Cleanup, Categorize and Propose Solutions

Consider starting this lesson plan with an acknowledgement that we are all living and working on what are traditional land and territories of native tribes. Around Lake Tahoe, we are living and working on the traditional lands of the Washoe Tribe. If you want to find out what tribes you should acknowledge in your area you can check it out here. https://native-land.ca/

Overview and Purpose

The purpose of this lesson plan is to let kids experience what it is like to work at Clean Up The Lake! Students can pick a heavily used public space and execute a cleanup. With the trash collected, they can perform a categorization exercise to see what types of trash they found, how many pieces they found and the weights of what they found. Then, with that documented, they can start brainstorming solutions and see which ones they can put into action.

Objectives

Let the students experience the trash problem firsthand.

Let them see the types of trash that they find in the environment.

Get them to perform an analysis of what they collected and see if they can see any patterns in the data.

Have them brainstorm and propose potential solutions. Does an area need more trash cans? Should there be a ban on single-use plastics? Do there need to be signs reminding people to pick up after themselves?

Take action. Pick one or more of the proposed solutions and take steps to get it implemented. Report findings at a City Council meeting. Write letters to the editor at the local newspaper. Invite journalists in to write a story.

Time Required:

This lesson plan can be broken up into 1.5 hour sessions over multiple days. One session for the introduction presentation from CUTL (Really only 30-35 minutes), one session for the cleanup activity, one session for the categorization and disposal, and one session for the brainstorming.

Materials Needed

Gloves for everyone participating in the cleanup and or trash grabbers. (If Clean Up The Lake representatives are present, we have gloves you can borrow.)

Buckets, bags, wagons etc. to carry the trash that is found.

A map application on a phone that will allow students to document the area they cleaned up and to mark the areas on the map that were particularly dirty or where they found heavy items that they need assistance moving. (Check out Avenza maps – has lots of free options for base maps, easy to use and lets you take pictures and plot courses.

2 Tarps. One that is just a reasonably clean tarp. One tarp with subset of CUTL trash categories defined. (Again, we are happy to let you borrow ours/give you an example to build your own – You just need some tape and some markers to make the tarp.)

At least 1 scale capable of weighing light items (anywhere from a ½ a gram to 1kg) and a scale capable of weighing heavier items, 1 kg to at least 50 kg. (Bathroom scales usually do the trick for this – hopefully you will not find really heavy items though. You can use any units you like, but kg is the scientific standard.)

Spreadsheet to document categories of trash, number of items in each category and total weight of items found in that category.

Camera to take pictures of:

- Your cleanup day. Especially important to document heavy or dangerous items that you did not remove so that you can report them to proper authorities.
- The general pile of trash you found before sorting. (Images are very powerful when you are trying to describe to a person, or government agency the extent of the trash problem in an area.)
- The trash in each category after it has been sorted – good way to QC your spreadsheet.

Procedure:

1. Select an area that is the best target for a cleanup.
2. Use the map application to mark the start of the cleanup zone and, eventually the end of the cleanup zone.
3. Have the student move through the area collecting trash.
4. Use the map application to mark any areas that are particularly dirty. This is helping to identify the areas that need the most attention.
5. Take photos of anything that is too dangerous or too heavy to collect and mark that location on the map as well so that it can be reported to the authorities.
6. After the cleanup is complete, bring the collected trash to an outdoor space that is safe for the students to work in. (CUTL uses a section of a non-public parking lot. An open, grassy area will do nicely too.)
7. Have the students, still wearing gloves, sort through the trash found and put them in their proper categories.

8. Take pictures of each category of trash.
9. Have the students count and document the pieces of trash in each category.
10. Have the students collect the total weight of the trash in each category and document that as well.
11. Dispose of the trash properly. (If you want to break recycling items out and send them to a recycling facility, all the better.)
12. Analysis and Brainstorming. Have the students look at the data they collected and start asking questions like:
    a. What was the most common type of trash, either weight or count?
    b. Was there dangerous trash?
    c. What solutions can they propose to stem the tide of trash in the environment? Is it more trash cans? Less single use plastic? Companies changing their packaging materials?
    d. Who needs to hear those solutions? Government agencies? City Councils? Companies that make the products? Help the students come up with a plan to get the data they collected in front of the right people along with their proposed solutions. Could be letters to the editor. Or better yet, a social media campaign with images of the cleanup and messages of change or driving people to petitions. Presentations to government agencies.

Verification

Can the students express what they learned about the prevalence of trash in the environment?

Can they see that the solutions have to go beyond just cleaning up?

Can they tell you what some of those solutions might be and how those solutions might get implemented?