

The Whole Earth Calculator Climate Literacy Lesson Plans

Reducing the Earth's Poverty and Carbon Footprint



Featuring New York Yankees





Dear Educator:

19 years ago Rock and Wrap it Up! launched its first School Program and Lesson Plans with the United States Department of Agriculture. Much has changed: we have morphed from an anti-hunger agency into an anti-poverty think tank. We have fed over 1 billion people and kept a billion pounds of food and other reusable assets out of land fill.

Now, a certain urgency has manifested. With the U.S. Global Change Research Program's release of The Impact of Climate Change on Human Health, we have published a new series of lesson plans. The USGCRP's Scientific Assessment focuses on the harm caused by climate change to our overall health, and especially the vulnerable and at-risk populations. The President has called in RWU to help fight climate change and our work will continue to be updated as new information becomes available. The Rock and Wrap It Up! Whole Earth Calculator (WEC) Climate Literacy Lesson Plans heighten the correlation of reducing poverty/hunger and the carbon footprint while students learn climate literacy. The WEC mobile app acts as a lightening rod, leading to the understanding of food waste and climate change, and allows the posting of the results on social media. Student actions become the conduit of food to feed locally challenged people and reduce greenhouse gases. Current and future student populations need education to be come the next generation of leaders to prevent more damage to our planet. They will take our place as advocates and custodians.

We want these lessons to act as a springboard for pro-prosperity and pro-environmental activities and projects. Students will be made to realize that their actions steering leftover school food and other assets to local at-risk populations will have meaningful results in helping people and the planet we all live on and share.

Sincerely

Syd Mandelbaum, MA, MBA CEO and Founder Rock and Wrap It Up!



THE WHITE HOUSE WASHINGTON

Today is Earth Day 2016 – the last one I'll celebrate as President. Looking back over the past seven years, I'm hopeful that the work we've done will allow my daughters and all of our children to inherit a cleaner, healthier, and safer planet. But I know there is still work to do.

That's why, today, the United States will join about 170 other countries in signing the Paris Agreement, a historic deal to reduce carbon emissions across the globe.

When Secretary of State John Kerry stands with other countries to support this agreement, we'll advance a plan that prioritizes the health of our planet and our people. And we'll come within striking distance of enacting the Paris Agreement years earlier than anyone expected.

This is important because the impact of climate change is real. Last summer, I visited Alaska and stood at the foot of a disappearing glacier. I saw how the rising sea is eating away at shorelines and swallowing small towns. I saw how changes in temperature mean permafrost is thawing and the tundra is burning. So we've got to do something about it before it's too late.

As the world's second-largest source of climate pollution, America has a responsibility to act. The stakes are enormous – our planet, our children, our future. That's true not just here in America, but all over the world. No one is immune.

That's why, when I ran for this office, I promised I'd work with anyone – across the aisle or on the other side of the planet – to combat this threat. It's why we brought together scientists, entrepreneurs, businesses, and religious organizations to tackle this challenge together. It's why we set the first-ever national fuel efficiency standards for trucks and set new standards for cars. It's why we made the biggest investment in clean energy in U.S. history. It's why we put forward a plan to limit carbon pollution from existing power plants. And it's why in Paris, we rallied countries all over the world to establish a long-term framework to reduce global greenhouse gas emissions – the first time so many countries had committed to ambitious, nationally determined climate targets.

Now, we're building on that momentum. When all is said and done, today will be the largest one-day signing event in the history of the UN.

Thanks to this agreement, we can be more confident that we'll leave our children a planet worthy of their promise.

That's what this is all about. And that's why today, America is leading the fight against climate change.

President Barack Obama

Anited States of America

WHOLE EARTH CALCULATOR

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Registered May 31, 2016	405 OCEANPOINT AVE. CEDARHURST, NY 11516

Int. Cl.: 9

TRADEMARK

PRINCIPAL REGISTER

FOR: MOBILE, LAPTOP AND DESKTOP COMPUTER SOFTWARE FOR CONVERTING THE TOTAL POUNDS OF PAPER PRODUCTS AND PLASTICS DIVERTED FROM LANDFILLS INTO THE AMOUNT OF CARBON DIOXIDE THAT IS NOT PRODUCED AS A RESULT; MOBILE, LAPTOP AND DESKTOP COMPUTER SOFTWARE FOR CONVERTING TOTAL POUNDS OF DONATED FOOD INTO MEAL EQUIVALENTS AND TOTAL CARBON DIOX-IDE THAT IS NOT PRODUCED AS A RESULT, IN CLASS 9 (U.S. CLS. 21, 23, 26, 36 AND 38).

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JASON MALASHEVICH, EXAMINING ATTORNEY



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Director of the United States Patent and Trademark Office

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DAY 1

Learning about Poverty and Carbon Footprints on our Planet

PowerPoint Presentation: Global Climate Change and Food Recovery

"a Global Climate Change.ppt"

Bloomberg TV Video on Food Waste and Solutions

http://www.businessweek.com/videos/2014-03-07/americans-waste-one-third-of-food-bought

Exercise A: Hunger and Poverty

Objectives (display on write-on board):

- What is poverty?"
- How many children are hungry every day in the United States?
- How does it affect all of us?"

Materials

Plastic knives & forks, paper cups & plates, photocopy of spaghetti, crumpled up paper "meatballs"

Procedures

1. Children line up in alpha or any other assigned order... then every SIXTH child is sent to the front of the room to "watch dinner."

2. Remaining students will "eat dinner" by tearing up paper on their plate, then tossing it into a trash can circulated by two assigned "sanitation workers." The "waste" must be walked past the "hungry kids" – sitting or standing against the chalkboard/Smartboard in the front of the room. [Try to create as pathetic a scenario as possible.]

This should give the class a chance to discuss exclusion, isolation, ostracism and shame – what it feels to be hungry and desperate [without actually being hungry].



ASK STUDENTS

- how they felt about members of the other group and about themselves and members of their own group.
- how did they feel about the adults who created this scenario? Ask them to try to use descriptive words.
- how did the two sanitation workers feel as impartial representatives of the government? What was it like to walk past hungry people and throw out food? Is that something you had ever considered before?

HAVE STUDENTS WRITE

- a paragraph about how they felt being hungry and watching others eat. How did inequality and deprivation feel from the bottom?
- about how they think they might feel if the tables were turned. Ask the "eaters" and the sanitation workers to do the same. Write three paragraphs from their own perspective and from either the workers' or the deprived persons' point of view.

Exercise B: Hunger by the Numbers

Objectives

- How many hungry persons are in the United States?
- How many hungry children are in the United States?
- How many pounds of waste exists in the USA?
- What is the impact on the environment?

Materials

- Slide film about hunger and waste in America (2 minutes)
- "Do the Math!" worksheet

Procedures

1. FILM

Preface to film – "Do you like math? Do you like horror movies? Well, here's a scary slide show/film about math and hunger in the United States."

Show the slide show/film – "Hunger in America: What a Waste!" (2 minutes) https://www.dropbox.com/s/wz9lw0aisu22ezx/RWU.m4v

2. DISCUSSION QUESTIONS

How many Americans go to bed hungry every night?

Answer: An estimated 49 million people live in food insecure households, i.e., households that had difficulty at some time during the year providing enough food for all their members due to a lack of resources.

How much food from food stores, restaurants, and homes is uneaten and wasted each year in the United States?

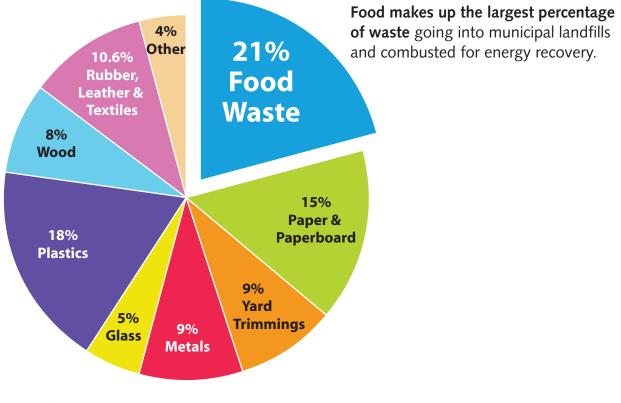
Answer: 133 billion pounds

How many pounds of unserved leftovers does it take to provide a meal for someone who's down on his or her luck?

Answer: 1.2 lbs.

How much difference does keeping every pound of waste out of landfills make in reducing greenhouse gases that harm our fragile environment?

Answer: See pie chart



Data from the 2011 Municipal Solid Waste Characterization Report Source: http://www.epa.gov/foodscraps

Why is it good for the environment to divert food waste from landfills?

— Answer 1: Reduce Methane From Landfills. Rotting food waste quickly generates methane, a powerful greenhouse gas with 21 times the global warming potential of carbon dioxide. In the United States, landfills are the third largest source of methane – thanks in large part to all that food waste!

— Answer 2: Create Valuable Compost. Composted food waste can be used to improve soil health. Video on composting benefits: https://youtu.be/dRXNo7leky8

How much less CO₂ is released for every pound of waste NOT dumped in a landfill?

Answer: .80 lbs

How much less methane is released for every pound of waste NOT dumped in a landfill?

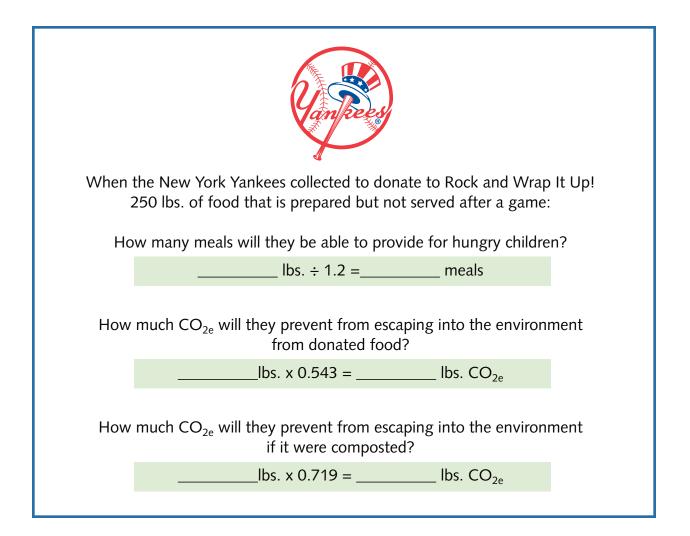
Answer: .72 lbs

3. DO THE MATH! USE THE ROCK AND WRAP IT UP! WHOLE EARTH CALCULATOR

The Whole Earth Calculator Mobile App

- Video instructions: http://youtu.be/PHSNr3YuRCk
- A simple mobile phone/tablet application that resides on a mobile-friendly website for statistical analysis.
- Converts pounds of food recovered into USDA formulas for meals and EPA guidelines for measuring Greenhouse Gases including CO₂ and Methane.
- Data can be sent out from mobile app as tweets and posts as digital social media announcements.

"Do the Math" Worksheet



DAY 2

Of Course You Can Change the World, Here's How

Rock & Wrap It Up! Partnership with NC Guilford County Schools

https://www.youtube.com/watch?v=d4HfTWvJHO8

Carbon Footprint Reduction Solutions for Elementary, Middle and High Schools and Colleges

Join the movement! Make a difference!

Since 1997, over 300 schools nation-wide have started Rock and Wrap it Up! School Programs to empower students to recover food and other assets. Why feed landfills when you can feed people instead? Keep the food recovered in your community! 53 schools in NC and 17 in TN now recover their school-generated leftover food from community based programs who feed people in the community

You can do it!

You can organize non-perishable food drives and recover perishable food from your school cafeteria – food that has been prepared, but not sold or served. We will help you start programs in your school. Call 1-877-691 FOOD to get started.

Use the Whole Earth Calculator

Show the difference you are making in your school and helping those in your community. Send out tweets and Facebook posts right from the mobile app.

Read and sign up

Subscribe to our daily newspaper also called the Whole Earth Calculator. It will give you current information about hunger and environmental issues. http://paper.li/WholeEarthCalc/1391487273#

You are never too young! Snack Wrap!

Ask elementary and middle school students to donate their sealed, healthy, packaged snacks to children in after school programs, shelters and pantries. These programs tend to be underfunded and these food assets can have huge value to after-school student programs.

The New York Mets and the New York Football Giants are the first teams to initiate Snack Wrap! – the collection of un-opened healthy snacks.



Helping Beyond Your School

Community activities for community service hours

(right) Rock and Wrap It Up! served Thanksgiving Dinner at the First Congregational Church in Super Storm Sandy devastated Rockaway Beach, Queens, NY. Meals were available along with pantry bags, pet meals and taxi service. All were welcomed to dine with us. Over 120 volunteers signed up to help serve in four shifts and over 500 meals were prepared.





Annual holiday give-away

(left) Rock and Wrap It Up! holiday party, now in its 25th year, provides gifts to over 1,000 families at John The Baptist Church in Arverne, NY. Every child deserves a little magic this time of year and every parent and grandparent deserves a chance to be his or her child's Santa Claus.



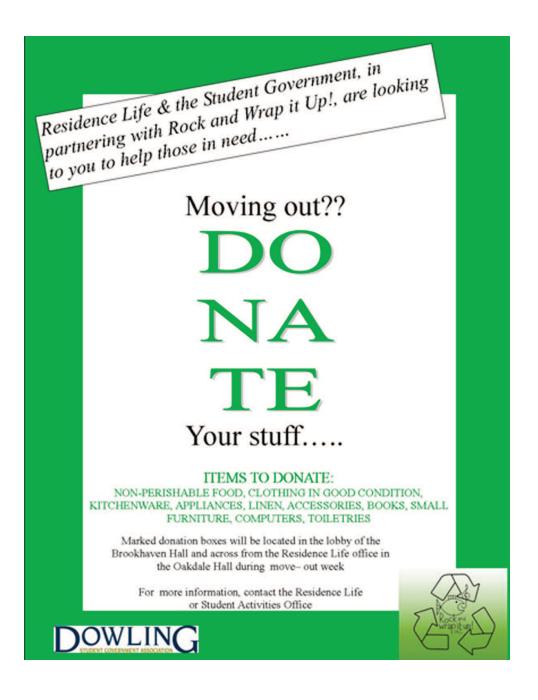
Mardi Bra and Hannah's Project

(right) In response to the ever growing need of homeless and destitute women needing feminine products, Rock and Wrap It Up! launched the first program of its kind to help this underserved group.

RWU in the News

You are never too old! The Give and Go Green!

This recovery program collects assets (bedding, furniture, appliances, clothing, toiletries and non-perishable food) from college dorm rooms at the end of the year. Donations are made to local anti-poverty agencies.



You are not alone!

The Rock and Wrap it Up! School Program

The Rock and Wrap It Up! School Program was introduced at the 1997 President's Summit on Volunteerism in Philadelphia jointly with the U.S. Department of Agriculture. This programs empower students to recover food and other assets from their schools and distribute these items in the local community.

WORLD REPORT EDITION IN THE NEWS Wrapping Up Hunger Lunchroom Leftovers Can Feed The Needy

Every day, school cafeterias across the nation serve meals by the steaming trayful. And every day, millions of pounds of that food gets tossed away uneaten.

Hoping to rescue the tons of unwanted chicken nuggets, Tater Tots and peanut-butter cookies that land in garbage cans, Syd Mandelbaum, a scientist and father of five, cooked up a plan. His Rock and Wrap It Up! school program allows middle- and high-school students to collect their school's leftover food and donate it to needy people. The goal: to end hunger in the U.S. by the year 2000.

"I want kids to be active," Mandelbaum said. "We're going to end hunger in this country as a group."

Rock and Wrap It Up! has been working to end hunger since 1991. Mandelbaum's program began by collecting leftovers from backstage parties at rock concerts. More than 100 rock stars, including Hootie and the Blowfish, Sting and U2, have pitched in. To encourage the program at schools, some of the bands are autographing award certificates for participants.

Since it began, Rock and Wrap It Up! has collected more than 1 million pounds of food. That's enough to feed nearly 3 million people one meal each! Students have a hunger to help out: already 305 schools have signed up.

"I look in my cupboard, and I have pudding, snacks and everything else," says Charlene How, a sixth-grader in Festus, Missouri. "Other people don't have anything. I'm just hoping to help change that."

October 3, 1997 Vol.3 No.4

Wrapping Up Hunger

Lunchroom leftovers can feed the needy

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Mandelbaum and students at a New York middle school gather up leftover food.

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To find out more about the Rock and Wrap It Up! school program, E-mail ruler@delphi.com

View more photos

http://www.flickr.com/photos/rockandwrapitup/4850573075/in/photostream/ http://www.flickr.com/photos/rockandwrapitup/4850571997/in/photostream/

Exercise A: Puzzle

How can I get my principal to agree to start a food recovery program?"

Divide the students into groups of three. After they have completed the task below, let them report back – one per group. Justifying the answer is key.

he following steps, #1 #2 #3 #4 #5 , in the order you feel would be most re for persuading an administrator to back your food recovery plan.
Meet with the principal, assistant principal and sometimes the school guid- ance department.
Determine whether your school requires community service hours for club/honor society membership or for graduation.
Encourage complimentary school collections of nonperishable food, baby items, toiletries, backpacks and other items anti-poverty agencies might need.
Identify teachers/parents in a position to support recovery of food that is prepared but not served or sold.
Request SnackWrap recovery containers from RWU through a partnership with the NY Mets and NY Giants.

Exercise B: Writing Project

"Is it better to give than to receive?"

- React to the following in two brief paragraphs.
- What was the nicest thing you have ever done for a stranger (non-kin, non-friend)?
- What was the nicest thing a stranger ever did for you or a member of your family?
- How did it make you feel?

DAY 3

Data Collection for Simulating a Future United Nations Conference on Climate Change

Each person or team will be assigned/choose a different country they will study and represent in the conference. Students may choose to pick countries from which their family member, or they themselves, were born. It is important that there be a student/pair/group representing the United States, China, and India, as these are major players in the climate change discussion. In order to facilitate discussion, students will fill out a work sheet with collected information and then incorporate the data and images into a PowerPoint. This may be done in school during a second day (Day 3), or assigned for homework. The PowerPoint file will be emailed/uploaded to teacher for grading.

PowerPoint Construction or Simulated Conference

- Incorporate our Conference Data Sheet (on the next page) in this exercise
- Conference: The teacher will call upon "nations" to explain about their country and its current situation
- Exercise for 10–12 grade level

Helpful websites for this project

- http://climate.nasa.gov/
- http://climate.nasa.gov/key_websites/
- http://www3.epa.gov/climatechange/index.html
- http://www.who.int/globalchange/climate/en/
- http://www2.ucar.edu/news/backgrounders/understanding-climate-change-global-warming
- http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf
- https://www.cia.gov/library/publications/the-world-factbook/
- http://www.rockandwrapitup.org
- http://www.mardibra-rwu.org

Name	
I/We will be re	presenting
(Include in you	r PowerPoint, a map of your country.)
What is the cu	rent population of the country?
(Include in you	r PowerPoint a population pyramid of your country.)
What is the cu	rrent population trend? Growing/shrinking/steady? At what rate?
	n is growing, how long will it take for the population to double?
(Note: doublin	g time = 70/growth rate)
What is the GI	P per capita of your country?
ls your country	developing, developed, or post-industrial?
What percent	of your nation's electricity generation is from fossil fuels?
	n some problems (social, environmental, and/or economic) that your nation is periencing that may be attributed to a changing climate?
What are your	country's poverty levels?
What future p	oblems may be expected in your country if climate continues to change?
(Include pictur	es of impacts in your PowerPoint. http://climate.nasa.gov/state_of_flux may be helpful
What is your n	ation doing to combat climate change and fight poverty?
What could yo	ur nation do to decrease its carbon footprint?
What type of i	nternational help may it need to enact these changes?
	nternational help may it need to enact these changes?



Reducing the Earth's Poverty and Carbon Footprints

About Rock and Wrap It Up!

Now entering its 26th year, Rock and Wrap It Up! (RWU) is an award-winning anti-poverty think tank. We research, discover and nurture potential donors who have renewable assets to share. Recognized by the White House with a Point of Light Award and receiving numerous EPA distinctions, we strive to re-earn these honors every day.

Asset donors include touring bands, educational institutions, the hospitality industry, professional sports teams, hospitals and TV/film productions throughout North America. Renewable assets include but are not limited to food, hotel amenities and college dorm items. Through our Mardi Bra Project and Hannah's Projects, we ask help give indigent girls and women dignity by donating feminine hygiene products. We ask that you purchase one extra box when you buy one. All of our activities feminine asset recovery activities can be found at www.mardibra-rwu.com Our success is enhanced by finding and vetting partner agencies that need these resources thereby reducing the poverty foot-print while reducing the carbon footprint. All of our partners are protected by the Bill Emerson Good Samaritan Act (Pub. L. No 104-210, 110 Stat. 3011 (1996) as long as safe food handling is used. Over one billion meals have been recovered since 1991.

Through our advocacy arm, RWU wrote and helped pass the Federal Food Donation Act of 2008 (Pul. L. 110-247 122 Stat. 2314 (2008). The Act encourages federal buildings to donate food from their restaurants, cafeterias and from outside rentals to feed our nation's hungry. We launched Hungerpedia.com in late July 2011. The Hungerpedia web destination is a North American compilation of anti-poverty/hunger agencies vetted by RWU to receive and recover asset donations.

Food waste accounted for 14.5% of municipal solid waste in 2012, according to the latest EPA figures. That's 36 million tons of food scraps and 96% of it was incinerated or thrown into landfills, where it decomposes and generates methane, a potent greenhouse gas. At the same time, 14.5% of U.S. households were deemed "food insecure," meaning they lacked access to enough food for an active, healthy life for all household members. The USDA and the EPA issued The Food Waste Challenge in 2013 to feed people not landfills.

There is no cost to partner with Rock and Wrap It Up and we have over 5,000 volunteers in 500 cities that handle the food and asset recovery. For more information, go to the Rock and Wrap It Up! website or call Rock and Wrap It Up! at 877-691-FOOD. Our website has vetting forms under heading Hungerpedia.

Rock and Wrap It Up! Whole Earth Calculator Application

Rock and Wrap It Up! (RWU) was the first anti-poverty think tank to tie together food, paper and plastics recovery with greenhouse gas emission reduction. Our mantra is reducing the poverty footprint by reducing the carbon footprint remains our goal.

Currently our partners/sectors in asset and food recovery include music, sports, tv/film pro-



duction, hospitals, hotels and schools. Our partners are supplied with statistics including pounds recovered with meal equivalents and greenhouse gas emission reduction through embedded spread-sheets and the option of sending a tweet to their # world. A separate app calculates paper and plastics reduction. Food that is prepared but not served or sold is recovered and given to the indigent across the US and Canada. The data which is supplied by RWU is currently put on websites and reported to management.

The RWU Whole Earth Calculator is a mobile phone/tablet application which converts pounds of food donated to the poor into total meals and CO₂ reduction statistics. The statistical data can be reported in English or metric units. The application supports social media handshakes. i.e., tweets on Twitter and posts on Facebook. More importantly, data collected is captured virtually and recorded on RWU donor spreadsheets for statistical analysis and marketing purposes. RWU has partnered with the United States Departments of Agriculture and Environmental Protection Agency, participating in their Food Waste Challenge Programs. The RWU Whole Earth Calculator application will further increase the inclusion in the Food Waste Challenge of food donor participants across the country.

The Rock and Wrap It Up! School Program will be expanded by the utilization of the application. Both science and economic curricula is being developed to accompany these applications for use in the school community. Students will be sensitized to keeping food waste out of land fill and new tactics to feed the poor. The application will increase food recovery and promote further positive environmental outcomes.



The New York Yankees were the first team in Major League Baseball to donate concession food to feed the hungry of New York and reduce land fill. Working with food purveyor Legends, they were the 2012 honorees of the Lena and Joseph Mandelbaum Humanitarian Award. Over 100,000 meals have been recovered by RWU since 2005.

Acknowledgements

We graciously thank **Dr. David Friedman** and **Dr. Stephen Sullivan** for their efforts in organizing and writing these lesson plans. We thank Steve for 15 years as volunteer, teacher, and supervisor of the Rock and Wrap It Up! School Program at Lawrence High School in Cedarhurst, NY. David has volunteered at MacArthur High School in Levittown, NY with our Snack Wrap Program for 6 years.

We thank **Dr. Elise Golan**, Director of Sustainability for the USDA, for her leadership and passion in helping to reduce waste in the United States.

We thank **Professor Jim Spellos** of Meeting U and **Jeanne Wolf** of Eventmobi for the development and refinement of the Whole Earth Calculator.



The White House Office of the Press Secretary. For Immediate Release: July 29, 2014. FACT SHEET: Empowering America's Agricultural Sector and Strengthening Food Resilience through the President's Climate Data Initiative.

To volunteer for Rock and Wrap It Up!

Fill out the volunteer form on our website www.rockandwrapitup.org

Email: info@rockandwrapitup.org

Call: 1-877-691-FOOD