

We Grow Together:

Sustainable Foundations

Goal 1: Find ways to teach our community about how to make more sustainable choices and why it matters.

Goal 2: Investigate alternatives to wasteful practices at school and share our ideas for more sustainable options to our school board.



The Bednarcik Junior High School The Environmentalists

Aurora, IL

Advisor: Ms. Amy Truemper

Student Leaders: Abigail John, Denel Phinn, Lydia Gerety, Avika Dua, Leah Uthe

The Bednarcik Environmentalists are a team of students in 6th, 7th and 8th grade who care about improving the world by addressing environmental issues. We organized several events throughout the year to teach others how to reduce their carbon footprint. NEED has given us the resources and opportunities to teach energy conservation to our school community.

Learning about Energy & Climate Change

In our science classes we learned about the many ways humans have impacted our environment.

We used the following NEED resources:

Science of Energy Kits to learn energy basics

We did activities to help us understand the sources of energy in Illinois and how that compares to other parts of the country. We learned why we use different types of energy compared to other places and we had fun doing the competition.

Exploring Climate Change which taught us why pollution causes the Earth to get warmer.



We participated in a program called Everfi which had simulations to help us understand sustainable foundations. We chose this as our topic because we saw how all our ideas for the year connect to this issue of sustainability.

A huge lesson learned is that there is no such place as AWAY. We need to change our habits to use less material and reuse what we currently have. This is how we chose our goal for the year.

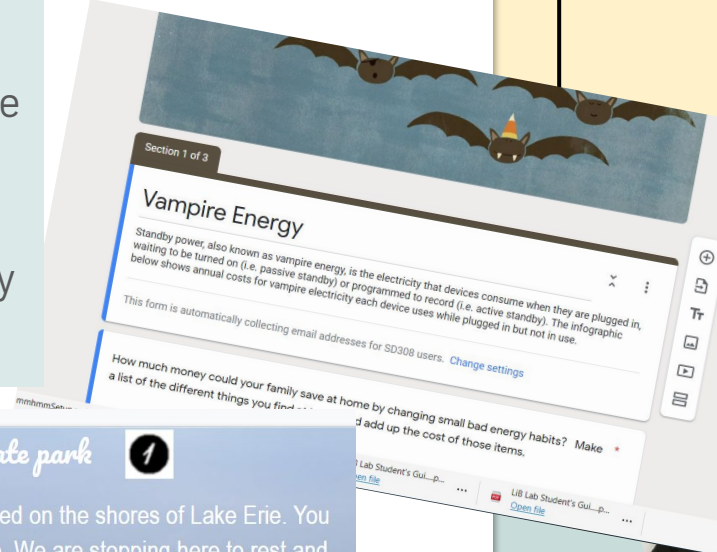
Learning about Energy & Climate Change

Pretzel Power and Road Trip taught us about fuel efficiency and carbon emissions.

This Week in Energy which was so much fun since we made videos on FlipGrid.

We learned about vampire energy and completed a home survey to see where we were wasting energy. We showed our parents how much money was being wasted. "I loved being able to teach my parents. It made me feel really smart." Denel Phinn

We continued to learn about renewable forms of energy and did competitions for wind turbines using KidWind Simulations. We used the Solar Farm from Illinois State University which taught us about seasons! Also it taught us how solar panels can work year round in Illinois.



East Harbor state park

East Harbor state park is a campground located on the shores of Lake Erie. You can boat, fish, swim, have a picnic, and camp. We are stopping here to rest and eat food.

Example of Physical Change: Chewing fish is an example of a physical change because it is just being chewed into smaller pieces and no new molecules are being made.

Example of Chemical Change: Once your saliva has touched the food in your mouth it begins to break down carbohydrates causing new molecules to be created. This is also the beginning of digesting the fish.

- Distance Traveled (Miles): 322 miles
- Gasoline Used (Gallons): 8 gallons
- CO₂ Emissions (Pounds): 155.2 pounds

Community Cleanups.

We have held multiple cleanups around our school and the neighborhood around our school. We have to work in small groups right now but we have had students, siblings and friends join us. So far we have collected 250 pounds of trash - mostly - plastic bags and bottles.



We found some crazy things in our prairie area - carpet, tires, a grill and the insulation board in the picture above.

Water Monitoring and Habitat Restoration.

Remembering to take care of our local habitats and water areas is very important to us and the animals that use it as their home.

We planted milkweed seeds to help the Monarch butterflies on their migration route.



We noticed during the pandemic more people were carrying out food and drinks for the family. On our cleanups we were collecting a lot of drink holders from McDonalds and Dunkin Donuts. We also recognized this material was like egg carton material so we wondered if we could reuse this material to make something new.

Recycling egg cartons and drink holders

Things are going to waste a lot today, one example is cardboard. We noticed drink holders and containers get thrown around outside, and sometimes not disposed properly. Instead of wasting cardboard, there are so many ways you can re-use it. In our group, we decided to work together and make clay out of cardboard, hoping to make a material to add on in other items.

It did not work out like we planned but we still had tons of fun experimenting. This led us to a new idea about food waste.



What we did:
We took pieces of cardboard and egg cartons, and put them in a blender.

Next, we added water and glue.

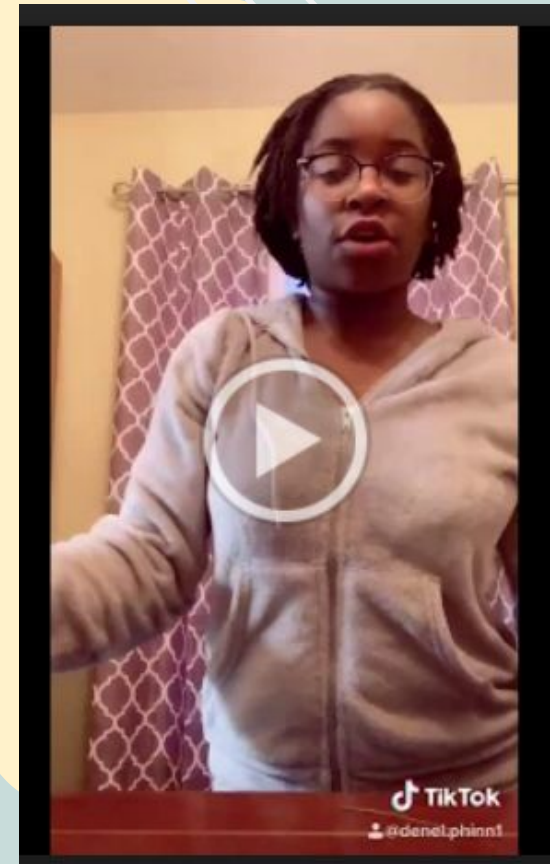
Finally, once it was all blended together, it was this soft clay-like material.



Food Scraps are Useful

Food scraps alone can cause a lot of damage to the environment. Good food is constantly being tossed out and wasted when there are other alternatives to help out the ecosystems. It ends up in the landfill and does not decompose.

Planting egg-carton gardens can reduce the amount of food scraps being wasted and it allows people to grow gardens of their own!



We made a series of TikTok videos to show family, friends and students who to plant their own gardens,

We also made Instagram posts to share our ideas.

Food scraps are useful.

Regrow Plants from Food Scraps in Cartons, Fast Food Drink Holders, and other recyclable containers. Learn more here:

FOOD REVOLUTION: REDUCE FOOD WASTE

Food and Compostable materials end up in landfills and do not decompose there. It is estimated by 2029, IL landfills will reach capacity. The team looked for ways to reuse materials that should not go to the landfill. They would like you to try their project. While it seems small, little changes in our regular life can add up to be a big difference and, in addition, it is fun to watch plants grow.



21% of landfills comes from food waste alone and 30-40% of food is wasted every year but we can reduce this by recycling our food scraps instead of throwing them away. Our team members of the club all tried this out and tried growing plants from food scraps that were still usable. When food is wasted, all of the materials used to make that food is also wasted. Once these still usable food scraps are wasted, they continue to affect the environment through climate change, global warming, increase of landfills, etc. Our project using the egg-carton garden helps out with a solution!

We shared our progress in the weekly announcements send to parents and students.

Growing Plants Without Soil.



Mint



Cilantro



Basil

We had so much fun with plants we wanted everyone to learn how to grow plants. We also learned caring for plants made us feel better when we were stressed out.

Our next idea for a school garden project was to grow plants in jars with water.

Aquaponics

We have just finished building a small aquaponics system that will grow plants in our classroom!

We are so excited to see it work!

We Grow Together

We Grow Together is a project where students get to be a part of a school garden. Every 7th grader student received a seed kit and we are watching our plants grow. This activity shows how we are still connected even in the tough time of Covid where some students are still remote. At the end of the year, we will put all our plants together in a garden.



Fast Fashion

Did you know that the fashion industry is responsible for 8% of carbon emissions? Our group worked on fast fashion and how to use clothes more sustainably for the environment we looked at places who do fast fashion and places that do and what to do with clothes you do not want.

We started a campaign to help teach our classmates about this issue.

EXTENDING THE LIFE OF CLOTHING
BY A FURTHER 9 MONTHS
WOULD REDUCE CARBON, WASTE
AND WATER FOOTPRINTS BY
AROUND 20-30% EACH



#FASHIONREVOLUTION



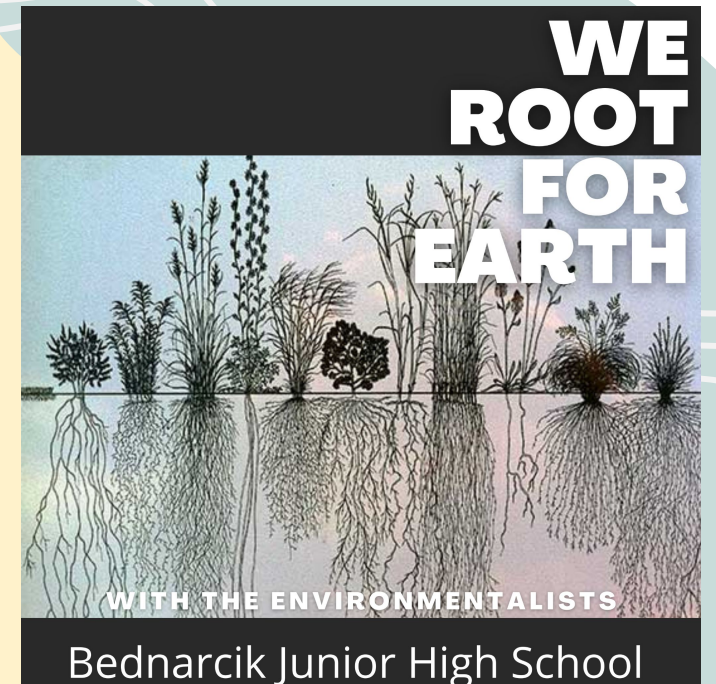
Those better be some nice clothes!

When you realize it takes over 700 gallons of water to make a t-shirt and 1800 gallons to make a pair of jeans



Podcast

The podcast is where our club discusses environmental issues and solutions we've come up with and done to help. It's a way where we can communicate and share our ideas with others on a bigger scale since there are some people who don't have time or enjoy reading so now they can still learn about the importance of protecting the environment.



Sustainable Ideas for the Cafeteria

We looked at the problems with sustainability in our cafeteria. Each class came up with their own proposal. We hope at least the hairnet and glove issue can be fixed. We hope to purchase reusable hairnets that can be washed with the aprons and we found biodegradable gloves which are not too much more money than the vinyl gloves

- 1 Sustainability in Cafeterias
- 2 Sustainability in Cafeterias
- 3 The Problem in Our School Cafeteria
- 4 Sustainable Tray Materials
- 5 Our Proposal

Sustainable Tray Materials

Styrofoam or expanded polystyrene is not a sustainable material. It will break down into smaller and smaller pieces but never disappear. Styrofoam is not compostable and is even hard to recycle, creating tons of waste. There are an abundance of compostable materials that are cheap and sustainable alternatives to styrofoam.

Examples are...

- Sugarcane Fiber
- Bagasse
- Recycled Paper
- Palm Leaves

However, one of the best materials used across the country is...


Mushroom Material!

www.mushroommaterial.com

Many schools across the country have already made the switch and love the results. Mushroom material trays aren't just affordable, but are good for the environment!

Fun Facts: Mushroom material is...

- ◆ Shock absorbing
- ◆ Waterproof
- ◆ Durable
- ◆ Customizable shape and size
- ◆ Completely Affordable!
- ◆ Fire resistant
- ◆ Biodegradable
- ◆ Sustainable
- ◆ Made of fungus roots




- 1 Sustainable PPE
- 2 Sustainable PPE
- 3 All Those Hairnets and Gloves!
- 4 The Waste in Our Cafeteria
- 5 Our Proposal

All Those Hairnets and Gloves!

Each day, according to Mrs. Haynes, a cafeteria worker at Bednarcik Junior High, 12 cafeteria staff members each use about one hairnet and ten sets of gloves per day. She also stated that some days, the cafeteria workers use more than one hair net, meaning that the amount of waste is even more than estimated. While that may not seem like a lot of waste in one day, there are about 180 school days, so the amount is immense (about 21,600 gloves and 2,160 hair nets in one school year). If all the disposed hairnets and gloves were combined, the amount would be unfathomable and have an extremely harmful impact on the environment. This is a major problem as these decisions are not sustainable. There is no such place as "away" and unless everyone starts making choices that are sustainable, soon enough Earth will not be able to support human life.

Plastic gloves and hairnets create waste that end up in landfills and take decades or even centuries to break down and release harmful chemicals into the air. On top of this, plastics are made with chemicals like benzene and vinyl hydrochloride which create harmful byproducts that pollute the land and air.



- 1 Improving Trays, Reducing Waste
- 2 Improving Trays, Reducing Waste
- 3 The Problem in Our School Cafeteria
- 4 Solution to the Problem
- 5 Environmental Benefits for Switching to Sustainable Materials

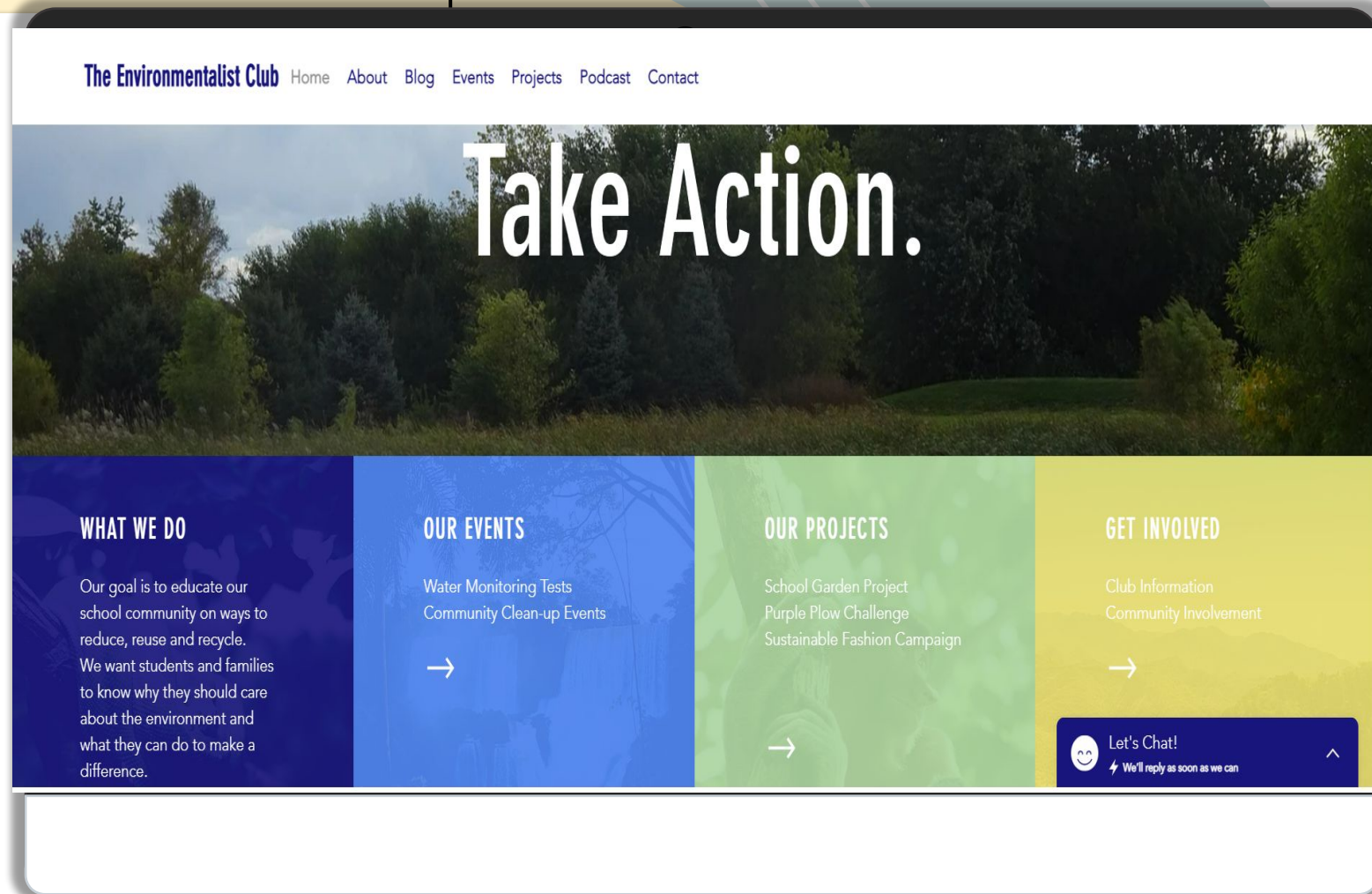
Improving Trays, Reducing Waste

Bednarcik Junior High
3025 S Eola Rd, Aurora, IL



Website

The website is a place where people can learn about us, what we've done and are currently doing. People can also go to the website to get further information on topics we might have put on poster or mentioned in school announcements.



Project Summary

The Environmentalist Team at Bednarcik Junior High leads recycling and energy conservation projects at school. The team consists of 6th, 7th, and 8th graders. This year,

Our current long term projects are 1) We Root for Each Other a 7th Grade Garden Project building community spirit and teaching about how to care for plants. 2) Aquaponics - the symbiotic relationship between plants and fish. 3) Educational podcast We Root for Earth!

One of our highlights this year was experimenting with ideas to try to solve the problem of landfill waste. Putting together the Podcast. We are so excited to share what we have learned with other students.

One of our most important lessons learned this year is not giving up. We often felt like our ideas would not work but we did not give up and just looked for new strategies which always led to a solution.

PERSEVERANCE!

Keeping the Earth clean and learning about sustainability We learned that small things we do can make a big difference.

The environment is being greatly damaged by waste constantly being thrown into landfills each day. A change needs to be made to help the life on our planet flourish. The change...starts with us.

Thank you!

The Environmentalists would like to thank all of our sponsors, especially the NEED and ESP programs for providing resources to help us learn about energy. We are so grateful for how these programs have helped us learn about our world and how they have inspired us to teach others how they can make a difference.



As this is my last year of being in the Bednarcik Jr. High Environmentalists, I just want to say thank you so much for the all the opportunities you have provided for us to grow.

-Abby John (Member of the Environmentalists)