

Litter Survey

Digital Toolkit – Clean Creek Campus Extension Activity

Activity Summary:

Through a litter survey, students will learn more about citizen science projects to help prevent littering, while also learning how they can incorporate technology to make a positive impact in their city and on the planet.

UNIT: Clean Creek Campus

GRADES: 3rd grade and up

MATERIALS:

- Tablets (if available)
- A computer (for classroom)
- Spreadsheet and chart to track and graph collected litter (also in the CCC Digital Toolkit)
- Litter cleanup materials:
 - Trash bags
 - Gloves

OBJECTIVES:

Students will be able to:

- Comprehend the impact of litter on the environment
- Practice data collection.
- Use technology to interpret data and compare it on a larger scale, understand how technology can help effect change.
- Understand how people adapt and modify their environment

TEKS CORE CONCEPTS:

- Coming Summer 2019!

Setup: If using tablets: Download Litterati app

(<https://www.litterati.org/>) onto devices. Will need to create a user profile and password, and can then create a “club” for participants. Otherwise can simply access the Litterati page at a later point in the classroom to compare results.

Intro:

Review with students – *What is litter? How does litter impact our watershed? Can watch Jeff Kirschner’s (the app creator) Ted Talk about the origin of the app and how it is actually generating data that influences policymakers. Link to video: [here](#)*

Interpretation questions: *How was Jeff’s project able to help the city? How much trash could we pick up as a class if we picked up one piece of litter every day for a week, month, year?*

Activity:

Have students perform a litter cleanup on campus or in a designated place - or have them pick up litter they see over a week (for example), logging what they find in the attached litter spreadsheet. (Optional: if tablets are available, students can also enter their observations through the Litterati app)

Compile and graph data using the included spreadsheet for the class to visualize and compare categories of materials collected during the cleanup.

Discussion questions: *What is the category we found the most of? The least? Why might that be – what does this tell us about littering habits? What can we do knowing this information?*

Compare classroom data with data from the [Litterati site](#) and [Keep America Beautiful](#) *What are the similarities and differences in the data? What predictions might we make if we were to do a cleanup in a park or by a road instead of around the classroom?*

Conclusion:

1. Discuss litter impacts. *What are some dangers of litter? Where does litter end up if we leave it where it falls (in our water). How does litter affect the environment?*
2. Watch [video about the Great Pacific Ocean Gyre](#), which dismantles the myth of “Trash Island”
3. Discuss how large databases and citizen science networks can help cities and people identify problems and come up

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with solutions. Can talk about how social media can also be used as a tool to encourage positive impact, for example, the [#trashtag challenge](#). *What solutions or actions can students take to help out in their community?*

Additional resources about litter:

Litter impact on our environment:

- [Link to video explaining biomagnification](#) – the process by which microplastic and chemical pollution increases its' impact as it makes it up the food chain:
 - [Link to the Project Wild game, Deadly Links](#), which demonstrates biomagnification in action:
- [Longer video made by the 5Gyres Institute](#) which discusses research being done to investigate the Great Pacific Garbage Patch. Features Austinite and swimmer, Ben Lecomte.
 - [Link to the 5Gyres website](#) for more resources, information, and educational tools:

Cleanup

- [Link to the Brand Audit Toolkit](#), a toolkit that takes another approach to doing a waste cleanup where participants can identify brands of the littered items and reach out to those companies to effect change:
 - [Video describing this effort](#) to “find the real litterbugs”