

Before the Workshop:

- Add presenter's name and affiliation; date of workshop; and logos of pilot partners to slide 1.
- Print handouts for attendees if doing in-person workshop (suggest three slides to a page in black/white for taking notes and printing double sided.)

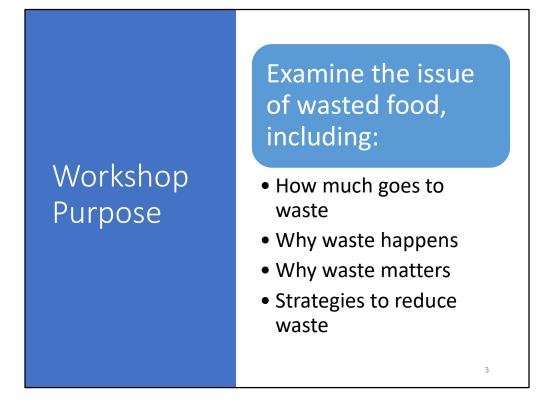
Opening the Workshop and Overview of the Pilot: 2 minutes

Welcome people and thank them for coming.

The Food: Too Good to Waste Campaign is a collaborative effort of [your organization], [the EPA], and [other organizations] concerned about the impacts of wasted food. Our role is to engage households in efforts to reduce wasted food through workshops such as this one. We do this in part by utilizing the tools available to us in the Food: Too Good To Waste Toolkit. The information contained in this *FTGTW Implementation Guide and Toolkit* is intended to inform the public and does not establish or affect legal rights or obligations. Links to non-EPA sites do not imply any official EPA endorsement of, or responsibility for, the opinions, ideas, data or products presented at those sites, or guarantee the validity of the information provided.

2

Disclaimer language



Less than 1 minute

Today we will be discussing the issue of wasted food including ...

Food IS Too Good to Waste!

By making small shifts in how we shop, store and prepare food...

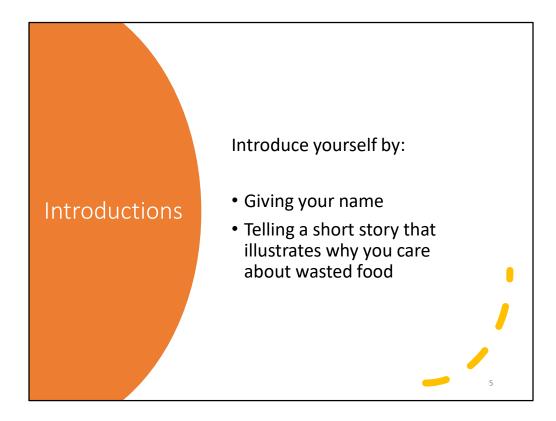
...we can toss less, eat well, simplify our lives, save money...

...and keep the valuable resources used to produce and distribute food from going to waste.

4

1 minute

The premise behind the Food: Too Good to Waste campaign is that by making small changes in our food management behaviors, we can have a large impact, both for ourselves, our wallets, and for the environment and our communities.



Depending on whether you have a small or larger number of people attending the workshop, there are two options for introductions.

8 people or less:

Let everyone introduce themselves to the group as a whole. Keep introductions to 2 minutes or less.

8 or more:

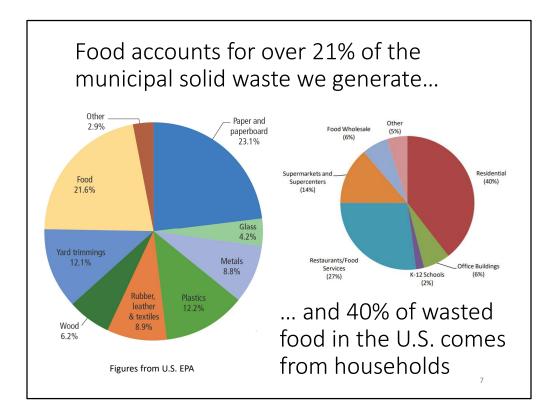
Have people pair off to introduce themselves. If doing virtually, place small groups in virtual break out rooms. Give each pair 2 to 3 minutes.

After they finish, have a few people share their stories with the group as a whole.



Less than 1 minute

Let's start by looking at how much food is wasted.



Currently, in the United States, it is estimated that more than 30% of edible food goes to waste.

In 2018, EPA estimates that over 63 million tons of wasted food were generated in the commercial, institutional, and residential sectors. Americans generate more food waste than any other type of waste. Food accounts for over 21% of the municipal solid waste we generate. And households are responsible for 40% of wasted food in the U.S.

Wasted Food occurs all along the food value chain - from farm to fork.

- For example, food is sometimes left in the fields because it costs more to harvest than what it could be sold for.
- Food that travels long distances is more likely to perish en route.
- At the retail level, food is wasted when grocery stores or restaurants buy more of a perishable food item than they can sell.

In this workshop, we will focus on wasted food in the household.

More detail:

In the United States, 31 percent—or 133 billion pounds—of the 430 billion pounds of the available food supply at the retail and consumer levels in 2010 went uneaten. The estimated total value of food loss at the retail and consumer levels in the United States was

\$161.6 billion in 2010. The top three food groups in terms of share of total value of food loss were meat, poultry, and fish (30 percent, \$48 billion); vegetables (19 percent, \$30 billion); and dairy products (17 percent, \$27 billion).

Sources:

Buzby, Jean, Wells, Hodan and Jeffrey Hyman. *The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States.* USDA, Economic Research Service. Economic Information Bulletin Number 121. February 2014. https://www.ers.usda.gov/publications/pub-details/?pubid=43836

U.S. EPA. Advancing Sustainable Materials Management: 2018 Fact Sheet. Assessing Trends in Material Generation, Recycling and Disposal in the United States. November 2020. https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancingsustainable-materials-management

U.S. EPA. 2018 Wasted Food Report. November 2020. https://www.epa.gov/sites/production/files/2020-11/documents/2018_wasted_food_report-11-9-20_final_.pdf

Gustavsson, Jenny, Christel Cederberg, and Ulf Sonesson. 2011. *Global Food Losses and Food Waste: Extent, Causes and Prevention*. Report for Swedish Institute for Food and Biotechnology. http://www.fao.org/3/mb060e/mb060e00.pdf.

USDA Economic Research Service. 2010. *Loss-Adjusted Food Availability: Spreadsheets*. https://www.ers.usda.gov/data-products/food-availability-per-capita-data-system/loss-adjusted-food-availability-documentation/.



Less than 1 min

Next, we will examine WHY food gets wasted.



Looking at the amount of wasted food by household, this photo shows a depiction of a family of four's monthly share of wasted food in eight food groups, and it includes both retail and consumer-level losses. Newer estimates show even higher levels of food waste, but this photo gives a sense of the magnitude, which we don't always see when we discard a little bit of food in the trash bin each day. USDA estimates that this wasted food costs a family of four about \$1500 a year.

Sources:

Martin, Andrew. *One Country's Table Scraps, Another Country's Meal*. New York Times, May 18, 2008. http://www.nytimes.com/2008/05/18/weekinreview/18martin.html?_r=0

PHOTO: http://www.nytimes.com/imagepages/2008/05/18/weekinreview/18martin-popup.html

Hall et al, 2009, The Progressive Increase of Food Waste in America and Its Environmental Impact, Plos ONE

Kantor, Linda Scott., Lipton, Kathryn., Manchester, Aiden, Oliveira. *Estimating and Addressing America's Food Losses*. USDA 1997. https://wayback.archiveit.org/5923/20111209023550/http://www.ers.usda.gov/Publications/FoodReview/Jan1997/J an97a.pdf

Buzby, Jean, Wells, Hodan and Jeffrey Hyman. *The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States.* USDA, Economic Research Service. Economic Information Bulletin Number 121. February 2014. https://www.ers.usda.gov/publications/pub-details/?pubid=43836

Venkat, Kumar. The Climate Change and Economic Impacts of Food Waste in the United States. Int. J. Food System Dynamics 2 (4), 2011, 431-446, April 2012.



1 min

Recent research in Oregon shows that of the food waste we throw away, 70% was could have been eaten, and 30% was never edible, meaning food scraps such as eggshells and bones. Fresh fruit and vegetables account for the largest percentage of edible food waste by weight, followed by prepared food and leftovers.

Source:

Oregon Department of Environmental Quality, 2019. *Oregon Wasted Food Study*. https://www.oregon.gov/deq/mm/Documents/ORWastedFoodMeasStudySummary.pdf

Why are we tossing food?

O Household Loss Reason	regon Wasted Food Study Diary (2017)	NRDC Diary (2015/16)
Moldy/Spoiled	32.1%	36%
Don't like/tired of eating	16.4%	9%
Not good as leftovers	14.1%	20%
Other	10.2%	4%
Past date	8.4%	7%
Too little to save	7.8%	7%
Worry about illness	7.4%	n/a
Contaminated ¹	1.4%	n/a
Damaged (stale, soggy, freezer burned) ¹	1.1%	n/a
Improperly cooked	1.0%	<1%
Unrefrigerated too long ¹	<0.1%	13%

1 min

In two recent household food waste studies, the most common reasons for why food was wasted are 1) the food had become moldy or spoiled; 2) the household didn't like or was tired of eating the item; and 3) the household didn't enjoy the food as much when eaten later as leftovers.

Source:

Oregon Department of Environmental Quality, 2019. *Oregon Wasted Food Study*. https://www.oregon.gov/deq/mm/Documents/ORWastedFoodMeasStudySummary.pdf

This study cites NRDC, 2017. *Estimating Quantities and Types of Food Waste at the City Level*. https://www.nrdc.org/sites/default/files/food-waste-city-level-report.pdf



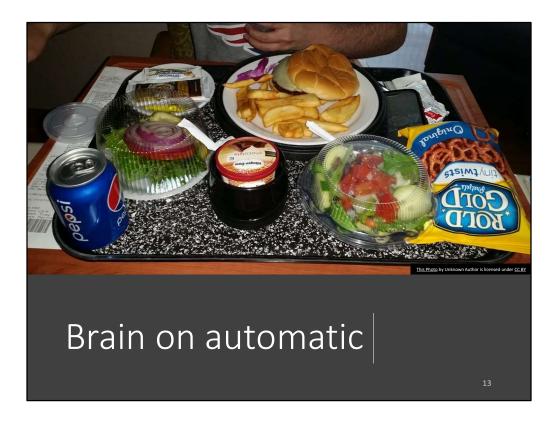
The mystery is why we waste so much especially since recent brain research shows that we really dislike waste, especially when it is something that we consider ours. There is even a term for it: loss aversion. Essentially, we are wired to hate losing the resources we have in hand.

The good news here is that we have an in-built motivation to waste less.

Explanation of loss aversion: Losses are more powerful behavioral motivators than gains. Owning something increases its value. Losing \$100 worth of food has a greater impact on how satisfied you are than saving \$100 on food.

Source:

Thaler and Sunstein, 2008, Nudge: Improving Decisions about Health, Wealth and Happiness; Kahneman, 2011, Thinking, Fast and Slow.



Still, there must be other things at play. One factor is that we often act automatically instead of reflecting on what we are doing.

For example, you are likely to serve yourself more if you are using a tray or a large plate. Serving more food can lead to plate waste when we aren't able to eat everything we take.

Our brains are often on automatic when we do routine tasks such as shopping and cleanup after meals, so we might forget what leftovers we have in the refrigerator or that we still have tomatoes from the last time we went to the store.

Source:

Kiho Kim & Stevia Morawski (2012) *Quantifying the Impact of Going Trayless in a University Dining Hall,* Journal of Hunger & Environmental Nutrition, 7:4, 482-486, DOI: <u>10.1080/19320248.2012.732918</u>



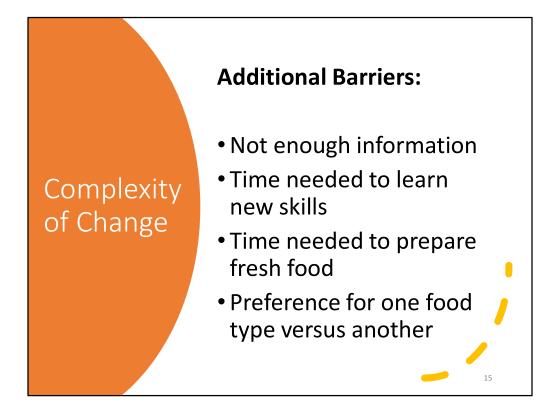
Another big factor that contributes to wasting food is our dynamic lifestyles.

Planning is one thing, and following through on plans is another. Plans change last minute due to social opportunities or work commitments. Both of these may take precedence over going home to cook that meal you planned and purchased ingredients to make.

A study by the <u>Cornell University</u> Food and Brand Lab found that <u>93 percent of</u> <u>respondents</u> acknowledged buying foods they never used.

Source:

https://well.blogs.nytimes.com/2010/11/01/from-farm-to-fridge-to-garbage-can/



While researchers can point to some general behaviors leading to wasting food, for different households, there will be different barriers to reducing food waste. Feeding a household is a complex series of activities. There's meal planning, shopping, storing, preparing and cooking food, as well as choosing what to eat at any given moment. Some of the barriers to making changes in how we carry out these activities are: not having enough information to make a change, a lack of time, and food preferences. Children especially can favor one type of food over another and though you try to get them to eat food that is good for them, it seems that just as often its still on the plate at the end of the meal.



Less than 1 min

Notwithstanding these barriers to reducing wasted food, there are significant benefits to be gained.



3 min

As this World War II poster suggests, the benefits of keeping good food from going to waste include saving money. But that's not the only benefit. Other benefits include:

Keeping fruit and vegetables fresh for longer periods of time may help to increase their consumption.

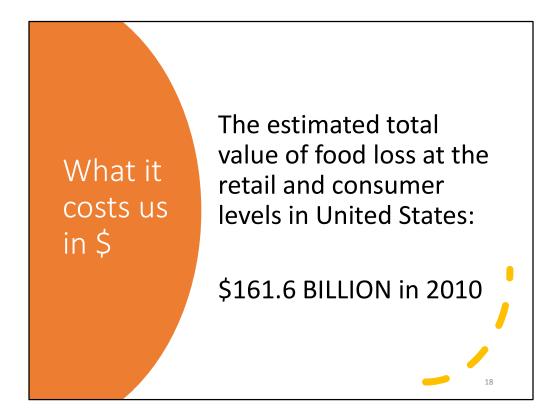
By trying different ways to buy and prep food, we can simplify our lives.

And there is the basic satisfaction that comes from wasting less.

Sources:

Buzby, Jean, Wells, Hodan and Jeffrey Hyman. *The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States.* USDA, Economic Research Service. Economic Information Bulletin Number 121. February 2014. https://www.ers.usda.gov/publications/pub-details/?pubid=43836

Venkat, Kumar. *The Climate Change and Economic Impacts of Food Waste in the United States.* Int. J. Food System Dynamics 2 (4), 2011, 431-446, April 2012.

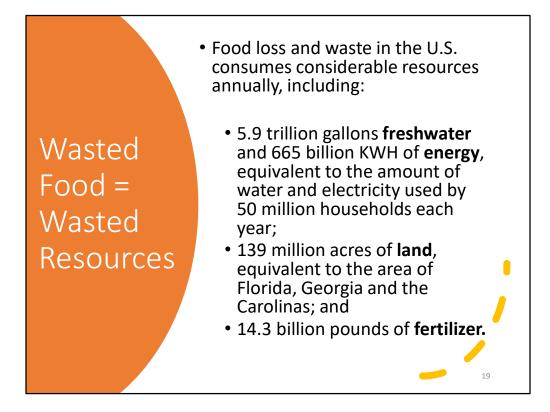


1 min

The USDA estimates that in 2010, food loss at the retail and consumer levels was worth over 161 billion U.S. dollars. As mentioned earlier in the presentation, this comes out to a household of four throwing away about \$1500 each year on food they didn't eat.

Source:

Buzby, Jean, Wells, Hodan and Jeffrey Hyman. *The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States.* USDA, Economic Research Service. Economic Information Bulletin Number 121. February 2014. https://www.ers.usda.gov/publications/pub-details/?pubid=43836



1 -2 min

When we waste food, we waste all the resources that went into producing that food, including water, energy, land and fertilizer.

Sources:

Read, QD; Brown, S; Cuéllar, AD; Finn, SM; Gephart, JA; Marston, LT; Meyer, E; Weitz, KA; Muth, MK. (2020). Assessing the environmental impacts of halving food loss and waste along the food supply chain. Science of the Total Environment 712: 136255. https://doi.org/10.1016/j.scitotenv.2019.136255

Pagani, M; De Menna, F; Johnson, TG; Vittuari, M. (2020). *Impacts and costs of embodied and nutritional energy of food losses in the US food system: farming and processing (Part A)*. Journal of Cleaner Production 244: 118730. http://www.sciencedirect.com/science/article/pii/S0959652619336005

Vittuari, M; Pagani, M; Johnson, TG; De Menna, F. (2020). *Impacts and costs of embodied and nutritional energy of food waste in the US food system: Distribution and consumption (Part B).* Journal of Cleaner Production 252: 119857. http://www.sciencedirect.com/science/article/pii/S0959652619347274

USEPA. WaterSense. "The average American family uses more than 300 gallons of water

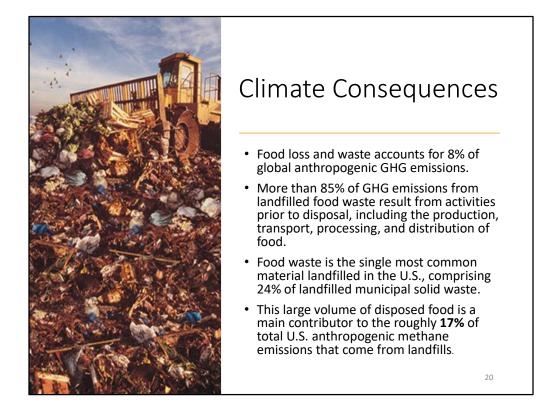
per day at home." <u>https://www.epa.gov/watersense/how-we-use-</u> water#:~:text=The%20average%20American%20family%20uses,in%20more%20water%2Dint ensive%20landscapes

USEIA (Energy Information Administration). In 2018, 120.3 million homes in the United States consumed 1,462 billion kilowatt-hours (kWh) of electricity (EIA 2019a). On average, each home consumed 12,146 kWh of delivered electricity (EIA 2019a). (Source: https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references).

Read, QD; Brown, S; Cuéllar, AD; Finn, SM; Gephart, JA; Marston, LT; Meyer, E; Weitz, KA; Muth, MK. (2020). Assessing the environmental impacts of halving food loss and waste along the food supply chain. Science of the Total Environment 712: 136255. https://doi.org/10.1016/j.scitotenv.2019.136255

US Census Bureau. *State Area Measurements and Internal Point Coordinates*. <u>https://www.census.gov/geographies/reference-files/2010/geo/state-area.html</u>

Toth, JD; Dou, Z. (2016). Wasted food, wasted resources: Land, irrigation water, and nutrients associated with food wastage in the U.S. In Food Waste Across the Supply Chain: A US Perspective on Global Problem. Ames, Iowa: Council for Agricultural Science and Technology. https://www.cast-science.org/wp-content/uploads/2016/03/CAST-Food-Waste-Across-the-Supply-Chain-2016.pdf



Food loss and waste accounts for 8% of global anthropogenic greenhouse gas (GHG) emissions (4.4 gigatons CO₂e annually). And more than 85% of GHG emissions from landfilled food waste result from activities prior to disposal, including the production, transport, processing, and distribution of food. These huge embedded GHG impacts are one of the reasons why preventing food from going to waste in the first place is so impactful.

Food waste is the single most common material landfilled in the U.S., comprising 24% of landfilled municipal solid waste. This large volume of landfilled food waste is a main contributor to the approximately 17 percent of total U.S. human-caused methane emissions that came from landfills in 2019. Landfills are the third largest source of methane in the United States, and methane is a powerful greenhouse gas that's more than 25 times more powerful than carbon dioxide. Keeping food out of landfills will also help the United States address climate change.

Sources:

UN FAO (United Nations Food and Agriculture Organization). *Food wastage footprint & Climate Change*. (2015). <u>http://www.fao.org/3/bb144e/bb144e.pdf</u>

Birney, C; Franklin, K; Davidson, T; Webber, M. (2017). An assessment of individual

foodprints attributed to diets and food waste in the U.S. Environmental Research Letters 12: 105008. <u>https://doi.org/10.1088/1748-9326/aa8494</u>

Equivalent calculated with EPA's Greenhouse Gas Equivalencies Calculator. Last updated March 2021. <u>https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator</u>

CEC (Commission for Environmental Cooperation). 2017. *Characterization and Management of Food Loss and Waste in North America. Montreal, Canada: Commission for Environmental Cooperation*. 289 pp. <u>http://www3.cec.org/islandora/en/item/11772-characterization-and-management-food-loss-and-waste-in-north-America</u>

USEPA. Advancing Sustainable Materials Management: 2018 Fact Sheet. Assessing Trends in Materials Generation and Management in the United States. December 2020. https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancing-sustainable-materials-management

US EPA. (2021). *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019*. Chapter 7-Waste. <u>https://www.epa.gov/sites/production/files/2021-04/documents/us-ghg-inventory-</u> 2021-chapter-7-waste.pdf



Have workshop participants group in pairs or small groups and give each 4 minutes to share the discussion questions. If doing this virtually, they can be placed in virtual break out rooms.

After everyone has had a chance to discuss, reconvene the group and ask for a few people to share their insights from the discussion.



In developing the Food: Too Good to Waste pilot, a workgroup of researchers and practitioners evaluated different strategies to prevent wasted food. The next slides present the top strategies in terms of the workgroup's evaluation criteria.

The strategies cover the range of activities we undertake as households to feed ourselves, from planning meals, to buying, storing, prepping and making choices about what to eat when.

There will be other strategies, besides those presented here, that help households waste less food. One of the efforts in this [small or large-scale campaign] is to test how effective these strategies are.



The first of the four strategies is making a food shopping list with meals in mind. This strategy is a little simpler than all-out meal planning and it leaves flexibility for buying what is local and seasonal, say if you go to the farmers market and find an abundance of summer squash.

The point of making a shopping list with meals in mind is both to check what you already have on hand -- what we call "shopping your kitchen first" -- but also to consider how many meals you will be likely to eat at home before you next go shopping and buy accordingly.

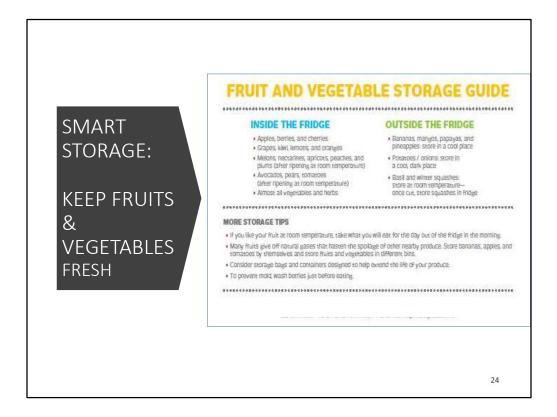
By making a list with meals in mind, you will waste less, eat better, and save time and money.

This strategy also focuses on buying only the quantities you need until your next shopping trip. The idea here is to be aware while shopping of how much you are putting in your cart rather than being on autopilot. By buying no more than what you expect to use, you will be more likely to use it up while it is still fresh.

Sources:

https://www.epa.gov/sustainable-management-food/food-too-good-waste-

implementation-guide-and-toolkit
https://www.epa.gov/sites/production/files/201602/documents/smart_shopping_ftgtw_2_1_2016_pubnumberadded_508_v2.pdf



The second strategy is perhaps the easiest of all – storing fruits and vegetables for maximum freshness. Knowing which fruits and vegetables last longer inside or outside the fridge is key here. We've developed a storage guide to assist with this strategy.

By storing fruits and vegetables for maximum freshness, they will taste better and last longer, helping you eat more of them.

Sources:

https://www.epa.gov/sustainable-management-food/food-too-good-wasteimplementation-guide-and-toolkit https://www.epa.gov/sites/production/files/2016-02/documents/smart_storage_ftgtw_2_1_2016_pubnumberadded_508_v2.pdf



The third strategy is to prep your perishables as soon as possible and, if possible, when you return from your grocery shopping trip. This strategy helps with busy lifestyles, like on those days when you only have a half hour or so to cook a dinner with fresh vegetables. By preparing perishable foods post-shopping, you'll make it easier to whip up meals later in the week, saving time, effort and money. Many people also prepare meals in batch up front.

Sources:

https://www.epa.gov/sustainable-management-food/food-too-good-wasteimplementation-guide-and-toolkit https://www.epa.gov/sites/production/files/2016-02/documents/smart_prep_ftgtw_2_1_2016_pubnumberadded_508.pdf



The final strategy is to eat what needs eating first. By being mindful of old ingredients and leftovers you need to use up, you'll waste less and may even find a new favorite dish in the process.

One way to do this is to move food that's likely to spoil soon to the front of the shelf or a designated "eat first" area with a visual prompt. Another approach is to learn flexible recipes. Casseroles, frittatas, soups and smoothies are great ways to use leftovers, produce that's a bit past its prime, and odds and ends.

Sources:

https://www.epa.gov/sustainable-management-food/food-too-good-wasteimplementation-guide-and-toolkit https://www.epa.gov/sites/production/files/2016-02/documents/smart_saving_eat_first_sign_ftgtw_2_1_2016_pubnumberadded_508_v2.p df



Solicit other strategies from group as a whole.



Less than 1 minute

One way to succeed in making these shifts is to make a record of what you are doing. We have developed a challenge to engage households in reducing wasted food by raising awareness on how much food is going to waste.

A second purpose of the challenge is to collect data that will help in the design of future programs to reduce wasted food.

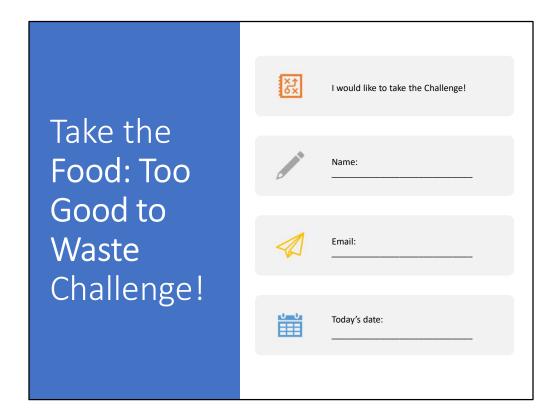


Record the amount of household food going to waste before and after trying one or more of the suggested strategies. This strategy takes place over four weeks.

- During weeks 1-2, you will be measuring how much food currently goes to waste (in volume and/or weight) in your household to determine a baseline.
- During weeks 3-5, try out one or more of the smart strategies that we just discussed while continuing to measure how much goes to waste each week. Keep notes on what works to reduce food waste and what doesn't.
- During week 6, you will measure and record your final weekly food waste amount. See how much food (and money) you saved compared to weeks one and two.

Sources:

https://www.epa.gov/sustainable-management-food/food-too-good-wasteimplementation-guide-and-toolkit https://www.epa.gov/sites/production/files/2016-02/documents/get_smart_ftgtw_2_1_2016_pubnumberadded_508.pdf



1 min

Distribute challenge cards or other materials and thank people for coming.