

Reducing food waste



As much as 40 percent of food produced in the U.S. for human consumption goes uneaten, and worldwide, one-third of food is wasted. About 36 million tons of food waste are generated in the United States each year. Food waste has increased significantly in recent years. Food waste per capita in the U.S. increased 50 percent from 1974 to 2009 according to the National Institute of Health.

According to the U.S. Environmental Protection Agency, food waste is the single largest component of garbage being sent to landfills and incinerators. Locally, food scraps and non-recyclable paper make up about one-third of what we throw in the garbage at home.

Environmental and economic impacts

Wasting food wastes resources that go into producing, packaging and transporting food. Additionally, there are many agricultural inputs used to produce food that emit greenhouse gases and impact soil and water, making wasting food an environmental threat. Food disposed of in a landfill quickly rots and becomes a significant source of methane, a potent greenhouse gas. Landfills are the largest source of human-related methane in the United States, accounting for more than 20 percent of all methane emissions.

Wasted food in the U.S. is valued at \$165 billion annually, representing a significant waste of money for households and businesses. Households are responsible for throwing away approximately \$43 billion worth of food, and this doesn't include plate scrapings, garbage disposal waste or composting. On average, American households throw away 14 percent of the food purchased, an average of nearly \$1,500 worth of edible food a year for a family of four.

Social and ethical impacts

The issue of wasted food is often juxtaposed with hunger and food insecurity. Every day, 980 million people go hungry in the world even though there is no shortage of food. In the U.S., 1 in 6 people don't have enough food. There are ways to help distribute food to people who are dealing with hunger issues, including donating unused food to a local food shelf and encouraging local restaurants and grocery stores to donate unused food.

Sources of food waste

Food waste is generated from many sources, including food manufacturing and processing facilities, supermarkets, institutions such as schools and hospitals, restaurants, and households. Because so much food is wasted at home, consumers play an important role in the food-waste equation and must be part of the solution. According to the Natural Resources Defense Council, the reasons consumers waste food include:

- Lack of awareness and undervaluing of food
- Confusion over dates on labels
- Impulse and bulk purchases
- Poor planning
- Cooking too much at once
- Forgetting about leftovers

By increasing awareness and taking some simple steps, households can significantly reduce the amount of food and money wasted every year.

Web resources

U.S. Environmental Protection Agency
www.epa.gov/foodrecovery

Natural Resources Defense Council
www.nrdc.org/food/files/wasted-food-ip.pdf

West Coast Climate & Materials Management Forum
westcoastclimateforum.com/food

Food and Agriculture Organization of the United Nations
www.fao.org/home/en

Save the Food
www.savethefood.com

TRACK YOUR FOOD WASTE AT HOME

More than 20 percent of the food we buy gets thrown away. That adds up to about 245 pounds per person each year! And food waste is a large proportion of our trash. An average household throws away one pound of food waste for every seven pounds of trash. The average American family of four ends up throwing away an equivalent of up to \$1,500 annually in food. In this activity, participants will calculate food waste by measuring and tracking all the food thrown away over a week or longer.

Outcome

Participants will increase their awareness of how much food waste they produce each week by measuring their food waste.

Audience

Youth (ages 8+), adults

Time

60 minutes for the initial set-up, then 1 to 2 weeks for the measurement exercise

Concepts

- Measure and record the amount food wasted each week
- Increase awareness about food waste

Supplies

- Paper lunch bags
- Tape or stapler
- The Food Waste Challenge measurement tool from the U.S. Environmental Protection Agency (EPA), available in the Appendix. Try to get participants to reuse the label for subsequent measurement weeks by removing the label from the paper bag after each week and reattaching it to a new bag, but be prepared to provide a few extras.
- The Food Waste Challenge worksheet from the U.S. EPA, available in the Appendix.
- BPI-certified compostable bags (*optional*)



TRACK YOUR FOOD WASTE AT HOME

Preparation

- Gather a supply of paper lunch bags, one or two for each week that you want participants to measure their food waste.
- Print out copies of the Food Waste Challenge measurement tool. Decide how long you want participants to measure their food waste.

Procedure

- Tape or staple the Food Waste Challenge measurement labels on the paper bags.
- At the start of each week, line one paper lunch bag with a BPI-certified compostable bag. Over the course of the week, place all your preventable food waste into the bag. Preventable food waste is food you bought to eat but has since spoiled or food that was prepared but was not eaten. Discard non-edible food waste such as banana peels, egg shells and chicken bones in the usual manner.
- At the end of each week, measure the volume of food waste in the bag using the fractions on the printed label. Record the volume on the Food Waste Challenge worksheet. If you have a kitchen scale at home, you may use that to weigh the food waste for a more accurate measurement.
- If the bag fills up before the end of the week, weigh or record the volume of the full bag and record how many days you collected food in that bag. Then begin collecting in a new bag. At the end of the week, total the weight and/or volume of food waste for the entire week.
- After recording the volume of food wasted for the week, place the collection bag and food in a curbside organics cart (if available) or backyard compost bin (as long as the food waste is only fruit and vegetable scraps), bring it to the Hennepin County Drop-off facility in Brooklyn Park or put it in your garbage.
- Have participants report and share the amount of food waste generated. If you are working with a group, consider charting or otherwise displaying and sharing the group's results. Discuss changes participants are motivated to take after measuring their food waste. Consider doing the activity again in a few months to see if participants have made any lasting changes.
- Waste collection tips:
 - If you are concerned about leakage, use a plastic bag as a second liner.
 - If you are concerned about odor, you can clip the top of the bag shut, or you can start using a new bag midweek as long as you track the total volume of waste for the whole week. You can also store the bag in the fridge.
 - Do not collect liquid waste such as soup.

Discussion questions

- What did you learn that was new? Was there anything that surprised you?
- Did you find the exercise helpful or informative, and how?
- Can you think of ways to reduce how much food you are throwing in the trash based on what you threw out?
- Do you think you often buy more food than needed?
- What are the most common food items that get thrown away in your household?
- What do you want to learn more about?

Additional activity ideas

Research the life cycle of food

Research the life cycle of a food or food product. What goes into getting your chosen food item from farm to your table?

Continue to measure food waste

Continue the food-waste measurement exercise for six weeks. The first two weeks are spent measuring

how much food waste your household throws away, and the third through sixth weeks are spent testing strategies from the U.S. EPA to prevent food waste while continuing to measure how much is being thrown away. View the U.S. EPA's "Food: Too Good to Waste" Implementation Guide and Toolkit at www.epa.gov/sustainable-management-food/food-too-good-waste-implementation-guide-and-toolkit.

FOOD WASTE BUFFET

About 40 percent of food produced for people to eat in the United States today goes uneaten, which is more than 20 pounds of food per person every month. That means Americans are throwing out the equivalent of \$165 billion in food each year. The food we throw out also uses huge amounts of water, chemicals, energy and land. Food is wasted for many reasons, such as buying too much, poor planning, spoilage and lack of awareness of how much is thrown away. In this activity, participants will take food waste and display it on a table like a dinner buffet to create a visual statement about food waste.

Outcome

Participants will visualize the amount of food that is regularly put into a garbage container by taking the waste out of the garbage can and displaying it on a table at an event.

Audience

Youth (ages 8+), adults

Time

30 - 90 minutes

Concepts

- Americans waste about 40 percent of the food that is produced in the United States for human consumption each year.
- Wasted food is wasted resources – water, fuel, and energy. It also contributes to pollution, soil erosion and deforestation.
- Displaying food waste at an event can help participants visualize how much food is wasted every day.

Supplies

- 1-2 long rectangular “banquet” tables
- Tablecloth(s)
- White board or chalkboard
- Marker or chalk



FOOD WASTE BUFFET

Preparation

- Choose an event for the food waste buffet. Make sure there will be food served at the event so attendees can use their leftover food for the food waste buffet. Choose a location for the buffet in a space that is highly visible but not obtrusive for the flow of traffic; for example near the trash containers, dish room or room exits.
- Recruit two to four volunteers (depending on the length of time for the event) to direct event attendees with their plates of leftover food.

Procedure

- Before the event, set up one or two tables, depending on the number of attendees, covered with a tablecloth. Position the dry-erase board or chalkboard near the table facing in a direction that makes it easy to read. Write a description such as “measuring our food waste” on the board.
- As the event is taking place, have the volunteers take peoples’ plates of leftover food and place the food on the food waste “buffet” tables. Food can be combined with other food to create full plates. Be prepared to answer questions about the purpose of doing this exercise (raising awareness about food waste by making it visible).
- After the event, calculate the amount of food waste by weighing or counting the number of plates of food, and report the results to the event’s attendees or organizer. Another possibility is to calculate the amount of leftover or wasted food generated in the kitchen, such as if the event takes place at a church, school or person’s house.
- Challenge event attendees to reduce their food waste at future events by only taking what they think they will eat and knowing they can go back for more food if they wish. Compare the results of this food waste “buffet” with those of the next event.

Discussion questions

- What new things did you learn?
- What was your reaction to seeing the leftover food? Did you expect to see more? Less?
- Was there any item in particular that people seemed to throw away a lot?
- Thinking about food waste in your household, overall how much food would you say you throw away in general?
- What reasons do you think lead to food getting wasted?
- Thinking about when you throw food away, to what extent does it bother you? A great deal, a fair amount, a little, not very much, not at all.
- What do you want to learn more about?

Additional activity ideas

Volunteer at a food shelf

- Volunteering at a food shelf can put a face on those who are hungry. One in nine Minnesotans struggles with hunger. You can help by volunteering at a food shelf. To find a food shelf near you, go to www.2harvest.org/get-involved/volunteer/ or salvationarmynorth.org/community/twin-cities-metro/community-pages/volunteering-21/.

EAT ME FIRST

According to the U.S. Environmental Protection Agency, food waste accounted for almost 14 percent of municipal solid waste in the United States in 2010 – that’s 34 million tons of food waste! Food is wasted for many reasons, including buying too much, poor planning and spoilage. This activity aims to help reduce the amount of food wasted in households by helping participants prioritize what food needs to be eaten first.

Outcome

Participants will create an “Eat Me First” sign to label a box, container or area of their refrigerator as a visual reminder that certain foods need to be eaten sooner to prevent them from spoiling and going to waste.

Audience

Youth (ages 8+), adults

Time

30 - 50 minutes

Concepts

- Food gets wasted when it’s forgotten about in the back of the fridge.
- Use up perishable foods before they spoil to avoid wasting money and resources that went into growing and producing the food.
- Make your perishable foods more visible by designating a specially labeled place for them in your fridge.

Supplies

- Shoe box or shoe box-sized plastic container for each participant
- Large, flat pieces of paper
- Scissors
- Glue stick or tape
- Markers or crayons
- Paints, fabric scraps, buttons, etc. for decorating the box (*optional*)
- A computer and printer if participants want to design a sign (*optional*)



EAT ME FIRST

Preparation

Gather the containers and materials for decorating the containers in advance. Provide a shoe box or other shoe

box-shaped container for each person, or have each participant bring one.

Procedure

- Explain to participants that they will be creating an “Eat Me First” container to keep in the refrigerator that will hold food that is close to its expiration date and should be consumed before it goes bad or is wasted.
- Have each participant use the paper and writing utensils to make a sign that says, “Eat Me First.” The signs can be as creative or decorative as they wish, but the wording should remain clear. Make sure the signs are the right size for the shoe boxes or containers.
- Have participants tape or glue the “Eat Me First” sign on the shoe box or container and ask each participant to specify where in their refrigerator makes sense to put this container.
- Have participants identify perishable food that should go in the “Eat Me First” container, and place the container in the refrigerator.

Discussion questions

- What types of foods will you put into your “Eat Me First” box?
- What are other ways you can try to help foods get eaten? (Example: rotate food forward with older food in front and new food in back)
- What are some other ideas for better storing food? (Example: place items on Lazy Susans in the fridge so food can be found and used easily)
- What are other ways you can reduce the amount of food you waste?
- How does reducing food waste help the environment?

Additional activity ideas

- **Create “Eat Me First” stickers**
Buy blank stickers and write or print “Eat Me First” on each sticker. Place stickers on individual food items in the fridge so people know which items to use up first.
- **Cooking challenge**
Choose five ingredients that you already have in your fridge, freezer or cupboards. Look online to find a recipe or brainstorm to create a recipe that incorporates those five ingredients. Prepare a dish, and then share it with other participants, who will rate each other’s creations to choose a winner of the cooking challenge.
- **Pack a Low-Waste Lunch**
Many parents pack lunch items in single-use plastic bags, or they purchase single-serving items that come in their own disposable package. These products are extremely convenient, but create a lot of waste. You can pack a no-waste lunch by using a reusable lunch bag, putting sandwiches and other main dishes as well as fruits and vegetables in reusable containers, and using a reusable beverage bottle, utensils and cloth napkin. You’ll be reducing packaging waste and saving money, too.
- **Tour a commercial composting facility**
Tour a commercial composting facility to see what happens to food waste. The Mulch Store is a commercial composting facility that offer tours to the public. Learn more at www.hennepin.us/environmentaleducation.

Resources

- Eureka Recycling’s online A to Z Food Storage Guide available in the Appendix.

MAKING SENSE OF DATE LABELS ON FOOD

Confusion over date labels on food can cause consumers to throw away food prematurely. In the United States, “sell by” and “use by” dates are not federally regulated and do not necessarily indicate food safety, except on certain baby foods or infant formula. Rather, they are manufacturer suggestions for peak quality. Most foods can be safely consumed well after their use-by dates. Understanding the true meaning of use by and sell by dates and being okay consuming foods that aren’t quite perfect can help reduce food waste.

Outcome

Participants will learn about food product dating labels such as “sell by” and “use by” to make informed choices about food.

Audience

Adults

Time

30 - 45 minutes

Concepts

- Use by and sell by dates on food labels don’t necessarily indicate food safety. They are often manufacturer suggestions for peak quality.
- Understanding date labels can help you reduce the amount of still-good food you throw away.

Supplies

- Food products that contain different date labels. Ideas include dry pasta, canned salsa or vegetables, bread, produce or cheese.



MAKING SENSE OF DATE LABELS ON FOOD

Preparation

- Collect food containers in advance.
- Review the date-label terms and definitions below before the activity to be well-versed on what the terms mean.

Procedure

- Explain what each date label means. Give participants time to ask questions about each date label.
- Have participants take an inventory of the dates on some of the food in their households. Ask them to choose foods stored in a variety of locations, such as in the cupboard, in the fridge, in the freezer, etc.
- Have participants record the dates on the food product and then think about how they would know if the food was safe to eat beyond looking at the date label, such as smelling the food first or looking for signs of freshness.
- Have participants discuss their findings and what they will do differently as a result.

Dates meant for businesses to communicate with each other:

- “Production” or “pack date”: the date on which the food product was manufactured or placed in its final packaging.
- “Sell by” date: the manufacturer’s suggestion for when the grocery store should no longer sell the product. This information helps stores with their stock rotation. The “sell by” date is often misinterpreted to mean a product is unsafe to eat, but in fact, “sell by” dates are typically designed as a way for the manufacturer to ensure the grocery store that if a product is sold by that date, it will still be of good quality for a reasonable amount of time after it’s purchased.

Dates meant to communicate directly with the consumer:

As explained by the FDA, “use by,” “best by,” “best if used before,” and “guaranteed fresh until” dates are typically manufacturer suggestions for peak quality. These are loosely used to mean:

- “Best if used before” or “best by” date: the manufacturer’s estimate of a date after which food will no longer be at its highest quality.
- “Use by” date: also typically a manufacturer’s estimate of the last date recommended for the use of the product while at peak quality.
- “Freeze by” date: a guide for consumers to know by when to freeze a product. This date is often used in conjunction with another date, in case the consumer chooses not to freeze the product.

Discussion questions

- How has your understanding of food date labels changed? What changes could be made to help consumers better understand food labels?
- Can you think of a food item that you have thrown away recently based on the belief that the food was unsafe to eat/no longer fresh?
- What do you want to learn more about?

MAKING SENSE OF DATE LABELS ON FOOD

Additional activity ideas

- **Grocery store label search**

Go to the grocery store as a group and split into groups. Visit the different areas of the store to look at the types of date labels commonly found on items such as fresh packaged deli food, packaged produce, canned foods, frozen foods, dairy products, baby food, pet food, and household cleaners. Each team should write down the number of different date labels they find, and then compare their list with the other teams. Review what the different date labels mean.

- **Watch and discuss “Inglorious Fruits and Vegetables”**

Intermarche, France’s third-largest supermarket chain, began a campaign called “Inglorious Fruits and Vegetables” in 2014 to try to change consumer attitudes about ugly-looking produce. View

Intermarche’s campaign video at www.vimeo.com/98441820 and discuss the campaign with participants. Was the campaign successful? Why or why not? What strategies can you use to know when fruits and vegetables are still edible and when they should be thrown out? What can you do with produce that might be overripe? (Example: use them for baking in dressings, soups or in a juice or smoothie)

- **Tell a friend**

Commit to telling one friend, family member, neighbor or co-worker about label dates and what they mean. Ask if they tend to throw away food because of the date labels, and encourage them to learn more about what labels really mean.

FOOD STORAGE

Much of household food waste is generated because we buy too much, let it spoil or put more on our plates than what we can eat. About two-thirds of food waste is due to food spoiling because it is not used in time, whereas the other one-third is caused by people cooking or serving too much. Certain types of food, such as produce, tend to get thrown away because it spoils before it can be used. Learning how to properly store food can significantly reduce food waste.

Outcome

Participants will learn how to store, refrigerate and freeze food to reduce food waste.

Audience

Adults

Time

30 - 45 minutes

Concepts

- Properly storing food can make it last longer and reduce food waste.
- Wasting food is costly for your wallet and the environment. It takes energy, water and other natural resources to produce food and to dispose of food waste.

Supplies

- Eureka Recycling's online A to Z Food Storage Guide available in the Appendix
- Examples of food items, including fruits and vegetables, meats, dairy, dry goods and spices
- Storage supplies including paper towels, cloth towel, glass jar, plastic bag, airtight container, kitchen knife, wax paper, grater
- Thermometers for people to check the temperature of their refrigerators (*optional*)



FOOD STORAGE

Preparation

- Read Eureka Recycling's online A to Z Food Storage Guide and review the Natural Resources Defense Council's The Refrigerator Demystified infographic to familiarize yourself with the material before you present it to participants.
- Print copies of Eureka Recycling's online A to Z Food Storage Guide for participants
- Acquire examples of food items.

Procedure

- Distribute Eureka Recycling's online A to Z Food Storage Guide and display or distribute copies of the Refrigerator Demystified infographic.
- Review the following food waste storage tips with participants.
 - Set your refrigerator to the right temperature. Food needs to be stored between 33 - 41 degrees Fahrenheit for maximum freshness and longevity. Check that the seals on your fridge are good as well. Make sure to store foods in the correct place in the refrigerator for maximum freshness.
 - Place food in appropriate packaging (example: store mushrooms in something breathable, like a paper bag, instead of plastic). Find alternative uses for produce that is past its peak quality. For example, vegetables that are starting to wilt can be used to make soup.
 - Learn the best place to store food. For example, many fruits should be stored in the fridge because they last longer in cooler temperatures.
 - Properly store your food immediately after buying items to ensure your food will last as long as possible.
 - Freeze food if you can't eat it in time. Many fruits freeze well, such as strawberries, blueberries, and bananas, and can then be used for smoothies or baking. Visit www.usda.gov and search "freezing food" to see how long certain foods last in the freezer.
- Ask participants what types of food are often wasted in their homes and search for storage tips on Eureka Recycling's A to Z Food Storage Guide.
- Show participants examples of food storage items and which foods could be stored in them to maximize the shelf life.
- Have each participant chose one to three storage tips to try at home. Have participants commit to their storage tips by writing which storage tips they will try on a sticky note and display the sticky notes for all participant to see.
- If possible, give participants a few weeks to try out the food storage techniques. Discuss the changes participants have made, sharing both successes and challenges they continue to encounter.

Discussion questions

- What specific food items do you have questions about storing properly? Give an example of one item, such as an apple, for which you learned the proper storage technique.
- What foods do you buy most often?
- What foods do you often find yourself throwing away?
- How often do you shop for food? Do you plan meals before you go to the grocery store? Do you find it helps you waste less food? What are other benefits to meal planning?
- What is your most common reason for throwing out food?
- What do you want to learn more about?

FOOD STORAGE

Additional activity ideas

- **Take inventory**

Take inventory of your refrigerator, freezer and cupboards to see what foods you have. Keep a list of the contents of each to remind yourself to use them up before buying more or before they spoil or become stale.

- **Donate food**

If you have non-perishable and unspoiled perishable food that you don't want or don't think you'll use, donate it to local food banks, soup kitchens, pantries, and shelters.

- **Leftover potluck**

Have a potluck dinner in which only leftovers are served. Foods such as chili, stew and soups can taste better as leftovers because the flavors have had time to meld.

Resources

The Natural Resources Defense Council's "the Refrigerator Demystified" infographic in the Appendix.