GNG PULSE CURRICULUM

2014-15
Wasted: Don't Trash the Earth
Pulse Curriculum

www.gng.org

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Wasted: Don't Trash the Earth
Program Overview

Introduction

We all know that we produce waste. Everyday we throw away trash without a second thought. In 2012, the World Bank published a report finding that each person worldwide generates on an average 2.65lbs/1.2kg of trash per day[1] with the average American throws away 4.4 lbs of trash every day[2] (EPA). This adds up to 750 million tons per year. Where does this trash go once you throw it away? The answer is not as simple as you may think… The waste you produce today will affect our world tomorrow. Global Nomads Group is excited to bring participants together for a special guest speaker event exploring the importance of recycling worldwide. Bringing forth the voice *of Mr. Thad Copeland of GrowNYC,* this curriculum will challenge students to reflect critically on the issues related to waste faced by the world, as well as within their own communities.

Using the Curriculum

Using project-based learning, this curriculum will help you implement the specific Pulse program in your classroom. Activities will guide students through the topic, allowing them to gain a better understanding of the subject matter, and ask them to complete a brief activity.

The curriculum is divided into three steps: **LEARN, ACT,** & **REFLECT**.

LEARN	*This step is intended to give students background information on the program's topic via a hands-on, engaging activity.*
ACT	*This step is intended to put students' knowledge and skills gained in the LEARN activity into action. It directs students to work together to identify a problem, related to the Pulse program topic, in their own community and begin to make the change happen.*
REFLECT	*After the broadcast, debrief and reflect with your class, and continue the conversations with your partners through the Google+ event page.*

The following preparatory curriculum will:

- Explore issues associated with waste including reduce, reuse and recycle.
- Engage students in taking action in their school and community.
- Identify ways to reduce waste in school.

Activity Overview- Wasted: Don't Trash the Earth			
	Activity	**Estimated Time**	**Checklist (✓)**
LEARN	What a Waste & Waste Audit	50 minutes	
ACT	Reduce, Reuse, Recycle (RRR) Action ✓ *Post RRR Recommendation on G+*	60 minutes	
	Hangout on Air ✓ Prepare outline with class	30 minutes prep 60 minute Hangout	
REFLECT	Reflect & Connect ✓ Post on G+	15 minutes	

[1] What a Waste: A Global Review of Solid Waste Management. World Bank. 2012. Permanent URL for this page: http://go.worldbank.org/BCQEP0TMO0

[2] "Municipal Solid Waste," *epa.gov*, last modified February 28, 2014, http://www.epa.gov/epawaste/nonhaz/municipal/

Google Hangouts on Air

This event will be broadcast LIVE using Google Hangouts on Air! Participating schools can engage with the online audience and guest speaker by utilizing the Google Hangout on Air chat box on the right side of the screen.

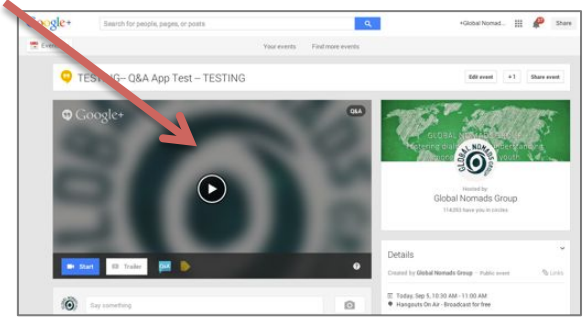
What is a **Google Hangout on Air**?

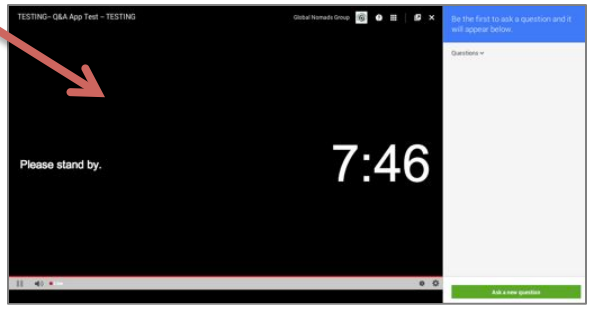
A *Hangout on Air* allows participants worldwide to join a conversation together. GNG connects schools and guest speakers together for a 60-minute program to learn about exciting topics and urgent global issues. All programs are recorded! If you cannot make the live event, visit GNG's YouTube page to view the program.

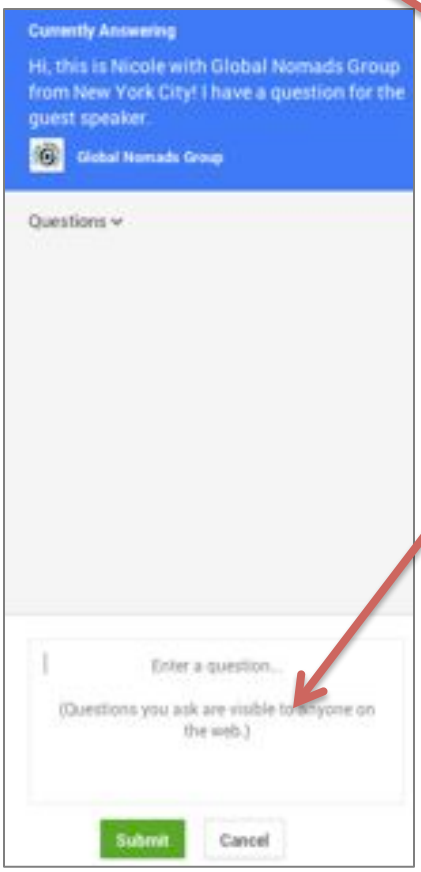
How to join?

1. **LEARN:** Go through the LEARN & ACT activities with your students prior to the event.
2. **JOIN:** On the day of the program, a link will be sent to you via email for the session you wish to participate on. Click this link. This will bring you to the event page. Click the play button to join!

   If the hangout has not started yet, you will see a screen that says "Please stand by" with a countdown to when the program will begin.







3. **ACT:** During the program, the Facilitator will pause to take your questions. On the right side of the event page is a question box. Introduce yourself with your school's name and location. Then, ask your question!

4. **REFLECT:** Continue the conversation on the **Google+ Event Page** (**https://plus.google.com/events/c62b4h4lcjsg5cgcfpi7f7provc**). This is a space for all Pulse participants to get to know each other, exchange curriculum activities, and share ideas and questions before and after your Pulse session.

What a Waste & School Waste Audit!

TIME:	50 minutes
MATERIALS:	"What a Waste!" reading on page 4. "School Waste Audit" pages 5-6. This activity requires several bags of classroom garbage- you may need to start collecting garbage ahead of time to have enough for each group to sort through. Newspapers or tarp to cover desks or floor for the trash.
OVERVIEW:	Students will develop an understanding of what waste is, it's origin, and what we can do to reduce our waste production.

LESSON PLAN ACTIVITIES:

1. **Brainstorm** (10 minutes)
   Engage in a class discussion using the following guiding questions. Then, students will individually or in small group, read "What a Waste!" on page 4.
   - What is waste?
   - What happens to your waste when you "throw it away" in our community?

2. **Regroup** (5 minutes)
   As a class, discuss the article. Use the following guiding questions:
   - Do you think waste reduction is important? Why or why not?
   - Do you do anything to reduce waste? (Answers may include: I recycle, I bring a lunch box to school instead of a disposable paper bag, I have a reusable water bottle, we compost our food scraps at home.)
   - Guide students in a discussion of what can be recycled in their community. A quick online search should help you determine the guidelines.
   - Review definitions of reuse, recycle and compost with students in order to help them fill out the Waste Audit.

3. **Group Work** (30 minutes)
   Now that students understand some of the problems associated with excess waste, they will take a closer look at their own school and conduct a waste audit. Split students into groups of 4-5. Each group should get the Waste Audit worksheet (pages 5-6), a bag of garbage, and a tarp or newspapers to spread on the desks. Students will then empty their garbage bags and begin their audit!

4. **Make a Recommendation** (5 minutes)
   Based on their findings during the waste audit, students should make recommendations of how to reduce waste in their school. Each group should circle the recommendations listed on the audit worksheet or create their own, strong recommendations. These recommendations will be used in the ACT activity. For example, a strong recommendation would be: "Reduce paper waste in each classroom by 20% this month".

What a Waste![3]

Read the below article to learn about waste in the United States.

The images in the media were vivid—and, well, disgusting. In March 1987, the *Mobro 4000*, the garbage barge from Islip, Long Island, sailed down the coast piled high with 3,100 tons of rotting garbage, medical waste, old tires, cardboard containers, and other trash from local schools and businesses, looking for a place to discharge its cargo. Wandering all the way from New York to North Carolina, Alabama, Louisiana, Texas, Mexico, and Belize, no community wanted to let it unload. The story was front-page news for weeks and resulted in considerable public debate and finger pointing. Society was creating trash faster than we could find space to put it. Eventually, we would all be buried under a giant pile of garbage, victims of our own excessive consumption and wastefulness. A senior administrator at the Environmental Protection Agency warned of a "deluge of garbage." What's more, we were using up resources, polluting the environment, and pushing these costs on to future generations.

Incineration, or burning, is still a popular way to dispose of waste. Although it does save landfill space, there are many negative consequences such as air pollution.

Landfills are engineered areas where waste is placed into the land. Landfills usually have liner systems and other safeguards to prevent polluting the groundwater.

Communities began to take serious notice. At the time, almost 80 percent of trash was destined for landfill; another 10 percent was **incinerated**; only about 10 percent was **recycled**. Nearly 3,000 municipal **landfills** had closed between 1982 and 1987; many more were scheduled to close over the next several years. There seemed to be a limited number of alternatives. We could reduce the amount of trash we generated, or increase the amount we recycled or burned.

In an effort to reduce trash production, many communities began to charge households for the amount of trash they generated; others began recycling efforts in earnest. In 1988, less than 1,000 communities had curbside recycling programs; by 2000, at least half the population could leave their bottles, cans, and newspapers at the curb.

Recycling is the recovery of useful materials, such as paper, glass, plastic, and metals from the trash to make new products, reducing the amount of virgin raw materials needed. The EPA reports that in 2014 the USA has a 35% recycling rate.

Fifteen years later, the subject of trash seems to have lost some of its heat. In the media, it now takes a back seat to articles on global warming and depletion of the ozone layer. What happened? Have our policies worked? Or are we still going to be buried under our own trash.

[3] Adapted from: Jane Katz, "What a Waste," *Regional Review* Quarter 1 (2002): 22-30.

School Waste Audit[4]

Identify and record what, in your community, can be recycled. Conduct the School Waste Audit using the below table. Tally each item, and mark whether the "items found" in your classrooms garbage can be recycled, reused, composted or if it belongs in the trash.

Community Focus: What items in our community can be recycled?

ITEMS FOUND	Tally	Item can be recycled in my community	Item can be reused	Item can be composted	Item cannot be recycled, reused or composted and is therefore trash
Ex: Plastic bags	***IIII***		***IIII***		
Plastic Food Containers (ex: cups, juice boxes, pouches)					
Plastic Wrappers (ex: chip, snack, spork wrappers)					
Dirty Paper (ex: towels, tissues, paper cups, lunch trays)					
Styrofoam					
Food					
Plastic Straws					
Glass Bottles/Jars					
Metal/ Cans					
Cardboard					
Paper Packaging (ex: clean lunch trays)					
Paper used on one side					
Paper used on both sides					
Food					
Other					
TOTALS					

[4] "Generation Earth" Audit Tool from LA County was adapted to develop this MRWMD Small Planet Ed. Waste Audit Tool. **www.mrwmd.org**

School Waste Audit

(continued)

Complete this analysis based on what you learned through your Waste Audit.

1. From the items found, what percentage can be recycled? _____
   ({Total of RECYCLABLES} ÷ by {Total of ALL} x 100 = %)

2. What percentage can be composted (food)? _____
   ({Total of FOOD} ÷ by {Total of ALL} x 100 = %)

3. What percentage is actually "trash?" _____
   ({Total of TRASH} ÷ by {Total of ALL} x 100 = %)

4. Which items were found in the garbage the most? _____

5. Did you find "single use plastics"? If so, how many items did you find? _____

6. 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).
   _____

7. Of the paper found, estimate percentage used on both sides of the paper? _____

8. Is there a recycling program in your school? _____ Is it being used? _____

9. Make a recommendation as to how to reduce waste in your school. Recommendations will be voted on in the next activity to select one recommendation to act upon as a class!

_____
_____
_____

Reduce, Reuse, Recycle (RRR) Action

TIME:	60 minutes in class planning, additional time to implement project
MATERIALS:	Student pages 8-9
OVERVIEW:	Students will select a challenge relating to waste in their school (an insufficient amount of recycling bins, the need for a cafeteria composting program, using too much paper in the teacher's office). Students will create a Reduce, Reuse, Recycle strategy for their chosen challenge. This activity is formatted to encourage students to think critically about a problem in their school and create a solution.
	Students post their RRR Recommendation on the Google Event Page (https://plus.google.com/events/c62b4h4lcjsg5cgcfpi7f7provc) prior to the broadcast!

LESSON PLAN INSTRUCTIONS:

1. **Brainstorm (10 minutes)**
   As a class, have students return to and reflect on each group's recommendation discussed in the Learn activity. Work together to select one issue for the group to focus on in the RRR Action Project. If there is no consensus, students take a vote.

2. **Project Format (15 minutes)**
   Have students use the Project Format Chart (p.8) to explore different project formats (campaign, documentary, etc.), reflecting on what will best help them meet their recommendation. The group should select 1 project type for their project.

3. **Activities Plan (20 minutes)**
   Ask students: Now that we know our format, what steps do we need to complete to create the project? Work as a group to brainstorm and list the steps into the Activities Plan Worksheet (p. 9). Encourage students to be as specific as possible in outlining steps.
   Prompt students to consider:
   - Activities
   - Materials/resources for each step
   - Deadlines

4. **Final Product (30 minutes in class, time outside of class may be necessary to complete the project)**
   Support students in the creation of their final project. Students should be able to answer the following questions upon completion of the project:
   - How does your project address reduce waste in your school?
   - How does your project help your school meet the recommendation you proposed?
   - Is this a project that could be implemented in other schools? Why or why not?

5. **Share and View: Locally and Globally (may include optional time outside of class)**
   Students should share their project with the other classes in their school. Students may want to take it farther and hold an assembly to encourage other classes to get involved.

   Update successes on the G+ Event page (https://plus.google.com/events/c62b4h4lcjsg5cgcfpi7f7provc)

ACT

Reduce, Reuse, Recycle (RRR) Action: Plan

Complete the Plan below based on your class discussions.

Make a Waste-Reduction Recommendation

Using the waste-reduction recommendations from each group in the Waste Audit, decide upon a recommendation as a class. Record it below.

Recommendation	

Project Format Chart

Use the below table to determine a project goal and decide which project format will best meet your recommendation. Some projects may fit into more than one goal or format.

	AWARENESS	**ADVOCACY**	**ACTION**
Goal	**Inform** others about an issue and give them the **knowledge to change** it.	**Outreach** to influence specific **decision-makers** who have the **power to change policies.**	Implement **direct activities** to change an issue yourself.
Project Format	**Public Service Announcement (PSA):** *Widely-shared message that changes public attitude*	**Campaign**: *A set of activities that promotes a specific cause, law, or change of behavior, often through media or politics*	
	Documentary: *Media/art that objectively presents the stories of real-life people or events, often focusing on a specific issue or cause*		**Event:** *In-person activity that produces a particular product or outcome (voter registration, fundraising)*
	Student Choice: *Design and implement your own type of project!*		

Record your project Goal and Format below.

Goal	☐ Awareness ☐ Advocacy ☐ Action
Format	☐ Public Service Announcement ☐ Campaign ☐ Documentary ☐ Event ☐ Other: _____

Reduce, Reuse, Recycle (RRR) Action: Plan
(Continued)

Activities Plan

What activities do you need to complete to create your project? Record the step-by-step process in the chart, thinking about your media output and role of your partner school.

Activity (Step)	Materials/Resources Needed	Deadline	School Responsible
Example: Research monthly water use in our town.	*Library/Internet access, phone interview with local water agency*	*February 5, 2014 (IVC 3)*	*Al-Wakra High School*
1.			
2.			
3.			
4.			
5.			
6.			
7.			

GUEST SPEAKER

Wasted Guest Speaker: Thad Copeland

Thad Copeland is a Program Coordinator for GrowNYC's Recycling Champions Program, a partnership with NYC Departments of Education and Sanitation. Recycling Champions works directly with educators, students, staff and parents to develop model recycling programs in NYC Public Schools. Thad completed his Master's in Sustainable Development at SIT Graduate Institute and is interested in the connections between consumerism, waste management, and the natural world. When not working in NYC schools, Thad enjoys cooking and traveling.

Did you know?

- NYC Public Schools, with over 1.1 million students and 1,700 schools, is the largest school system in the U.S.
- 40% of NYC School Waste is recyclable paper and cardboard
- 40% Food Waste (NYC currently offers Organics Collection for food scraps and food soiled paper in over 700 NYC schools. These materials are used to make compost and green energy).
- 10% Recyclable plastic, cartons, metal
- 10% trash (non-recyclables such a foam trays, plastic bags)

Google Hangout on Air Outline: Wasted

TIME:	Day/Date: Wednesday, November 19 Hangout on Air Start Time (60 minutes): 11:00 *AM*
MATERIALS:	Google Hangout on Air Outline (p. 9-10), prepared with comments and questions
OVERVIEW:	**Get ready for your Pulse session with these three steps:** **1.** Complete the LEARN and ACT activities with your class **2.** Review the outline and prepare comments and questions.
	Post follow-up questions and comments to the Google+ Event Page!

1. **Introduction and Greetings** (7 minutes)
   GNG facilitator welcomes everyone to the *Wasted: Don't Trash the Earth* program. All Ambassador schools will introduce themselves when directed. All Participant schools will introduce themselves in the Q&A chat box to the right of your screen.

Have one student from each group introduce him/herself and the group with the following.
➢ Name: ➢ School Name and Location: ➢ One interesting thing you learned about this topic so far:

2. **LEARN: Guest Speaker** (10 minutes)
   GNG facilitator provides a brief introduction of Thad Copeland, and a brief overview of his relevant experience.

   Using the information students have learned about waste through the curriculum and the role that youth can have in reducing waste, record three thoughtful and reflective questions for our guest speaker. GNG facilitator will guide a discussion between the guest speaker and the Ambassador schools, starting with a guiding question: ***How can we, as youth, rethink waste?***

Questions for Guest Speaker:
1.
2.
3.

3. ***Q&A (7 minutes)***
   GNG Facilitator pauses conversation with the Ambassador schools to take questions from the Participating schools.

4. **Peer Discussion** (15 minutes)
   How does waste impact you and your community? Questions may include:
   - How does your community deal with waste?
   - What have you learned about or experienced that motivates you to implement your class project?
   - Do you think the Reduce, Reuse, Recycle Action plan discussed would work in your schools and communities? Why or why not?
   - What role should youth play in reducing waste in their school and community?

Questions for other schools:
1.
2.
3.

5. ***Q&A (7 minutes)***
   GNG Facilitator pauses conversation with the Ambassador schools to take questions from the Participating schools.

6. **Conclusion (3 minutes)**
   Thanks to all for participating! Don't forget to stay in touch in between using the online platform and to continue your involvement in GNG programs.

Use this space to record any questions or thoughts that you didn't have time. Then ask them on the Google+ Event Page!

Reflect and Connect

TIME:	15 minutes post-Google Hangout on Air
MATERIALS:	Access to the internet –Pulse Google+ Event Page
OVERVIEW:	Post reflections on Google+: • Educators fill out IVC Feedback Form; • Students post to the *Pulse* Google+ Event Page (https://plus.google.com/events/c62b4h4lcjsg5cgcfpi7f7provc).

REFLECTION ACTIVITES

1. CONNECT (15 minutes)

Educators

Educators will receive a link to a brief survey to complete within a week following the broadcast.

Students

Reflect on the questions below, then go to Google+ Event Page and post your thoughts!
https://plus.google.com/events/c62b4h4lcjsg5cgcfpi7f7provc

What was the most interesting or surprising thing you learned about waste? How did it make you see this issue differently?

What questions do you still have for your peers? The guest speaker?

How is this issue relevant to your lives and your country/community? How do you plan to engage others on this topic/project at your school or in your community?

Connect on the Google+ Event Page

Pick at least one reflection or question from your class to share in a Google+ Event Page post. Post and see what your partners are saying!

APPENDIX

Resources

This section contains additional resources for students and educators.

- *GrowNYC's Recycling Champions Program: www.grownyc.org/rcp*
- *NYC Department of Sanitation School: http://www.nyc.gov/html/nycwasteless/html/recycling/schools.shtml*
- *Municipal Solid Waste in the United States 2012 Infographic: http://www.epa.gov/epawaste/nonhaz/municipal/infographic/index.htm*