



Public do not use recycle trash cans properly.

What is the Problem?

Introduction. Recycling cans have trash in them. Trash cans have recyclables in them. What goes where? There is confusion about recycling. It is especially apparent at the Science Museum Café. The café sells a variety of packaged and freshly prepared food and drink items. 100 percent of the customers I surveyed want to recycle and understand that the blue cans are for recycling, but the recycle containers always contain mixed trash. People are aware of and genuinely interested in recycling, but confused about how to do it.

Analysis. Using the data I acquired during the performance analysis (interviews and observations), I determined that the most common recycling errors are as follows: straws, paper plates, plastic utensils and thin plastic wrappers. These are not recyclable at the Science Museum. When surveyed, patrons were wrong about what to do with these items 61 percent of the time:

Straws	55% of the time wrong.
Paper plates	82% of the time wrong.
Utensils	72% of the time wrong.
Plastic Wrap	36% of the time wrong.

Objective. The primary objective is to decrease the confusion about recycling these items. Optimal success is when the public correctly sorts these four items to the landfill 100 percent of the time. However, due to factors noted below, a 100 percent is not possible without addressing the other barriers and drivers of performance. That is, the Science museum patrons may be able to use the job aid to properly categorize straws, paper plates, utensils and plastic wrap as not recyclable, but may be unsuccessful at sorting due to time, interest or preconceptions. Since there is evidence in the IPSOS study that 13 percent of Americans will not recycle – no matter what, and with consideration for the barriers noted, I set objective for success at 80 percent correct (or errors reduced to 20 percent).

The task of sorting the trash happens when the patrons go to the cans. There were several problems observed at this point:

Motivation. A 2013 survey commissioned by the Environmental Industry Associations (EIA) shows that 26 percent of Americans will not make an extra effort to recycle outside their homes. This is a societal problem that cannot be addressed by a job aid.

Incentive. There is a certain amount of social pressure to do the right thing, but also social understanding for parents with many small children. It takes more time



to recycle; this is a dis-incentive. This also cannot be resolved with a job aid, but the job aid may clarify the process and reduce the time needed.

Environmental. Existing Signage (see appendix B) is in English and takes a while to read. Its colors are inconsistent with current norms for recycle vs. landfill trash cans. Information for both recycle and landfill are combined on one sign that is posted on the recycle can. This is confusing and requires the use of some memorizing as you sort from one can to the other. There are no graphics for non-English speakers or young children pre-readers. It includes items not usually sold in the café such as cardboard and Styrofoam, and does not include enough detail about some of the common items (such as which parts of the soda cup is recycled). I plan to address this by creating a job aid (signage) that clearly indicates the recyclable items in both narrative and graphic forms and in the familiar colors commonly used for trash and recycling.

Skills & Knowledge. Many patrons may be aware of the rules for recycling at their home, but not aware that the rules may be different for a commercial enterprise. Their existing knowledge does not help them and will make them more likely to ignore the signage. By making the signage more graphically interesting we may be able to get their attention.

What Format and Medium?

The job aid will be used by patrons of all experience levels and various English reading levels. It will be located on trash cans placed in the café – both indoors and outdoors. Based on the timeframe and available resources, I plan to create improved signage as the job aid. I designed two letter-sized signs containing both words and graphic representations (in two colors) of the appropriate waste for both the landfill can and the recycling can, to be printed on waterproof self-adhesive vinyl and attached to each can on several sides and top. A survey of trash receptacles located in various other food venues led me to choose simple silhouette graphics and a sans-serif font.

What does the Draft Job Aid Look Like?

After reviewing the items that are sold in the café and consulting with the custodial staff, I determined that the following items are not recyclable (in addition to straws, paper plates, utensils and plastic wrap): food, bottle caps, small sauce cups and lids and napkins. These items are included on the “Landfill” sign which is printed in a dark warm gray.

The items that are recyclable include: glass and plastic bottles, drink cups and lids, drink boxes, and paper wrappers (such as those in which straws may be provided). The staff also noted that these items must be emptied before recycling. The “Recycle” sign design contains these items and is a blue color. (Large-sized versions are included in Appendix C.)



Results of Pilot Testing / Re-testing.

Due to the difficulty of printing and re-signing six trash cans, and then sifting through the trash to check for correct sorting; I conducted a pilot test using a survey similar to the one used in the performance analysis, but showing the revised signage. I want to test whether the job aid improves understanding about the four main error categories.

This new signage improved knowledge for recycling these items by 45 percent (from overall 39 percent correct response to 84 percent correct response). Correct Responses:

Straws	45% → 82%.
Paper plates	18% → 82%.
Utensils	28% → 82%.
Plastic Wrap	64% → 91%.


Interviews of those testing poorly showed that they based their answers on their presumed knowledge and not the actual signage. Further, when asked to reassess their answers using only the signage, they corrected their errors in each case. This conflict with existing knowledge was noted in the performance analysis. Taken alone, the new signage yields results in recycling success of at least 84% percent. This exceeds our 80 percent objective. To overcome the pre-knowledge bias, a redesign that includes verbiage highlighting the differences could be tested. However, this job aid is only one part of a solution system recommended in the performance analysis. To address the pre-knowledge bias and time dis-incentives, it proposes using additional job aids: a tray-liner to help pre-sort items and stickers on the products that identify recyclable items.

How is the Job Aid Managed?

The job aid is printed and cut in the Multimedia Department on a Roland SOLJET Pro 4 XR-640 Large Format Color Printer/Cutter. The material is then heat laminated using waterproof UV inhibiting film. Time and materials will be charged to the Maintenance Dept. The multimedia staff will attach the signs to each of six (three recycle and three landfill) trash cans. One sign is attached to the top and one to each of four sides at 30 inches from the floor. The old signage is to be removed and destroyed. The Multimedia department is tasked to monitor the café menu products for changes that would impact the signage and initiate a redesign of the sign. This is to be done quarterly beginning in January.



Appendix A: Pilot Testing Survey

Pilot Testing Survey Results			
	Y	N	?
1. Can you put straws into the recycling container?	18%	82%	0%
2. Can you scrape food off paper plates into regular trash and then recycle the paper plate?	18%	82%	0%
3. Can you recycle plastic spoons with the  Symbol molded into it?	18%	82%	0%
4. Can you recycle the clean plastic wrapper from your bagel?	9%	91%	0%
5. Can you recycle the metal lid from your juice bottle?	27%	64%	9%

Appendix B: Current Signage

**EMPTY
CONTAINERS ONLY!**

YES PLASTIC FOOD CONTAINERS,
PAPER, CARDBOARD,
GLASS BOTTLES,
YOGURT CONTAINERS

NOT RECYCLABLE:

NO FOOD, PLASTIC UTENSILS,
STYROFOAM, PLASTIC BAGS
WAX CONTAINERS



Appendix C: New Job Aids

RECYCLING
ITEMS MUST BE EMPTY



GLASS BOTTLES



PLASTIC BOTTLES



DRINK CUP LIDS



PAPER WRAPPER



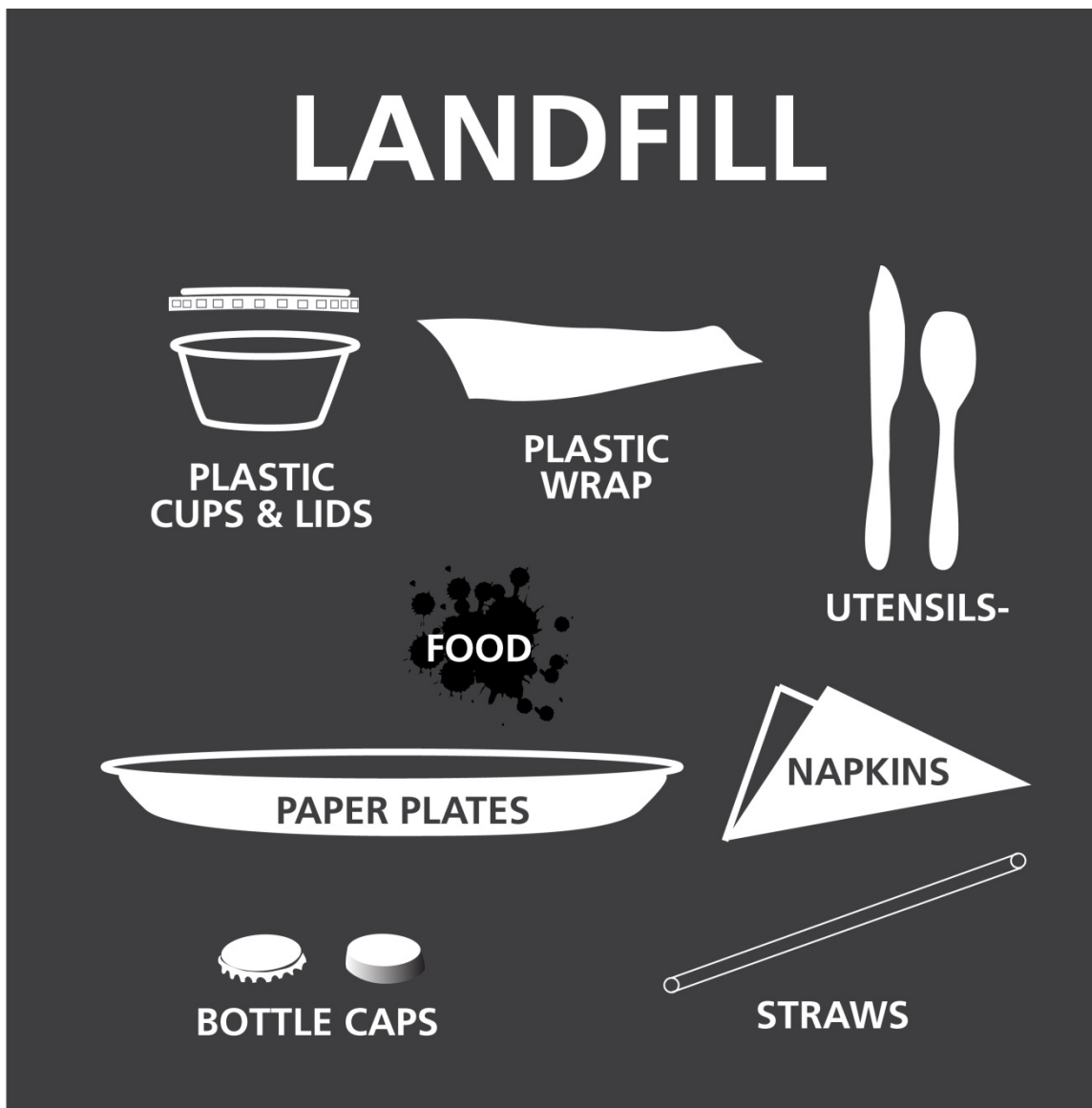
DRINK BOXES



DRINK CUPS



Appendix C: New Job Aids





Appendix D: References

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