

Creating a Difference in Our Community

The Bednarcik Junior High

The Environmentalists Team

Advisor: Ms. Amy Truemper

Student Leaders: Trisha J. Shukla, Saba Ahmed and Manya Srivastava



Goal 1: Increase motivation for students and staff to recycle.

Goal 2: Provide information and incentives for students to save energy at school and at home.

Goal 3: Educate the community on the steps they can take to conserve energy and help environmental issues in the world.

NEED has given us the resources and opportunities to teach energy conservation to our school community. The Bednarcik Environmentalists are a team of students that meet before school Mondays and Fridays to look for ways to improve the environment through recycling and energy conservation efforts. We have participated in several challenges throughout the year. The different aspects of our project are as followed:

RECYCLING

We increased our recycling efforts through numerous competitions, incentives, and community education. We competed in two national competitions involving using recycled materials to help rebuild our infrastructure.

CONSERVING ENERGY

We audited classrooms to gain an understanding how we used energy in our building. We provided feedback and conservation tips to individual classrooms. We also compared their results from prior years so they could see their improvements.

COMMUNITY EDUCATION

Bednarcik had its 4th annual energy fair. We worked with district administration to promote conservation throughout the district. We worked with the IT department to host an Earth Day and Electronics Recycling Event for our school district.

Recycling

Goal 1:

Increase motivation for students and staff to recycle.

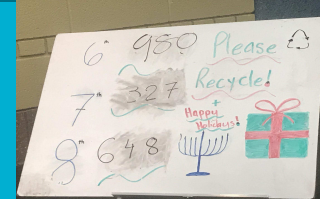
Resources: PepsiCo Recycle Rally, TerraCycle, NEED.org, EPA Make A Difference In Your School, Illinois Department of Natural Resources, The Surfrider Foundation Keep America Beautiful, Going Blue: A Teen Guide to Saving Our Oceans, Lakes, Rivers and Wetlands by Philippe Cousteau, EarthEcho International, SHEDD Aquarium

Student Incentives: Monthly recycling raffles were held to increase items recycled. Everytime someone recycled an item, they received a raffle ticket which they could put in a drawing for a gift card. We also held lunch hour challenges and the winning hour received cell phone privilege for a week. To boost recognition for recycling we created the weekly award - Recycler of the Week which recognized one boy and one girl for recycling in the hallway or classroom.

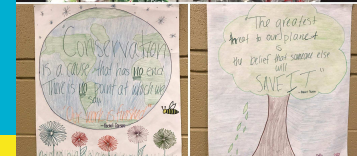
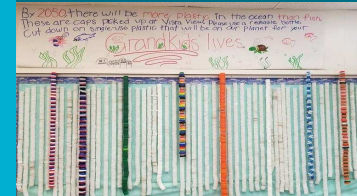
We promoted recycling with daily announcements and social media posts. We also created a new school recycling slogan: BE a Recycling Machine and a new hashtag #BEarecyclingmachine. We created a school recycling mascot and presented the mascot at large events and during school hours. In addition, we created bottle cap art to help show students how much single use plastic was being used each day at school. To the right are all the caps from 1st semester.

For the 4th year, we participated in the PepsiCo RecycleRally and are on our way to Gold Level status. We improved our number of recycling containers throughout the building and stated composting in the science classrooms.

Bednarcik held its third spring themed recycling drive. In week 1 community members brought old shirts to a collection bin in our school, and we then upcycled the shirts and turned them into dog toys for the Naperville Humane Society. For week 2 we collected old art supplies like markers and colored pencils the Crayola ColorCycle It program. This was so successful, many teachers asked for classroom containers to continue collection year round. Week 3 was for bathroom supplies such as contact solution or lenses, toothpaste packaging and empty mouthwash containers for our TerraCycle projects. We collected 60 pounds of used contact packets. Our team collaborated with Bernie's Book Bank. We made a homeroom competition out of it to see which class could bring in the most books to be donated. By the end of it we collected over over 1000 books which will provide individual libraries to over 80 children in the Chicagoland area.



Above: Lunch Hour Competition Challenge
Below: Bottle Cap Art



Energy Conservation

Resources: ComED Student Power and NEED.org

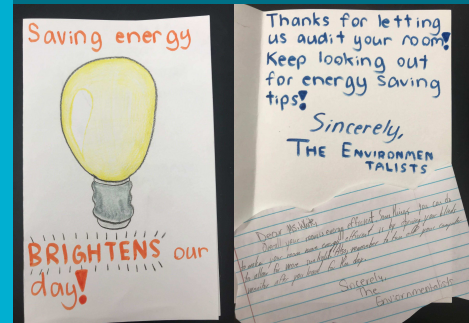
Goal 2: Provide information and incentives for students and staff to save energy at school and at home.

Monitoring Energy Use Activities

1. More experienced/returning members taught new members how to do energy audits in the classrooms. The students were taught how to use tools such as a Kill-A-Watt meter, a Humidity and Water Thermometer, a Light Meter, and a Ballast Checker to help measure the amount of energy used in the classrooms.
2. August to December, teachers signed up to have an energy audit done on their classrooms. The team analyzed each room and created list of positives and some suggestions for improvement. The audits were compared to the results of last year in order to see habitual errors and improvements. We are pleased that most classrooms reduced their energy use. We are currently doing the second phase of audits to look for changes during this year. We created a thank you card with energy tips.
3. Family energy conservation challenge - Several families have filled out the energy conservation contract provided by NEED, took notes on energy saving strategies at Energy Fair and are now competing with each other to see who can reduce their energy use the most. The winning family will receive a set of Phillips programmable lights.



Here is one of our audit cards with feedback for Mrs. White..



Energy Conservation

Resources: ComED , CEMAST Smart Grid for Schools, NEED.org

Goal 2: Provide information and incentives for students and staff to save energy at school and at home.

More Activities to Monitor Energy Use

1. Members of the team met with a professional energy auditor. They were able to advance their knowledge of performing their own energy audits. These students also located the source of many phantom energy sources, as well as finding key areas in the building that could be improved with energy usage. We also located several drafts that were fixed by maintenance! Finally, we are excited to take our knowledge to other schools.
2. Members of the team went around the school at the end of each day and shut down energy draining devices including all of the school computers and coffee machines to ensure that they were not continuing to drain energy at night when nobody was using them.
3. Environmental team members educated the school on energy saving tips through the morning announcements.
4. The team made holiday greeting cards that were sent out to the community with tips on how to save energy during the holidays.



Students meet with a professional energy auditor and gain much insight about school energy usage

Energy Conservation

Energy Fair 2019

As an annual tradition for Bednarcik Junior High, the Energy Fair consisted of 7th and 8th grade projects which included different activities, displays, and demonstrations created by the Environmentalist Team at the school.

Environmentalist Team Tasks

1. Plan and assemble the layout and items for the Energy House Exhibit
2. Write display information and scripts for the different parts of the Energy House
3. Create flyers, posters, and announcements for the event
4. Decide on and collect raffle items
5. Prepare game stations
6. Make signs for each area of the fair
7. Prepare an explanation of the Energy House Exhibit
8. Hand out free materials and information sheets
9. Display Energy Conservation Art for the Art Gallery

Over 600 people attended the fair!

Resources from NEED: Intermediate Energy Infobook, Energy at a Glance Fact Sheets, Blueprint for School Energy Teams, Building Science, Energy from the Sun, Energy from Wind
Additional resources: DefinedSTEM, EnergyStewards, Illinois Solar and Wind Schools, Illinois Energy Learning Exchange Library, Think Green NASA JPL, SaveOnEnergy, ReliantEnergy, CEMAST Smart Grid

Goal 3: Educate the community on the steps they can take to conserve energy and help environmental issues in the world.



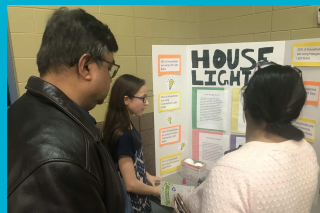
Energy Conservation

Energy Fair 2019- Museum Exhibits



Goal 3: Educate the community on the steps they can take to conserve energy and help environmental issues in the world.

The museum exhibits at the energy fair educated students and community members about different aspects of energy such as ways it can be produced, ways it can be used, and ways to save energy. Students got very creative with their projects and learned many new things about the topics they were covering while making it.



Chloe explains information about home lighting



Izzy explains information about solar energy



A student teaches about smart meters at the smart meter exhibit



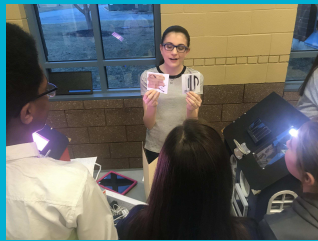
Brian gives a lesson on how hydrogen fuel cells work.



Jessica shares several strategies for reducing home heating costs.



A student explains natural gas safety.



Ruthie explains to community members about the smart grid.



Nathan teaches a group of elementary students about wind turbines.



Aayan demonstrates his natural gas refinery.



Alexis teaches families how to be safe with electrical appliances.

Energy Conservation

Energy Fair 2019- Energy House



Goal 3: Educate the community on the steps they can take to conserve energy and help environmental issues in the world.

Students constructed a life size version of a house space, making it energy efficient. This year students focused on the different seasons and how the different seasons use separate methods to make the house more energy efficient. Fan blade direction and using blinds effectively were two main concepts parents do not know before visiting the energy house.



A student explaining ways to save energy in the kitchen



A student displaying some tools in our audit box as well as ways to save energy at home



Anya and Rakshita giving a tour of the energy house to people who attended the fair



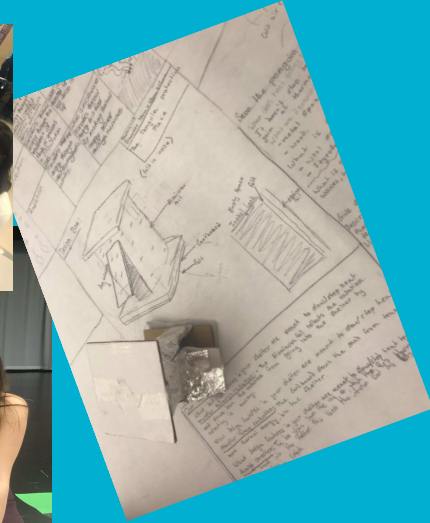
A student talking about energy efficient lighting within homes



Erin explaining how it can be beneficial to have plants inside of homes

Energy Fair 2019- 7th Grade Save the Penguins Project Engineering Challenge

7th grade Honors Science students were challenged to create the most insulated house that would protect penguins suffering from global warming. Then we created posters that were hung up in our cafeteria. Then we created action plans and acted on them by creating petitions, contacting local government officials and raising money to help penguins being rehabilitated at SHEDD Aquarium.

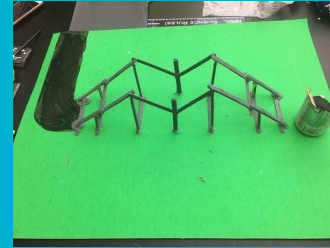


Resources: DefinedSTEM, NEED Solar House Challenge, House Design Project, Saving Energy at Home and School, Energy Efficiency

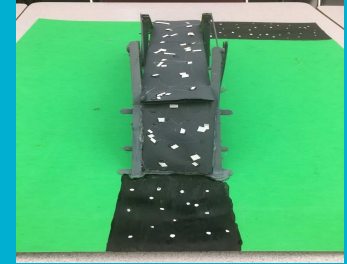
Energy Conservation Special Projects

Goal 3: Educate the community on the steps they can take to conserve energy and help environmental issues in the world.

January 2019 - As we were doing our recycling projects we started to think about implementing things that were recycled into the world around us. We started learning about how many bridges needed to be rebuilt as they were falling apart and were dangerous for the cars driving across them. One solution is to use recycled materials like plastic and steel that could be used to make a bridge. We competed in the Recycle to Rebuild National Competition and will soon learn how we did.



Beginning of construction for the bridge.



Continued bridge construction

April 2019 - We are currently planning the Earth Day event which will consist of different booths talking about water conservation, native plants, and energy conservation tips. We are collaborating with the district IT department who will run an electronics recycling drive to help bring more families to our event.

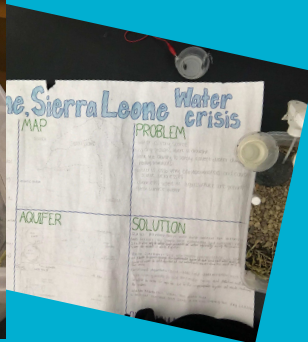
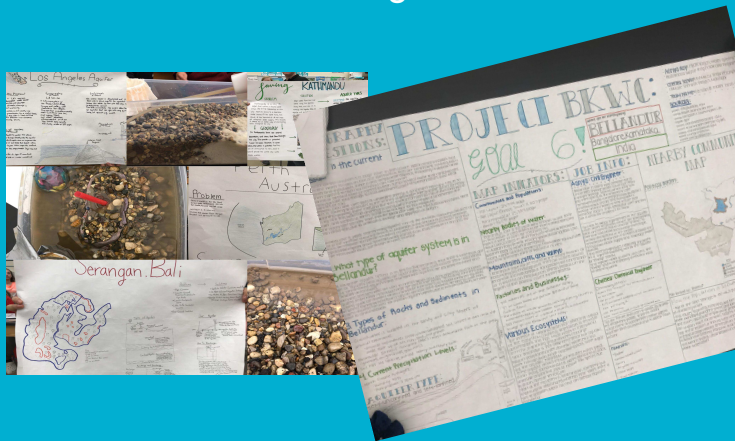
May 2019 - Kick the Straw campaign will begin in several area business. We have worked with our Alderman, Mr. Bugg, to make this a reality. We will also complete a water quality survey of the Fox River for EarthEcho International and work with a local high school on the Walk for Water.



Learning the Value of Natural Resources

Goal 3: Educate the community on the steps they can take to conserve energy and help environmental issues in the world

NEED has provided so many useful materials to teach energy in a fun way. The students had a blast learning about energy transference and then we got opportunities to apply the knowledge that we learned. 7th graders learned about how we get and use natural resources as forms of energy and how that impacts the Earth.



8th graders learned about conserving water, our most precious resource, by learning how to build and replenish aquifers, how to clean water and how to help solve problems in specific communities with a water crisis. All of these lessons were shared with families and community members at the Energy Fair and Earth Day event.

Environmental Songs and Videos

Our team finds that a great way to engage our school and community in learning about environmental information is through music videos. Below are some of our educational lyrics:

To the tune of "Victorious" by Panic! At the Disco

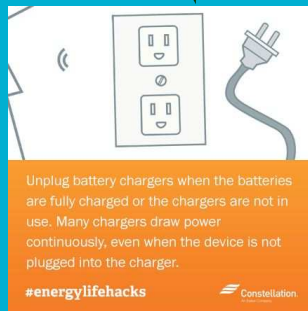
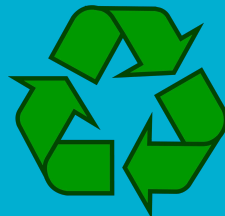
Many people don't know that
Things that don't fit in a can
Still can be recycled too
This is what you have to do
Woah oh oh oh oh
Recycle that
Woah oh oh oh oh
Have you ever wanted to recycle something big?
But you can't because it won't fit inside of the
recycling bin.
Refrigerators, furniture, computers galore,
Say goodbye to all your worries, this won't happen
anymore.
Just look and search it up online,
you'll see that many places can take away your trash
if you go to a recycling drive
Oh, it's time to recycle bigger things,
Like your ancient washing machine
We won't take a break till our Earth is clean
Keep thinking green
Keep thinking green
big appliances
Have certain requirements
Check all of the regulations
Before you go recycle them
This includes items such as freezers and stoves
Furnaces and heaters, the machines that warm your
home
You can arrange for furniture
To be picked up at your house
You don't have to worry it'll be recycled somewhere
else

Oh, it's time to recycle bigger things,
Like your ancient washing machine
We won't take a break till our Earth is
clean

To recycle a computer
Go to a local retailer
That has a computer program
I swear it's pretty easy fam
do you have an old TV?
Call your waste disposal team
Go check out your city's website
Then you'll gain some new insight

Oh, it's time to recycle bigger things,
Like your ancient washing machine
We won't take a break till our Earth is
clean
Keep thinking green
Keep thinking green

Many people don't know that
Things that don't fit in a can
Still can be recycled too
This is what you have to do



Water pollution
Has an easy solution
Student education
More experimentation

Population's growing
Trash is overflowing
It's ruining the place we call home

The sea-life won't last for long
If we keep doing what is wrong
Recycle and we can save their home

Water pollution
Has an easy solution
Student education
More experimentation

Recycling saves the sea and all
The sea-life and the humans so
Recycle and we can save our home

These actions help the ocean too
But all of it comes down to you
Do your part to save out home

Water pollution
Has an easy solution
Student education
More experimentation

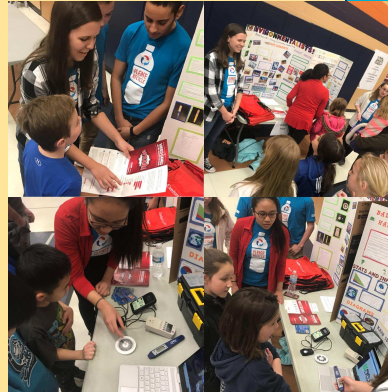
Garbage is condensing
Water is flowing
We can save our planet for all



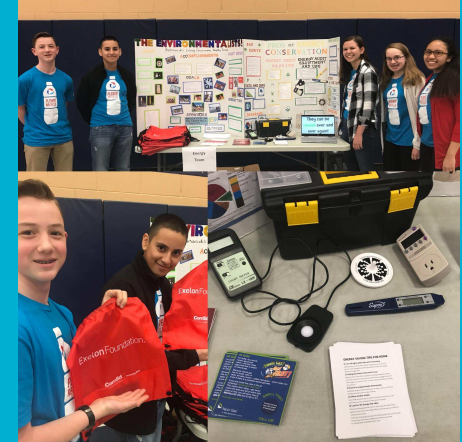
Getting Involved in the Community

The Environmentalist Team has been invited and reached out to several events and programs at other schools and around the community to help clean up the Earth and to help spread awareness. Some of these include:

- Southbury Elementary STEM fair
- Bernie's Book Bank Drive and Volunteer Session
- Keep America Beautiful Recycle Bowl
- Ward 9 Clean Out and Recycle Drive
- SHEDD the Straw Campaign with SHEDD Aquarium
- River Cleanup with Friends of the Fox River
- Beach Cleanup and Prairie Restoration Project with Great Lakes Action Committee
- Monarch Butterfly Garden and habitat restoration



Goal 3: Educate the community about environmental issues so they know how and why to conserve energy at home and school.



Check out more information, videos and achievements on our blog:

<https://besome1whoconserveseenergy.wordpress.com/>

Our Instagram and Twitter Pages: TRUSCIENCECLASS

Getting Involved in the Community

The Environmentalist Team is working on several projects now:

- Aurora-Ward 9 Annual “Clean-Up The Streets” Day
- District Administration Building Energy Audit
- SD308 IT Department Community Recycling Event
- Skip the Straw Campaign at local restaurants
- Lakewood Valley Clubhouse Recycling and Community Newsletter
- Working with Fox Valley Park District to get recycling bins in all parks
- SHEDD the Straw Campaign with SHEDD Aquarium
- WE Walk for Water Campaign with Oswego High School promotes water conservation & raises funds for global access to clean water.

Goal 3: Educate the community about environmental issues so they know how and why to conserve energy at home and school.



Project Summary

The Environmentalist Team at Bednarcik Junior High leads the recycling and energy conservation projects that go on in the school. The team consists of 6th, 7th, and 8th graders that all contributed to our success this year. This year, the team has tried to get more involved in the school and the community, encouraging people to save energy and to recycle materials in order to save the Earth. Some of the students on the team are involved with other clubs and have used this club as a platform in order to help spread the environmental benefits that come with recycling and saving energy. We know the current 7th and 6th graders on the team will carry on the importance of this team and will continue to achieve new goals and we hope the 8th graders moving on to high school will spread their knowledge and help start a recycling and energy conservation team there.

By using different programs such as PepsiCo Recycling Program, NEED and their affiliates, Terracycle, the National Geographic GeoChallenge, the Recycle to Rebuild Competition, EarthEcho live field trip experiences and more, the team has been able to have new opportunities, experiences, and interactions that have helped us grow as leaders and has further instilled in us the desire to improve our environment. With each new challenge comes a new excitement for recycling and energy conservation.

It feels very accomplishing to be able to teach adults and other children new information and tips that they could also help spread. Our team is very proud of all we have accomplished this year! From monthly competitions to all of the different parts that went into our annual Energy Fair, we continue to hope that we have not only achieved what we set out to do, but also more.

“In the past three years, NEED has helped our team learn and succeed by learning about energy conservation. We have been participating in programs through NEED and ESP which has helped us gain knowledge I hope the team can continue to excel and apply information learned to the future to assist others.”

- Trisha J. Shukla

“NEED has really inspired our team to keep up with the environmental projects we are doing. We are able to continue educating our school about the steps that we can take to make our community a better place.”

-Saba Ahmed



“From all of my experiences with the NEED program, I have learned so much more about energy conservation and I am happy that I can apply the information I have learned to my future and to assist others.”

-Manya Srivastava

The Environmentalists would like to thank all of our sponsors, especially the NEED and ESP programs for allowing us to participate in such wonderful learning experiences. We are so grateful for how these programs have allowed us to succeed and inspire us to improve the environment of our world.

