

Cafeteria Sorting Station Design Concepts



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1. Sorting Station Size/Key Parameters

Station height for a primary-level school:

A station total height of ~28 inches, from the floor to the top of the station, works well for primary grade-level students.

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.

Height for a MS/HS sorting station:

Station height: 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).

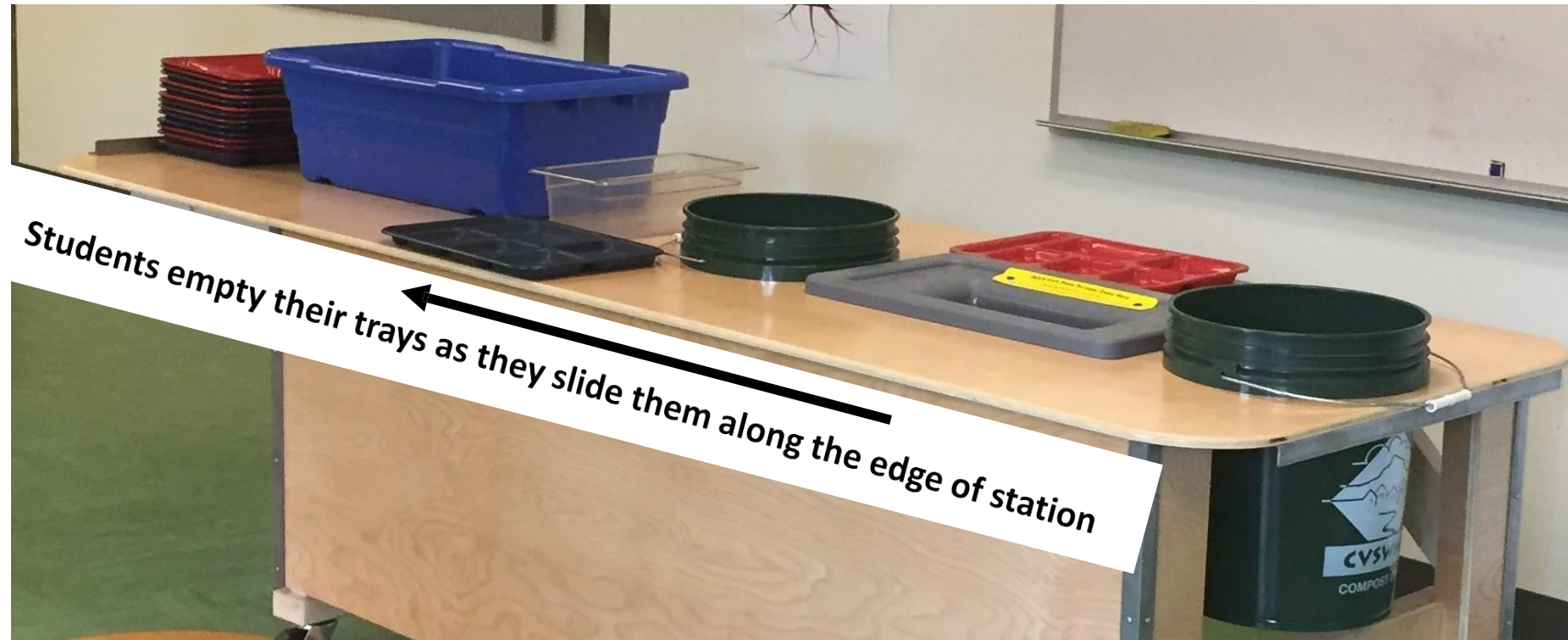
Importance: The greater the height of a station, the greater the chance that students with physical challenges (e.g. student in a wheelchair) may have difficulty independently accessing the station.



Providing a ledge for younger students to put down trays:

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

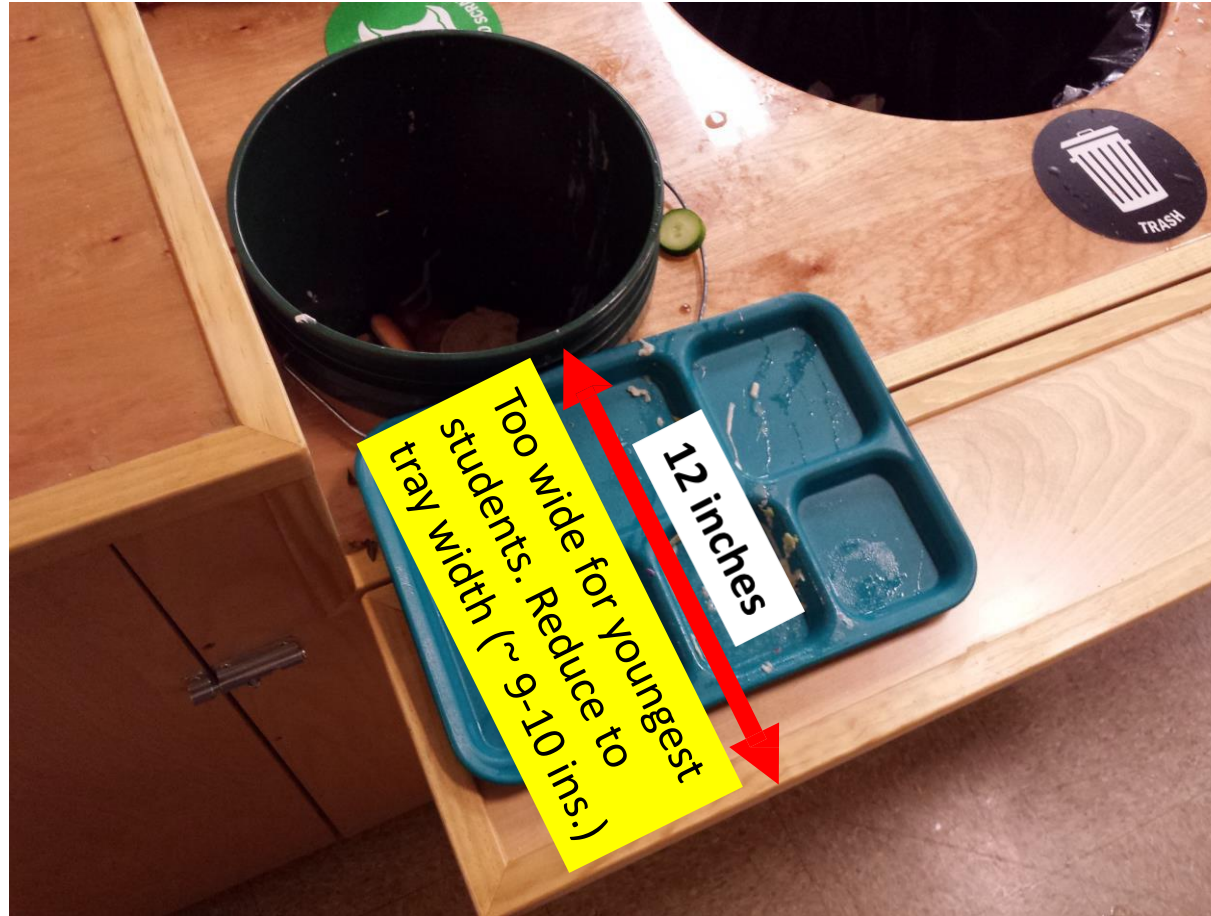
Incorporating a ledge for this purpose is not as important for MS- or HS-level students, as these students are generally content to stand and hold onto their trays, while emptying them of their contents.



Width of ledge for younger students to put down trays:

For the youngest children in the K-12 school where this sorting station was installed, the total width of 12 inches, measured from the outside edge of the food scrap buckets to the outside edge of the ledge, proved to be too wide for some of the youngest students to reach the buckets when emptying food scraps from their trays. This resulted in food scraps not making it into buckets, creating more mess for custodial staff to contend with.

In a primary-level school keep the total width from the outside edge of food waste buckets to the outside of your ledge to the minimum needed to accommodate the full width of a tray (this should be approx. 9 to 10 inches).



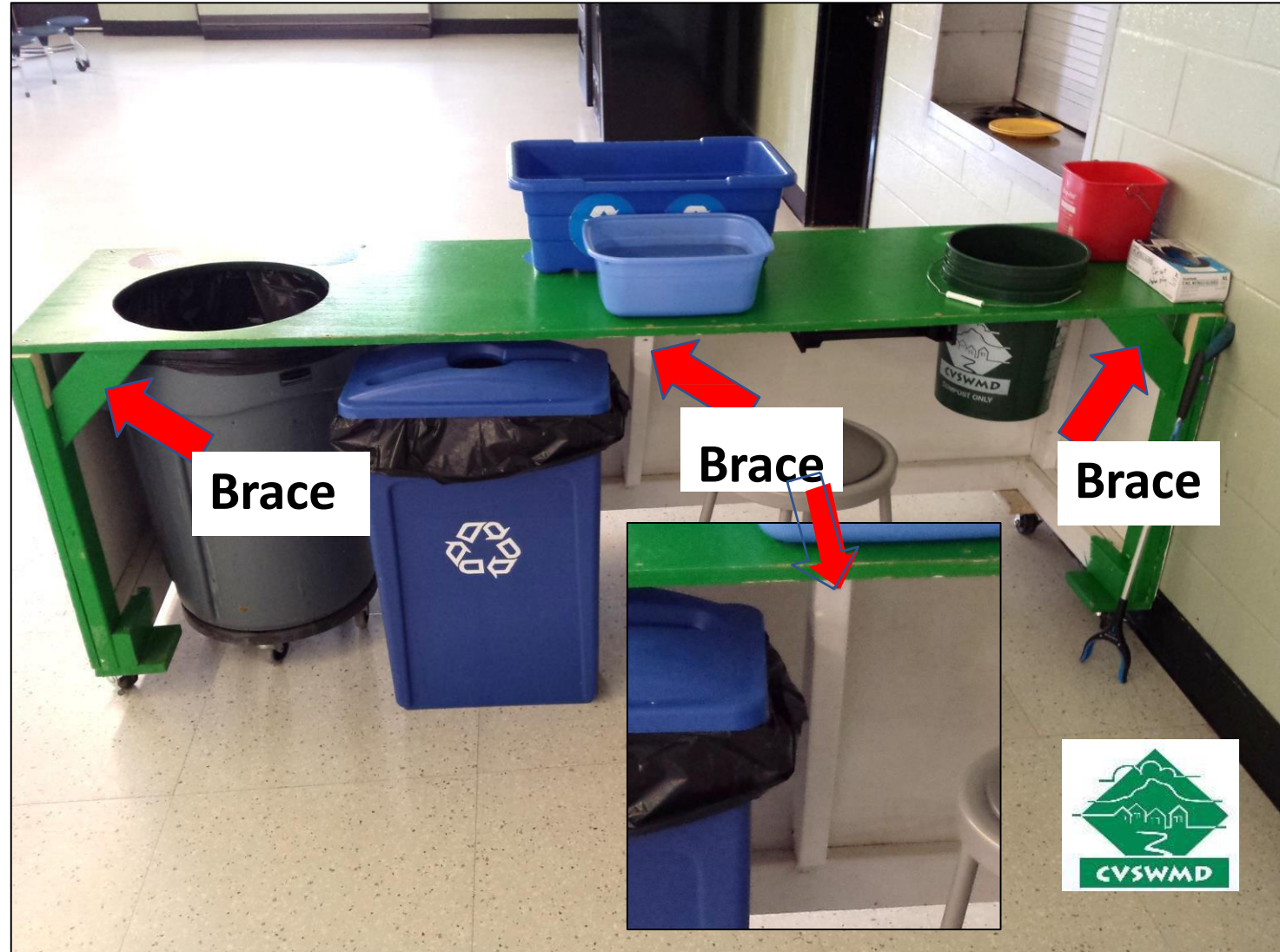
Using braces to maximize station lid height, to accommodate a taller trash can:

Station height and 2"x 4" support lumber for lid:

2"x 4" lumber, installed around the perimeter of the underside edge of a sort station lid for structural support, can interfere with the ability of a station to accommodate a taller, 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.

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



A photograph of a light-colored wooden table with a foldable extension at the end. A large blue plastic storage bin sits on the table. In the background, there are stacks of black bowls and a person's legs. The floor is green.

Extension on end of table folds down for storage

A white curved arrow with a blue outline, pointing from the text box to the foldable extension of the table.

A foldable extension increases complexity of constructing a station, but can be useful when space in your cafeteria is limited

2. Sorting Station Exterior Finish

Middle school station personalized/decorated by students:

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



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.



Student graduation gift to her school community



HS station with signage and lights:

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, silverware, etc. to the kitchen window for washing by food services staff.



HS station with signage and lights:



3-D Signage

The 3-D signage for trash and recycling is an excellent addition to this sorting station.

A student created the signs, which reflect the actual waste produced in this particular school cafeteria.

Additionally, the signs are hung in a way that students can easily see and reference them, as they utilize the station to sort their lunch-produced waste.

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 not 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 acceptable.



3. Monitoring a Sorting Station

Middle school station with Compost Monitor:

Being able to stand behind a sorting station makes it easier to monitor.



Share station



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:

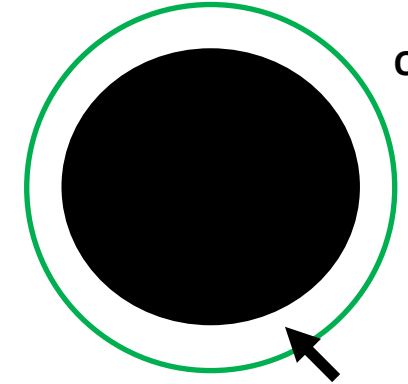
Height of station has been lowered and the opening in the sort station lid enlarged, but not larger than the opening of the trash can.

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

Consideration: Make the opening in the sort station hole 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.



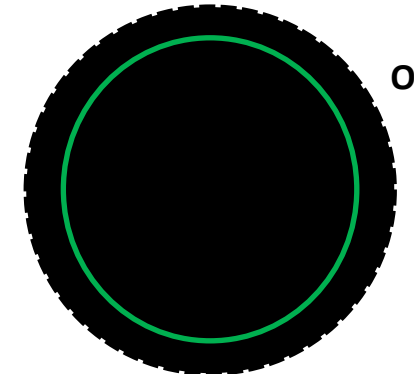
Opening in station lid larger than trash can mouth



Option #1

Food can slip past trash can through opening

Station lid opening smaller than trash can mouth



Option #2

Opening in lid of station
Opening of the trash can



Rinsing Recyclables at a Sorting Station

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



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 used by monitor.



Of the different types of plastics, identified as #1-#7, only #1 & #2 rigid plastic, single-use containers are actually banned from the landfill in VT and need to be recycled. Examples of these types of plastics in schools include single-serving cereal tubs and some yogurt containers.

Number 5s are also considered to be recyclable, as per recycling markets in VT, but are not a mandatory recyclable, as are #1 and #2.

#6 single-use plastic containers, often used in schools as single-serving cups for fruit cocktail, dipping sauces, etc., are not banned from the landfill and there is no demand for them in the recycling market, so these #6 plastic containers are trash.



Sorting Station Design Examples

Order of receptacles (silverware soak):

Silverware is a non-food item that mistakenly ends up in food waste buckets, as well as trash receptacles.

Consider placing silverware soak first in the arrangement of your sort station receptacles, so students can unload silverware before tipping trays into food waste buckets and trash cans.

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 a station, without the silverware soak necessarily having to be on a separate cart.

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 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:



A sort station for a K-12 school:

K-12 school: 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 of students emptying trays 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.



A simple yet functional design for a sort station:

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

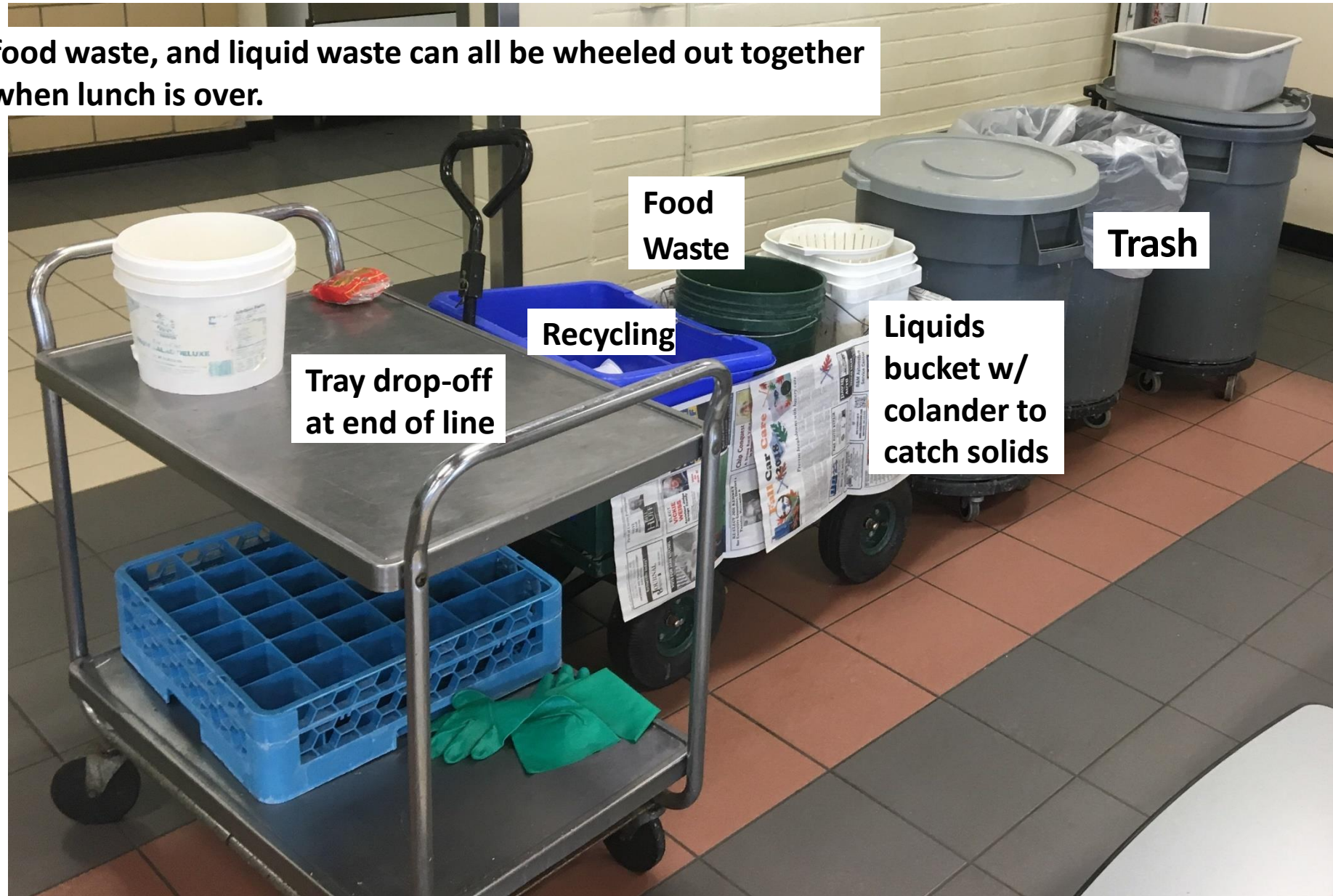
Potential disadvantages to this station design:

- 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.



Another simple yet functional design for a station:

Recycling, food waste, and liquid waste can all be wheeled out together on wagon when lunch is over.



Another simple yet functional design for a station:

A simple rectangular design for K-4 sorting station

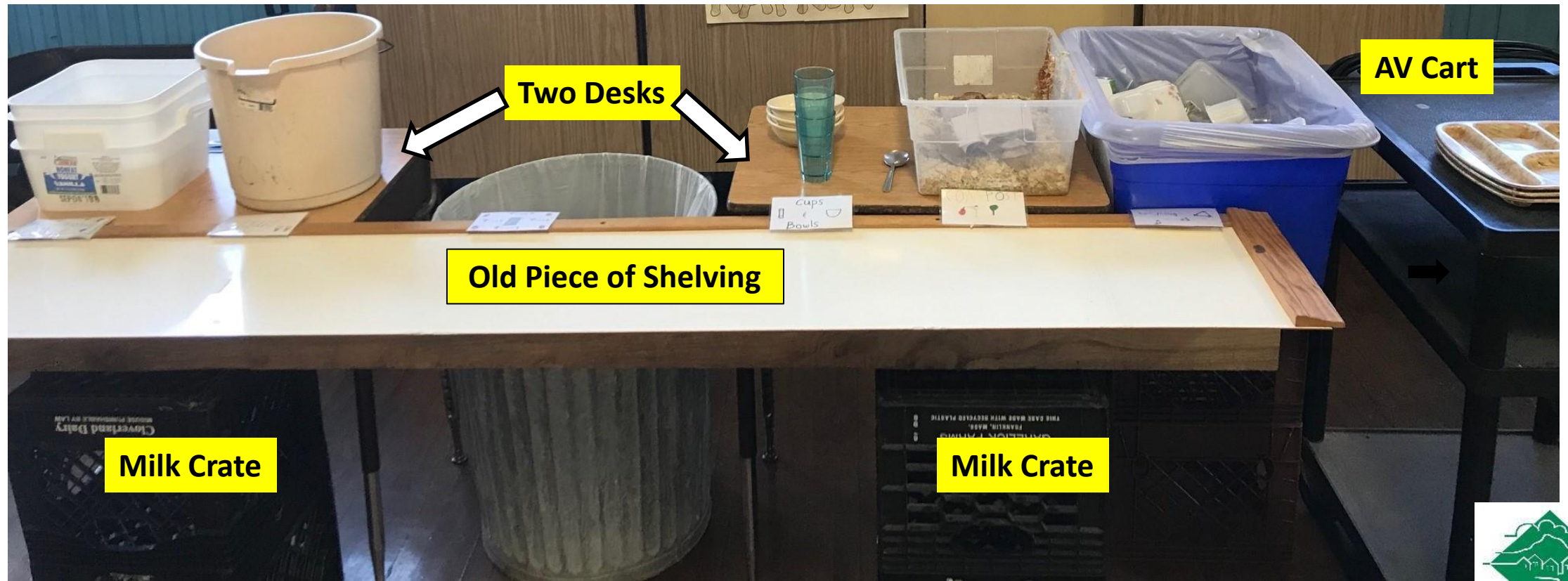
At 24" in height, this station is low for older, taller students who may want to put down their trays, when they are emptying them. A height of 28", which youngest students can still access, is better for a primary grade school.

Note the white buckets: at the request of their hauler, the school began diverting milk from composting buckets, into separate white buckets, and dumping it down a drain.

Station design and its placement (in middle of cafeteria, with plenty of room on both sides) allows students to access from both sides.

Yankee Ingenuity Built This Cafeteria Sorting Station at Woodbury ES:

Intended to serve as an experimental prototype, it was put together using...



...and it works!!!

Cafeteria Sorting Station at Woodbury ES:

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

~ 5/6 grade students oversee this process ~





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, resources you have available to construct a station, space limitations, budgetary constraints, etc.

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