



Lightning Round Presenters

1. Amy Preble, UNC Chapel Hill
Residence Hall Composting
2. Alyssa Halle-Schramm, Austin Community College
Paper Towel Composting
3. Bill Rudy, Brigham Young University
Waste Bin Sensors
4. Deb Kutska, Oakton Community College
Improving Diversion
5. Lydia Vandenberg, Penn State University
Designing Effective Bin Signage

Amy Preble

Waste Diversion Coordinator
Office of Waste Reduction and Recycling
UNC Chapel Hill



Residence Hall Composting

Residence Hall Composting at UNC-Chapel Hill



COMPOSTING AT UNC



FOOD AND YARD WASTE



If it rots, it's
compostable!

PAPER PRODUCTS



RESIDENCE HALL COMPOSTING

The ResHall Composting pilot program was launched in the spring semester of 2014 at four residential communities.

As of Fall, 2017, **fourteen** residential communities are enrolled in the program: **Manning East, Manning West, Ehringhaus, Craige, Morrison, Hinton James, Connor, Cobb, Parker, Carmichael, Kenan, Olde Campus Upper Quad, Olde Campus Lower Quad, and Ram Village.**



RESIDENCE HALL COMPOSTING

- Residents are educated on the program (community kickoffs)
- Residents check out a bin from the main office as an enhancement
- The bin is kept in the resident's room (it can fit in a mini-fridge), and it is the responsibility of the resident to monitor what goes into the bin and keep it in good condition
- Residents take out their compost to the community bin located at the dumpster site (we suggest once a week)
- The carts are serviced twice a week by a student (Drew)
- Residents wash out their bin and continue collecting compost
- Residents get to keep their bin for the following year, or recycle it!
- The compost is collected from the community bins weekly and taken to Brooks Compost!



RESIDENCE HALL COMPOSTING

UNC-CH RESIDENCE HALL COMPOST

Composting is an easy & effective way to have a positive impact on the environment. Start using your compost bin today!

WHAT **CAN** BE COMPOSTED



FOOD
WASTE



PAPER &
BAGASSE PLATES



WOODEN
UTENSILS



BIOPLASTIC
CUPS



FOOD-SOILED
PAPER



COMPOSTABLE
FOOD PACKAGING

WHAT **CANNOT** BE COMPOSTED



METAL
INCLUDING FOIL



PLASTIC BAGS,
FLATWARE, ETC.



CHEMICALS



GLASS



STYROFOAM



STICKERS

Office of Waste Reduction & Recycling | 919-962-1442 | go@unc.edu/recycling | recycling@fac.unc.edu

WHY COMPOST?

- Compost reduces greenhouse gas emissions & groundwater pollution, by decreasing the amount of food waste in landfills.
- Compost is turned into natural fertilizer that can be used in gardening, reducing the need for toxic chemicals and excessive watering.
- Compost concentrates food waste into a sealed container so that your garbage bin doesn't smell!
- Your residence hall's compost is collected by Brooks Contractors, a local compost facility that turns organic waste into healthy soil.

COMPOST INSTRUCTIONS:

1: Collect compostable material in your personal compost bin.

TIP: Use compostable BioBags in your bin to help keep it clean. Bags can be purchased at stores such as Target, Walmart, & online.

2: Make sure that your bin/bag has compostable items only.

Check the list on this guide. NO PLASTIC BAGS!

3: Take your bin/bag to your residence hall's compost site.

Compost bins are located near the other waste & recycling bins. See map & picture.

4: Reward yourself for saving the earth by being a compost champion!



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RESIDENCE HALL COMPOSTING



DINING HALL COMPOSTING



GET INVOLVED!

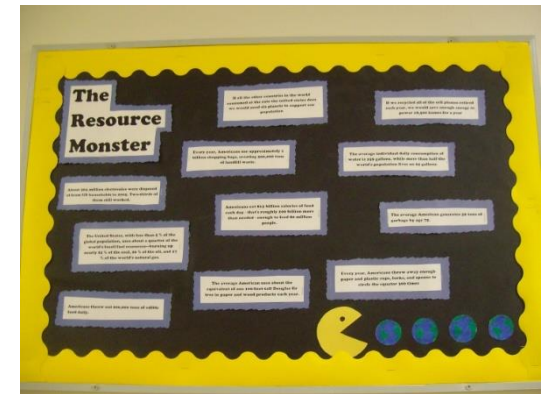


GREEN GAMES

- Student-led environmental competition between housing communities
- Purpose is to promote sustainable behavior and environmental education
- Earn points from programs, events, and contests.



GREEN GAMES



GREEN GAMES

How to earn points



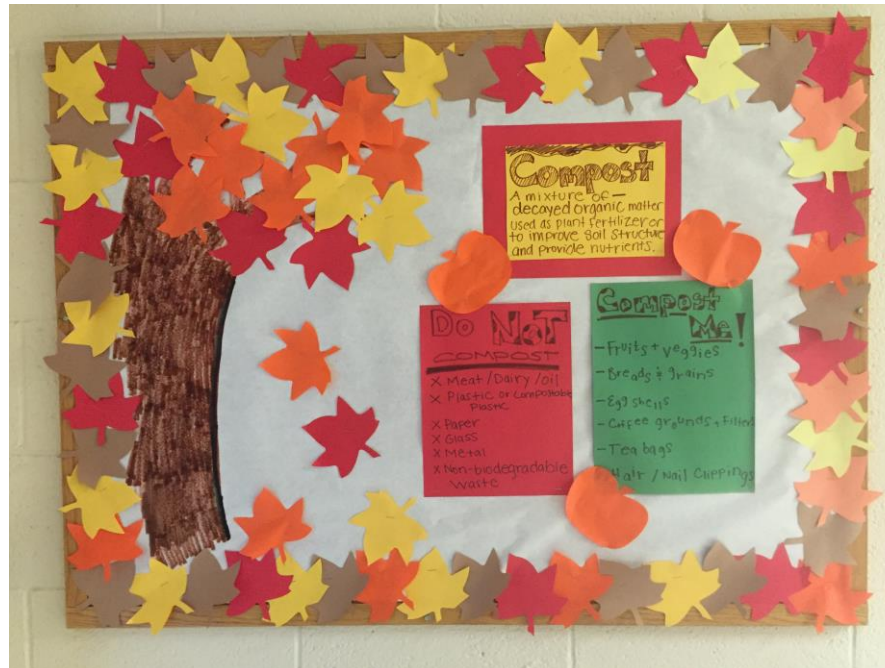
	<p>Service Projects: 100 Points</p> <p>Ex: Volunteer in Battle Park or Carolina Campus Community Gardens</p>	<p>Pledge/Floor Drive: 50 Points</p> <p>Ex: Carolina Green Pledge, Hard-to-recycle items drive (Contact OWRR for help!)</p>
<p>Tour/Trip: 75 Points</p> <p>Ex: Trip to NC Botanical Gardens or the Carrboro Farmer's Market, Tour of Green Buildings on campus</p>	<p>In-Community Program: 50 Points</p> <p>Ex: Making valentines out of recycled materials, holding a sustainable/vegetarian cooking class</p>	<p>On-Campus Event: 30 Points</p> <p>Ex: Environmental or sustainability-focused lecture, meeting, movie screening, etc.</p>
<p>Bulletin Boards: 15 Points</p> <p>Ex: Submit pictures of your green-themed bulletin boards (and try to use recycled paper + materials!)</p>	<p>BYO Program: 10 Points</p> <p>Request that residents bring their own cups/plates/etc. to events instead of using disposables</p>	<p>Carolina Green Event: 50 Points</p> <p>Host a "Green Event" by becoming certified or getting help from a certified Green Events Coordinator (Contact OWRR for help!)</p>

QUESTIONS?

go.unc.edu/recycling

amyp@unc.edu

@UNCRecycles





Alyssa Halle-Schramm

Sustainability Coordinator
Austin Community College



Paper Towel Composting

Throwing in the Towel:

Lessons learned from launching a paper towel composting program

Alyssa Halle-Schramm, Sustainability Coordinator

Waste Management at ACC

- 3 main waste streams: landfill, recycling, and compost



Food Organics Compost

- No traditional dining halls
- ACC Eastview food organics composting
 - Culinary Arts Program
 - Children's Lab School



ACC CULINARY ARTS PROGRAM PROMOTES COMPOSTING

Student chefs attending the Austin Community College Culinary Arts Program are learning a valuable and sought after skill, recycling.

Paper Towel Compost Program Benefits

- Reduces landfill waste
- Isolated & easy waste stream to divert
- Minimal contamination
- Easy to pilot & easy to “sell”
- No smells & pests



Program Benefits, Cont'd.

- Great relationship builder with custodial
- Highly visible & participatory
- Daily educational opportunity
- Campus pride & friendly competition



Operational Considerations

- Signage, signage, signage!
- Color-coding & bilingual
 - Landfill, **Mixed Recycle**, **Compost**
 - Basurero, **Reciclaje Mezclado**, **Compost**
- Start small & pilot



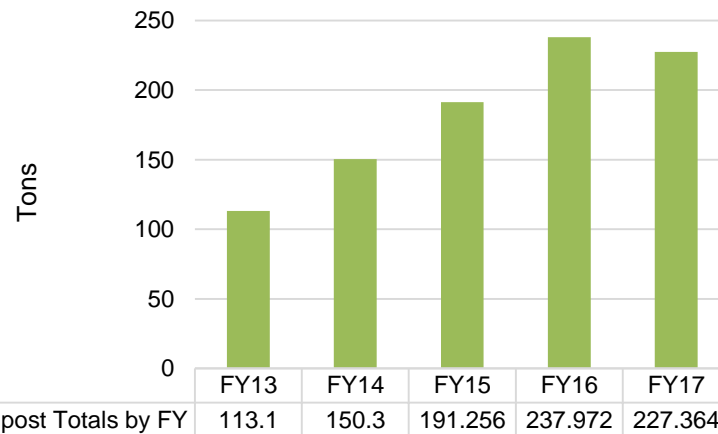
Operational Considerations, Cont'd.

- Develop strong relationships with custodial
- Train custodians & custodial leadership
- Train campus managers / building managers
- Cost & thinness of bags
- Operational changes to minimize bag usage
- “Compressor tools”

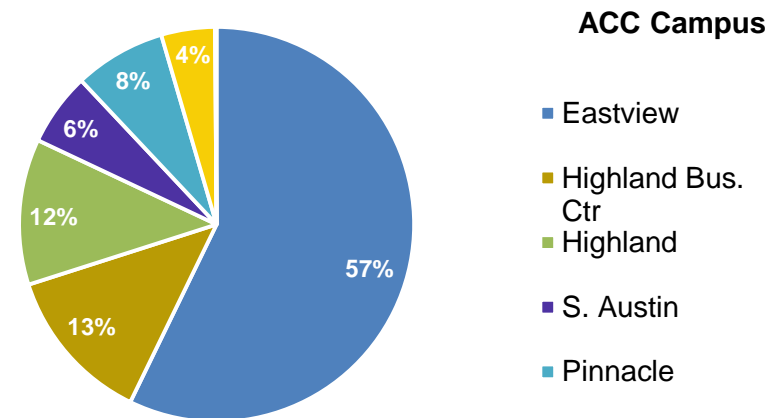


Program Results

ACC Compost Totals



FY17 Compost Total: 227 tons



*added Aug '17

Questions & Discussion

ACC Energy & Sustainability Office

Alyssa Halle-Schramm, Sustainability Coordinator

A decorative arch at the top of the slide, composed of two concentric curved bands. The outer band is a light olive green, and the inner band is a dark brown.

Bill Rudy

Recycling & Solid Waste Supervisor

Brigham Young University



Waste Bin Sensors

Seeing Eyes

Bill Rudy

Recycling and Solid Waste Supervisor

Brigham Young University























Deb Kutska

Sustainability Specialist
Oakton Community College



***Improving Diversion at
Oakton Community College***

Improving Diversion at Oakton Community College

Deb Kutska, CURC Workshop
October 2017



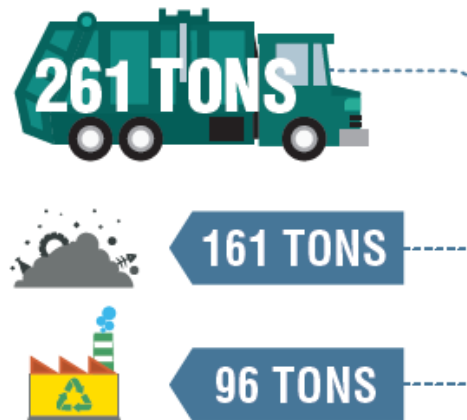
Snapshot

- 2008-Green Committee
-Green bag lunches
- 2013-Zero Waste Event
- 2014-Waste Audit
-Sustainability Specialist (part-time)
- 2015-Talkin' Trash Committee
-Composting Pilot in ECE Centers
- 2016-New waste bins
-Composting in RHC
-Water Bottle Ban
- 2017-Full-Time!
-More to come....

Managing Waste at Oakton

2016 WASTE COLLECTED

We collected over 260 tons of trash. Roughly 161 tons went directly to a landfill.



STUDENTS CARE!

200 students were surveyed about sustainability efforts on campus.

75%

want to see a reduction of paper waste on campus

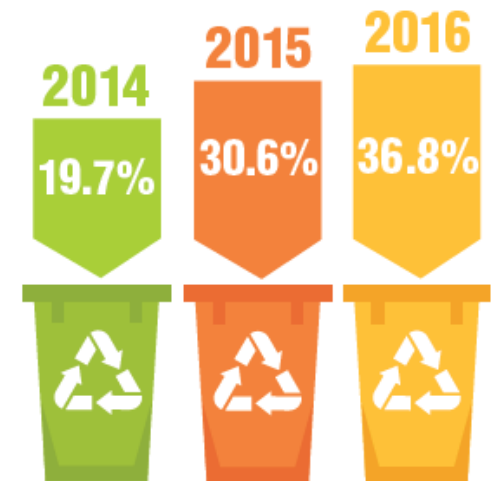
58%

want to see expanded opportunities for composting



Students are happy about the "Ban the Bottle" initiative, average rating of 4.29 on scale of 1 (unhappy) to 5 (happy).

2014-16 WASTE RECYCLED



THANKS TO:

- Increase in zero-waste events
- Composting at the Skokie cafeteria
- New waste bins in TenHoeve Center, cafeterias, and Skokie
- Housekeeping staff efforts to sort waste
- Educational messaging to employees

FUTURE EFFORTS INCLUDE

- Continue Zero-Waste events
- Composting and recycling in the kitchen at the Des Plaines campus
- Print reduction initiatives

Note: Waste data include only items collected and recycled by our hauler, not e-waste, construction waste, and bio-med waste.

We are proud of our successes, but we need your help to reach our goal of 50% recycled waste.

Goal to Recycle 50%

Contracted with 3rd party to complete Waste Audit



Goal to Recycle 50%

Host Zero Waste Events...move toward total composting?



Goal to Recycle 50%



Created Talkin' Trash Taskforce to identify problem areas



Goal to Recycle 50%

Revamp Recycling Program & Messaging

From this....



To This...



Goal to Recycle 50%



Pilot Composting Programs



Goal to Recycle 50%



Student-led Bottle Ban Initiative





Des Plaines ■ Skokie ■ www.oakton.edu

Stay Tuned...



Lydia Vandenberg

Associate Director of Employee Engagement

Sustainability Institute

Penn State University



Designing Effective Bin Signage



PennState

sustainability
INSTITUTE

Designing Effective Waste Signage

October 15, 2017

Lydia B. Vandenberg



Agenda

- Campus waste infrastructure and process
- Concerns about signage
- Signage study
- Results



- 45,000 students
- 17,000 faculty and staff
- 17,000 tons of waste annually
- Diversion rate of 63%
- Sorting stations with 7 bins
- 10,000 signs



PennState

Over 10,000 signs



Learn. Live. Lead.

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New Signage Needed

- Possible bin reductions
- Program changes
- Opportunity to apply new messaging strategies

MISCELLANEOUS PLASTIC

Yogurt containers

Plastic food-storage containers

Plastic take-out containers

“Styrofoam®” plates, bowls, and cups



möbius
penn state waste management

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PennState

Lessons from Literature

Learn. Live. Lead.

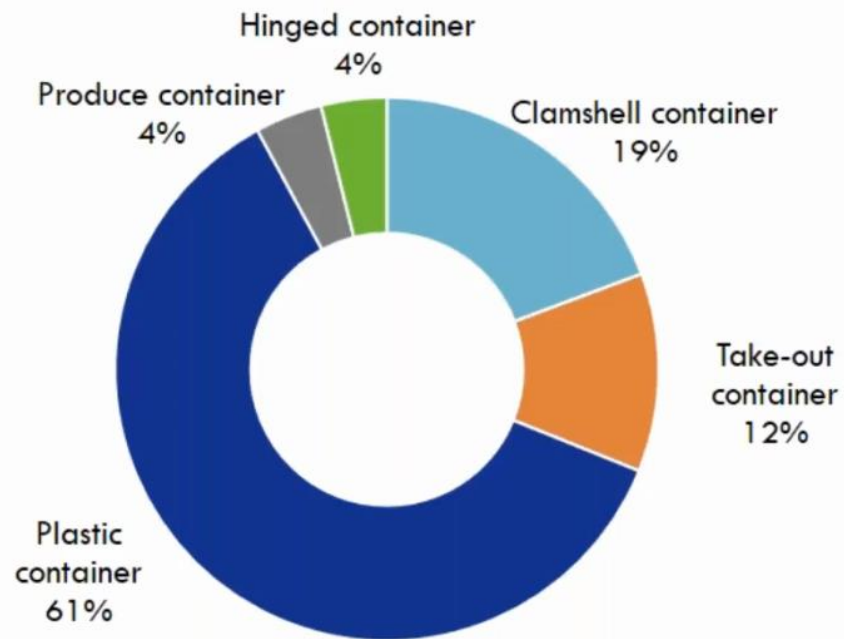
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Determining Best Practices

- Purdue University
- George Washington University
- University of British Columbia & Vancouver
- University of Victoria
- Keep America Beautiful & Pepsico
- Recycling Partnership



61% of residents call this a “plastic container”

19% say “clamshell container”





Lessons Learned

- Words matter

PLASTIC BOTTLES & FILM

Plastic beverage and other bottles

WHAT'S A BOTTLE?
THE NECK IS
SMALLER THAN
THE BASE

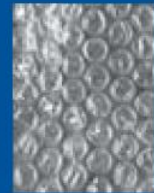


Plastic food storage bags (empty of course)

Plastic grocery bags

Packing plastic

Any "stretchy" plastic film



WATCH
YOUR
WASTE!

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Best Practices

- Color code signs



All food waste -
fruits, vegetables, dairy, meats, and grains.



**NO GLASS, PLASTIC, METAL
OR CARDBOARD IN THIS BIN.**

For more information on Penn's waste minimization & recycling initiatives, visit: www.upenn.edu/sustainability





LANDFILL



K Cups



Candy Wrappers



Chip Bags



Napkins



Plastic Bags



Wax-lined Cups



Styrofoam



Paper Plates

**NO GLASS, PLASTIC, METAL OR
CARDBOARD IN THIS BIN.**

For more information on Penn's waste minimization & recycling initiatives, visit: www.upenn.edu/sustainability




RECYCLING



Paper



Plastic Bottles



Cans



Cardboard



Plastic Cups



Glass Bottles



Utensils



Plastic Containers



Aluminum Foil

For more information on Penn's waste minimization & recycling initiatives, visit: www.upenn.edu/sustainability




COMPOST

**All food waste -
fruits, vegetables, dairy, meats, and grains.**



**NO GLASS, PLASTIC, METAL
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Best Practices

- Signage should illustrate 80% of bin contents
- Include frequently confused materials
- Combine words and illustrations





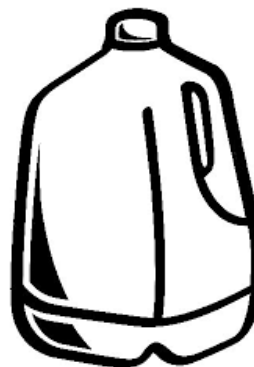
Research Questions

- What sign format guides accurate sorting, especially for sometimes and middle of the road recyclers?
- What sign formats best guides those for whom English is not their native language?
- Which products are most confusing?



Signage Study

- Determine whether text, icons or photographs are more effective



PLASTIC


























Signage Study Design and Launch

- Survey pool: 7,500 students and 2,500 faculty/staff
- N=1,294 with 61% students, 33% staff and 6% faculty
- Launched early April and ran for 2 weeks
- \$100 VISA card incentive
- 3 sign formats for 4 bins

Text Only

 COMPOST	 LANDFILL	 PAPER	 PLASTIC
Food waste Soiled or wet paper Paper napkins, tissues, and towels Compostable plates, cups, and utensils Pizza boxes	Candy and snack wrappers Chip bags Coffee Pods Styrofoam/Polystyrene	Mixed Office Paper Newspaper and Magazines Envelopes Spiral Notebooks Paperboard Boxes	Plastic beverage and other bottles Yogurt containers Plastic food storage containers Plastic take-out containers  NO Polystyrene/ Styrofoam
 PennState <small>Send us your questions! recycle@psu.edu</small>	 PennState <small>Send us your questions! recycle@psu.edu</small>	 PennState <small>Send us your questions! recycle@psu.edu</small>	 PennState <small>Send us your questions! recycle@psu.edu</small>

Icons and Text

 COMPOST	 LANDFILL	 PAPER	 PLASTIC
<div><div>ALL FOOD WASTE</div><div>SOILED PAPER PRODUCTS</div><div>PIZZA BOXES</div><div>COMPOSTABLE MATERIALS</div></div>	<div><div>CHIP AND CANDY WRAPPERS</div><div>SODA AND COFFEE CUPS</div><div>COFFEE PODS</div><div>POLYSTYRENE (STYROFOAM)</div></div>	<div><div>MIXED OFFICE PAPER (COLOR OK)</div><div>NEWSPAPERS & MAGAZINES</div><div>SPIRAL NOTEBOOKS</div><div>PAPERBOARD BOXES</div></div>	<div><div>BOTTLES & CONTAINERS</div><div>CUPS</div><div>NO POLYSTYRENE/STYROFOAM</div></div>
 PennState Send us your questions! recycle@psu.edu	 PennState	 PennState Send us your questions! recycle@psu.edu	 PennState Send us your questions! recycle@psu.edu

Photos and Text

 COMPOST	 LANDFILL	 PAPER	 PLASTIC
<div>ALL FOOD WASTE</div>  <div>WET/SOILED PAPER PRODUCTS</div>  <div>PIZZA BOXES</div>  <div>COMPOSTABLE PLASTIC</div> 	<div>CHIP AND CANDY WRAPPERS</div>  <div>COFFEE CUPS</div>  <div>COFFEE PODS</div>  <div>POLYSTYRENE (STYROFOAM)</div> 	<div>MIXED OFFICE PAPER</div>  <div>NEWSPAPER & MAGAZINES</div>  <div>SPIRAL NOTEBOOKS</div>  <div>PAPERBOARD BOXES</div> 	<div>BOTTLES & JUGS</div>  <div>CUPS</div>  <div>FOOD CONTAINERS & JARS</div> 
 PennState Send us your questions! recycle@psu.edu	 PennState Send us your questions! recycle@psu.edu	 PennState Send us your questions! recycle@psu.edu	 PennState Send us your questions! recycle@psu.edu

Sorting Exercise

COMPOST

ALL FOOD WASTE

WET/SOILED PAPER PRODUCTS

PIZZA BOXES

COMPOSTABLE PLASTIC

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LANDFILL

CHIP AND CANDY WRAPPERS

COFFEE CUPS

COFFEE PODS

POLYSTYRENE (STYROFOAM)

Send us your questions!
recycle@psu.edu

PAPER

MIXED OFFICE PAPER

NEWSPAPER & MAGAZINES

SPIRAL NOTEBOOKS

PAPERBOARD BOXES

Send us your questions!
recycle@psu.edu

PLASTIC

BOTTLES & JUGS

CUPS

FOOD CONTAINERS & JARS

Send us your questions!
recycle@psu.edu

_____ Water Bottle (1)
_____ Used Tissue (2)
_____ Gum (3)
_____ Soiled Pizza Box (4)
_____ Styrofoam Container (7)
_____ Starbucks Cup (8)
_____ Coffee Pod (10)
_____ Cheeseburger (11)

_____ Candy Wrapper (1)
_____ Coffee Pod (5)
_____ Styrofoam Container (7)
_____ Cheeseburger (10)
_____ Dunkin' Donuts Cup (8)
_____ Soiled Pizza Box (9)
_____ Granola Bar Wrapper (13)
_____ Condiment Packet (14)

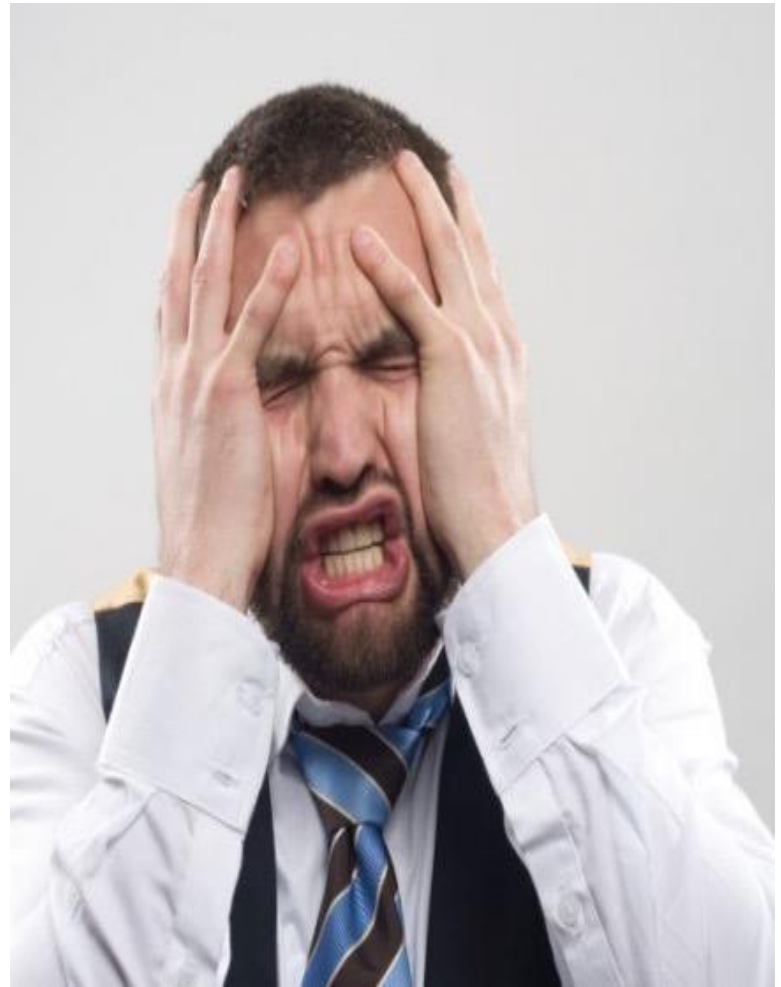
_____ Water Bottle (1)
_____ Spiral Notebook (2)
_____ Candy Wrapper (3)
_____ Soiled Pizza Box (4)
_____ Used Napkin (6)
_____ Envelope (7)
_____ Starbucks Cup (8)
_____ Softbound Book (9)

_____ Candy Wrapper (2)
_____ Solo Cup (3)
_____ Ballpoint Pen (4)
_____ Yogurt Container (5)
_____ Styrofoam Container (7)
_____ Starbucks Cup (8)
_____ Starbucks Cup Lid (11)
_____ Laundry Detergent Bottle (12)



Barriers to accurate sorting

- Time
- Space to collect materials
- Familiarity with sorting stations
- Familiarity with material classifications

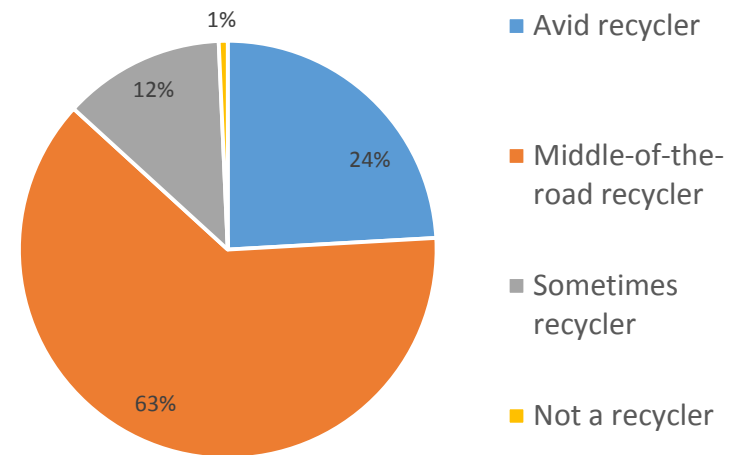




Recycling habit classification

- Avid recycler
- Middle of the road
- Sometimes recycler
- Not a recycler

Recycling Enthusiasm





Recycling Beliefs

- Improve environmental quality
- Significantly reduce land used for landfills
- Improve public health
- Significantly conserve natural resources
- Build the local economy and create jobs
- Reduce pollution
- Eliminates waste from the ocean that is harmful to marine animals



Which of the following groups in your life expect you to recycle?

- My neighbors
- My family
- My friends









Results

- For non-recyclers and sometimes recyclers: photo signage outperforms text and icons
- For overall population, slim differences in sorting accuracy with different sign format
- What sign formats best guides those for whom English is not their native language?
- Which products are most confusing?



Product Confusion

- Starbucks hot cups  plastic (landfill)
- Pens  plastic (landfill)
- Gum  compost (47%)
- Soiled napkins and pizza boxes  paper (compost)



Thank You

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