%20the%20rate%20of%20individuals,in%20a%20food%20insecure%20household
16. forbes.com/sites/sap/2020/10/14/worldfoodday-2020-reducing-25-of-global-food-waste-will-eliminate-hunger--starvation/?sh=f7d901a466f9
17. thefoodtrust.org/uploads/media_items/grocerygap.original.pdf
18. nclnet.org/lifesmarts_foodwaste_audit/
19. ncbi.nlm.nih.gov/pubmed/15668677
20. healthyeating.org/docs/default-source/3.0-our-cause/slm-pages/national-slm-handbook.pdf?sfvrsn=e2bd095f_2
21. sciencedaily.com/releases/2007/04/070418163652.htm
22. foodandhealthnetwork.org/wp-content/uploads/2020/02/TVTasteTestGuide.pdf
23. cde.ca.gov/ls/nu/sf/mbnsdsfsp012008.asp
24. foodforward.org/about/annual-report/

NOTES

