



How to Conduct a School Grade 6-12 Leftover Food & Beverage Assessment

February 16th, 2017

Sustainable Materials Management

Food Recovery Challenge



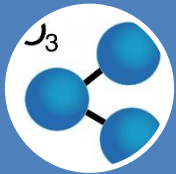
Changing how we think about our resources today for our children's tomorrow

U.S. Environmental Protection Agency



EPA mission:

To protect human health and the environment.



1971-2016: Cut air pollutants by 70%



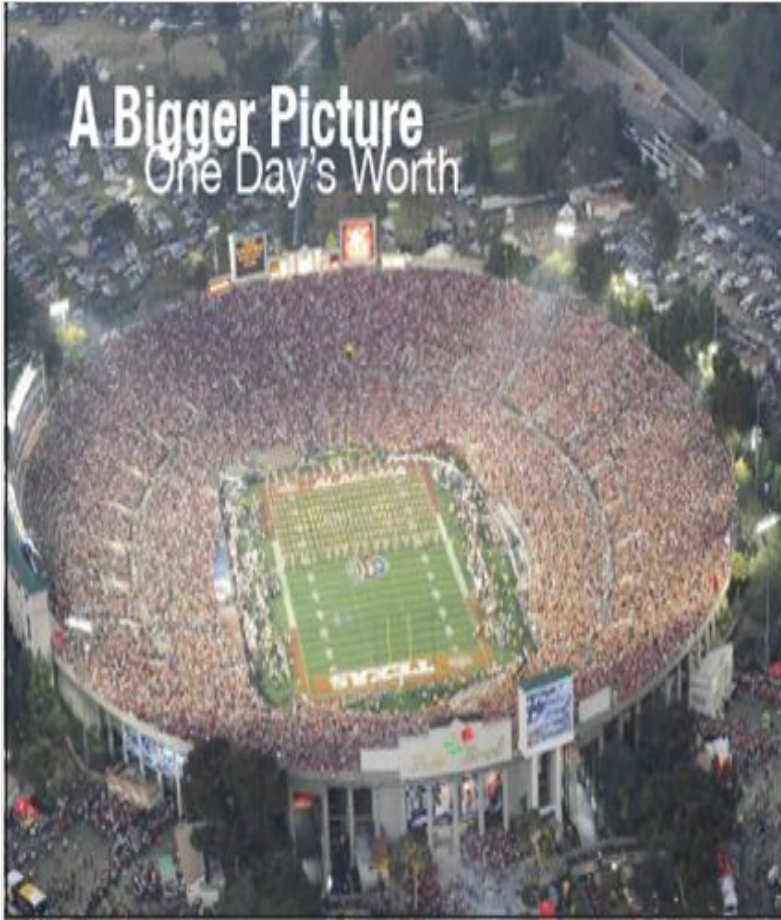
93% compliance with drinking water standards.



>9 million tons of virgin materials avoided.



Wasted food in the U.S.



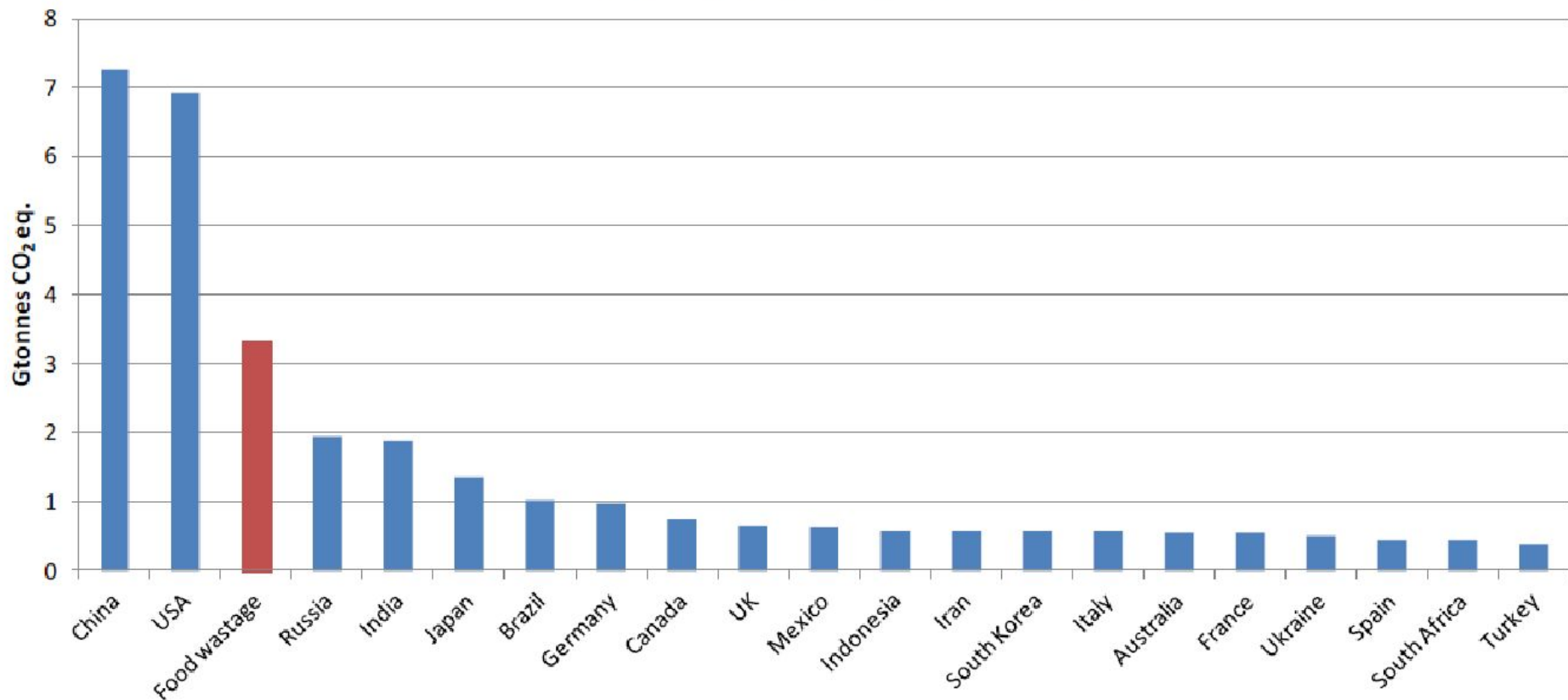
- 30% of food in US is wasted
- Costs U.S. retail & consumers **\$161 billion/yr.**
- **1 in 6 Americans** lack a secure supply of food.
- **25% US water** is for wasted food



Sources: USDA, EPA, FAO. Photo Credit: Jonathan Bloom

If food wastage were a country: 3rd biggest contributor to greenhouse gases

Total GHGs emissions excluding LULUCF
Top 20 of countries (year 2005, WRI) vs. Food wastage



By ASHLEY WELCH / CBS NEWS / August 25, 2015, 2:48 PM

School lunch fruits and veggies often tossed in trash, study finds



Wasted food in K-12 schools=\$1 billion annually.

Los Angeles Times

Solutions sought to reduce food waste at schools

April 1, 2014



On hundreds of campuses in the Los Angeles Unified School District, the nation's second-largest school system, which serves 650,000 meals a day, students throw out at least \$100,000 worth of food a day - and probably far more, according to estimates by David Binkle, the district's food services director.



Food Recovery Hierarchy

Most Preferred

Source Reduction

Reduce the volume of surplus food generated

Feed Hungry People

Donate extra food to food banks, soup kitchens and shelters

Feed Animals

Divert food scraps to animal feed

Industrial Uses

Provide waste oils for rendering and fuel conversion and food scraps for digestion to recover energy

Composting

Create a nutrient-rich soil amendment

Landfill/Incineration

Last resort to disposal

Least Preferred

EPA 食物回收等級

減少來源
減少食物的剩餘量

給飢餓的人們
將多餘的食物捐給食物庫貧民廚房和庇護中心

給動物
將食物餘渣轉為動物食料

工業用途
提供廢油脂和食物餘渣
用來回收和製造能源

堆肥
創造營養豐富的泥土

填埋／焚燒
最後一招是
填埋

最佳的選擇

最劣的選擇



Jerarquía de Recuperación de los Alimentos

Reducir la fuente
Reducir el volumen excedente de comida generada

Combatir el hambre en la población
Donar la comida sobrante a bancos de alimentos, comedores comunitarios o refugios

Alimentar a los animales
Utilizar las sobras de comida para la alimentación de animales

Usos industriales
Destinar las sobras de comida y el aceite usado para su aprovechamiento energético

Composteo
Crear un abono rico en nutrientes

El basurero/incineración
Disposición al basurero

Más preferido

Menos preferido

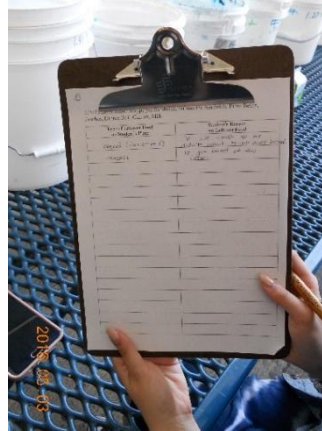
EPA Region 9 -- Southern CA K-12 Lunch Leftover Food & Bev. Assessments

- 6 assessments in 2016
 - 5 public high schools
 - 1 public middle school
- Assessed lunchtime leftover food & beverage from students' plates.





1) Student brings leftover food to surveyor.



2) Ask student's reason for leftover food.



3) Separate partially eaten food into pre-labeled buckets.

STEPS IN A LEFTOVER FOOD & BEVERAGE ASSESSMENT

4) Weigh leftover food.

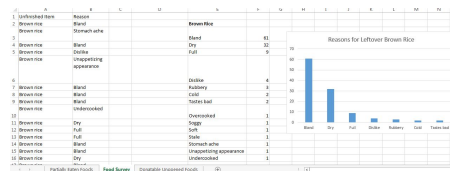


5) Count unopened food.



6) Analyze data.

Complete report.



7) Implement food recovery.

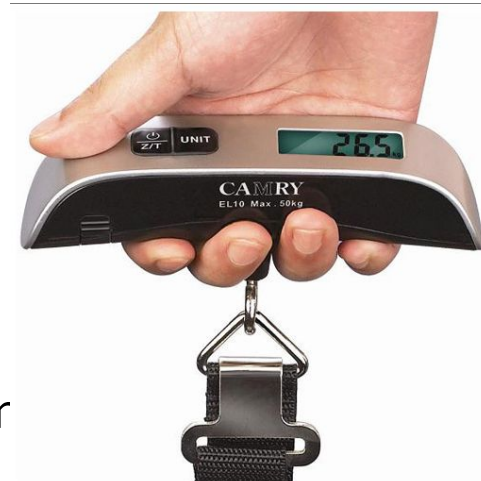


Leftover Food & Beverage Assessment
Prepared by U.S. EPA
with the esteemed collaboration of Culver City High School
April 22nd, 2016
Culver City High School
Culver City

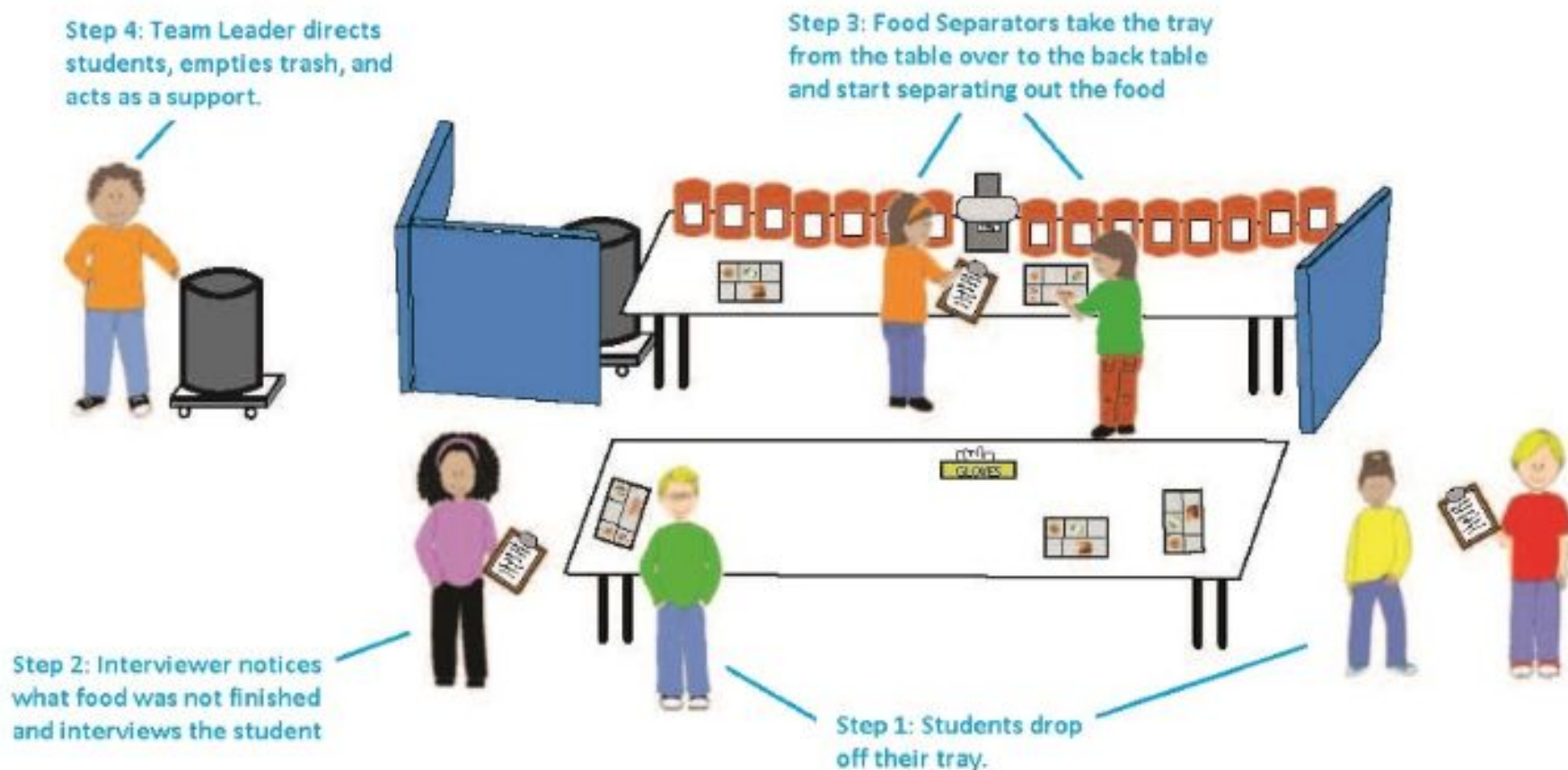


Leftover Food & Beverage Assessment Supplies

- Students/faculty/administrators/parents to help perform assessment
- List of that day's lunchtime menu items
- Clipboards & pens
- Leftover food interview sheets
- Leftover food weight log sheets
- Unopened food log sheet
- Luggage scales with batteries
- Menu item labels – create one label for each item
- 5-gallon buckets – with a food or beverage label
- Gloves – for separating food into pre-labeled buckets
- Aprons – for staying clean during the assessment
- Camera – take pictures of every menu item and unopened items
- Trashcans
- Tables



K-12 Leftover Food & Beverage Assessment Station



Unopened Food & Beverage – Culver City Middle School

5/18/16 menu: Pizza, BBQ Pulled Pork Sandwich, Tater Wedges, Rice, Sweet & Sour Chix, Salad, Raw Veggies, Fruit, Milk, Juice

Type of Unopened Food	Quantity
these String cheese	4 10
Carrots	2
Oranges	13
Apples	8
Milk	1
Juice	2



Uneaten Food Interview Sheet for Cobalt, Victorville 3/17/16

Possible reasons: too salty, too sweet, undercooked, overcooked, spoiled, bruised, I'm full, I'm allergic, stale, too dry, too wet, tastes processed, I dislike veggies, I dislike Fruit, I'm vegetarian, I dislike milk.

Person - 14

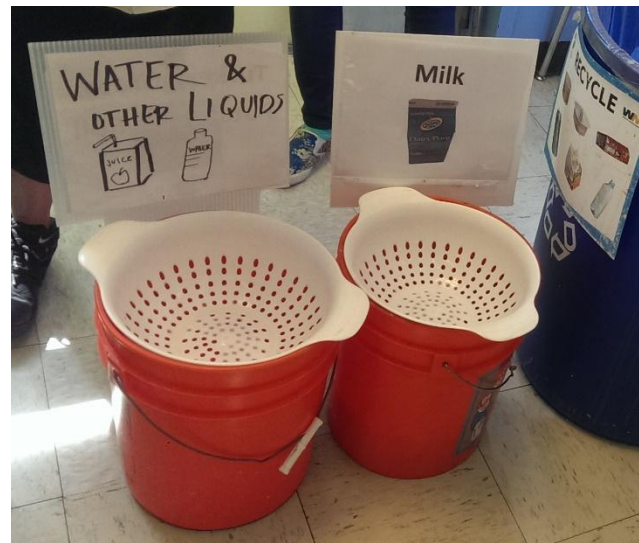
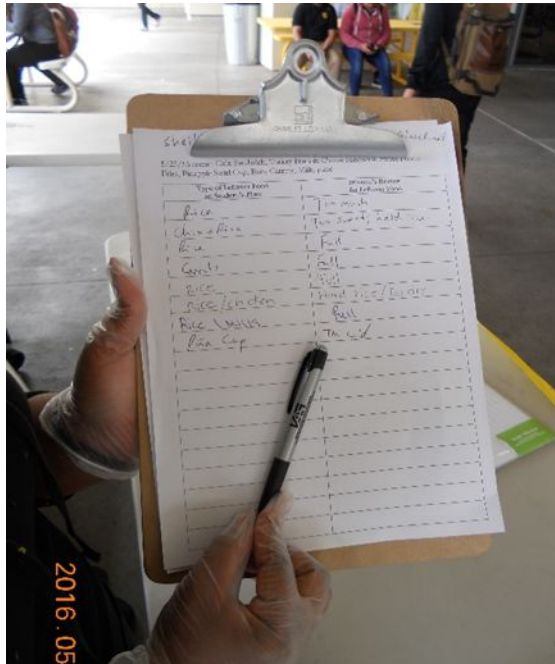
Type of Uneaten Food on Student's Plate	Student's Reason for Leaving Uneaten Food
Chicken & Rice Broccoli	- BLAND - SOGGY - FULL - BLAND - DRY - FULL
SALAD	- FULL - FULL
Chicken & Rice	too BLAND - too SOGGY - NO FLAVOR - BLAND
Fruit	- CAN'T REEL - BLAND - too SAUCY - Full (Needs BUNCH and Taj)
Broccoli ?	- DON'T LIKE - DON'T LIKE
Rice	SOGGY - DRY - weird - BLAND - SOGGY
Sandwich	- BLAND - Smoach Bread - SOGGY
SLUSHY	- NO TASTE - SOUR - FULL weird doesn't taste like apple
turkey Sandwich	- had cheese & cranberries - too much Bread



Take a photo of every menu item:
before eating, leftovers, unopened.



Have Students do the sort



Students' Reasons for Leftover Brown Rice (103 lbs)

of Reasons

63

10



Too dry and undercooked

Full

Bland/lacks flavor

Dislike taste ("nasty")

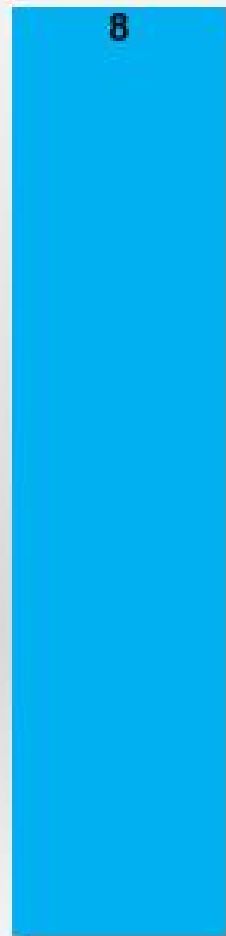
Doesn't taste like rice /tastes like plastic

Too much

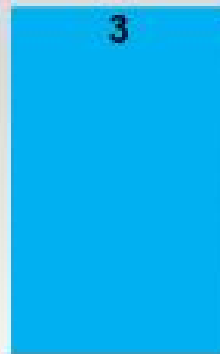
Too mushy/soggy

Students' Reasons for Leftover Milk (1.45 lbs)

of Reasons



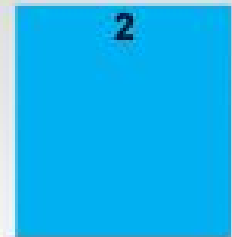
Dislike taste



Looks expired



Doesn't go with the
food



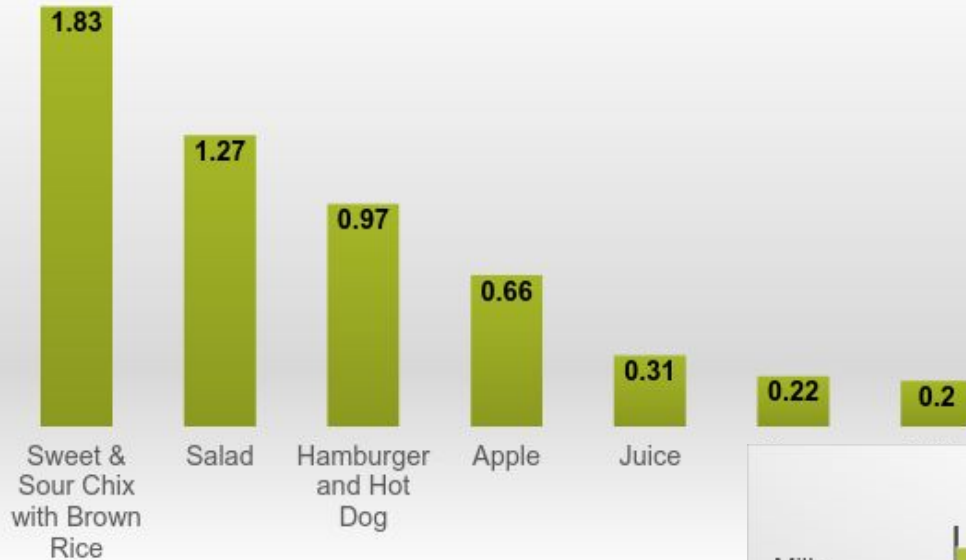
Smells nasty



Leftover food & beverage assessment: May 2016

~25 students surveyed.

Partially Eaten Food on Students' Trays (5.46 total lbs)



Unopened Items (36 total)



Unopened Food & Beverage: 263 items

Menu Item	Quantity
Veggies (carrots/celery/cucumber)	86
Whole Fruit	47
Luck O' The Ice Sour Apple Cup	43
Juice	28
Crackers	23
Milk	14
Turkey & Cheese Sandwich	11
Turkey Panini	8
Orange Chicken	3
Total Items	263

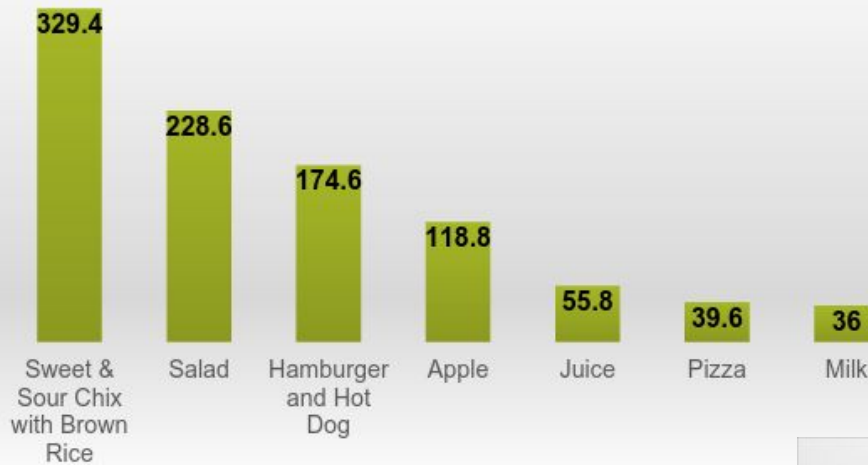


Total= 594 unopened items –
6 school audits

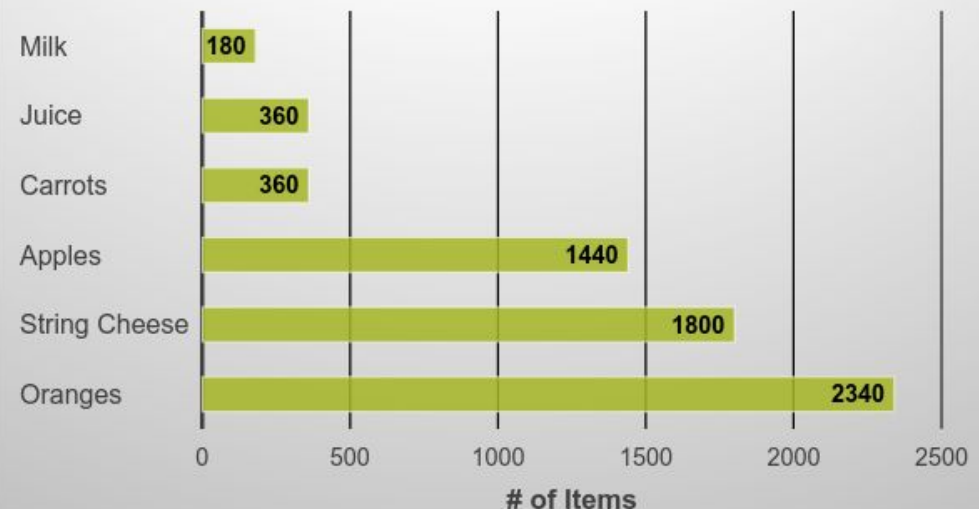


Estimated Lunch-Time Leftover Food for an Academic Year (180 days)

Partially Eaten Food on Students' Trays (982.8 total lbs)



Unopened Items (6480 total)



Value of Partially Eaten & Unopened Food & Beverage Going to Trash for **One Day**

(based on ~90 students surveyed)

Menu Item	Price That LAUSD Pays
Teriyaki Chix & Brown Rice	\$12.58
Baby Carrots	\$10.31
Frosty Pineapple Swirl Cup	\$6.95
Milk	\$3.51
Fries	\$2.89
Grand Total	\$36.24
Price Per Student	\$0.40



Top 10 Recommendations

Source Reduction: Reduce the volume of surplus food generated.

- 1) Continue serving the students **delicious, nutritious food & beverage**.
- 2) **Adjust preparation** of the top three leftover/unopened food/beverage items.
- 3) Before debuting a new menu item, conduct a **taste test** with a group of students.
- 4) **Educate** students, faculty and operations on food waste and food recovery.
- 5) Post **cafeteria signs** indicating what and how much of each menu item students must take.
- 6) Use the [**Smarter Lunchrooms Self-Assessment Scorecard**](#) to help reduce food waste.
- 7) Give each menu item a persuasive, age-appropriate name in Spanish or other appropriate language & English, like: *X-Ray Vision Carrots/Zanahorias de Rayos X*.

Donation & Sharing

- 8) Establish a [**share table**](#) for unopened foods, whole fruits and beverages.
- 9) [**Donate unopened food and beverages**](#).

Composting

- 10) Establish an [**on-campus compost site**](#).



8) Establish a share table for unopened foods, whole fruits and beverages.



Donation & Sharing

10) Establish an on-campus compost site.



Ramona High School, San Diego County

Rescued carrots from high school food assessment converted to Creamy Carrot Juice.



www.epa.gov/sustainable-management-food/food-loss-prevention-options-grade-schools-manufacturers-restaurants



Food Loss Prevention Options for Grade Schools

Below is a list of ideas and activities that grade schools may consider implementing to help prevent food loss and waste. Contact your local EPA representative for log sheets, signs, and other tools.

- ☐ **Perform a food waste audit.** See what's being thrown out and why.
 - Get the students involved. Be there at the dish return line with a few volunteers, buckets, a log sheet and a weight scale. Record what and how much is being thrown out and why. Be sure to ask students for reasons why they didn't finish their food.
 - In the kitchen, have only one food waste trash can and provide each staff member a small container to fill with food waste at their station. Before they empty their container, have staff weigh it and record the amount, type and reason the waste is being discarded on a log sheet located near the trash can.
 - *Audit Tip: Volunteering can be part of the core curriculum or count toward community service hours for many student organizations.*
- ☐ **Set up a share table.** Check with your local health department and school board to find out if donating and sharing is allowed. If so, set up a share table, a place students can return whole items that they choose not to eat so that they are available for others who may want additional helpings.
- ☐ **Employ "Offer versus Serve."** Offer versus Serve is a provision in the U.S. Department of Agriculture's (USDA) National School Lunch Program and their School Breakfast Program that allows students to decline some of the food offered that they do not intend to eat to help reduce food waste.
- ☐ **Schedule recess before lunch.** This strategy shows a reduction of plate waste and an increase in food and nutrient consumption.
- ☐ **Provide children another choice of beverage** in the food service line that is low cost for the school (e.g., water).
- ☐ **Extend lunch periods from 20 to 30 minutes** to reduce plate waste by nearly one-third.
- ☐ **Minimize waste from mandatory fruit and vegetable servings.** Many schools are required to offer or serve a fruit/vegetable serving to students. Below are tips to reduce waste associated with this requirement:
 - **Slice the fruit:** Cutting fruit into bite-sized pieces is easier to eat and encourages students to eat what is on their trays.
 - **Give fruits and vegetables catchy names that appeal to children:** Younger kids like fun names like "X-ray Vision Carrots" and "Super Strength Spinach" while older children prefer more descriptive names like "Succulent Summer Corn" and "Crisp Celery and Carrots."
 - **Put healthy foods within reach:** Moving salad bars and fruit closer to students' reach increases both sales and consumption.



United States Environmental Protection Agency (5305P)
Washington, DC 20460
EPA-530-F-16-019-A
August 2016

For more information, including who
your local EPA representative is, visit:
<https://www.epa.gov/foodrecovery>

Food Recovery Challenge (FRC)

epa.gov/sustainable-management-food/food-recovery-challenge-frc

- **Participants:**

- Track and measure their surplus food.
- Move toward their food recovery goals.

- **Endorsers:**

- Educate on sustainable food management.
- Conduct Food Recovery Challenge outreach.



Resources for K-12 food recovery

Information for K-12 Schools on Reducing Wasted Food, including Donation from School Breakfast and Lunch Programs:

<https://www.epa.gov/sites/production/files/2015-06/documents/guide-for-k-12-schools-food-recovery.pdf>

What You Can Do to Prevent Wasted Food, USDA

<http://www.fns.usda.gov/tn/what-you-can-do-help-prevent-wasted-food>

EPA webinar *How to Donate & Compost Surplus Food from K-12 Schools*:

<https://www.youtube.com/watch?v=4zhBgQirHVw&feature=youtu.be>



Wendi Shafir, U.S. Environmental Protection Agency

Shafir.wendi@epa.gov

415-972-3422

