Cafeteria Sorting Station Design Concepts at CVSWMD Schools

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Monitoring and visibility of receptacles

For purposes of actively and purposefully monitoring a sorting station, being able to see when something is put in the wrong receptacle is important.

The contents of this trash can are very easy to see, so anyone can observe if food waste or recycling incorrectly goes into the can. Any incorrectly sorted items can then be removed with a grabber and put into the correct receptacle.

Compare this type of set-up to the trash can in the next slide…

Monitoring and visibility of receptacles

This trash can is more difficult to monitor, because it is difficult to see inside it.

If someone pulls the can out from under the station to check its contents, there is a good chance that when the next student comes to the station to throw away their trash, the trash will miss the can and end up on the floor.

Solution: Enlarge the hole in the top of the station close to the same size as the trash can opening AND lower the height of the station, so the opening of the trash can is closer to the top of the sort station (see the next slide, where this alteration has been made).

Monitoring and visibility of receptacles

Height of station has been lowered and the opening in the sort station lid enlarged, but not larger than the opening of the trash can.

<u>Consideration:</u> Make the opening in the sort station lid a couple of inches smaller than the trash can, to help avoid trash slipping by the opening of the trash can and ending up on the floor.

It is now much easier to monitor the contents of this trash can during lunch.

Station height for a primary-level school

A station total height of <u>~28 ins.,</u> from the floor to the top of the station, works well <u>for primary grade-level students</u>.

A lower station height, particularly when you get down to ~ 24 ins., can be too low for the older, taller children in a primary school.

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Height for a MS/HS sorting station

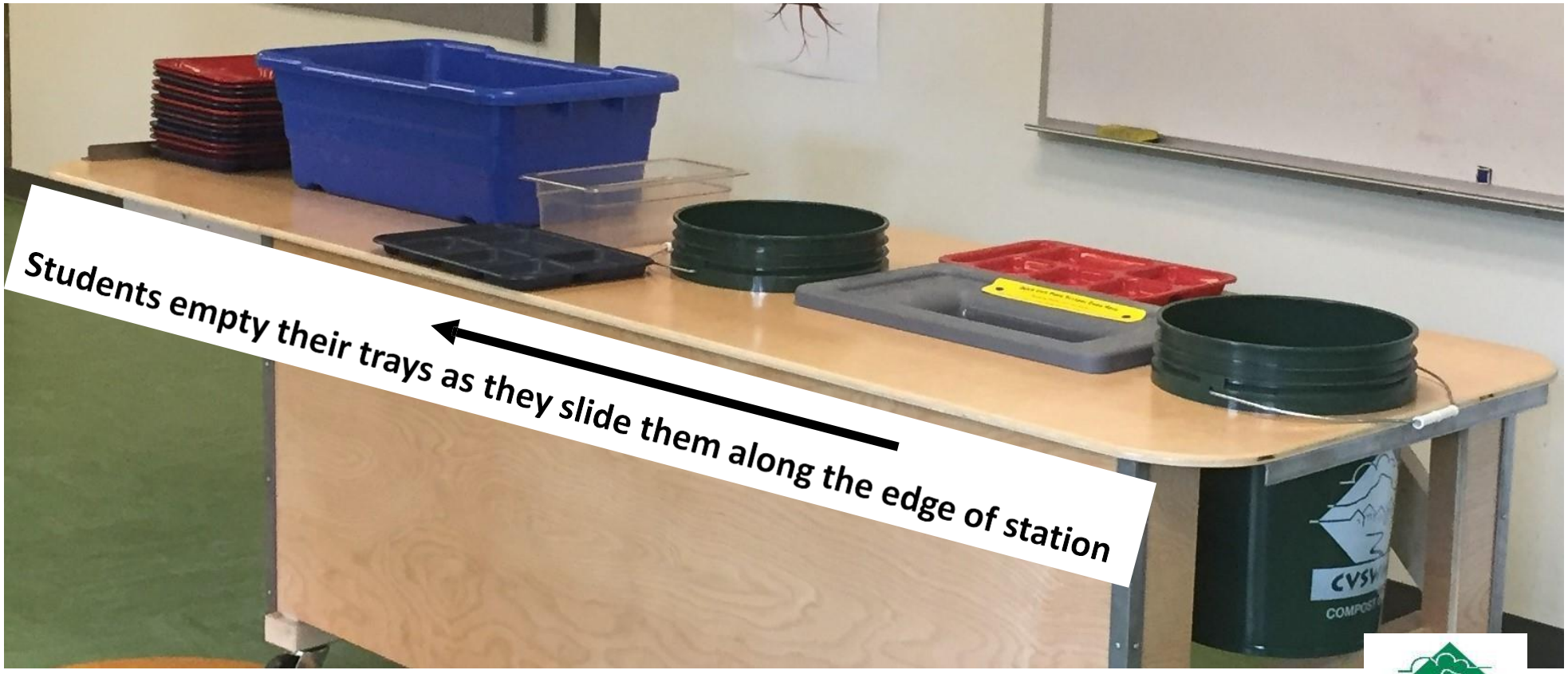
<u>Station height:</u> Although a taller station presents a more commanding, noticeable presence in a cafeteria, this sorting station is higher than it needs to be, at ~ 42”.

36 inches is a good max. height to consider for a middle/high school sort station (think ave. home kitchen countertop height).

<u>Importance:</u> the greater the height of a station, the greater the chance that students with physical challenges (e.g. student in a wheelchair) may have difficulty independently accessing the station.

Providing a ledge on station for students to put down trays

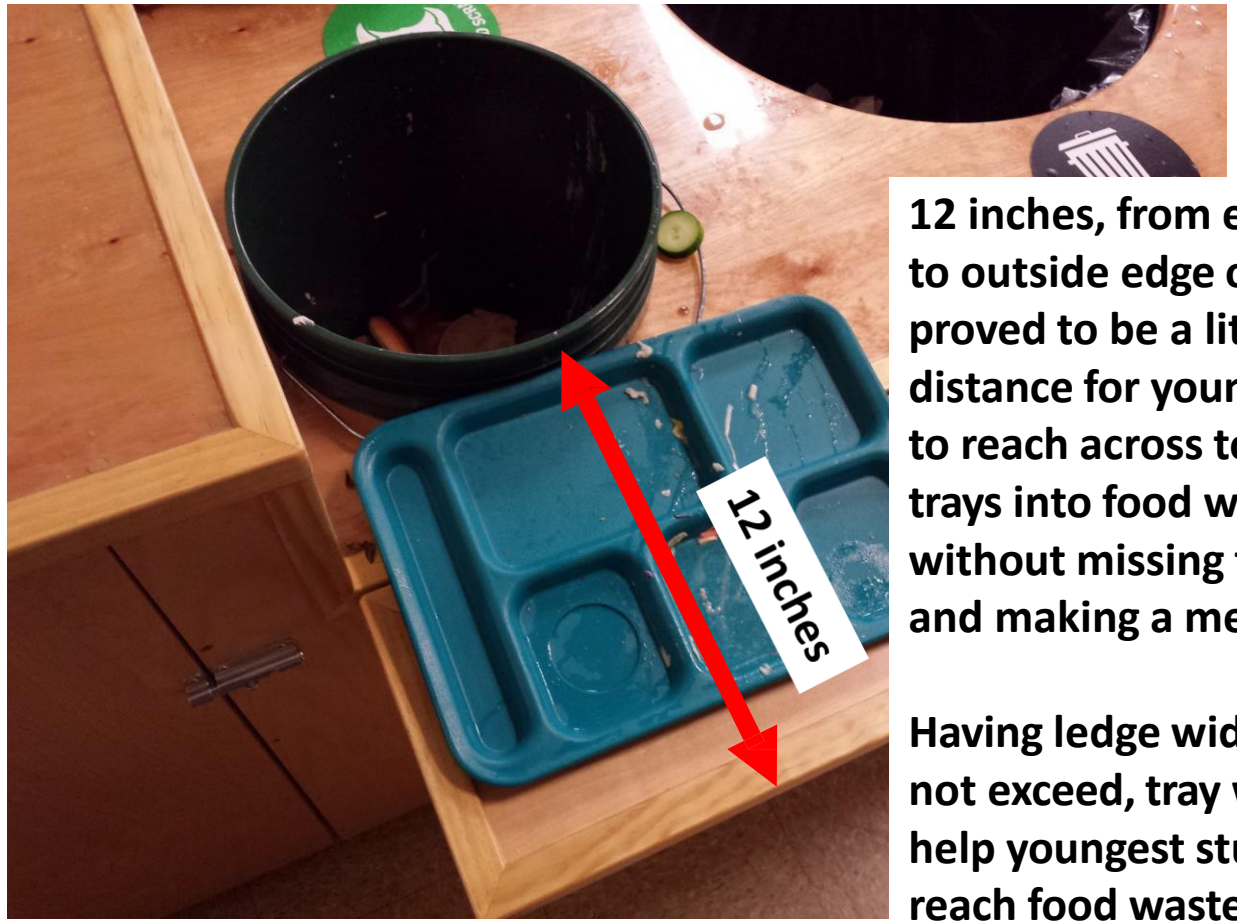
Particularly for primary-level schools, a very important design component is incorporating a ledge that is wide enough to accommodate lunch trays being set down, while students sort their silverware, recycling, food waste, and trash.



Providing a ledge on station for students to put down trays

For the youngest children in the K-12 school where this sorting station was installed, the width of the ledge (12 inches) proved to be too wide for some of them to be able to reach the food waste buckets when emptying food scraps from their trays.

In a primary-level school, consider keeping the width of your ledge, from the nearest edge of food waste buckets to the outside lip of the ledge, to the minimum needed to accommodate the full depth of a tray (this should be 9-10 inches).



12 inches, from edge of bucket to outside edge of station, proved to be a little too far a distance for younger students to reach across to dump their trays into food waste buckets without missing the buckets and making a mess.

Having ledge width match, and not exceed, tray width should help youngest students t reach food waste bucket sort station.

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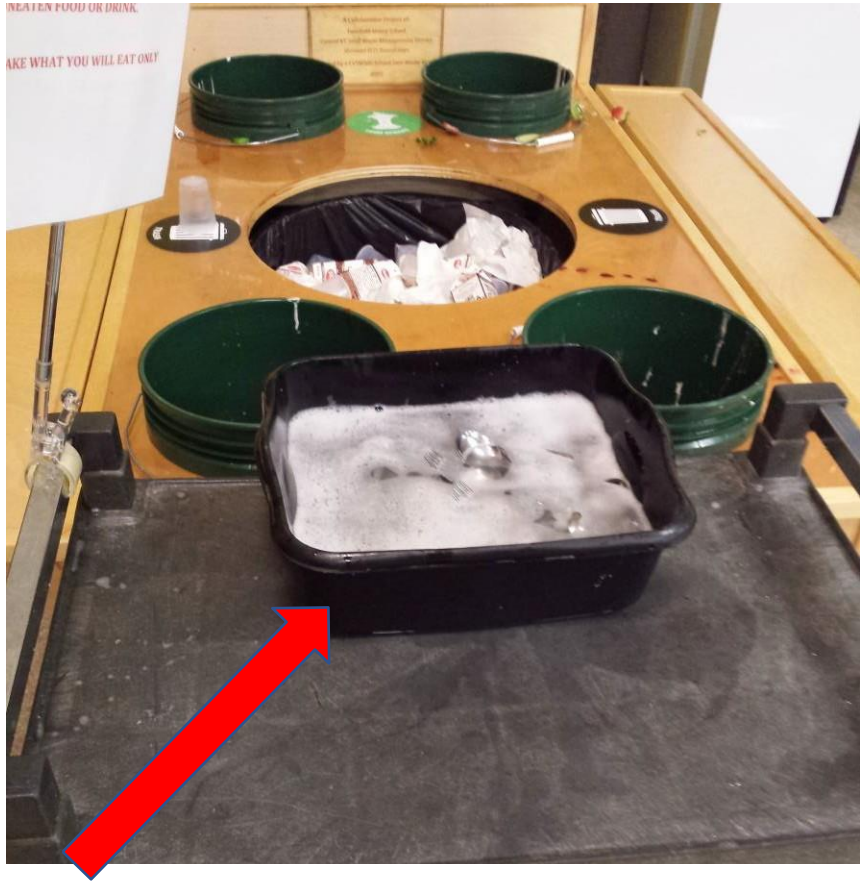
Order of receptacles and silverware soak

Silverware is a non-food item that mistakenly ends up in food waste buckets.

Consider placing silverware soak <u>before</u> food waste buckets in the arrangement of your sort station receptacles, so students can unload silverware before tipping trays into food waste buckets.

School staff, providing support for students at this station, work with younger children to direct them to the silverware soak, before the children access the station to sort their food waste and trash. This helps keep silverware out of both trash and food waste buckets.



Silverware soak placed on cart, where students can put their trays down and unload their silverware, immediately before they reach the main sorting station.

This design could be incorporated into the station, without silverware soak necessarily having to be on a separate cart.

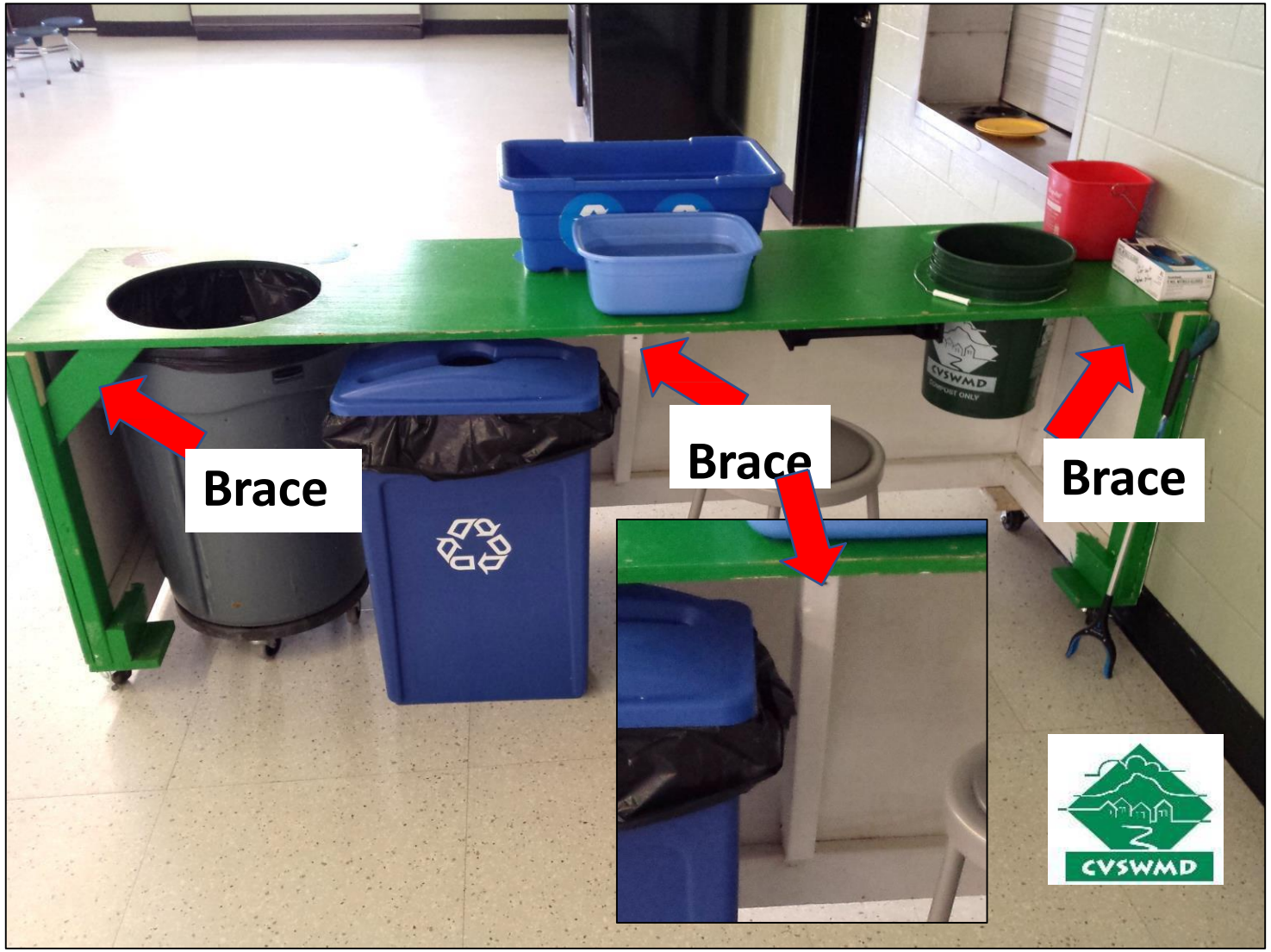
Using braces to maximize station lid height to accommodate a taller trash can

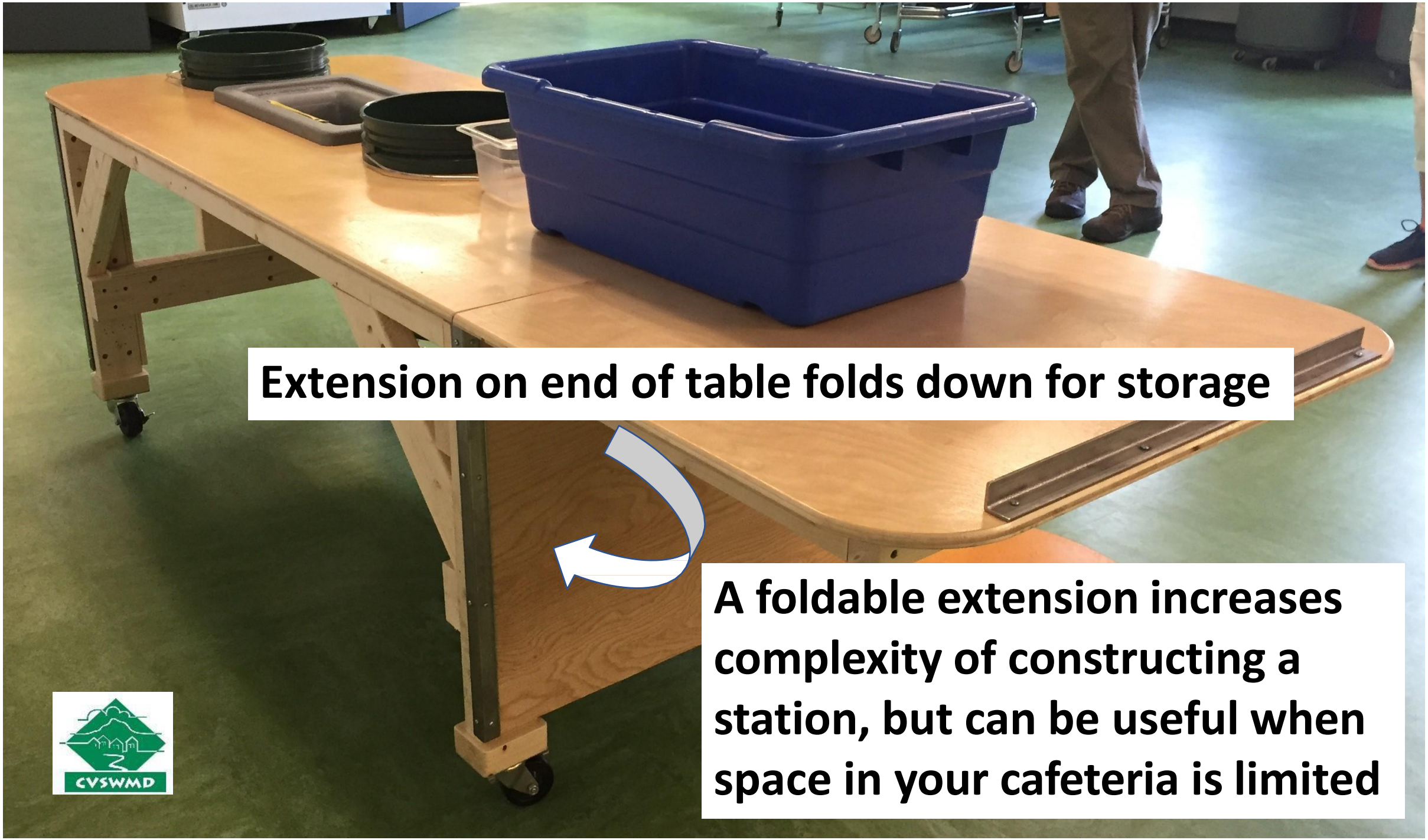
<u>Station height and 2”x 4” support lumber for lid:</u>

2”x 4” lumber, installed around the underside edge of a sort station lid for structural support, can interfere with the ability of a station to accommodate a full-sized trash can.

An alternative is the use of braces to support a station lid, with the middle brace playing the most important role for structural support.

<u>Importance:</u> Larger cans can hold more trash and need to be emptied less frequently by custodial staff during lunch periods.




Extension on end of table folds down for storage
A foldable extension increases complexity of constructing a station, but can be useful when space in your cafeteria is limited
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Color of paint for finishing sort stations

The surfaces painted in white tend to more readily show food waste residue and need to be wiped and scrubbed down more often.

Recommend staying away from lighter colors, if a station is painted.

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Sorting station lid with holes cut into different shapes for trash, recycling and food waste

A school that designed the lid of their sort station this way reported that the constrained, oddly-shaped holes made it more difficult for students to empty their trays into the receptacles below.

Also, the different shapes, which are supposed to symbolically represent trash, recycling, and food waste, are generally not used to teach students how to separate their lunch waste, so it is not an idea they are familiar with and can readily relate to.

Based on the aforementioned, recommend <u>not</u> using different shapes for openings in a sort station lid.

However, the color green for food waste and blue for recycling around the rim of the openings is probably a good idea.

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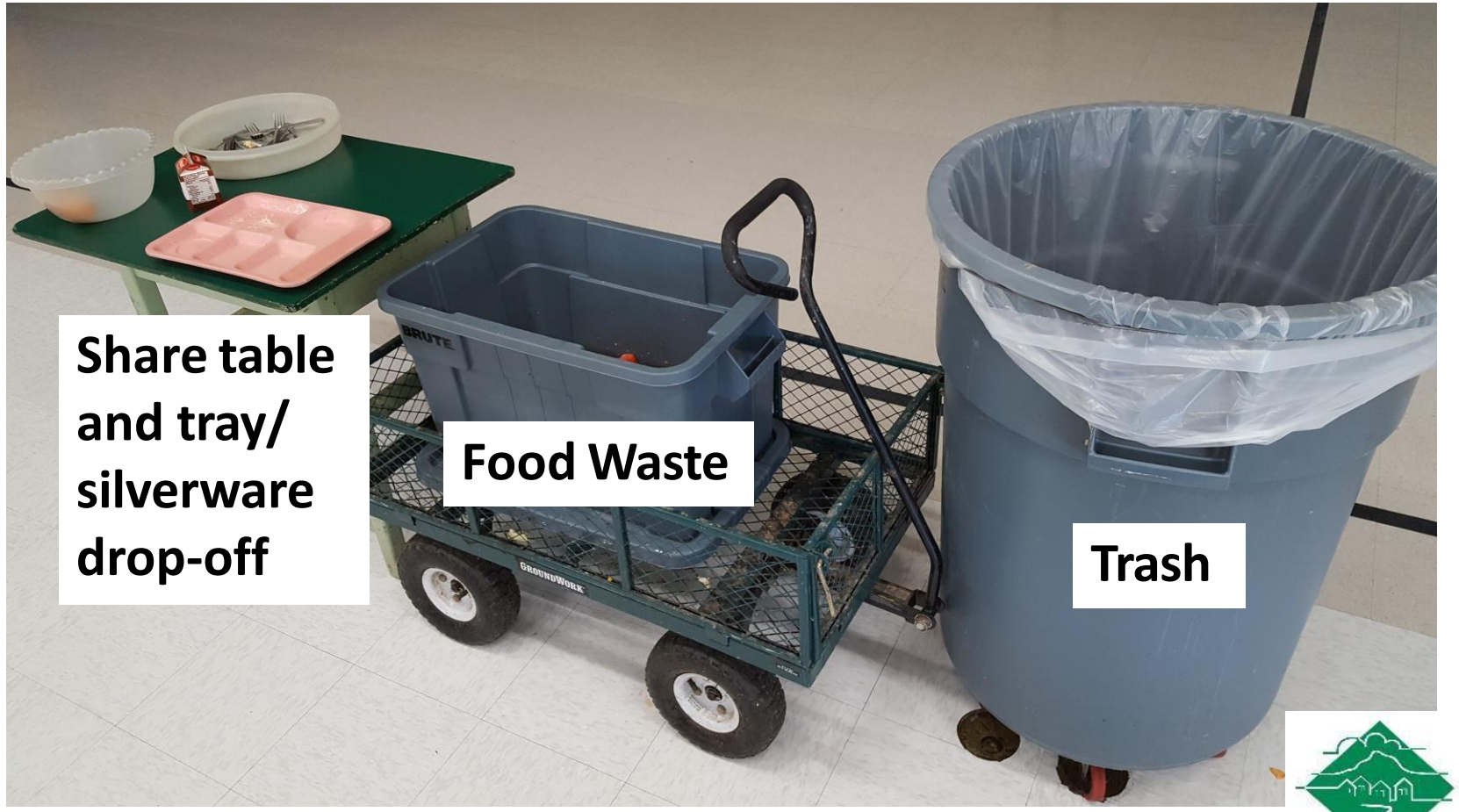
A simple yet functional design for a sort station

Custodial staff support K-3 grades in separating their lunch leftovers. During second lunch, 4-6 grades sort on their own.

Potential disadvantages to this station design:

-Does not provide students the opportunity to place their trays down while they empty them.

-Food waste bin could get heavy by the time lunch periods are over.



Using a tote for food waste, instead of 5-gall buckets

<u>Large food waste tote:</u>
Provides students with a bigger target than 5-gal. pails to empty food waste into from their trays.

Disadvantages:

- **Custodial staff must be able and willing to lift the tote to empty it, after lunch periods are over.**
- **If tote doesn't fit into kitchen dishwasher, needs to be washed by hand daily.**

A sort station for a K-12 school

<u>K-12 school:</u> Challenge was to construct a sorting station to accommodate such a varied student demographic and to also accommodate a relatively large number of students (~330) using the sort station over 4 lunch periods.

The school already kept a large food waste tote from their food waste hauler in the caf for students to dump their food waste into, but this was too tall for younger students to reach.

A sort station hung from cafeteria wall

The middle school this sort station was installed in had few other options, due to space constraints in their caf. While this set-up did provide them with a more organized, formal sorting area, there are some downsides to this wall-mounted type of station, including:

- **Only allows students to access one side of station, which can slow down process when many students are trying to access the station at the same time.**

- **The optimal set-up for monitoring a station allows monitors to be able to stand directly behind a station and have oversight of all receptacles and student activity at the station. This design forces monitors to stand to the side, inhibiting their ability to effectively direct student behavior and monitor a station of this type.**

Middle school station with monitor

Three 5-gall buckets, for students to empty their food waste into, sit next to the station on a wheeled cart, but can't be seen in this image.

The station was built by students in the school's Sustainability Program.

A sorting station with a recyclables rinse system

At this sorting station, the station monitor's responsibilities include rinsing food-contaminated recyclables (e.g. plastic, recyclable yogurt containers).

1. Students scrape/dump remaining food residues from recyclables into this food waste pail, before the recyclables go into the Recycling Soak/Rinse Tub

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Another sorting station with a recyclables rinse system

Station monitor rinsing recyclables before they go into the main recycling bin, which is out of sight, underneath the sorting station.

Students place recyclables into this container.

Recycling Soak/Rinse Tub

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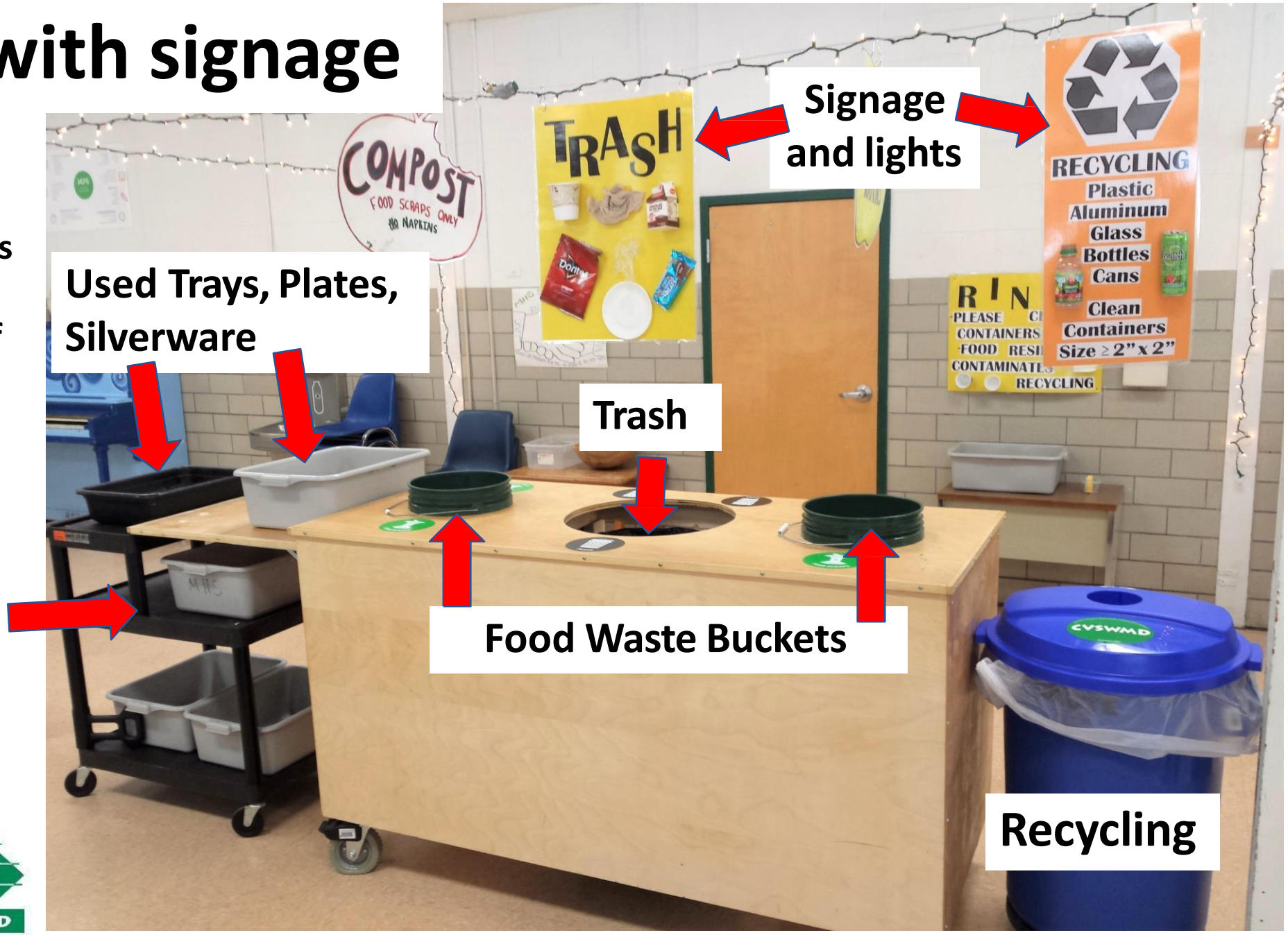
HS station with signage

Note signage hung above corresponding receptacles and lights strung to enhance the ambience of the station and make it more attractive.

School staff and students monitor these tubs and take used plates, silver-ware, etc. to the kitchen window for washing by food services staff.



Station design accommodating up to 4-6 students at a time

Students can park their trays, on both sides of the station, in front of one of the green food waste buckets or the trash can and be able to reach both types of receptacles at the same time.

Depending on the age of the students, what level of oversight they have, etc., this arrangement of receptacles can accommodate up to 4-6 children at a time at the station.

This is somewhat analogous to a gas station offering several pumps that drivers can pull up to at the same time, rather than drivers having to wait in line to access just one or two pumps.

Another station design accommodating up to 4-6 students at a time

This Sort Station Design Appears to be Working…

E. Montpelier ES post-lunch caf. trash audit, 6-6-2018:

A K-6 Elementary School, ~ 225 students

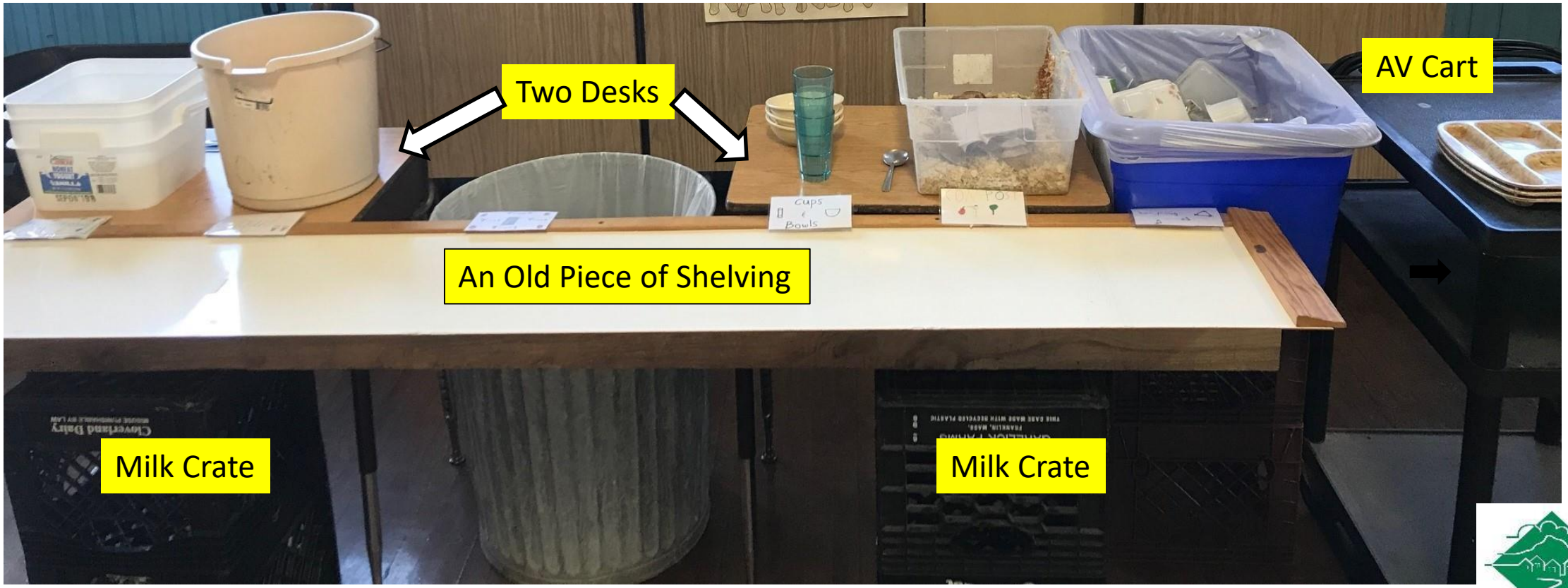
3 total lbs. of trash (including 2 lbs. milk cartons)

Recyclable Plastics: a few pieces

Food Waste: only a few ounces

These results achieved even with very little oversight of station during lunch periods

Yankee Ingenuity Built This Cafeteria Sorting Station at Woodbury ES. Intended to serve as an experimental prototype, with help from school facilities staff it was put together using…



…and it works!!!

Students move left ➡ right, unloading the post-lunch contents of their trays into the appropriate receptacles.

~ 5/6 grade students oversee this process ~

Silverware Soak ➡ Waste Liquids ➡ Trash ➡ Bowls/Cups ➡ Food Waste ➡ Recycling ➡ Trays

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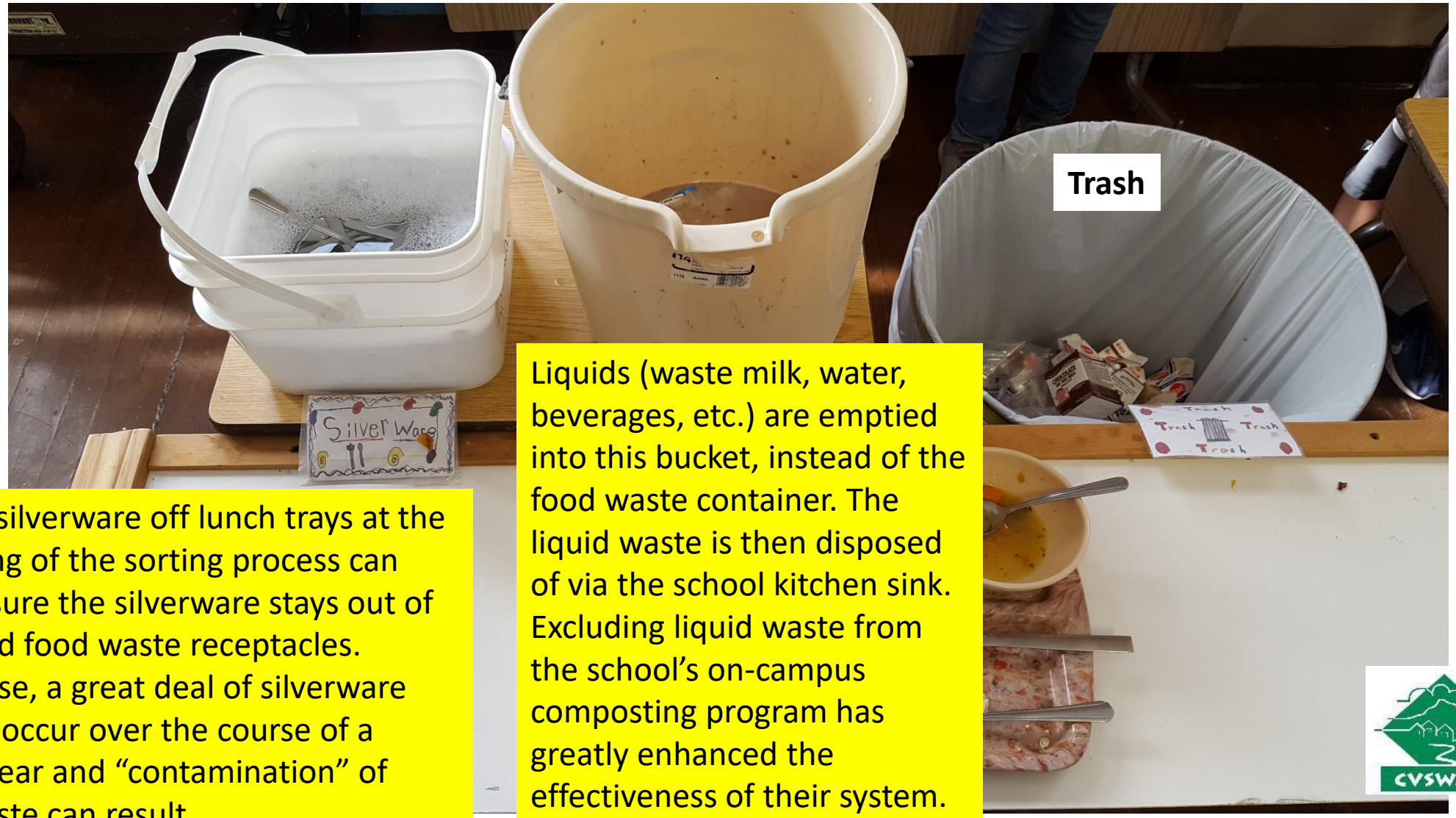
Silverware soak

Liquids (including milk waste)



Getting silverware off lunch trays at the beginning of the sorting process can help ensure the silverware stays out of trash and food waste receptacles. Otherwise, a great deal of silverware loss can occur over the course of a school year and “contamination” of food waste can result.

Liquids (waste milk, water, beverages, etc.) are emptied into this bucket, instead of the food waste container. The liquid waste is then disposed of via the school kitchen sink. Excluding liquid waste from the school’s on-campus composting program has greatly enhanced the effectiveness of their system.

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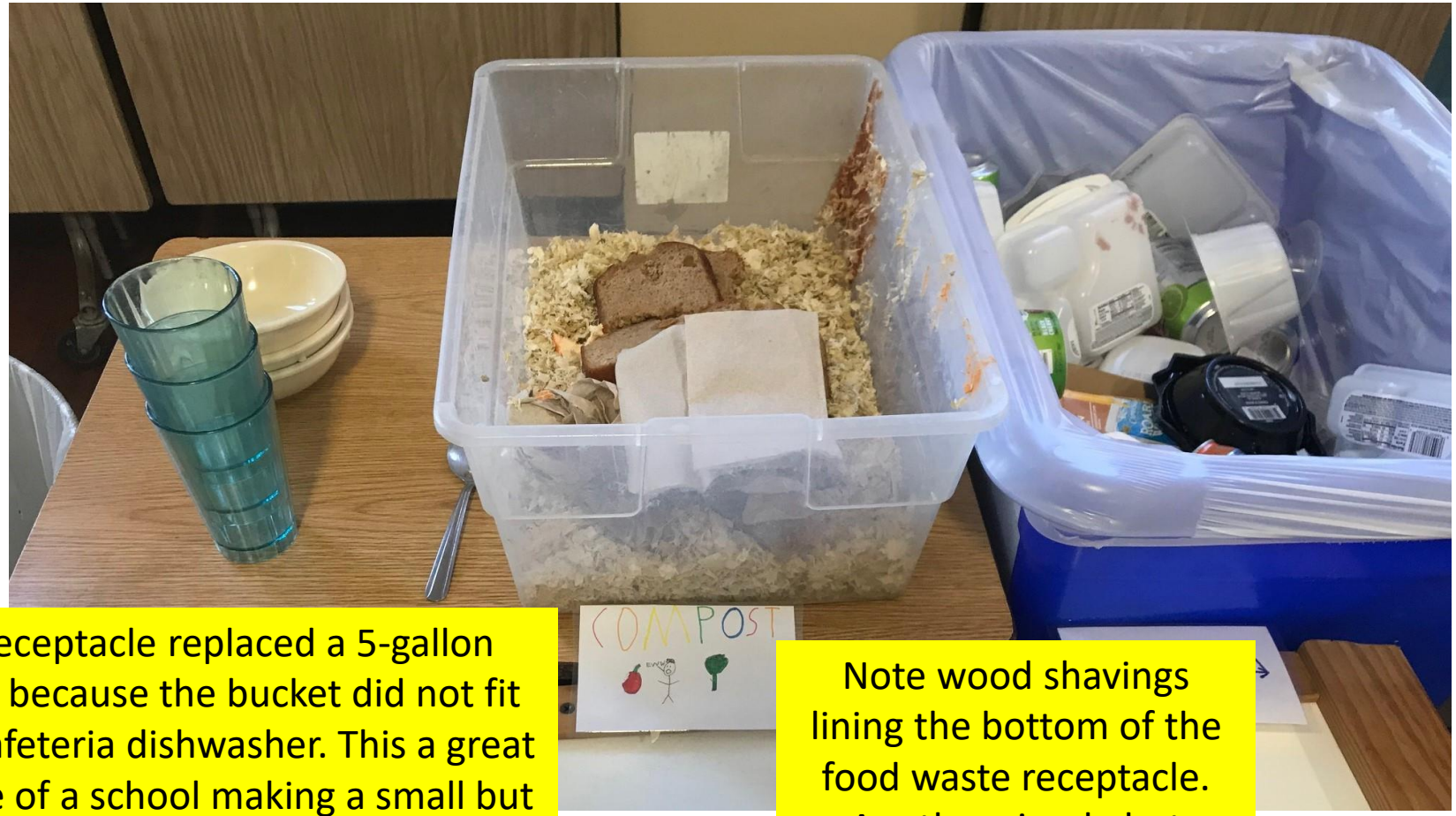
Cups/Bowls **Food Waste** **Recyclables**



Plastic bag, lining recycling tote, is not included with recycling when the recycling bin is emptied at the end of lunch.

This receptacle replaced a 5-gallon bucket, because the bucket did not fit in the cafeteria dishwasher. This a great example of a school making a small but important tweak to their cafeteria sorting station to simply things and meet their own specific needs.

Note wood shavings lining the bottom of the food waste receptacle. Another simple but important tweak to this school's sorting station, which…

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Closing Thought: It is important to incorporate what you need for your school's sorting station, depending on the particular circumstances you have in your cafeteria.

Compliments of:

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