CleanUP:
Become a Waste Reduction Superstar

H O W  T O  G U I D E

WWW.EARTECHO.ORG
Next Generation Science Standards

MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.
MS-ESS3-4 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth’s systems.

Common Core English Language Arts Standards

W.6.1 Write arguments to support claims with clear reasons and relevant evidence.

W5.7 Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic
W6.7 Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate
W7.7 Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation
W8.7 Conduct short research projects to answer a question, (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration

W5.9; W6.9; W7.9; W8.9 Draw evidence from informational texts to support analysis, reflection and research
Project Summary
Students will learn about waste and waste reduction in their community through research and a school waste audit, and then use their knowledge to plan and implement a community CleanUP and make a Waste Reduction Recommendation for their community.

Driving Question
How can we, as students, take action to reduce waste in our communities now and in the future?

Investigate

Before doing a waterway cleanup, and even before doing a classroom waste audit, students will investigate resources to help them learn more about waste reduction, issues related to waste, and waterway conservation in their community and around the world.

WATCH

Bag It The Movie, A film about the amount of single-use plastic bags Americans use and what happens when they are thrown “away.”
Alternative: shorter videos from Algalita Marine Research and Education

Service Learning in Action: Earth Conservation Corps
This EarthEcho Expeditions video provides a look at how high school aged youth are working with the District of Columbia to decrease the amount of trash and debris entering their local waterway.

READ

This reading is actually two short excerpts on The Great Pacific Garbage Patch and Bottled Water from Going Glue: A Teen Guide to Saving Our Oceans and Waterways by Cathryn Berger Kaye with Philippe Cousteau.

WWW.EARTHECHO.ORG
RESEARCH

Students should further investigate the issue by looking to their community and researching relevant local organizations, recent news, and local waste regulations. Information can be collected on the worksheet on page 8.

• What organizations are working on the issues of waste reduction and preservation of waterways in your community?
  • Identify at least one local organization that you could contact for help and resources, or to share your findings with!
• Has there been recent or local news about waste reduction and waterways?
  • Search for relevant information! You can do an internet search by going to the website of a local news source and searching relevant keywords including: waste reduction, recycling, waste, garbage, compost.
• Identify local waste regulations.
  • Is community-wide recycling, composting or re-sale mandated in your community? Knowing this in advance will help you create a meaningful Waste Reduction Recommendation later on.
  • Identify your local Sanitation or Solid Waste Department, most waste regulations (including recycling, hazardous waste removal, and composting) are made on a county-by-county basis, use your county as the basis for your search.

DO: Mini-Lab

Classroom Waste Audit
Have students brainstorm what they think might be the most commonly found items in your classroom garbage can. Prompt them to identify the behaviors that lead to the garbage, for example: if drinking straws are an item they think they will find most common then drinking juice boxes might be the behavior that leads to it.

Conduct the School Waste Audit using this Google Spreadsheet (printed landscape or digital copy) and garbage from one or more classroom garbage cans, or even a home garbage can. While sorting through classroom garbage, be sure that students are wearing gloves and have a space to safely spread and sort items.

Tally each item and mark whether the “items found” in your classroom’s garbage can be recycled, reused, composted or if it truly belongs in the trash. If you want to use the Google Spreadsheet digitally, first tally on a paper document or whiteboard and then add the actual number (IIII becomes 4) into the spreadsheet. Analyze the waste to determine the percentage of the waste that was could be recycled, composted, or that is actual garbage. Calculations and follow up questions can be found on the worksheet on page 9.
Help students analyze their findings in the waste audit to make recommendations on specific ways to reduce waste in the future. Based on your findings during the waste audit, make recommendations of how to reduce waste in your school. For example, a strong recommendation would be: “Reduce paper waste in each classroom by 20% this month” or “Use only reusable lunch trays in the school cafeteria.” Come back to this recommendation after your CleanUP to make a plan to put into action to achieve your goal.

**PROBLEM STATEMENT**

Now that you have researched how this issue relates to your local community it is time to write a Problem Statement to help focus your work. The problem statement should answer three questions:

- What is the problem or need?
- Who has the problem or need?
- Why is it important to solve?

Use the following format to write a problem statement: **Who need(s) what because why.** For example: Stony Brook, NY needs to keep its shorelines clean because pollution is making the beach less fun to visit, and it is causing water pollution and poisoning wildlife.

My community need(s) a clean-up because________________.

How will your action (Community CleanUP) address your problem statement?

Now that your students have completed their investigation, they should be able to craft an answer to your driving question. How you choose to have students answer this question is up to you, it could be in a reflection paper, as a group discussion, or a presentation. The “answer” to the driving question should include reference to your action and the issues you discovered at the local level.
How to Host a Cleanup

Prepare

Your class has identified why your community needs a CleanUp, now you must determine your plan for action. In order for your CleanUP to be a successful you need to prepare for your event!

Create an **Action Plan** considering all of the following areas:

- Who are your community partners?
- Where and when will you hold the event?
- What is your budget?
- What supplies do you need and where will you get them? Can they be donated or borrowed rather than purchased new?
- What type of documentation will you need during the event? How will collect data?
- How will you promote your event?

We recommend a more detailed trash tally sheet for an outdoor clean-up that encompasses many things you would not normally find in classroom waste audit. *Ocean Conservancy’s Ocean Trash Data Form* is a great data form, or if you prefer, you can create your own!

Delegate Roles and Responsibilities

- **Logistics Team** – general coordination and oversight to make sure the place and date are established, all transportation and permissions are set, and partner communication happens.
- **CleanUp Team** – Responsible for organizing the work groups and ensuring all needed supplies are resources are obtained.
- **Promotion Team** – Responsible for getting the word out for more participants, managing social media accounts, bringing in any partners, and contacting and meeting the press.
- **Documentation Team** – Ensures photos and videos are being taken throughout the planning process and during the event and collects and tabulates all data.
- **Fun Team** – Responsible for thinking about what will make this a fun, memorable event! T-shirts? Games? Those are the planned by the fun team!
The planning is over and it is time for your CleanUP!

Make sure that each team is ready for the day:
• Logistics Team – Arrive with a timeline! Make sure that everyone has the appropriate permissions and that supplies and people are at the designated place at the designated time.
• CleanUP Team – Arrive early to get everything set up, set out supplies and greet everyone as they arrive!
• Promotion Team – Hang any signage to direct people to the correct areas and have information handy for any press that arrive.
• Documentation Team – Have copies of data sheets and pencils ready for all participants. Have a few people dedicated to taking photos or video throughout the event, from start to finish!
• Fun team – Keep the fun alive! Implement any activities that you have planned to keep the day going.

Compliment yourself on your success and spread the word about your accomplishments!

Based on your findings during the CleanUP, make recommendations (to the appropriate body) of how to reduce waste in your community or, more specifically, in the area you just cleaned! What items of trash were most prevalent? What can you do to reduce this waste? Can you work to eliminate straws from a local snack stand? Install more containers for cigarette butts? Distribute recycling bins? The possibilities are endless!

After changes are implemented, conduct another CleanUP and compare findings. Have your changes been effective?

Share your story with the world! Get creative and share your story over some of your favorite media (social media, YouTube, blogs, school newspapers, etc.). There is no limit to how you choose to share! If you need a jump start, check out Telling Your Story: Message Guidelines.

Be sure to share your story with EarthEcho as well by filling our OurEcho Project Reporting Form.
The department or organization that oversees waste disposal in my community is _________________________.

Their website is ________________________________.

What types of services are offered in your community for trash disposal? (ex. curbside trash pick-up, a local dump)

Is community-wide recycling, composting or re-sale mandated or offered in your community?

  What items can be recycled? Examples may include paper, #2 plastics, glass, or nothing.

  What items can be composted? Examples include yard waste, food waste, or no composting services.

Which organizations (ex. Goodwill, Salvation Army, religious organizations) in your community collect unwanted materials to be reused? What types of items do they collect? (ex. clothing, housewares, furniture).

Has there been recent or local news about waste reduction and waterways?
Search for relevant information! You can do an internet search by going to the website of a local news source and searching relevant keywords including: waste reduction, recycling, waste, garbage, compost.

What organizations are working on the issues of waste reduction and preservation of waterways in your community?
Identify at least one local organization that you could contact for help and resources, or to share your findings with!
Conduct the School Waste Audit using this Google Spreadsheet (printed landscape or digital copy) and garbage from one or more classroom garbage cans, or even a home garbage can. While sorting through garbage, be sure you are wearing gloves and have a space to safely spread and sort items.

Tally each item and mark whether the “items found” in your classroom’s garbage can be recycled, reused, composted or if it truly belongs in the trash. If you want to use the Google Spreadsheet digitally, first tally on a paper document or whiteboard and then add the actual number (1111 becomes 4) into the spreadsheet. Analyze the waste to determine the percentage of the waste that was could be recycled, composted, or that is actual garbage.

Fill your totals in the table below, you will use them for your calculations:

<table>
<thead>
<tr>
<th>Total # of Items</th>
<th># That can be recycled</th>
<th># That can be donated/reused</th>
<th># That can be composted</th>
<th># That is truly trash</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the items found,

What percentage can be recycled? \( \frac{\{\text{Total # of RECYCLABLES}\}}{\{\text{Total #}\}} \times 100 = \% \)

What percentage can be composted? \( \frac{\{\text{Total # of Compost}\}}{\{\text{Total #}\}} \times 100 = \% \)

What percentage can be donated/reused? \( \frac{\{\text{Total # of Reused}\}}{\{\text{Total #}\}} \times 100 = \% \)

What percentage is actually “trash?” \( \frac{\{\text{Total # of TRASH}\}}{\{\text{Total #}\}} \times 100 = \% \)

Which items were most commonly found in the garbage you audited?

On the back of this sheet, create a list of alternatives for the “highly trashed” items (example, cloth bags instead of plastic shopping bags, or reusable water bottle instead of disposable bottle).

Then, make recommendations of how to reduce waste in your school. For example, a strong recommendation would be: “Reduce paper waste in each classroom by 20% this month” or “Use only reusable lunch trays in the school cafeteria.”
Stage 2: Dive In → Prepare: More to learn and plans to be made!

Why Clean Up? Why Now?

Reading these two excerpts from the book *Going Blue: A Teen Guide to Saving Our Oceans and Waterways* by Cathryn Berger Kaye with Philippe Cousteau, published by Free Spirit Publishing, provide information that opens our eyes to the importance of taking care of trash and reducing our garbage footprint, and why this is urgent right now.

**The Great Pacific Garbage Patch**

Yuck! The Great Pacific Garbage Patch, Trash Island, Plastic Soup—whatever you call it, there’s one heck of a garbage dump floating out in our ocean. Located between Hawaii and California, it’s twice the size of Texas. The mass has been growing since the 1950s, and unless people intervene this hunk of junk will continue to collect more and more waste—including discarded electronics, children’s toys, and most of all: tons of non-biodegradable plastic. Of this giant heap, 40 percent is plastic—evidence that humans are doing a lousy job of properly disposing of the 260 million tons of plastic we create every year. We only recycle 5 percent of that amount. With the garbage patch sprawling in international waters, no country is willing to take responsibility for the massive clean up necessary.

Does plastic biodegrade? The vast majority of plastic does not biodegrade, or break down into natural elements, like organic materials do. Rather than biodegrade, plastic photodegrades—it breaks into tiny toxic bits. These fragmented particles called “nurdles” cause further problems by being ingested as food by jellyfish and other marine life and thus moving up the food chain.

**Bottled Water**

People in the United States buy an estimated 34.6 billion single-serving bottles of water a year—up from 3.3 billion in 1997. Worldwide, 2.7 million tons of plastic are used each year to make water bottles, and in the United States, less than 20 percent of these plastic bottles are recycled. Does using all this plastic and drinking the water inside make a difference? Yes, in most cases, tap water actually follows higher purity standards than bottled water. About 40 percent of bottled water originated as tap water. While some are recycled, a whopping 9 out of 10 water bottles end up as garbage or litter, which equals 30 million per day. U.S. cities pay around 70 million dollars every year in costs related to trash cleanup and landfills. Even soda, sports drinks, and juices are also bottled “water.” What can you do? Instead of using a disposable plastic bottle, invest in a reusable one. If you do buy a plastic bottle, always recycle it.

Learn more about plastic pollution, nurdles, threatened marine life, and ideas for action at www.SaveMyOceans.com. Meet ocean heroes, download tools you can use, and discover how your everyday choices have big results.

www.Earthecho.org