



Fairchild Challenge at Phipps

2017 – 2018 Middle School Challenges In-Depth

Challenge I: Sustainable and Healthy Meals

“Eco Edibles”

For individuals or groups | Maximum points: 200 (one book with a maximum of 10 recipes)

Due at Phipps: Fri., Oct. 20, 2017 by 5 p.m.

Your Challenge:

Of the many natural resources on this magnificent planet that sustain human existence, none is more important in our daily lives than food. Shockingly one third of the food raised or prepared isn't eaten; this food might be rejected for lack of perfection (aesthetic objections) or forgotten in the back of the fridge until its deemed spoiled and tossed. Regardless of the reason, uneaten produce uses up resources and produces greenhouse gases. Reducing food waste is considered the third most beneficial change we can make to reverse global warming!*

For this challenge, your class is tasked with creating a plant-based cookbook which utilizes plants that might normally be considered scraps, aesthetically imperfect (bruised or a funky shape), on the verge of being spoiled, etc. Your goal is to reduce your overall household food waste and in the process save your family money! As a school, share with us 10 of your favorite recipes, include a photograph so we can admire your creation. Let us know: 1) how you are reducing your food waste at home with this recipe, 2) what resources are used to produce the main plants in your recipe, and 3) how recovering this food item is reducing your household contribution to climate change. We encourage as many students as possible to participate in this project.

Examples: baked potato peel chips, carrot top pesto, bruised tomatoes for sauce, etc.

Entry Requirements:

Deliver to high school program coordinator at Phipps in person or via certified mail (electronic submission is not accepted):

- Submit one book with a maximum of 10 unique, plant-based recipes each photographed and with the student's name. School name must be on the cookbook.
 - For the main plant(s) in your recipe include the common and scientific names; country/region of origin; plant parts used.
 - Feel free to use recipe inspiration from other sources, but be sure to credit them.
- In addition to each complete recipe and photo, write one-two paragraph(s) explaining,

1) how your recipe reduces food waste in your household, 2) the resources used to produce the main plant(s) in your recipe, and 3) how recovering this food item is reducing your contribution to climate change.

- One original illustration or photography is required as cover art.
- Challenge Entry Form

Additional Information:

- Points are awarded to entries that include multiple students.
- *This challenge was inspired by *Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming*, edited by Paul Hawken. This book documents the 100 most sustainable solutions to reverse global warming, based on research by leading scientists and policymakers from around the world.
- Warning: Do not consume spoiled or moldy food.
- *5 bonus points:* Calculate the volume of food saved by your household over two weeks. First document the volume of food waste generated in your household for two weeks. Then change your eating habits to be more eco-conscious. And lastly document the volume of food waste generated in two weeks after your changes. By subtracting these volumes you may find impressive food savings! *Schools that reduce the most food waste will receive special recognition at the Award Ceremony in May.* On a separate sheet of paper show your calculations to receive points.

Resources:

- Johns Hopkins Center for a Livable Future's *Foodspan Curriculum*:
www.foodspanlearning.org
- United States Environmental Protection Agency's *Sustainable Management of Food*:
www.epa.gov/sustainable-management-food
- United States Environmental Protection Agency's *Food: Too Good to Waste*:
www.epa.gov/sustainable-management-food/food-too-good-waste-implementation-guide-and-toolkit

Challenge 2: Visual Art

“Petals and Pollinators” (Global Challenge)

For individuals or groups | Maximum points: 200 (100 per model, 2 entries per school)

Due at Phipps: Fri., Dec. 1, 2017 by 5 p.m.

Your Challenge:

Over millions of years, flowers have co-evolved physical traits with various animal pollinators. Adapted to retrieving nutritious nectar from within the blossoms, these animals carry pollen to the next flower, enabling the plant to reproduce. Research the co-evolution of flowers and their pollinators and create a 3D model depicting a fictional flower. Write a

description of your fictional flower incorporating traits based on your research. Identify what kind of pollinator your flower relies upon and any special adaptations that have co-evolved to facilitate pollination.

Entry Requirements:

Deliver to high school program coordinator at Phipps in person or via certified mail (electronic submission is not accepted):

- 3-D model labeled with school name, student(s) name, and name of flower
- Typed description & bibliography attached to entry
- Challenge Entry Form
- Model must be 3-dimensional, made entirely of paper and/or cardboard, and no larger than 13.5" x 11.5" x 5.5".
- Flower must be fictional but include labeled representations of at least three scientifically based flower parts (pistil, stamen, etc.) Pollinator can be real or fictional, but must incorporate researched pollination-related adaptations.
- Model, bibliography and description labeled with school name, student(s) name, and name of flower
- Typed description should be 200 words or less and include: what type of environment your flower inhabits, what kind of pollinator your flower relies upon, and what special adaptations your flower and pollinator have co-evolved to facilitate pollination
- Bibliography citing at least two sources, following MLA or APA format
- On-time entry submission (late entries may not receive points)

Additional Information:

- Students are encouraged to use recycled or reused material to create their 3-D model. Paper products such as newspapers, cereal boxes, shoe boxes, clean paper plates, etc. are all accepted. Please do not use perishable materials for the construction.
- As students create their model, they are encouraged to consider how it will be transported and hold up over time.
- Models will be photographed and returned at the end of the school year.
- Top entries will be highlighted through the Global Showcase with all of the Fairchild Challenge partners.

Resources:

- APA and MLA Citation Generator: www.easybib.com
- *On Pollination:*
 - Eden Project's *Pollination for Kids*: www.edenproject.com/learn/for-everyone/what-is-pollination-a-diagram-for-kids
 - Kids Growing Strong's *Pollination*: www.kidsgrowingstrong.org/pollination
 - USDA's *Pollination*: www.fs.fed.us/wildflowers/pollinators/What_is_Pollination
 - Biology Corner's *Flower Structure and Reproduction*: www.biologycorner.com/worksheets/flower_coloring.html

Challenge 3: Environmental Design

“Eco Lots”

For individuals or groups | Maximum points: 200 (one entry per school)

Due at Phipps: Fri., Jan. 26, 2018 by 5 p.m.

Your Challenge:

In the city of Pittsburgh there are over 27,000 vacant lots! That’s thousands of acres of open space ripe for creative and ecologically beneficial projects. We challenge you to reclaim this space for your community! Come up with a vacant lot concept that will benefit both local nature and your neighbors. Pretend you are preparing to pitch your idea to grant funders. Your design concept should consider these questions: 1) What could be added to your neighborhood to make it a better place for the environment and its residents? 2) Are there local environmental issues that can be addressed using this empty plot? How will you incorporate these needs into your design? Examples: rainwater capture, healthy local food, safe play spaces, pollinator sanctuary, soil/lead remediation, calming nature sanctuary, habitat for local animals, etc.

Pick an empty plot in your neighborhood or find a plot using the “Lots of Love” link below. Survey neighbors to see what they would like to see in your community. Create a visual display to depict your vision for your transformed lot.

Five bonus points: If you have \$5000 in grant funding, how will you realistically spend your money? Consider the supplies needed to complete your project.

Entry Requirements:

Deliver to high school program coordinator at Phipps in person or via certified mail (electronic submission is not accepted):

- Maximum Entry: 1 design concept which includes:
 - A one-to-two-page, double-spaced, 12 pt. font description including: 1) a mission statement for your vacant lot, 2) your theoretical plans for the empty lot, 3) the advantages of your plans for the community and the environment, 4) how your plans meet your mission.
 - A visual display that shows your plan as it would be ideally implemented. This can be done as a tri-fold board, a poster or a blue print layout. Consider how much space you have available.
- Challenge Entry Form

Resources:

- Interactive web resource for finding vacant lots, sharing project ideas and so much more (created by GTECH, Greenspace Alliance and the City of Pittsburgh Department of City Planning)! www.lotstolove.org

Challenge 4: Writing/Personal Testimonials

“An Ode to Nature”

For individuals or groups | Maximum points: 200 (one book with up to 15 poems)

Due at Phipps: Fri., Feb. 23, 2018 by 5 p.m.

Your Challenge:

Humans have long been discussing and writing about their profound connection to nature. As described by the famous English poet, William Wordsworth, while he gazed upon a tranquil lake, “The calm; And dead still water lay upon my mind; Even with a weight of pleasure.” Recently scientific studies have validated the benefits of nature expressed by these authors. Evidence suggests spending time in nature decreases anxiety, stress and rumination, as well as increases creativity, generosity and kindness. Immerse yourself in nature and enjoy these benefits.

Your challenge is to be poets of nature. Reflect upon your personal connection to your favorite outdoor space through a book of short poems modeled after “If You’re not from the Prairie...” by David Bouchard. This requires going outside and taking time for quiet observation. Develop a sense of place through your poems to help us understand the sentimental connection you each have to a place of your youth.

Entry Requirements:

Deliver to high school program coordinator at Phipps in person or via certified mail (electronic submission is not accepted):

- Schools should submit one book with a maximum of 15 poems modeled after “If You’re not from the Prairie...” by David Bouchard. Book labeled with school name, and each poem labeled with student’s name.
- One original illustration is required as cover art. Multiple illustrations reflecting the poems are welcome, but not required (any medium, i.e. pencil sketches, watercolor, etc.).
- Students are asked to go outside and find inspiration around your school, home or neighborhood in order to create an honest depiction of nearby nature. Poems should focus on details of local nature or describing how you identify with the chosen local and natural environment.
- Challenge Entry Form

Additional Information:

- Points are awarded to entries that include multiple students.

Resources:

- David Bouchard’s *If You’re Not from the Prairie...*:
www.sepulvedaesol.weebly.com/uploads/3/0/5/3/30532022/if_youre_not_from_the_prairie_text.pdf
- Form for adapting “If You’re Not from...” poems:
www.mrhazard.com/lessons/language/if_youre_not_template/if_youre_not.pdf

Optional Challenge: Public Service Video

“Environmental Citizens”

For individuals or groups | **Patti Burns Prize** | Maximum 2 videos per school

Due at Phipps: Fri., March 23, 2018 by 5 p.m.

Your Challenge:

Identify either a proposed environmental law or an attempt to change an existing environmental law (federal, state or local). Investigate both arguments for and against the implementation. Have a class debate representing both positions. Create a public service video to advocate for your informed position. Try to persuade local citizens to support or oppose the new environmental law or change in an existing environmental law.

Five bonus points: Interview a local professional on the topic to understand the effect of the proposed environmental law or change in an existing environmental law (provide email or video evidence of your correspondence.)

Entry Requirements:

Deliver to high school program coordinator at Phipps in person, via certified mail or electronic submission (accessible on YouTube):

- Maximum Entry: 2 videos per school (3 minutes maximum for one video)
- Video must answer: 1) What is the proposed environmental law or what is the proposed law change? 2) How will this law change or addition affect humans and the environment? 3) Why should we care? 4) What can we do to support or oppose this law change or addition?
- Bibliography citing **at least two sources, following MLA or APA format**
- Challenge Entry Form

Additional Information:

- **Entries will be considered for the Patti Burns Prize for Excellence in Communication and Media (\$500), but will not be awarded points towards the 2017 – 2018 Fairchild Challenge at Phipps.**
- Evaluation criteria: Submissions will be judged on accuracy of content, creativity/originality, technical quality and overall impact.
- Note for teachers – If videos are submitted via a flash drive or CD and awarded first, second or third place Phipps will require video/photo permission forms of students present in the entries.

Resources:

- Joylette Portlock's *Don't Just Sit There — Do Something!*
www.youtube.com/user/DJSTDoSomething

Challenge 5: Take Action

“Environmental Action: Home, School or Community”

For individuals or groups | Maximum points: 300 (one trifold or one report)

Due at Phipps: Fri., April 27, 2018 by 5 p.m.

Your Challenge:

“Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it’s the only thing that ever has.” — Margaret Mead

Even small and simple environmental initiatives can affect great change. For this challenge, you are asked to initiate, implement and sustain an activity or activities that promote environmental awareness and conservation within ONE of the three following target areas: home, school, or community.

Entry Requirements:

Deliver to high school program coordinator at Phipps in person or via certified mail (electronic submission is not accepted):

- Maximum Entry: 1 poster or 1 report
- Create a tri-fold display or written report that documents your school’s efforts to promote environmental awareness and conservation in one out of three areas: within students’ homes, throughout the school or across the community.
- Clearly state: 1) the project goal(s), 2) the Five Ws (Who, What, When, Where, Why), 3) how you met your goal(s) and 4) how your project(s) promotes environmental awareness and conservation.
- Please attach a list of the students and/or classes involved in the project.
- Limit report to a maximum of 10 pages of text, double-spaced, 8.5” x 11” pages. Any photographs included must be within the 10 page limit.
- Challenge Entry Form

Additional Information:

For this challenge, one or multiple environmental action projects done throughout the school year are encouraged. Ideally, this challenge should become an all-school effort, **engaging as much of the student body as possible**. Implementing new projects in your home, school, or community will be weighted more heavily than repeated projects from the previous year. While creative and original ideas for projects are welcomed, we have also provided some optional examples below.

Suggested Projects:

Home:

- Engage your household in an effort to reduce wasted food. See the EPA’s *Food: Too Good*

To Waste campaign for helpful tips:

www.epa.gov/sustainable-management-food/food-too-good-waste-implementation-guide-and-toolkit

- Perform a home energy audit and make changes based on your findings
- Set a recycling goal for your household
- Educate and encourage your family to become environmentally responsible purchasers and consumers
- Encourage your family to have one sustainable (ie., meat-free, locally grown) meal each week
- Create a western PA-friendly habitat in your backyard that invites wildlife and minimizes environmental impact

School:

- Host an environmental documentary at school and donate proceeds to an environmental organization
- Have a school grounds clean up, being sure to recycle and/or dispose of materials properly
- Devise a plan to reduce waste at your school, involving recycling as appropriate. Perform an energy audit at your school and present a plan for improvement to your school board.
- Create a mentoring program where older students can educate younger students about environmental issues
- Post environmental tips and reminders on posters in visible locations at school
- Encourage your kitchen and maintenance staff to use environmentally friendly products
- Host an educational Earth Day event at school
- Conduct a biodiversity inventory of your school grounds, including plants, birds, butterflies, and others

Community:

- Volunteer with a local environmental organization
- Participate in an environmental organization's work project on Earth Day
- Assist with environmental education or initiatives at a local community center
- Host a fundraiser and donate money to an environmental cause
- Write letters about your environmental concerns to local politicians
- Participate in a citizen science project