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Bloomington High School South

Cover Letter

Project Green Challenge has changed absolutely everything about my life. I think there is no niche left untouched. Every single one of these submissions I chose made me step out of my bubble, grow as a person, and experience something new. These were the most fun submissions for me, I think. They engaged with me the way school used to when I was younger, the hunger to learn more every second. I haven't felt that in a long time. One by one in order as listed on the form, this is why I chose the submissions I did.

Firstly, the Soil Greenest challenge! I had the opportunity to make a teaching tool on the greener challenge that was a wooden sign with the carbon cycle and facts about soil and why we need to protect it. I met with the Child's teacher in charge of the garden there, Mrs. Smith, and watched how she taught the kids in keeping up with the garden. She kept my sign to put up in the spring when they would be learning about the topic, and we discussed her methods of upkeep. This entire experience was amazing. I love kids, so working with them and seeing how excited they were when they found a worm, bit into that perfect ripe tomato, or dragged me by the hand to see their handiwork, was the highlight of my week. Not only was I able to give them something they could learn from, they taught me so much about gardening and composting, as well as how real world teaching truly engages kids. I had made something with my own hands, someone else had wanted it, and the kids had the will to learn from it. The reason I chose this submission was less for what I did, and more for the experience I got from stepping out and participating in an activity I would have never thought to partake in. I am proud that I have contributed to the learning environment that I grew up in.

The second submission I chose was controversial in my house. Not in a bad way, but Meatless Monday was not a "fun" day for my family. A little background on why I am so proud of how this day went. Steak has been my favorite food for at least 9 years, my mother lives on cheese, and together we can eat a whole turkey by ourselves on Thanksgiving. This was one of those things that I said wasn't for me. I said, give me anything else and I'll try it, but I like my meat. But when it came along as a challenge, I had made a commitment to do all of them, and I wouldn't let myself stumble over something so small. Did it go perfectly? Of course not. I found that I couldn't really commit to going vegan for the day like I wanted to because I was allergic to tree nuts, and often the trade off for dairy is tree nut products. I ate out for dinner, found a vegan cheese, and then went home to find out that it was based in coconut oil and was sick for almost two days. So Meatless Monday was a challenge. But I did it! I proved that for one day, I could, somehow convinced my carnivorous mother to join in with me, and managed to go mostly vegan. This particular challenge had a lot of hoops to jump through, a few roadblocks along the way, but I did it because I chose to, and I did it to the fullest that I could. Being willing to try something new is the first step, and we can each only do as much as we are able to. .

Writing has always been my love, so when I got the chance to write an article, I was elated. The article itself is not necessarily what I am proud of. I usually write opinionated articles

or poems, but they are usually broad, on the whole issue or on a group of ideas or people. This was targeted at the University, and there were some “strong” statements in my writing. I didn’t want to take them out, because they were what made the article good, made it my writing, but in trying to get it published somewhere, I found I was suddenly scared to be ridiculed for my opinion on IU’s lack of action. This challenge taught me how to get over that. I had done my research, I had written a well written article. I had an opinion worth hearing. Even though four people turned me down for publication, including our school newspaper, I summed the entire experience up to just that, an experience. That’s how it works in the real world, you get turned down. Just because they did not want those opinions in their paper doesn’t mean the statements aren’t worthy or accurate. This challenge taught me how to have true pride in my work and not bend under pressure from others to say something softer.

The Fashion Viewing Party, as it is referred to by the friends that attended, was a gathering of friends that, if not for this particular challenge, would never have ended up in the same room together, let alone in my house. They were friends of a range of ideals, political views, and backgrounds, and at first I was a little anxious for us to watch the documentary together. I had asked random people if they were interested, so I was worried they would not want to intervene or participate with the others if they didn’t know them. This challenge proved me wrong. The kids that came, although very different from each other, engaged in quality conversation, discussed the hard issues when it came to Fast Fashion, and were able to find a middle ground on economic/political ideas as well as equity issues. I am proud of this challenge because we were able to bridge our differences and come together for something I wouldn’t normally do. I never have people over, never host get togethers, and try not to have conflict worthy conversations with people I know are true friends because I don’t want to jeopardize that relationship. In this challenge, I managed to do all three, and only good things came out of it.

Making the dinner was another evolving get together. I knew I wanted to make something we already knew how to cook, to show my family that we could easily make the switch to things that were organic, even if cost was an issue. Again, the challenge forced me to get people together, pay attention to others, and contribute to a common goal. The girls that came over, surprisingly to me, wanted to come early and help me cook! This is a challenge I am proud of because I was able to adapt what we usually do, a recipe we made almost weekly, and show my family that we could make it cheaper organically and that it would taste better. They were pleasantly surprised to find that these things were true! Without meaning to, I included 5 people in every part of the process, shopping, cooking, eating, and every one of them wanted to be a part of each. I am so used to saying “I’ll do it myself” that I had to learn to *let them* help me, let them enjoy the experience with me. I am proud of this challenge because it was an easy way to learn a lot of new things, and as a result, we have made an effort to buy safer, healthier food in the weeks since. This challenge was the push that let us realize it was possible after years of accepting it was not.

I am proud of each of these submissions, not because they won or because there was a tremendous amount of effort, although in some there was, but because they each taught me more than I could have guessed. I have not only taught myself, but those around me. My view of the world is forever altered. I pushed myself, and I succeeded. And that is what I am proud of.

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The garden I am working with is the Child's Elementary School garden. I made my teaching tool for their garden because I have volunteered in the Garden club they have every tuesday and the kids are closely involved with the garden. The teacher was very open to

regenerative organic practices and said she would love to put my sign in their garden to teach her students about photosynthesis and the importance of soil. I talked to her about techniques that they could implement that I found as suggestions from

(<http://www.regenerateland.com/a-brief-introduction-to-most-important-techniques-in-regenerative-agriculture/>).

1. Holistic Decision Making-Economics, Equity, Environment

- Their garden is not for a profit, but solely for educational purposes, so they do not deal with an economic standpoint.
- *Permaculture Design*: Their rain garden is situated in front of the garden beds to soak up the major waterflow into Jackson Creek at the foot of the property. They place plants that need more water than others at the base of the hill where the water pools.

2. Soil Food Web

- The school cafeteria sends all food waste to Mrs. Smith, whose parent volunteers take care of compost management until it is ready to be put in the garden.
- The *compost system* looked complicated to me, but she explained it as Instant pots in the ground. It has a simple "doggy door" for worms, where, once the bins are in the ground, a hole lines up the two bins and worms can travel through to eat organic material. They can close these doors with sliding blue pieces that shut the worms in one bin to make it faster.



3. Properly Managed Livestock

- When I asked if it would be feasible for a school garden to have managing livestock, she surprised me with a yes. She said there has been some discussion of a chicken coop on wheels, inspiration from the *Edible School Yard in Berkeley California* which she visited for inspiration. (<https://www.edibleschoolyard.org/>)
- Could eggs laid be sold or eaten? She said that the kids eat the tomatoes straight off the vine but meat or dairy might need a more strict protocol. She was open to sending in an inquiry on the subject.

4. Perennial Crops

- All of the herbs are perennials, as well as most of the native plants.
- She said the main problem is that a lot of the things they want kids to help grow and get to go through the whole process with are plants like tomatoes that are not perennial.
- They plant trees in the butterfly gardens, and after discussion shade and sun hours, they are thinking about planting persimmon trees on the north side of the garden, so as the sun rises and sets all parts of the garden get both shade and sun.

5. Polyculture

- *Companion Planting*- She said they may not participate in full polyculture, but they try to pair plants next to each other that expel nutrients the other plant needs in a system called Companion Planting. They do not plant where there might be competing nutrients.
- They rotate where each plant goes every year, except for the perennials that come up in the same spot every year.

6. S.T.U.N. Breeding- "Sheer Total Utter Neglect"

- While they do not alter their seeds in any way to achieve this, they do not use ANY chemicals-*no fertilizers, pesticides, or herbicides*.

7. Water Use and Management

- They collect water in rain barrels and do not use a hose at all.
- When our region had severe flooding this summer, (our lake rose 11 feet over normal) they put out hay bales on the top of the hill to absorb the water as it came down the hill and slowly leak it into the root systems of the garden's plants.
- The hay bales not only monitored the water to the plants, but also controlled erosion of the mulch and soil in the garden.



Because she was already implementing a lot of organic practices, I signed up the Child's Elementary School Garden on the Climate Victory Garden Page. She was ecstatic that someone my age cares enough to do the research and had the kids show me everything about the garden.

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Me:

- ½ Thomas blueberry bagel, toasted, with *JIF* peanut butter- *non-GMO*
- Large serving of fruit smoothie:
 - Blackberries from our garden last summer, 1 cup frozen
 - 6 oz raspberries
 - 1 banana, 2 Darling clementines
 - 2 cups Dannon *Light and Fit* original vanilla yogurt

- Vegetarian quesadilla:

- Cheese
- Tomatoes
- Peppers
- Onions
- Tomato sauce

- AZZIP pizza:

- Dairy free cheese-which we found out later was coconut oil based, but I only had a minor reaction to it.
- Sun dried tomatoes
- Green peppers
- Pineapple



Kristina(mother):

- 2 kitkats
- 1 cup coffee
- A serving of the smoothie





- Toasted Blueberry Bagel with cream cheese
- 2 tbls spinach and artichoke dip with chips
- Penne Pasta:
 - Alfredo sauce
 - Tomatoes
- AZZIP pizza:
 - Dairy free cheese
 - Sun dried tomatoes
 - Spinach
 - Mushrooms



Responses:

- *Was it easier or harder than you thought to go without meat for the day?*
 - **Mama:** It was exactly what I thought it would be. Substituting out things for vegan options is much harder than I thought, especially with your allergy. Growing up in southern Indiana in a farming community, the idea of not depending on animals in any way seems far fetched and undesirable. It would be a complete overhaul of our way of life. It would take a lot of planning to meals suitable for your dietary needs.
 - **Me:** The act of going meat free would not have been hard for one day a week or more. There are lots of meatless options. It's the dairy free or vegan route that would be insane to find for someone with a nut allergy. I loved breakfast, but the surprise of coconut oil in the vegan cheese made me very sceptical towards restaurants that say "vegan, vegetarian, nut free". I could not be vegan without a lot of planning, ordering things online, and a lot of help from someone who knows what they
- *How do you feel after a day of no meat?*
 - **Mama:** Hungry. I think my body is used to going through more stuff in less time and we normally have meat at every meal so it feels like a big chunk of our meals is cut out. I am tired but that might not have anything to do with it.
 - **Me:** I am tired and ready to go to bed, but I do not connect my crankiness to going meat free. Every meal that I made or bought that was meat free made me happy. I was trying new things, buying new things, eating a whole new category of sustainably focused food, something that hadn't

even been on my radar. I feel positive that I am learning how to make a difference, if not to this level of commitment.

- *Do you think you will continue to participate in Meatless Mondays or consider adopting a plant-based, vegetarian, vegan, or flexitarian diet?*
 - **Mama:** No. I can cut down on certain types of direct meat or less beef a week of day. I don't think I could go all out and trade in animal products. We can work on having meat be the side instead of the main event. More fruit less bacon on weekend breakfasts, that kind of thing.
 - **Me:** I would like to do meatless Mondays in the future, have the breakfast I had today, salad at lunch, and a variety of options for dinner besides what I found doing my research. I could go the flexitarian route. For our lifestyle and my allergies, I can easily make meat free choices when I can, and still stay safe and comfortable. Eventually when I am buying my own food and making my own meals, I might add to the flexitarian diet. But for now, I might continue meatless Mondays and my family will eat less beef and direct meat throughout the week. I agree that we can easily cut down on our meat consumption, and will start offering to go to the grocery store to help with the decisions on food for the week.

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I chose to research Indiana University instead of Bloomington South because they do not release this information, whereas Indiana University does.

Sources:

- 1) <https://sustain.iu.edu/commitment/energy/index.html>
- 2) <https://www.limestonepostmagazine.com/guest-column-ius-solar-strategy-shortsighted/>
- 3) <https://www.eia.gov/state/?sid=IN>
- 4) <http://www.hewv.com/knowledge-cafe/incentives-helping-to-drive-green-power-on-college-campuses/>
- 5) <https://news.iu.edu/stories/2017/10/iub/inside/30-photobioreactor-duke-energy-grant.html>

Where Does IU's Energy Come From

By: Josie Sparks

Living in Bloomington Indiana, IU's campus is our city, our home, and we have a connection to everything it has to offer, even as high school students. For many of us, we've grown up here, and if someone were to ask us any question about the athletics, the festivals, the variety of schools and specialties, or the downtown experience, we could answer them. We are indepthly connected to everything about the university... except where all the energy comes from. If I asked you what kept the Student Union warm in winter, what lit up the Sample Gates at night, or what gave you warm water to wash your hands at the football games, what would you say? Probably what you would say if I asked you about how this country gets its energy, and you'd most likely be right.

Like the rest of this state, Indiana University's energy comes mainly from coal. In 2018, 69% of our states energy was derived from coal. Why? Historically, it has been cheaper than any other energy alternative. Last year, we came in second for coal consumption among the 50 states, directly behind Texas, a state 7 times as large as ours. If you have driven to Chicago before, you'll remember the wind turbines in the fields in the northern part of the state. Wind power was only 5% of Indiana's electricity source in 2018, while the combined production from solar, hydropower, and biomass clocked in at just a little more than 1%. **(3)** There are some efforts on campus to use solar energy, but is it enough?

According to Matt Flaherty, that'd be a big fat NO. In his article, he gives the figure of just under "41 kilowatts of rooftop solar photovoltaic capacity", which might sound like a lot, but it's not. It's only equal to about 5 or 6 houses with rooftop solar. In the city of

Bloomington, Flaherty points out, there are “single city blocks” that would generate more electricity than the whole of campus does. To add another stunning statistic, in 2017, businesses and building owners in Bloomington put in 25 times the amount of “solar capacity” than IU currently has. Supporters of IU’s efforts point out that a university would not get the same tax credit from installing solar as home owners do, but there are alternatives to outright purchases that could be considered. **(2)** There is the suggestion of something called power purchase agreements, where “a private developer builds, runs and maintains a solar installation” and would take a 30% tax credit, offering the energy to the university at a lower cost. Other Midwest states like Ohio and Minnesota have already signed similar agreements, so why haven’t we? **(4)** Another argument is that there is not space on campus for new infrastructure. There are arguments that if we want to keep the green space we are known for on campus, we cannot “litter it with solar panels”. Our city seems to be more inclined to find ways around that argument. Just check out the solar panels that sit above the City Hall parking lot. **(2)**

Let’s head over to the North side of campus, where the Central Heating Plant is located, within walking distance from the Memorial Stadium. This site is a combination of bad environmental practices and efforts of reducing IU’s carbon footprint. Over the years, the plant has updated from 100% coal to 95% natural gas, a small improvement to some, but an improvement nonetheless. The university purchases electricity from Duke Energy, but produces its own steam to heat the buildings on campus. But why are they renovating and not investing in Green Energy? It’s all about economics. Coal is cheap. Well, money cheap. Its cost on the environment is anything but low. You’d think for a university in an environmentally conscious town, with a large variety of environmentally linked degrees being offered at the O’Neill School of Public and Environmental Affairs (the largest school of its kind in the US), IU would have stepped up to the green challenge. In some ways, they have.

On top of the power plant is something called a photobioreactor. That’s a mouthful, isn’t it? It is a system of PVC pipes that houses algae floating in water. Emissions containing carbon and nitrogen will float in bubbles through the hydrologic system to feed the algae. The goal is to convert harmful emissions from the power plant into fertilizer. How? Think back to freshman year of High School, Biology class. It’s an easy answer to the question of global warming. Photosynthesis. This process, as you may remember, draws harmful chemicals out of the air to turn into food for plants and then stores the remainder in the soil for future use. **(5)**

Where will the algae-fertilizer go? If you’ve ever walked around campus, you’ve seen, smelled, or stepped into one of the 200 flowerbeds that make this campus ranked as one of the most beautiful in the country. Other than saving almost \$4000 in fertilizing costs- fertilizers that would have polluted our water ways-the system had returned almost 200 lbs of carbon into the soil in its first year in service, growing another system that

naturally combats climate change. Who's paying? Surprisingly to me, Duke Energy. The company often bashed for their poor energy use and dirty coal operations gave IU \$50,000 for the design and installation of this project. **(5)**

The only thing is, it's not a very big step. Although all steps in the direction of green energy are positive ones, this situation can be compared to the solar panel dilemma. In a visit to IU this month, the Bloomington South AP Environmental Science students learned that, although an amazing effort in reducing emissions, in its current lifetime the system has only removed around 1 ton of carbon from their emissions. Out of *thousands*. So, even though the University is making steps in the right direction, it seems as if their portrayal of the green advances they are making is exaggerated. The reality is, where there are a lot of people, a massive amount of energy is used. With over 40,000 students on campus every day-excluding faculty and local visitors- that is an immense amount of energy. The other part of the equation will always be money. As a university, IU is still a business, an organization made to earn money for profit. They will pick what is less costly to their bank account until prices change. And right now, coal is cheap, carbon is cheap, and renewables are not.

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Rowan Stalnaker, another Project Green Challenge participant, and I decided to converge two friend groups-5 people- into one for a viewing of *The True Cost* at my house with halloween snacks and deep discussion. The main words after watching the movie was “anger” and “sad”. Simple words that hold a lot of weight for the content we had watched. We agreed that as kids, teenagers, there are some things we can do to prevent the injustices happening, but we will ultimately have that power when we have our own purchasing power. We discussed the injustices related to health, education, and profiting power, and how we play a role in that system by purchasing clothes without thinking about their origins. We talked about how where we live and what size we are limits what decisions we can make. How expensive brands would be if they had to be sized or tailored, eco-friendly, or both! We agreed collectively that the change had to be an agreement between the parents and the children to not purchase clothing that contributes to fast fashion, but that this was a discussion that needed its place in a conversation and wouldn’t necessarily pop up in a normal environment, which is why Rowan and I agreed the greener challenge was a great first step to the process of conversation.

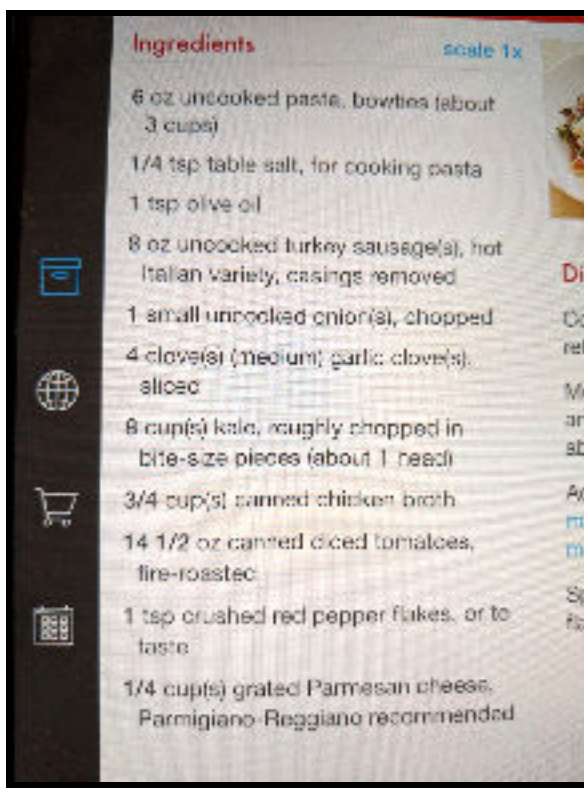
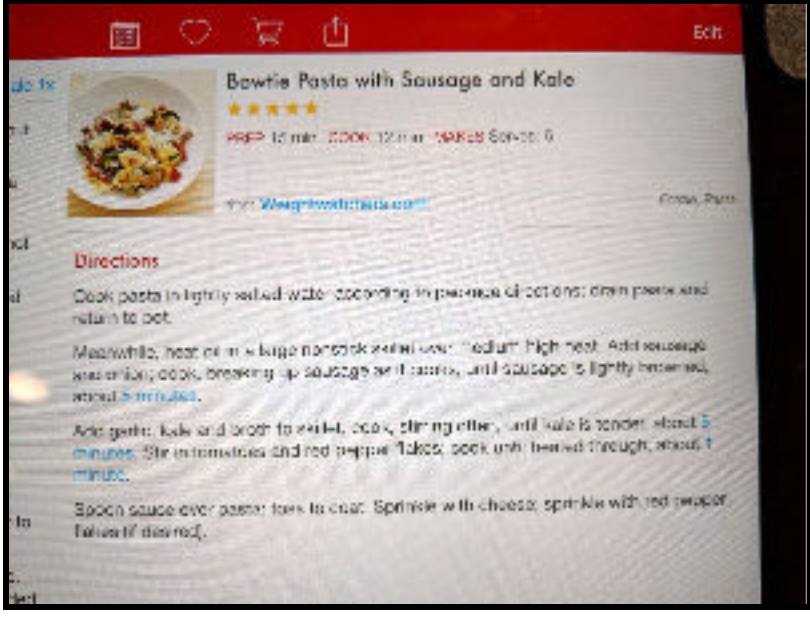
I started out with the word “unfixable”. That was the first word that came to mind when I thought about this issue. You don’t have to be any given sector of society to contribute to this problem- which is why it is so important that everyone take a step in the right direction. The other two words are education and injustice. The two go hand in hand. When there is a lack of education, injustices are committed against those that are not educated in a way that could protect them. I do not buy clothes all that often, and give away or donate everything I get rid of, but what I *do* buy, I can research. For every company that is not being the best they could be for the environment or their workers, there is a sustainable accompanist waiting for our business, waiting to enact change. For something like this, an amazing idea to continue to share about injustices in the fashion industry and the effects of fast fashion, creating a social media account that was dedicated to looking at pieces of clothing and doing research on their origins would be fantastic. People could check the channel for clothes they were looking to buy and I could do the research for them on a variety of topics I now know the basics of.

I am the person asking the questions at the beginning of each topic. Here is a link to our full group conversation (about 9 min long).

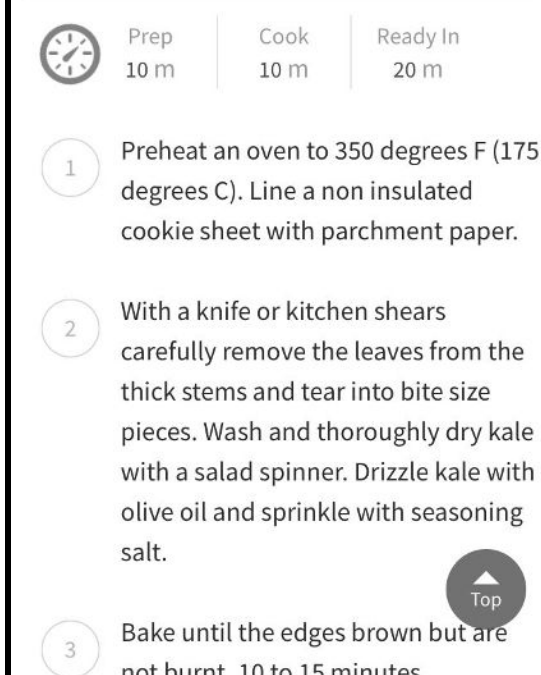
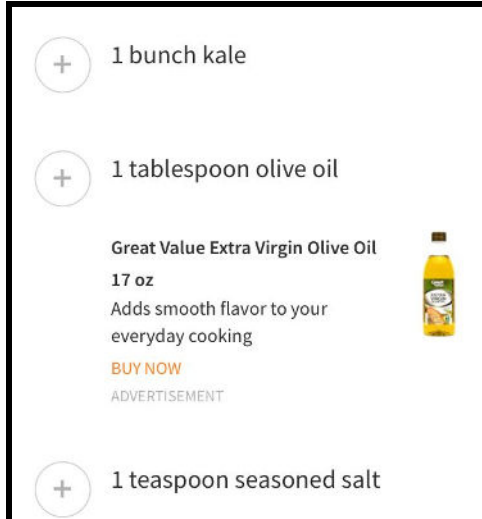
<https://www.youtube.com/watch?v=Y4OjVdCqu38&authuser=0>

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Youtube video of feasting :) Buying, Preparing, and Cooking.
<https://youtu.be/nuF2kav-zHc>



^Recipe for Kale chips>



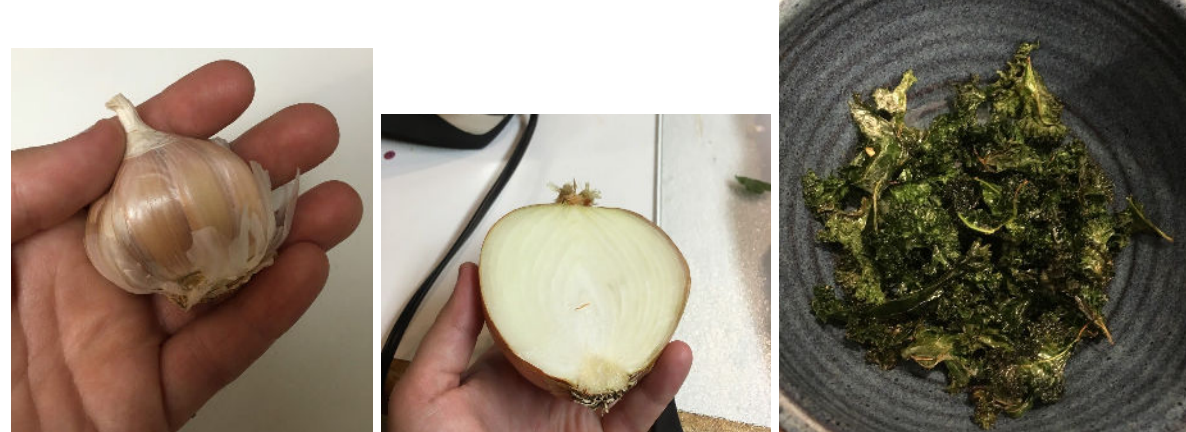
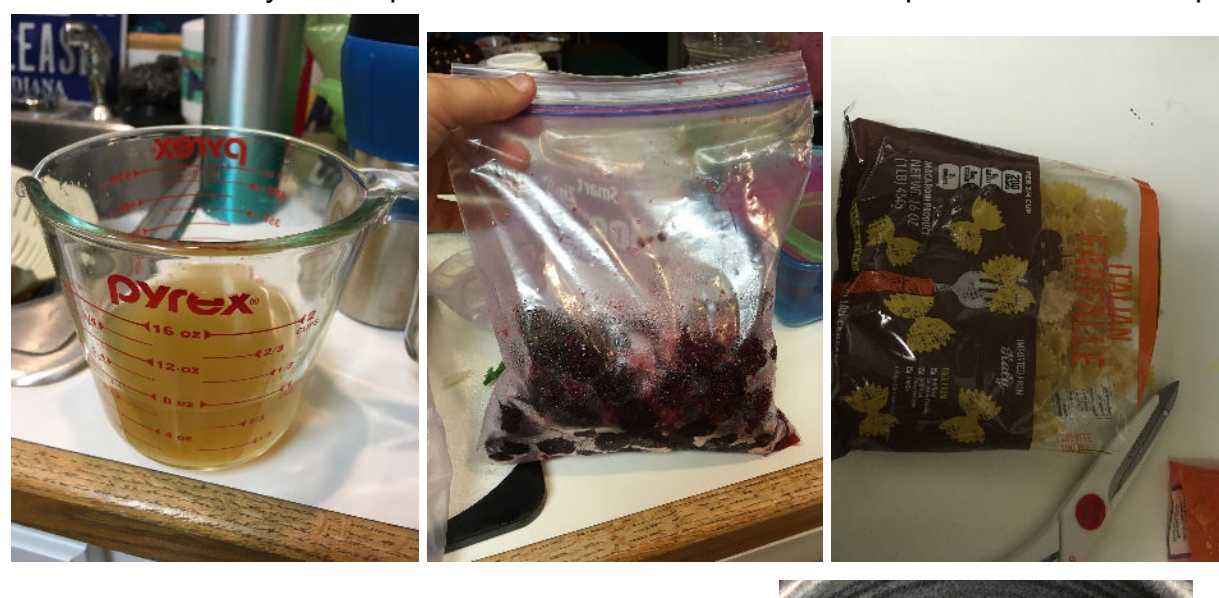
5 * \$4 = \$20 budget
Entree: Pasta with kale and sausage
Sides: Kale chips and watermelon slices
Drinks: Blackberry Smoothie and water

Items-FreshThyme Brand (unless specified)	Cost
Vanilla Greek Yogurt	3@\$0.75= \$2.25
Hot Italian Turkey Sausage	\$3.19
Fire Roasted Diced Tomatoes	\$0.69
Italian Farfalle bow tie pasta	\$1.00
Garlic clove	\$0.69
Organic Green Kale	2@\$1.50= \$3.00
Watermelon Halves	\$1.54
Yellow Onion	\$0.60
Total Cost	\$12.96

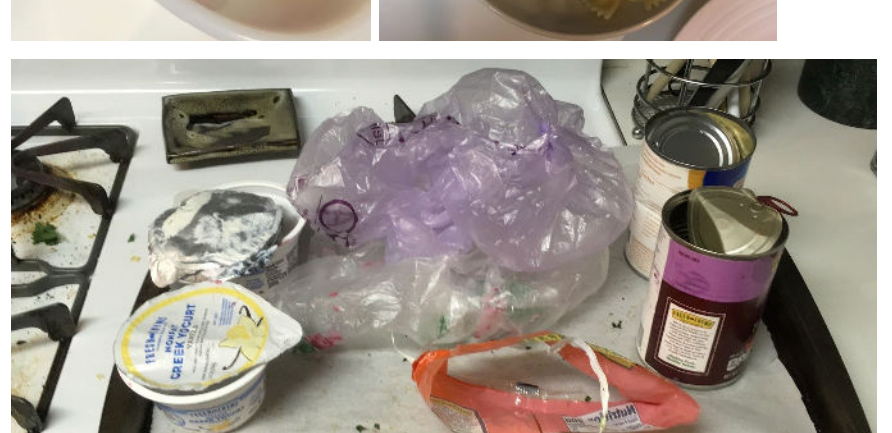
Our total was \$12.96, about \$7 under budget. We had a few ingredients in our kitchen already and shopped at an eco-friendly store downtown. My friend wanted to help me cook because she would be eating and they make organic meals all the time, so we went to Fresh Thyme to get the majority of the food, but we had already purchased organic spices and organic chicken broth in the past at Kroger for other recipes. The frozen blackberries were from my grandma's garden last summer. I took a recipe we make every week and converted the ingredients to be organic to show my family that we could continue eating the same meals in a way that was better for the environment. Changing things slowly like switching ingredients to meals we are already familiar with means we can ease into the idea of new eating habits and my family will already know how to prepare the meal. It is a lot more appealing to them that it is a food they know and love and have made before.

We had a few leftovers, a few scoops of cooked pasta, half the bag of uncooked pasta, enough sausage kale mix for half of a serving, half an onion, four garlic cloves, 8oz of chicken broth, and a 1/2 a bag of frozen blackberries. Everything was put away for another use.

Compost consisted of the watermelon rind, onion and garlic skins, and kale stalks. The recyclable waste included metal cans and yogurt containers, along with the recyclable bags they give you at the store. We poured the waste water from cooking and drinking glasses outside in our side gardens, and put the compost in our soil pile on the side of the house. Trash that could not be recycled included the meat sealant sleeves and the styrofoam plate it rested on as well as a few napkins used in cleanup.



Recyclable Waste



Compost

JOSESPARKY @JOSESPARKY... · 1s ✓
The photo recipe is for sausage-kale pasta (yum 😊), part of the meal I made for #PGC2019 's organic/FLOSN food challenge 🌱.

Smoothie Recipe: 🍓 🍇
-as many frozen blackberries as you want
-three 5.3 oz yogurt containers

Kale Chips Recipe: 🌱
allrecipes.com/recipe/176957/...



Turning Green

