



# Food Matters:

Teaching Ecological Sustainability Through What We Eat

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Monday, June 10  
3:30 – 4:30 pm

# *Food Matters: Teaching Ecological Sustainability Through What We Eat*



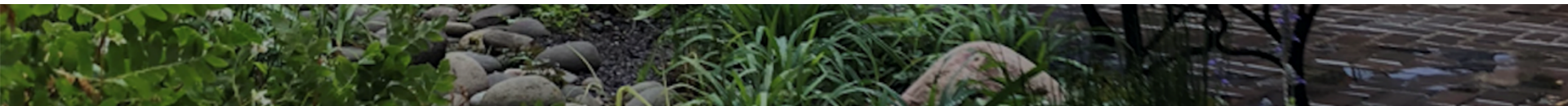
Pam Koch



Meredith Hill



Debi Slatkin



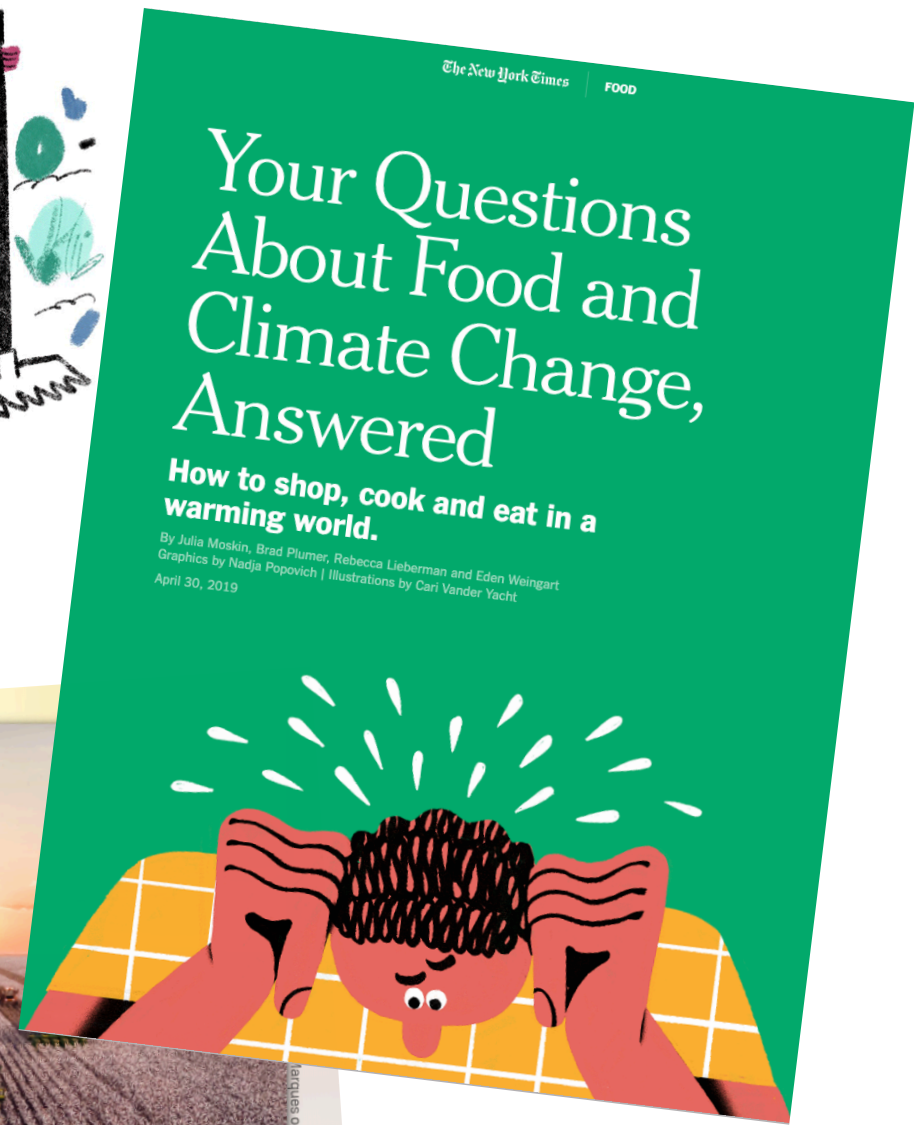
# We Produce Too Much Food. The Green New Deal Can Stop This.

*Overproduction spurs environmental degradation while the poor get left behind.*

BY **ERIC HOLT-GIMÉNEZ**

ILLUSTRATIONS BY RYAN JOHNSON

APRIL 22 | MAY 2019 ISSUE



## Reducing agricultural carbon emissions will be good for the planet and our stomachs

From soil microbes to factory farming, the Green New Deal could radically improve our food system



**Lauren McKee**  
Microbiology, Biochemistry, and  
Agricultural Science  
KTH Royal Institute of Technology

April 22, 2019

3 peer comments



Images on Unsplash











# EARTH FRIENDS

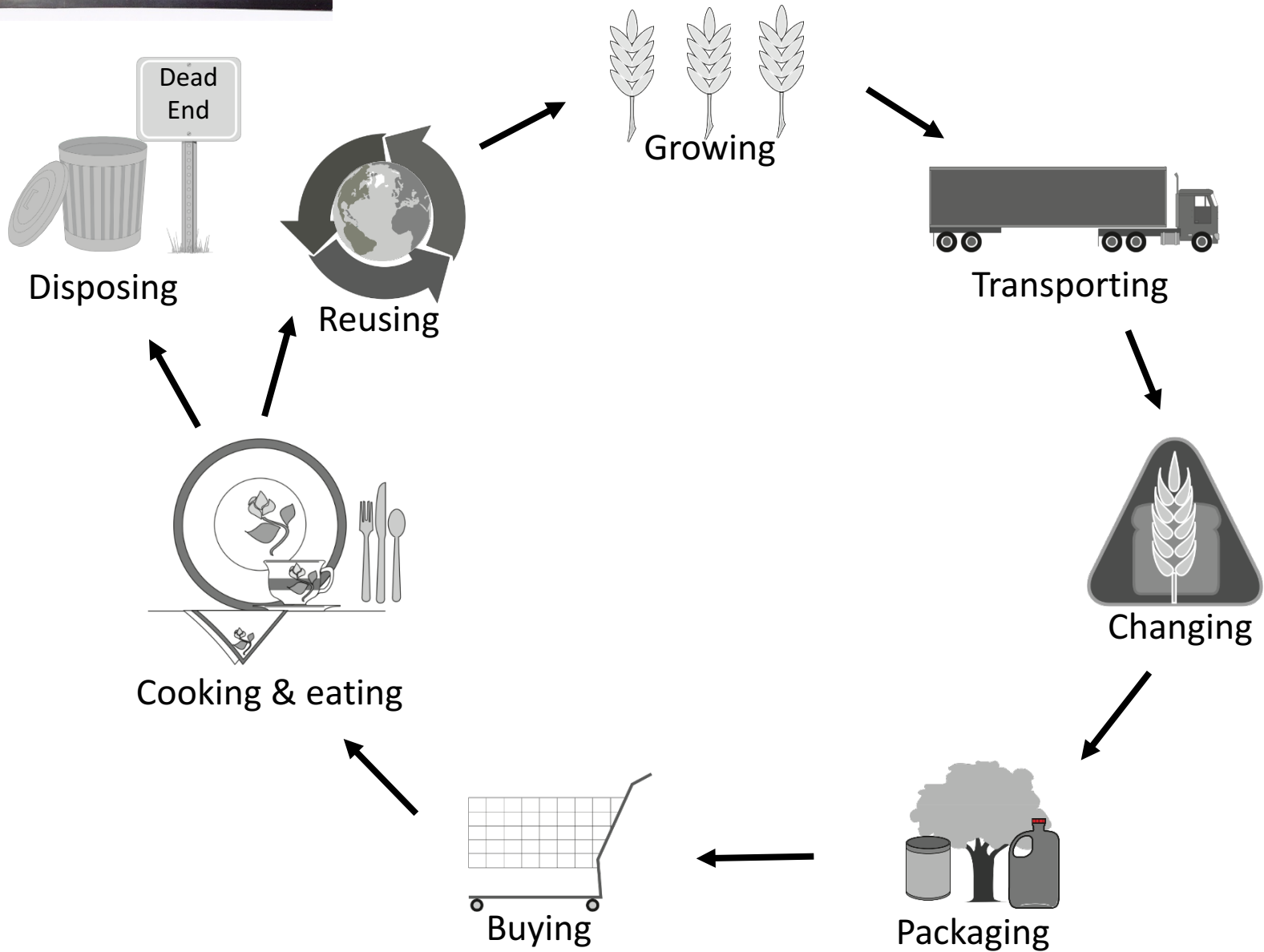
EarthFriends: exploring the whole story of food





**EARTH FRIENDS**

EarthFriends: exploring the whole story of food



# TEACHERS COLLEGE RECORD

TEACHERS COLLEGE, COLUMBIA UNIVERSITY  
VOLUME 81, NUMBER 4, SUMMER 1980

## FOR THE RECORD

JOAN DYE GUSSOW 411 *Food and Nutrition Education: A Redefinition*

## LEARNING AND EATING: THE NEW NUTRITION EDUCATION

HAROLD J. MOROWITZ 417 *Food for Thought*

ISOBEL CONTENTO 421 *Thinking about Nutrition Education:  
What to Teach, How to Teach It, and  
What to Measure*

JOAN DYE GUSSOW 448 *Who Pays the Piper?*

HAROLD J. MOROWITZ 467 *Drinking Hemlock and Other Nutritional  
Matters*

FRANCES MOORE LAPPÉ 471 *Beyond the Hunger Myths*  
JOSEPH COLLINS

WILLIAM J. REESE 496 *After Bread, Education: Nutrition and Urban  
School Children, 1890-1920*

Ready or not, nutrition educators may simply have to take on food supply issues, since no one else is doing so.

But telling the whole truth,  
teaching people about who  
eats and who does not, and  
why, and about what ought  
not to be eaten as well as  
what ought to, will make  
nutrition a politically charged  
subject, ...

... a subject that more than mathematics or reading or even history or social studies will ***collide early on with powerful economic interests.***

To teach the right things—  
simply to ask the right  
questions—is likely to prove  
unsettling to the largest single  
industry in the United States.  
***However, not to do so is to  
continue to settle for  
ineffectualness.***

# Food and Sustainability

## Industrial Food Production

Agriculture and  
GHG emissions

Rest of Food  
System and  
GHG emissions

Deforestation  
and food  
production

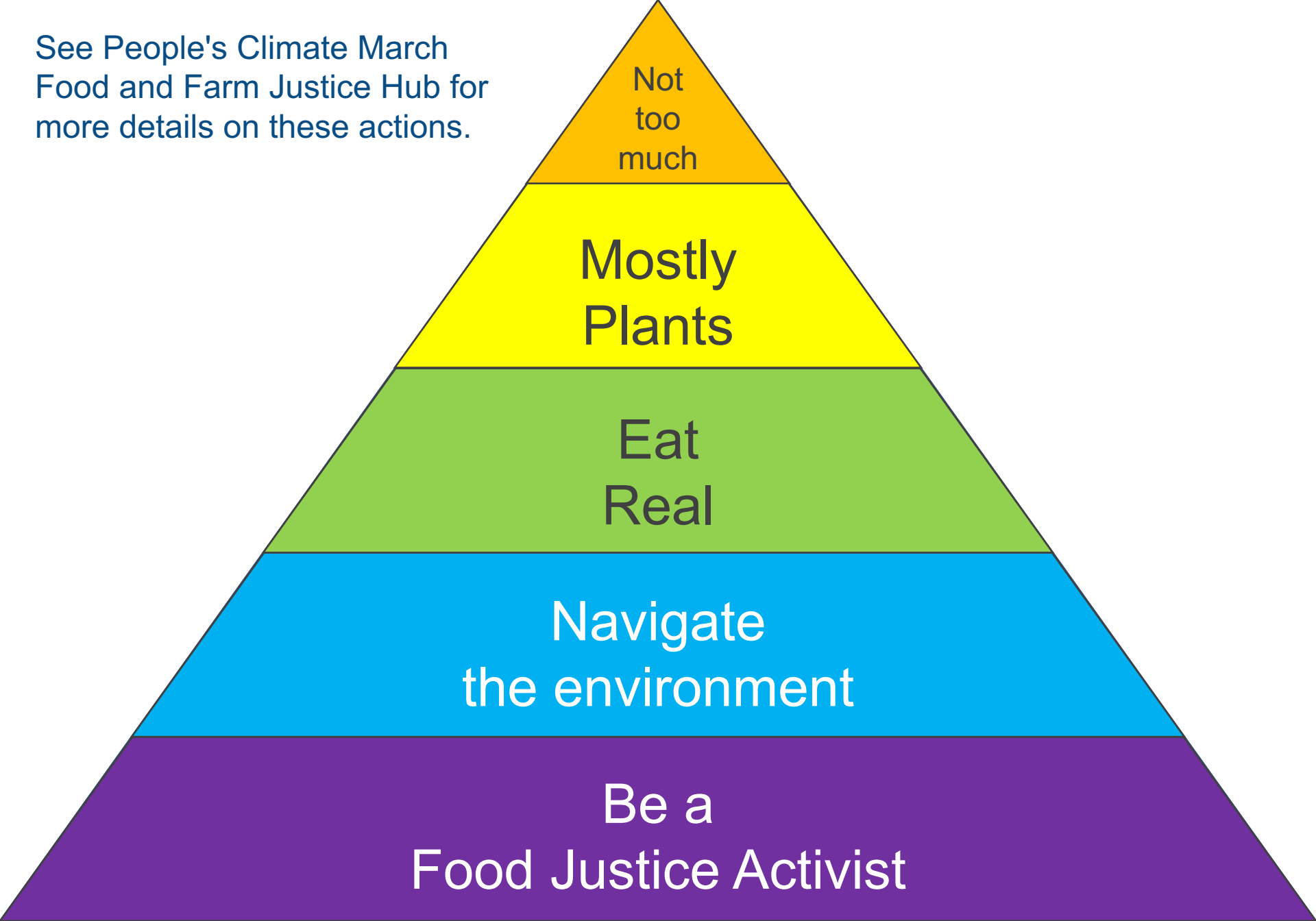
## Ability to produce nourishing food

Poor people  
most impacted

Unpredictable  
crop losses

HOPE  
regenerative  
agriculture

See People's Climate March  
Food and Farm Justice Hub for  
more details on these actions.



**What can we do?**





## UNDERSTANDING FOOD AND CLIMATE CHANGE: AN INTERACTIVE GUIDE

An interactive guide for educators, students, and advocates that explores how food systems and our changing climate interact, and how personal choices *can* make a difference.



*Understanding Food and Climate Change: An Interactive Guide* uses video, photography, text, and interactive experiences to help educators, students, and advocates learn how food and climate systems interact and how personal choices *can* make a difference. Ideal for grades 6–12 and general audiences, with connections to Next Generation Science Standards and the National Curriculum Standards for Social Studies themes, the guide offers activities for student research and resources for further investigation. The guide is also designed to support self-guided and independent study, and is a boon for advocates seeking hopeful strategies and creative responses.

# Meredith Hill

Assistant Principal and Garden Coordinator,  
Columbia Secondary School for Math, Science,  
and Engineering

Please do not reproduce photos without permission!  
[mhill12@schools.nyc.gov](mailto:mhill12@schools.nyc.gov)





Today's  
Tomatoes  
are  
From the  
CSS Garden!





How can New York City  
always ensure a healthy,  
plentiful supply of food  
without ruining the earth?





# YOUTH VOICES ON FOOD & SUSTAINABILITY

GO ON SOME  
FOOD ADVENTURES

LEARN HOW TO BE  
FRESH!, FARM STYLE

Discover  
the Strengths of  
Sustainability



Written by the Students of  
Columbia Secondary School  
for Math, Science, and Engineering  
a public school, community, and university  
partnership

0106 1 8581 11 704



# YOUTH VOICES ON FOOD & SUSTAINABILITY

COWS COME  
WITHORNE

INSIDE THE HIVE  
WHAT'S THE BUZZ?

FISH, FABULOUS FISH!

Written by the Students of  
Columbia Secondary School  
for Math, Science, and Engineering  
a public school, community, and university  
partnership

# YOUTH VOICES ON FOOD & SUSTAINABILITY

## Crazy Compost!

Getting down and dirty with decomposition!

## What's Cooking?

See what our 7th grade chefs are cooking up!

Written by seventh graders of Columbia Secondary School for Math, Science, and Engineering a public school, community, and university partnership



VOL 3/ ISSUE 1 JUNE 2012

## Garden Time!

Student Views on the Importance of School Gardens!

GARDEN TIME!

## A Living Classroom: The Garden

By Ahmed

I began gardening this year at the age of 13. Gardening was new to me because I had never experienced anything like this before. I thought gardens were just places to grow plants and get some fresh air. I was wrong. Gardening is an activity that involves hard work, dedication, blood, sweat, and tears. It's a living classroom where you learn about the cycle of life, the importance of soil, and the benefits of growing your own food. I've learned a lot from my garden, and I'm excited to share my experiences with you.



10 FreshVol 3/1

## Meat Lovers... a perspective.

By Abhey

Approximately 32% of U.S adults are vegetarians or follow a vegetarian diet. There are many reasons for this. Some people believe that eating meat is unethical, while others believe it's bad for the environment. I, however, am a meat lover, and I have a different perspective on this issue. I believe that eating meat is a natural part of our diet, and it's important to support local farmers and ranchers. I also believe that eating meat is a good source of protein and other nutrients. I'm excited to share my perspective with you.



31 FreshVol 3/1

# Heating Up With Chicken Poop

By Xiomara

When we started composting at our school community garden, I convinced my family to collect compost and regularly bring food scraps from home. When I heard about our school challenge to meet 1,000 lbs of compostable food waste from our students' homes and cafeteria out of landfills, I thought that was A LOT of compost. That is, until I went to Governor's Island and helped out with Earth Matter's compost project.

On Sunday, June 10th, 2012, twenty students from the "Food and Sustainability" class went to Governor's Island. We found that we were going to build a compost pile out of 8,000 lbs of food waste for the whole day. At Governor's Island we all composted. We didn't actually collect the compostable food waste. That was done at Greenmarkets in Brooklyn the day before, and brought to the island on a truck at 6:45 am that day. Our job was to turn it and layer it so that it was easier for the compost to turn into soil. We were making an Earth lasagna. This project was led and guided by an organization called "Earth Matter."

At Governor's Island they had chickens and goats. We got to touch the goats, but that wasn't our main job. We were working in the "Hot Chicks House," which is where our compost pile was made. We were able to work with

the chickens, and even though they always ran away from us, they were doing work just like us. They were breaking down the compost material so that it could turn into soil faster - by eating parts, scraping through it to get their favorite materials, and pooping in it. We were helping by putting the compost in layers, or as Charlie liked to refer to it, lasagna.

Our first layer was the soil, which we had to flatten out by using hoes and shovels. Next we opened many bags (252!) of compostable food scraps, then broke up all the big pieces. After we broke up the compost, the worst part came - we had to shovel up a half decomposed pile of compost and chicken poo! It was about 97 degrees when we first started shoveling, and the closer we got to the center, the hotter it got... and it was also incredibly smelly. In the end it was extremely hot and funny, but it was also educational.

This was so much compost, so it seemed like it must've come from many places, so I was surprised that it only came from waste from a few Greenmarkets. If we could compost all compostable waste, I can't even imagine how much we'd have to turn to make compost! However, if we did compost, we could save a lot of money and space and reduce negative environmental impact. Erik told us that \$125 million is wasted every year on waste removal, which could be turned into compost. One ton of waste costs roughly \$125 to remove, and there is about a million tons of waste collected in our city every year. The next time you are throwing away your food scraps that are non-oils or meats, remember that there are many places that are willing to take compost. YOU can help make that difference! ☺



# Gardening

(AKA *The Art  
of Being  
in a Garden*)

By Jade

**W**hat *is* gardening? Yes, it is the art of being in a garden, but what does that mean? To me, it means being free. Getting out into nature is very important. People need to get dirty to be experiencing the world. Like right now, most of my day is spent sitting down and staring at a screen, like the rest of America. I might get covered in dirt, maggots, worms and mulch at my local park or community garden, but it's worth it. I get a taste of what nature truly is, and trust me, it's not a bunch of farm animals roaming around on some farm in suburbia, it's really just getting out and getting involved in helping the world and helping get involved with plants and animals.

There's only one problem: how do you do this type of thing in the city without all that open space? There are plenty of empty lots in the city that could be made into beautiful gardens. Personally, when I garden, I'm out in the world of nature. I'm planting Swiss chard, tomatoes, chocolate mint, lettuce, parsley, and lots of other things. I also help with the composting program and the "Garden to Cafe" program. I'm helping my community become green, and by doing that, I am one small step on the way to saving the Earth. It has been proven that taking time out to involve yourself in nature can help you be more relaxed and less stressed and rushed.

There are lots of ways any person can get involved in gardening. You could start a small in your house or on your fire escape with potted plants. So get out into the world and start helping everyone in your community become green! ✨



# Soil Sanctuary

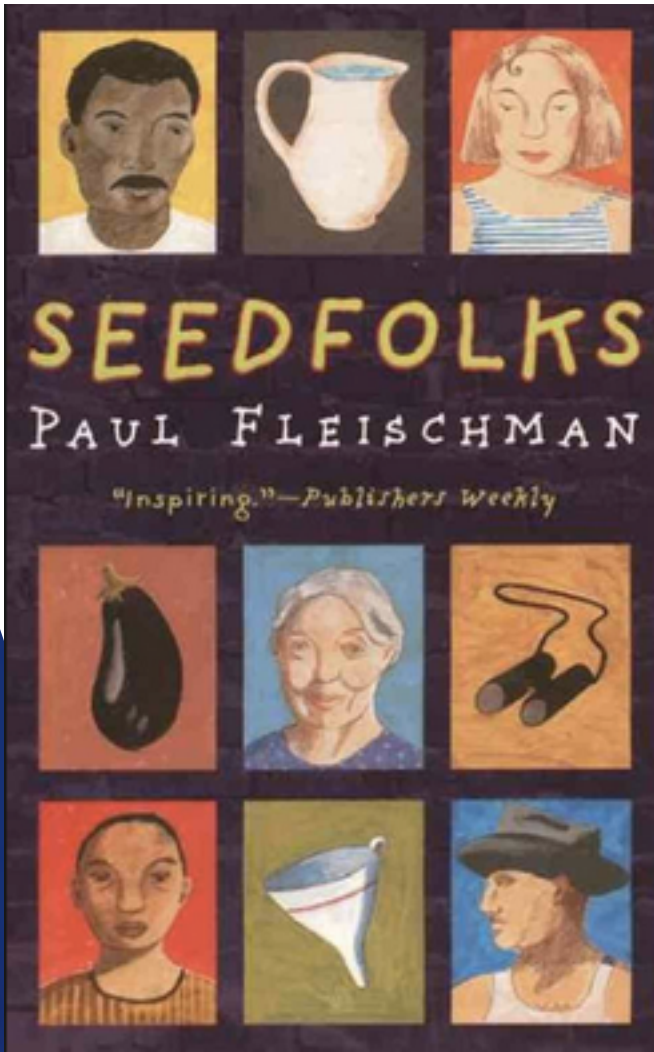
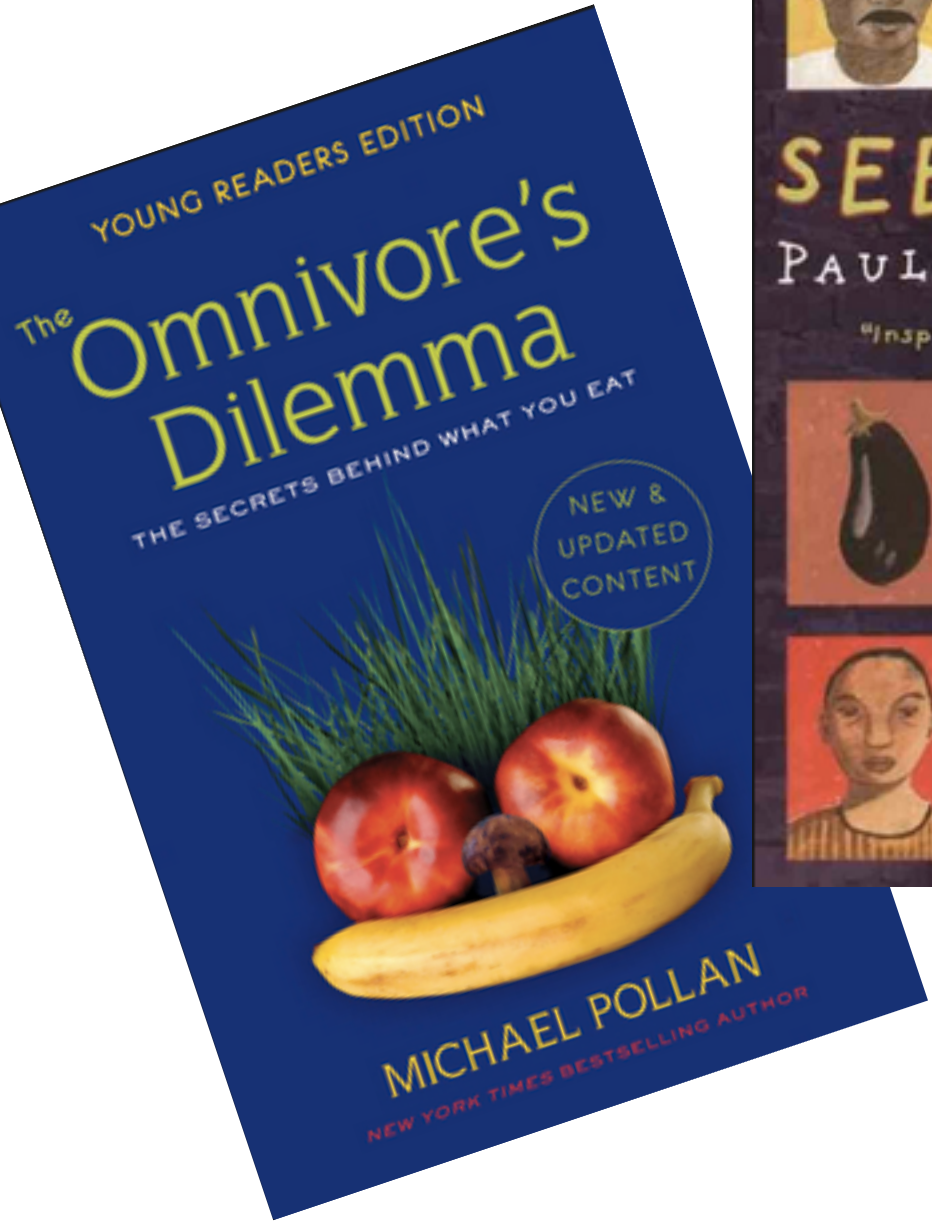
By Maya

The CSS Community Garden is much more than just a space filled with “gross” insects, weeds, and hundreds of plants! The CSS garden is a sanctuary. You might say that it is a sanctuary of hard work and dirty clothing, but there is something special and calming about gardening, and I’m not the only one who thinks so. Every Friday after school, about 10 students go to the garden to work, and, I have to admit, socialize. But whether it’s pulling weeds, planting tomatoes, or having girl-talks in the “spacey” tool-shed, there’s always something fun to do in the garden.

One spring afternoon, a friend and I were working on watering, but we couldn’t find the watering can. We ended up connecting a long tube to a water bottle and filling it up with rain water. We watered all of the plants by the gate with our new contraption. Not only did we help give plants necessary resources that day, but we also had A LOT of fun.

On other, less productive days, my friends and I do some composting or weeding, but then we go into the shed and talk to let out our stress or how we feel. For me, the garden has become a sanctuary. It is a great place to be with friends, relax, and help the environment. ☺





# Principles of Ecological Sustainability:

Diversity & Interdependence

Networks & Nested Systems

Cycles & Flows

# Principles of Ecological Sustainability:

**Diversity & Interdependence**

Networks & Nested Systems

Cycles & Flows



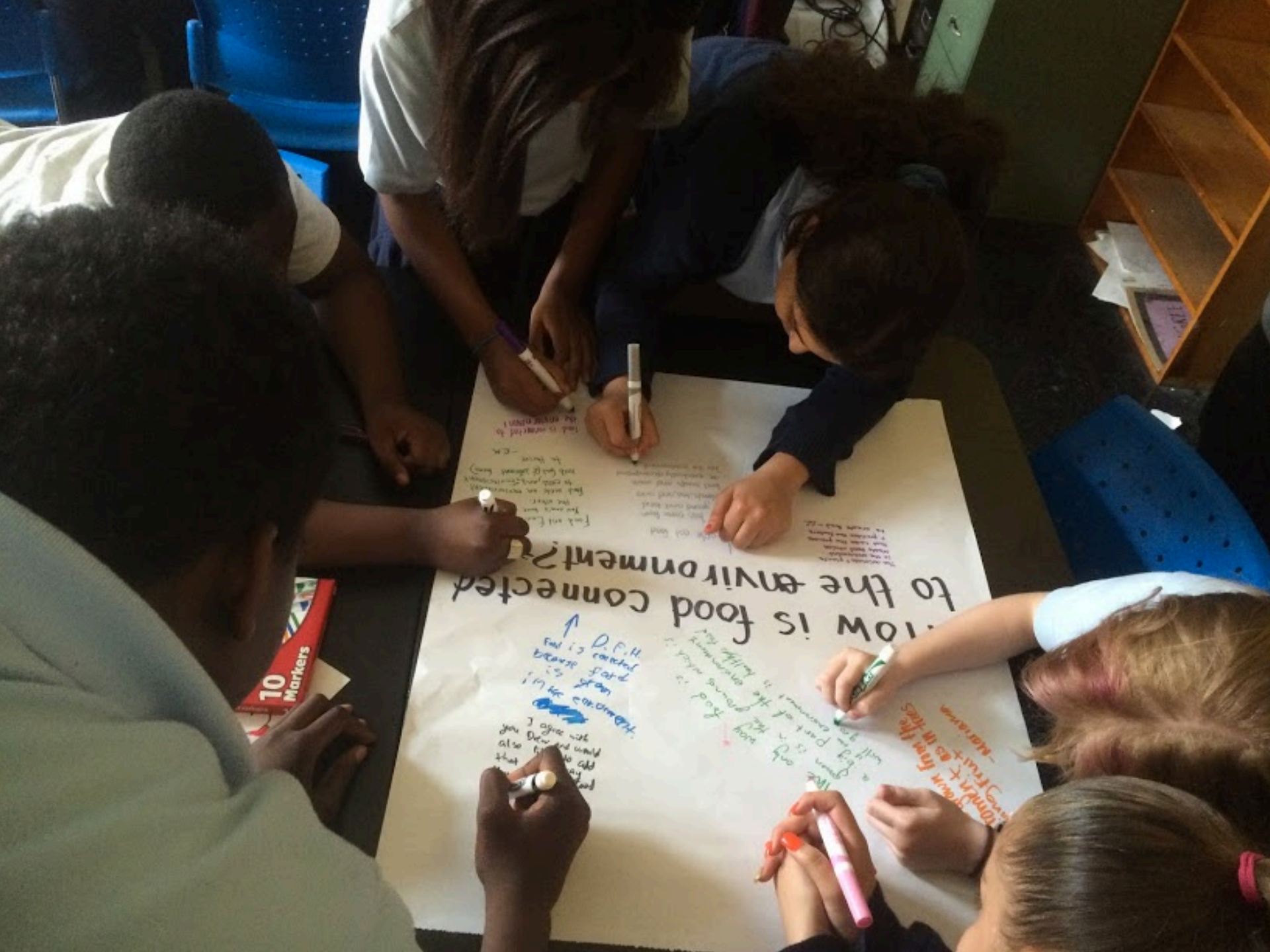


# Principles of Ecological Sustainability:

Diversity & Interdependence

**Networks & Nested Systems**

Cycles & Flows



# How is food connected to the environment?

D.P.H. control  
of food  
in the environment

I agree with  
Drew and would  
also like to add  
that food

you food is  
part of the growing  
environment

like a green  
part of the growing  
environment

grow from the  
tomato + as in the  
-starram

find out how  
the water  
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# Principles of Ecological Sustainability:

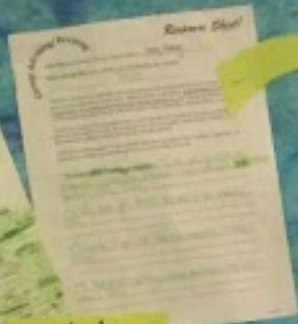
Diversity & Interdependence

Networks & Nested Systems

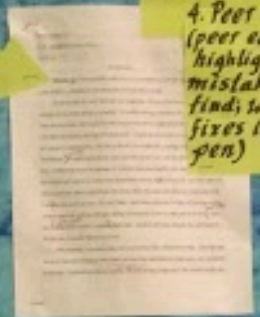
**Cycles & Flows**

# The Writing Process

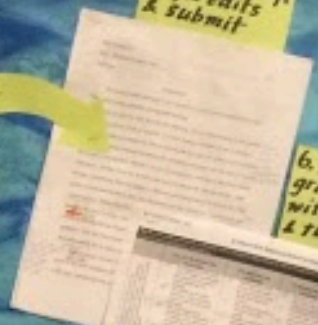
Our Mission  
To provide a safe and secure environment for the learning and exploration of global citizenship, who engage students in complex problems of social and environmental justice and their solutions for the world.



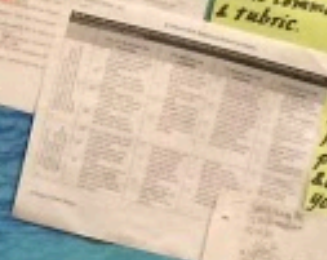
1. Write Draft #1  
2. Peer Revise & add revision notes in green.



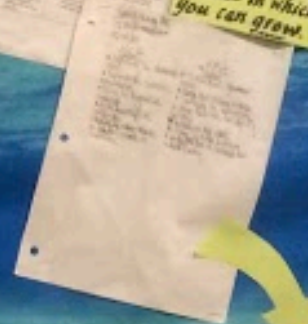
3. Update draft to incorporate revisions.  
4. Peer Edit (peer editor highlights any mistakes they find; writer fixes in red pen)



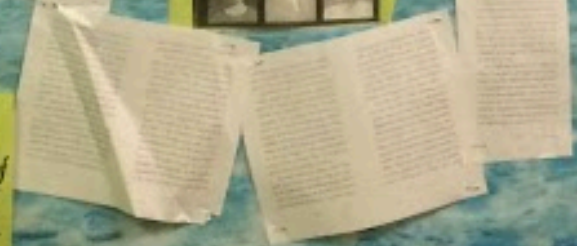
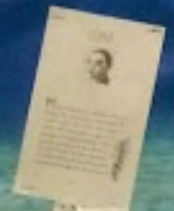
5. Update draft to fix edits & submit



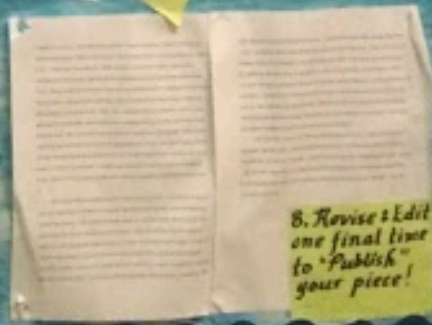
6. Receive graded piece with comments & rubric.



7. Reflect on how your piece 'grew' & areas in which you can grow.



Jenny's piece is from the point of view of the receptionist that Leona encounters at City Hall.



8. Revise & Edit one final time to "Publish" your piece!

In 6<sup>th</sup> grade ELA, students wrote narrative pieces from the point of view of characters from Paul Fleischman's Seedfolks. Check out one writer's process as she moves from the seeds of an idea to her "published" Seedfolks piece!

Does the industrial organic food system solve the problems of the industrial food system? Explain using details from the text.

According to The Omnivore's Dilemma, the industrial organic food system solves ~~most~~ problems of the industrial food system. To explain, "This food is grown on [...] natural bug and weed control." (p. 5) This and, "Also, organic cows, like Rosie the organic chicken, are never fed corn that contains residues of atrazine, the herbicide [that] has been shown to change the sex of frogs," (p. 134) mean that no pesticides or herbicides go into our food, making it safe for us to eat organic plants and livestock. Adding on, "the [Rosie chickens,] receive no antibiotics." (p. 129) This is important because sometimes antibiotics will make their way into your food. Furthermore, industrial livestock is fed, "unnatural" feeds [that] make chickens have mushier and blander meat, ~~but~~ industrial organic livestock "are fed organic corn." (137) That means the industrial organic livestock are fed corn not treated with pesticides, while industrial livestock is fed pesticide treated corn and other things that will make the meat less appetizing. However, industrial organic food system doesn't solve all the problems. Even though, "organic food sometimes tastes better," (133) it comes at a price of "\$24 to feed a family of three at home (133)

Transition Words

First,	Once	Therefore,	Lastly	Such as,
Next,	Before	Overall,	In conclusion	
Then	To conclude,	To sum up,	Not only that, but	
After	Second,	Afterwards	In addition,	
Finally,	Last	Thus,	To add on...	
Also,	For example,	Moreover	Further	
All in all,	But,	However	On	
So,	Yet	Because of <sup>this</sup> / <sup>that</sup>		
For this reason,	Thankfully	In <sup>my</sup>		
Fortunately	According to			
Now,	Tell the			

First, the farmer plants his corn seed. About 2 weeks later, the farmer sprays his seeds w/ pesticides. Then, after the farmer's corn grows, the farmer goes to his nearest corn silo, and puts his corn in. Afterwards, a truck comes to pick up ALL the corn from the silo, this corn is going to a feedlot. After a while, the corn reaches it's destination. Now, the farmer gives the corn, to his cattle. Later in time, the cattle gets fat. Unfortunately, the chicken gets sent to the slaughter house. All in all, the a truck comes to pick up the dead chicken parts, the truck drops off the dead chicken parts to a processing unit, "where they use their endless supply of corn" in the products they make. In the end of this process, a truck comes to pick up the processed fried chicken. Now, the truck is going to transport the Fried Chicken to a Chinese Restaurant. Once the chicken gets there, hungry customers order it. After this, a customer takes it home, puts it in the garbage.... & Last!



# Sixth Grade Spoons and Stories

A Cookbook Blog by the Sixth Graders of Columbia Secondary School for Math, Science, and Engineering

Sunday, July 26, 2015

## Real Tomatoes

I wandered in between the green tomato patches of the Cooper family farm, in Freeland Maryland, right near the Pennsylvania line. Softly singing to myself the song about homegrown tomatoes, I held up the corner of my t-shirt and piled real tomatoes in it. (No pesticides, no chemicals, no artificial anything.) Cherry, Black Cherry, Sun gold, the big Breakers, and Yellow Pear. I had few of the Yellow Pear Tomatoes, because I kept eating them. They were my favorite.

"There's only two things that money can't buy and that's-" I popped a tomato in my mouth. "-true love and homegrown tomatoes!" Up and down the rows of tomatoes I went, until I reached my grandmother's house. She lived in the floor under my Aunt Cathy and Uncle Jim.

"Homegrown tomatoes, homegrown tomatoes. What would I do without homegrown tomatoes?" I hummed as I stepped into the house and kicked off my shoes. The walls were crowded with dozens of pictures, drawings from her 22 grandkids and 4 great grandkids, paintings, and tons of motivational quotes in frames, on pillows, plaques, carved into wood, etc. There were also various Irish blessings (my Meemom is 100% Irish, and very religious)

"Hey there, Turtle!" She called from the sink in the kitchen.

"Hey Meemom!" I called back. I dropped the tomatoes on the countertop as Uncle Jim came down the steps from upstairs.

"Hey, 'ere, Mawm. Anna. Watcha got 'ere?"

"Tomatoes!" Just then 5 year old Eliana and 7 year old Ava came bursting into the living room.

"Tomats!" Ellie exclaimed. She and Ava leaned over and wolfed down a couple.

"Anna! Let's go to the pool!" Ava shouted gleefully.

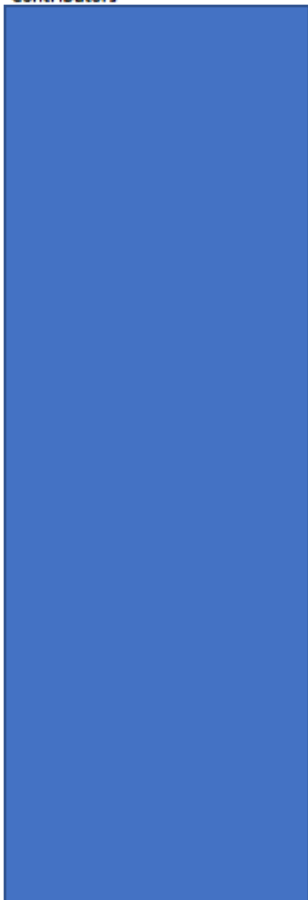
"One sec, Av. Lemme get a drink." I opened the fridge with a plastic cup in my hand.

"In the bottom, Love." Meemom gestured to the bottom of the refrigerator. I poured myself a generous glass of the cold lemonade and sat down.

"Alright, Maw, headed out front now. Gotta wash the mats and tire covers o' the trailer van." As Uncle Jim went outside, we heard the hose start up. "Oughtta get new covers, I ought. Some'ne throw this dog's stick and get 'er t' leave me be." The dark silhouette of a big black dog approached. Downing the rest of my lemonade, I went outside.

"Pepper! Come 'ere, Pep!" I called. In her mouth was a frayed, chewed up stick. She dropped it at my feet. Ava and Ellie came out of the house. I tossed the stick and Pepper

### Contributors







"A sustainable community worth imagining is *alive*, in the most exuberant sense of the word - fresh, vital, evolving, diverse, and dynamic. It cares about the quality as well as the continuation of life. It is flexible and adaptive. It draws energy from its environment, celebrates organic wholeness, and appreciates that a life has more to reveal than human cleverness has yet discovered. It teaches its children to pay attention to the world around them, to respect what they cannot control, and to embrace the creativity with which life sustains itself"

(M. Stone, *Smart By Nature: Schooling for Sustainability*, 2009)

# Food for thought

Widening Our Notion of Sustainability

*~ Debi Slatkin, co-director, TC Initiative for Sustainable Futures*

“For more than five hundred years, Native communities across the Americas have demonstrated resilience and resistance in the face of violent efforts to separate them from their land, culture, and each other. They remain at the forefront of movements to protect Mother Earth and the life it sustains.”

from the US Dept of Arts & Culture  
<https://usdac.us/nativeland>

**The quality of our relationship with nature underpins all notions of sustainability, including food matters.**

**What If** everyone was in love with the natural world ...

As if it were part of their family

## May 2019 press release

From the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services  
(IPBES)

### **Nature's Dangerous Decline 'Unprecedented' Species Extinction Rates 'Accelerating'**

**Current global response insufficient;  
'Transformative changes' needed to restore and protect nature;  
Opposition from vested interests can be overcome for public good**

**Most comprehensive assessment of its kind;  
1,000,000 species threatened with extinction**

- IPBES findings: **nature managed by Indigenous Peoples is in better health than nature managed by national or corporate Institutions**

Why?

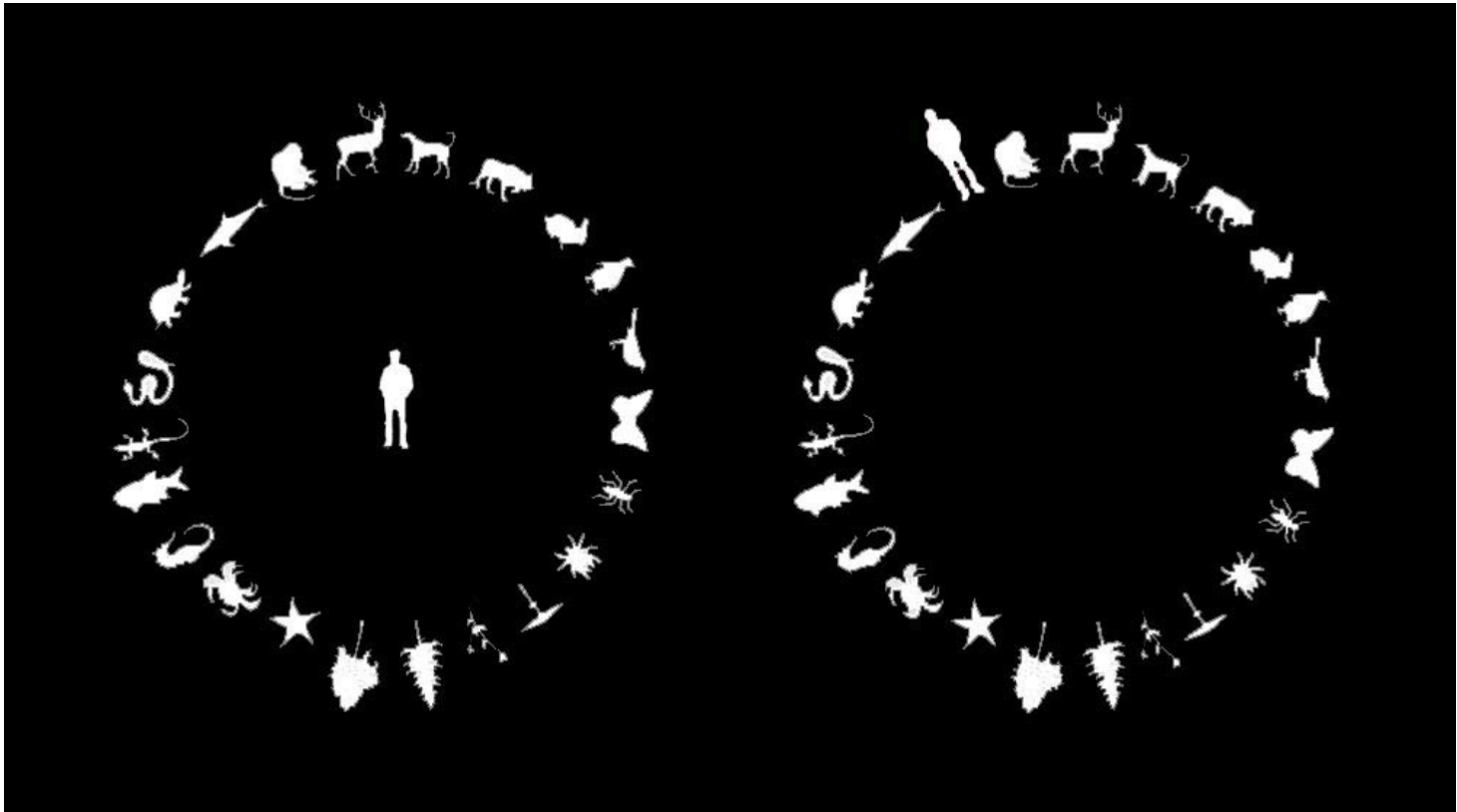
- Thus, ecosystems “would benefit from an explicit consideration of the views, perspectives and rights of Indigenous Peoples and Local Communities, their knowledge and understanding of large regions and ecosystems”
- “Recognition of the knowledge, innovations and practices, institutions and values of Indigenous Peoples and their inclusion and participation in environmental governance often enhances their quality of life, as well as nature conservation, restoration and sustainable use.”

from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Global Assessment



Dr. Gregory Cajete (Tewa), noted educator:

**“Human beings must come to terms with the fact that we are a part of the natural community.** It is through the educational process of ourselves and our children that we can internalize this basic understanding and reflect on the relationship we must establish with the natural world. Indigenous people around the world have been able, through experience and their direct relationship with the natural world, to establish this much-needed understanding of natural process and relationship. For them, this understanding was part of becoming complete within the context of traditional forms and systems of education.” (Cajete, 1994, p. 113)



Ego

Nature

Adapted from a widely shared internet meme. Apologies: source unknown.

From a 2009 interview with educator Gregory Cajete (Tewa):

- “for non-indigenous people . . . **look at these traditions of indigenous people and begin to understand them with respect, responsibility, resonance and relationship.** Because ultimately, we are all indigenous at some time in our life and culture. Even the cultures of the West are indigenous at a certain point in their history.”

Robin Wall Kimmerer (Potawatomi), plant ecologist, writer and SUNY Distinguished Teaching Professor:

- For all of us, becoming indigenous to a place means living as if your children’s future mattered, to take care of the land as if our lives, both material and spiritual, depended on it. Kimmerer, 2013, p. 9

Foundation of Anishinaabe, Haudenosaunee and many First Nation/Indigenous ways of life can be summarized

- Respect
- Relationship
- Reciprocity
- Responsibility

These are over-simplified and are not nouns.

They are complex verbs about relating to each other, all beings, the world.

Complex, interrelated...  
... Just like an ecosystem

# Applying 4 Rs to education and pedagogy

- Curricula and pedagogy need to be land-based in respectful and reciprocal way;
- respectful to the Original Caretakers of the place;
- designed in respectful, reciprocal way that honors and incorporates local wisdom and wisdom of students;
- relational (local context, interconnected and multi-disciplinary); and
- responsible and responsive to those who have gone before (ancestors), to those living now (community) and to future generations (descendants).
- These aren't mutually exclusive, nor all-inclusive!

Bringing it back to food . . .

- All beings need food to live
- All feed one another
- All become food when they die

# How do we live in a healthy reciprocal relationship with the land? Robin Wall Kimmerer:

- **How to restore relationship between land and people? “My answer is almost always, ‘Plant a garden.’** It’s good for the health of the earth and it’s good for the health of people. A garden is a nursery for nurturing connection, the soil for cultivation of practical reverence. And its power goes far beyond the garden gate—once you develop a relationship with a little patch of earth, it becomes a seed itself. Something essential happens in a vegetable garden. **It’s a place where if you can’t say ‘I love you’ out loud, you can say it in seeds. And the land will reciprocate, in beans.”** Kimmerer, 2013, p.126
- “Cultures of gratitude must also be cultures of reciprocity. Each person, human or no, is bound to every other in a reciprocal relationship. Just as all beings have a duty to me, I have a duty to them. **If an animal gives its life to feed me, I am in turn bound to support its life. If I receive a stream’s gift of pure water, then I am responsible for returning a gift in kind. An integral part of a human’s education is to know those duties and how to perform them.”** Kimmerer, 2013, p.115

# Co-evolutionary cycle

**“The exchange between plants and people has shaped the evolutionary history of both.** Farms, orchards, and vineyards are stocked with species we have domesticated. Our appetite for their fruits leads us to till, prune, irrigate, fertilize, and weed on their behalf. Perhaps they have domesticated us. Wild plants have changed to stand in well-behaved rows and wild humans have changed to settle alongside the fields and care for the plants—a kind of mutual taming. We are linked in a co-evolutionary circle. The sweeter the peach, the more frequently we disperse its seeds, nurture its young, and protect them from harm. **Food plants and people act as selective forces on each other’s evolution—the thriving of one in the best interest of the other. This, to me, sounds a bit like love.”** Kimmerer, *Braiding Sweetgrass*, p.



# More about feeding one another . . .

“The traditional ecological knowledge of indigenous harvesters is rich in prescriptions for sustainability. They are found in Native science and philosophy, in lifeways and practices, but most of all in stories, the ones that are told to help restore balance, to locate ourselves once again in the circle.” Kimmerer, 2013, p. 179

“Collectively, **the indigenous canon of principles and practices that govern the exchange of life for life is known as the Honorable Harvest.** They are rules of sorts that govern our taking, shape our relationships with the natural world, and rein in our tendency to consume—that the world might be as rich for the seventh generation as it is for our own. The details are highly specific to different cultures and ecosystems, but the fundamental principles are nearly universal among peoples who live close to the land.” Kimmerer, 2013, p. 180

# Honorable Harvest (Kimmerer, *Braiding Sweetgrass*, pg 183)

- Know the ways of the ones who take care of you, so that you may take care of them.
- Introduce yourself.
- Be accountable as the one who comes asking for life.
- Ask permission before taking.
- Abide by the answer.
- Never take the first.
- Never take the last.
- Take only what you need.
- Take only that which is given.
- Never take more than half. Leave some for others.
- Harvest in a way that minimizes harm.
- Use it respectfully.
- Never waste what you have taken.
- Share.
- Give thanks for what you have been given.
- Give a gift, in reciprocity for what you have taken.
- Sustain the ones who sustain you and the earth will last forever.

# Language of Nature

“I have a question for [plants], but since we don’t speak the same language, I can’t ask them directly and they won’t answer verbally. But plants can be eloquent in their physical responses and behaviors. Plants answer questions by the way they live, by their responses to change; you just need to learn how to ask. I smile when I hear my colleagues say “I discovered X.” That’s kind of like Columbus claiming to have discovered America. It was here all along, it’s just that he didn’t know it. Experiments are not about discovery but about listening and translating the knowledge of other beings.” Kimmerer, 2013, pp. 158-59.

## Resources (in order of mention and relevance)

US Department of Arts and Culture. Honor Native Land: a Guide and Call to Acknowledgment.

<https://usdac.us/nativeland> and <http://landacknowledgements.org/>

Whose land are you on? <https://native-land.ca/>

Listen to an interview with Hadrien Coumans, Co-Founder of the Lenape Center on First Voices Radio:

<https://firstvoicesindigenousradio.org/program/20181010>.

Ramapough Lenape Nation <https://ramapoughlenapenation.org/> and Split Rock Sweetwater Prayer Camp

<https://www.facebook.com/splitrockprayercamp>.

Lenape Center: <https://www.facebook.com/LenapeCenter/>

The American Indian Community House (AICH) is a not-for-profit organization serving the needs of Native Americans residing in New York City: <https://aich.org/>

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). (2019) *Media Release: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating'*. Retrieved from <https://www.ipbes.net/news/Media-Release-Global-Assessment> on May 31, 2019. Includes link to the full report.

Cajete, G. (1994). *Look to the mountain: An ecology of Indigenous education*. Skyland, NC: Kivaki Press.

Gregory Cajete, An Indigenous Ecology. (2009). Interview retrieved from

<https://thegreeninterview.com/interview/cajete-gregory/>

Kimmerer, R. W. (2013). *Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants*. Minneapolis, MN: Milkweed Editions.

## Resources (continued)

On Being with Krista Tippett. (2016, February 25). Robin Wall Kimmerer: The intelligence in all kinds of life. Interview transcript retrieved from <https://onbeing.org/programs/robin-wall-kimmerer-the-intelligence-in-all-kinds-of-life-jul2018/>

De-centering humans, non-humans with agency and personhood is showing up in mainstream content, e.g., 2 recent novels I highly recommend: Richard Powers, *The Overstory* and Sue Burke, *Semiosis*

Permaculture resources: Earth Activist Training (including permaculture design certification) and a new two-year Regenerative Land Management program <https://earthactivisttraining.org/>

New York City's Urban Forest. <https://www.nycgovparks.org/trees> interactive street tree map. E.g., find trees near your school and (with students) develop relationships with them.

Environmental & Sustainability Education in Teacher Ed <http://eseinfacultiesofed.ca/> has many resources, section on Indigenous Education, including the monograph: Beckford, C. L. & Nahdee, R. (2011). *Teaching for Ecological Sustainability: Incorporating Indigenous Philosophies and Practices*. What works? Research into Practice: Literacy and Numeracy Secretariat

Learning for a Sustainable Future <http://lsf-lst.ca/> has many resources including their Step Outside nature guides and curricula materials

Hattie Carthan Community Garden in Bed-Stuy neighborhood of Brooklyn NY is a wonderful, flourishing space for learning, growing, connecting—a shining example of community-centered regenerative culture and agriculture. <https://www.hattiecarthancommunitymarket.com/>

The image features a blue-tinted view of Earth from space, showing the curvature of the planet and the dark void of space. At the bottom, there is a white silhouette of a city skyline. The word "Questions?" is centered in white text.

Questions?

# THANK YOU

Don't hesitate to contact us!

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Do visit [www.tc.columbia.edu/sustainability](http://www.tc.columbia.edu/sustainability)

