

# Recycling and Waste Audit

## Core Activity

### Activity Summary:

Perform an audit of the school's waste to learn more about types of waste generated, amounts, and areas for improvement. Students will audit several bags of waste, record and graph the results, and compare their sample to national data. This lesson can precede or follow a more in depth look at landfills, recycling processes, and compost systems.

UNIT: Generation Zero

GRADES: 6<sup>th</sup> – 12<sup>th</sup>

#### MATERIALS:

- 6 Scales
- 6 Aprons
- 6 Tongs
- 6 goggles
- 6 buckets
- 1 Box of gloves per 50 ppl
- Trash bags
- Recycling bags
- 6 dry erase boards
- 6 dry erase markers
- 6 tarps
- Waste bags (collect on site)
- 6 tally sheets
- Hand sanitizer
- Cleaning supplies: spray/paper towels

TIME REQUIRED: 50-75 mins

#### OBJECTIVES:

Students will be able to:

- Conduct an effective and accurate waste audit.
- Calculate amounts of waste generated at the school.
- Compare/Contrast findings to national average

#### TEKS CORE CONCEPTS:

See Teacher Resources

**Before beginning** - it is important to note that a Recycling Audit or Classroom Waste Audit is the best introduction to this process. Composting Audits and Cafeteria Audits with food heavy waste can be quite a bit messier and are best done after first having completed a Recycling or Classroom Waste Audit.

#### Set-up (10-15 min)

1. Choose Audit Type: Classroom Waste, Recycling Bin, Compost Bin or Cafeteria Waste
2. Identify the number of bags needed. One bag per 4-6 students per class. Bags can be reused for each classed for ease.
3. To get the waste necessary to do the audit, coordinate at least one week beforehand. Sometimes, teachers are able coordinate with the custodial staff to have them collect trash from the classrooms. Emphasize that trash should not be more than 24 hours old when the Audit starts. Decomposition happens quickly and old trash can be much more hazardous. Steer clear of Bathroom trash bags.
  - a. Recycling – Collect from recycling dumpster (on your own) or classroom recycling collection bins (ask custodians to hold for up to 48 hours).
  - b. Classroom Waste – custodians collect from classrooms and hold for up to 24 hours.
  - c. Composting – Collect from Compost Dumpster (on your own but be careful to get fresh bags) or from composting collection bins (ask custodians to hold for up to 24 hours).
  - d. Cafeteria Waste – Ask custodians to hold trash for no more than 24 hours.
4. Once you have collected your waste, find an outdoor space where you can set out the tarps, scales, and other materials. Alternatively, a classroom setting works as well if you have access beforehand.
5. Preview all waste and check for hazards such as sharps, biohazards, and objects not suitable for students to handle.

#### What's an audit? (5 min)

1. Ask the students about waste. *What is waste?* Stuff we don't use anymore, gross stuff, old things, etc.
2. *Where does trash go when we throw it away?* **Dump, landfill.**
3. *Do you think about the trash after you've tossed it?*

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4. Share with the students that today they will be performing an audit of their school's (fill in Audit type) waste-stream.
  - *What does the word audit mean? An **audit** is "conducting a systematic review of" a particular thing. If they don't know, relate it to a tax audit.*
  - *If that's what an audit is, what do you think a waste audit is? What about a (insert type) Audit?*
5. Brainstorm about how the audit should be conducted to make it the most effective.
  - *Should they record every piece of trash they find? No.*
  - *Should they come up with categories? Yes.*
  - *What are some categories they might find? Brainstorm as a class, guiding them to use the following categories: paper, plastic, metal, glass, food, other.*

### Auditing Their Waste (25 minutes)

1. Explain that they will now head outside to audit a couple of (trash or recycling) bags that have been collected and kept from the dumpster. Remind them that they are collecting important information so to NOT ERASE THEIR DATA until otherwise instructed. Their instructions, which should be explained before they begin, are as follows:
  - Split into groups of 4-6 (depending on class size)
  - When you get outside, every student should grab a pair of gloves and head with their group to tarp where a bag of waste\* and their supplies will be waiting. Each tarp should have: a scale, pair of tongs, apron, pair of goggles, a tray, a whiteboard (w/columns), and a dry-erase marker. Tell students to keep their hands off of the equipment until their roles have been assigned and they've been given the go-ahead.
  - Assign one student from each group to be the waste manager and put on the apron and goggles. Next assign a weight manager and information recorder. Everyone else will help sort the waste as the waste manager removes it from the bag.
  - Instruct the weight manager to turn their scales, adjust the unit so they are set to grams, and tare them with the bucket/tray on top.
  - Once they begin, students should then split their waste up into the categories outlined above. Weigh each group and record the total weight in grams on the tally sheet under the appropriate column. Again, make sure they hold on to their data for the next part of the activity.
  - Once finish, return waste to the trash bag once complete.
  - If bags will not be reused for another class, students should sort their waste into recycling and landfill bags. Set aside a few minutes to explain what can be recycled/composted, and have students sort their waste into recycling, landfill, and compost bags.
  - Clean their area when they're finished, throw away gloves, and wait until all the groups are ready.
  - Assist with groups as needed. Once everyone is finished or your time is up, head back inside.

### Conclusion (5 minutes)

1. Introduce the City of Austin's Zero Waste Initiative. Goal in Austin to divert 90% of our waste from the landfills by year 2040.



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2. Share that as of Fall of 2018, every AISD school has recycling and composting services and that their school has an opportunity to utilize this resource to make a big difference in Austin!
3. Ask how we can work to meet the goal? Recycling, composting, reusing
4. Ask if they think it is possible to meet the Zero Waste Goal?
  - Yes! We just need to learn how to compost and recycle as best as possible.
  - Share that that is just what the next visit is about.
5. **CHALLENGE students to think before they toss and to see what they throw away the most**