



WEST WARWICK HIGH SCHOOL

PASSION TO ACTION



WEST WARWICK HIGH SCHOOL: PASSION TO ACTION

SCHOOL NAME: WEST WARWICK HIGH SCHOOL

Advisor: Mr. Mark Grover

PROJECT TITLE: TURNING PASSION INTO ACTION

Student Leader-Meghan Janicki



- ▶ **Our NEED Club this year was composed of only two members who sought to complete contest based projects which will greatly improve the community near and far. We will continue to work on the ideas presented in these projects to generate even more change. When very few students were interested in being part of our club, we did waste our passion; we used our passion to follow through on our goals, for there is nothing we cannot change. The NEED program has allowed us to realize the power two people, who spent 900 hours on their goals, can have on the community.**

TREX PLASTIC COMPETITION

- ▶ The TRES Plastic competition was something that we dedicated a large amount of our time to. We believe in the cause of it, not only in terms of saving the environment bag by bag, but by encouraging our school community to recycle the things that they would normally throw away.

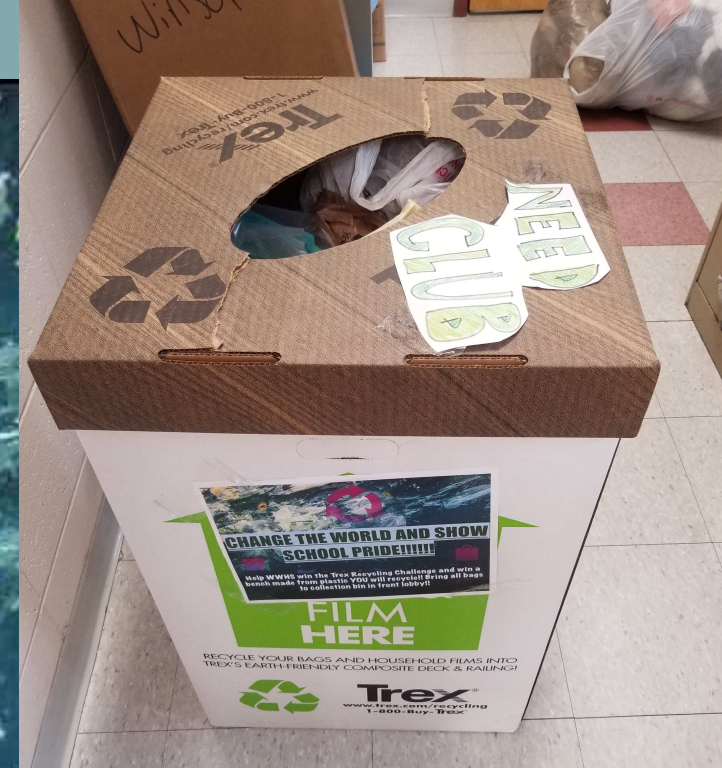
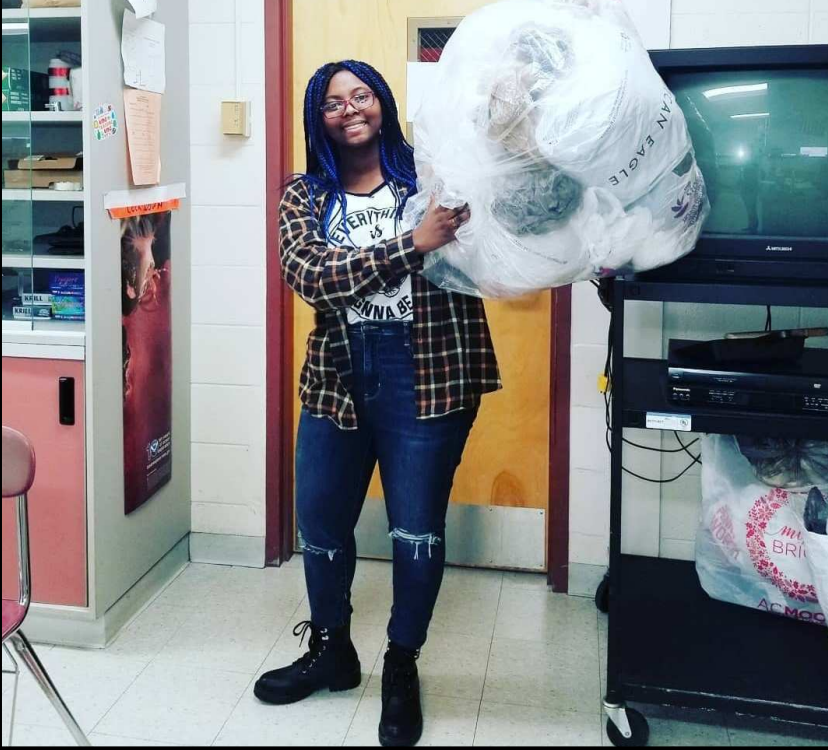
GOAL #1: Our main goal through the collection and recycling of plastic bags in our school was to educate our students on why they should be recycling and encourage them to make it a habit in their daily lives. The passion for recycling is matched by laziness in today's society, and our goal was to maximize recycling and show students that it does not take much work to make a difference.

Tasks: Collecting the plastic bags was a very time consuming and difficult task, starting from constructing collection boxes to advertising the contest. We referred to many websites and studies to present the idea of recycling bags to the students of our school in the funnest way possible. With this in mind, we were able to have a great outcome by collecting over 500 lbs of plastic. The count of bags took place every month from September to April.

Student Leadership: From the very start to now, the collection of plastic bags has been completely student led. From coming up with the idea, to obtaining the collection bins, to collecting and weighing the plastic. The registration for the project was done by us to generate the most possible interest.

Resources: Educational websites, experience and evaluation, and TRES educational tools.

Evaluation: Though we are unaware of the contest results, we fulfilled our goal of changing the opinions of others. There was nothing like seeing your English teacher walk into school with a huge bag filled with plastic and congratulate you for initiating such a meaningful practice in a school environment. Overall, making others in the school aware of the plastic problem, and how it can be solved, as they leave the school environment matters more than anything else. Independent or correlated to the TRES contest- we will continue to engage plastic recycling in school for years to come, and after that hopefully others will follow. The next page shows our poster that was sent out from the school on web pages and contest photos.



CHANGE THE WORLD AND SHOW SCHOOL PRIDE!!!!!!

Help WWHS win the Trex Recycling Challenge and win a bench made from plastic YOU will recycle!! Bring all bags to collection bin in front lobby!!

JASON CHALLENGE

GOAL: The JASON Challenge gave us an opportunity to compete with other schools about our ideas for how STEAM can be used to improve infrastructure. Our goal was to win.

Tasks: The first thing we did was research. Then, we narrowed down our ideas and decided we wanted to submit a video instead of the poster option. Gathering footage came next. After all the footage was gathered, we had to edit the video, which was the most challenging part.

Resources: jason.org. need.org. [imovie](http://imovie.com).

Student Leadership: Our group decided that we wanted to enter this competition. We decided how we wanted to enter and planned what footage we needed and how we would compose the two minute video.

Evaluation: Though we did not meet our goal of winning the competition, we experienced the fun of creating a video, working together, and being creative with science practices to constitute results. In the future, we will enter similar contests. The video is what we submitted for video portion.



SAMSUNG SOLVE FOR TOMORROW CHALLENGE

GOAL: Compete with millions of schools around the country by presenting our idea for an Environmental App that can change the mindset of people.

Tasks: The first part was deciding what wanted to submit. Then, we followed the guidelines to submission while experimenting with tools to help code our app. When we found something that worked we used it to determine the layout of the app. After the first phase we narrowed our ideas and competed in the final state contest, after winning the state finalist. Attached is examples of our submission.

Resources: Educational websites, experience and evaluation, and [NEED.org](https://www.need.org/) educational tools, plastics research, xCode, AppInventor

Student Leadership: We wrote and submitted both applications, completed all code, idea planning and conferences. Most importantly, the App idea came from our group member.

Evaluation: Being a state finalist proved to us that our idea mattered and we had an opportunity to compete further. To get a better understanding of the environmental needs we held conferences with the environmental leaders in the state and with places like the zoo, and attended coding application workshops. Though we did not make it to the national stage we will continue developing.

Rhode Island

Mt. Hope High School
Providence Career
& Technical Academy
East Greenwich High School
West Warwick High School



SANSUNG CHALLENGE SUBMISSION



Community Impact:

Â 3. What is the anticipated improvement to your local community?

(Abbreviated Example: Developing a greywater collection program to this problem will help relieve daily stress and financial difficulties faced by the community as a whole. We anticipate that as a result of our activity, we can save \$X in the experiment and show an overall community impact of helping Y (# of) families. We anticipate that these families will save an average of \$Z as a result of our system. This plan can save money while increasing the availability of our most precious natural resource.) *

This app improves communities, by connecting under a goal of living in a healthy environment. Students are working with Trex plastic recycling, and the app shows the effects of plastic through quizzes and data. This provides opportunity for the planet to participate and Communication and extremists collaborating on ways to improve our world. Places of high energy usage like the zoo have agreed to work with us to apply renewable energy. PEC will have data of trash to energy. Users are influenced by seeing this, and money is saved. The first offshore wind farm and the EPA has conferenced with us and is thrilled for this technology to help citizens understand the problems and solutions, which are improving their daily life. PEC reveals chief aspects of energy society must understand. Â Users would be influenced by seeing their action change the world. People Environmentally Connected app boosts the environmental morale globally, which is the change society and the planet need.

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TEXAS INSTRUMENTS- TI CHALLENGE

GOAL: Use computer science practices to generate a program that will impact the environment and connect the community to our work.

Tasks: The first thing was to decide what the goal of our program was. To connect it to the Trec contest and the global plastic crisis- it would tell the viewer how many organisms the amount of plastic that they wasted would kill. To accomplish this, we used visual studio pro coding application and coded in two different languages, in addition to the programming on the TI calculators. The application seen at the bottom right sums our goals and was the submission to TI.

Resources: MacOS, Visual Studio Pro, TI Nspire CX

Student Leadership The drive to enter the contest, generate a obtainable and origional goal, and accomplish the expectations were all derived by us. Taking the step to learn the programming languages and have solid mathematic reasoning behind the program is a skill taught by ourselves and is something we need for the future.

Evaluation: After completing the contest receltly, we have set our code for anyone who is curious to use. The amazement by people who use it and realize what the plastic waste is truly impacting is critical to obtain tehir attention. During the summer we will learn more code and generate something better.

```
function start(){
    var num_bags = readInt("Number of plastic bags: ");
    var weight_bags = (num_bags*12);
    println("Weight of bags: " + weight_bags);
    var plastic_film = readInt("Amount of plastic film: ");
    var weight_film = (plastic_film*0.453);
    println("Weight of film: " + weight_film);
    var total_weight = (weight_bags + weight_film);
    println("Total weight: " + total_weight);
    var total_organisms1 = (total_weight*0.5);
    var total_organisms2 = (total_weight*0.35);
    if(total_weight > 14){
        println("Total Organisms: " + total_organisms1);
    }else{
        println("Total Organisms: " + total_organisms2);
    }
}
```

The world is swimming in waste. By 2038 the only major waste center in Rhode Island, and the biggest in New England will be obsolete. Our program will determine how much food is wasted at our school, and how much space it would then take up in the landfill. In terms of plastic waste, we have created a program that calculates how many organisms are estimated to be killed at fault of the wasted plastic ending up in the ocean. By creating these programs, our community will see and change how products are used, to become more environmentally aware. If we do not use this opportunity to generate change of how we deal with our waste, the problem will never end. By utilizing the technology of Texas Instruments, these programs will be created and tested. From the TI devices, people will be able to calculate for themselves and realize how detrimental their daily actions are to our environment. Our solution will take into account the food wasted every day in homes, and in the school cafeteria directly. From there, the plastic waste from the food will be calculated to determine how many organisms have been killed as result. To show others the power of zero-waste systems our program will calculate the energy that can be produced from the waste product including wastewater, and food that has the ability to power systems. In our program lies not only STEM principles at practice, but the power to change the minds and lives of people of the world, for stagnation is not a solution.

STUDENT LEAD NEED WORKSHOP

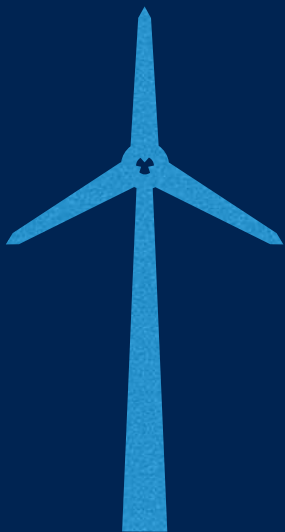
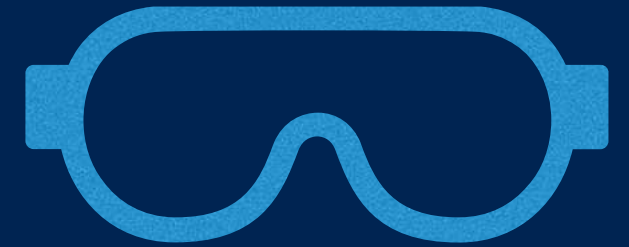
GOAL : Educate future NEED advisors and teachers of energy content what the goal of the NEED Program is and how crucial it is that kids receives energy education.

Student Leadership: We designed, practiced, and researched the stations: added the teachers by guiding them in the right direction and providing personal experience. Also, we presented our plans for the year to give them a real look into how amazing this program is.

Tasks: Create stations for the teachers and work with them by explaining why they matter, their applications in the classroom and the technicality behind them: in addition to our experience participating in NEED for 3 years.

Evaluation: Not only was this a successful showing of the NEED program, but the ability it gives to students to become leaders as well. Hearing the teachers from across the state discuss our success was amazing because it gives us confidence that they wil join us for years to come. The conference is predicted to happen again.

Resources: Educational websites, experience and evaluation, and NEED.org educational tools.



HYDROPONIC PLANT AT WWHS

GOAL: Become educated about the hydroponic plant producing leafy greens at West Warwick High School and conduct audits to calculate the gain and loss in terms of finance, energy, the use of product, and product distribution.

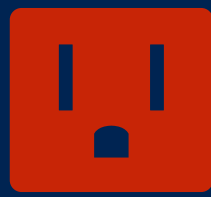
Tasks: Before any work could be done we needed to be certified to use the plant. This means that we are capable of growing and maintaining the product and have knowledge of how food is produced. Next, we needed to determine a control timeline which would be where we make calculations from. Though this timeline has not yet ended and there is not yet concrete data, we have learned about the process and the energy which it saves.

Resources: Fellow teachers, Science Department Head, School Administrators, Townwide Officials, Research and Experimental Data

Student Leadership: We used and improved our connections skills by driving the resources listed above together to adhere to our goal. We spent the time deriving our experimental goals, procedures and what data we need to collect to make our conclusions successfully.

Evaluation: Though our timeframe has not yet ended, our data so far supports the conclusion that this practice is efficient and beneficial to the town and the students. As the processes and products grow we will continue to monitor its use and examine the sides of economics, product distribution and most importantly energy efficiency associated with it.





COMMUNICATION AND OUTREACH



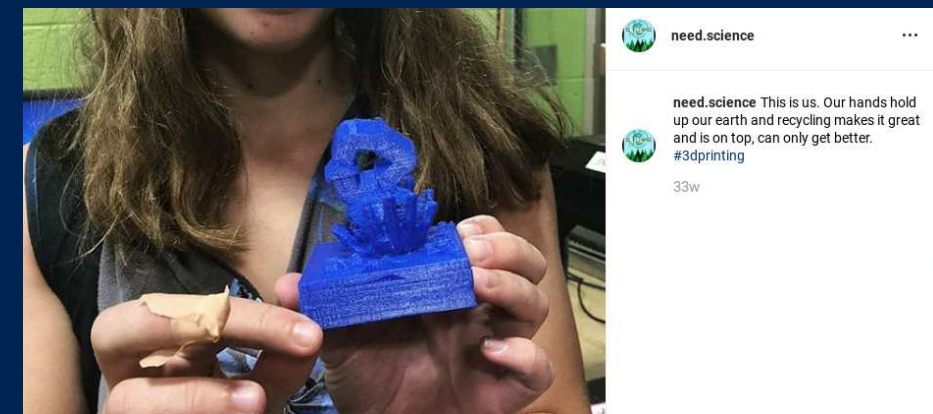
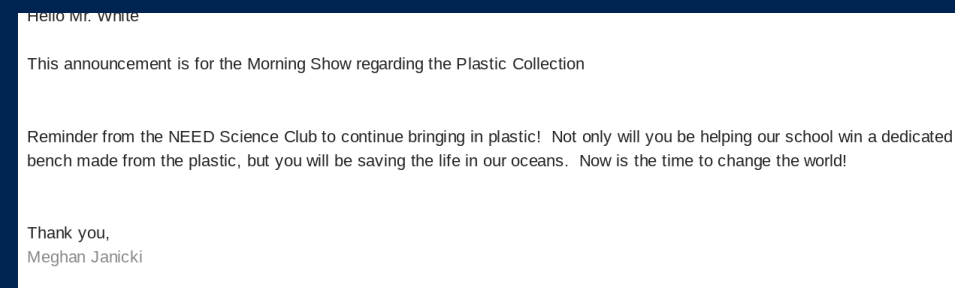
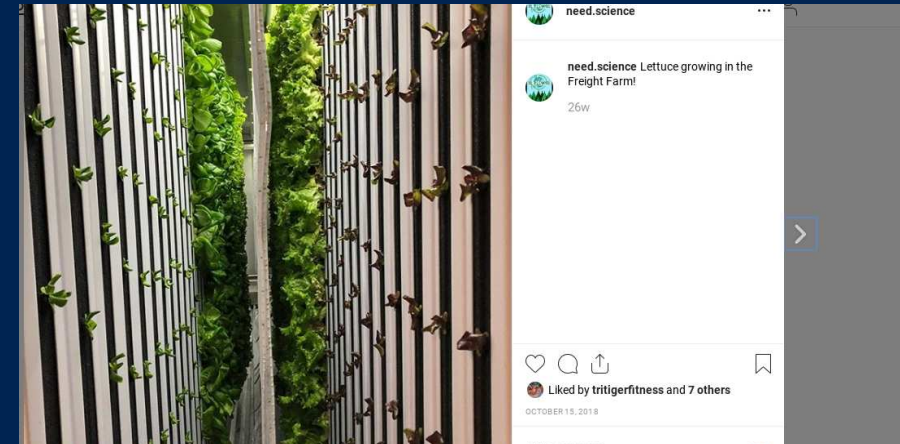
GOAL : Reach as many people in the community outside and inside school.

Tasks: Create and maintain social media pages, talk about present issues with people, utilize idea spreading tools provided such as the WWHS Morning Show, collaborate with the Media Broadcasting Club to have video footage and interviews recorded. To draw greater attention to those who are interested; fundraisers are presented.

Resources: Educational websites, experience and evaluation, and NEED.org educational tools, School-wide Groups- Broadcasting Club, The Morning Show, and the Technology Department.

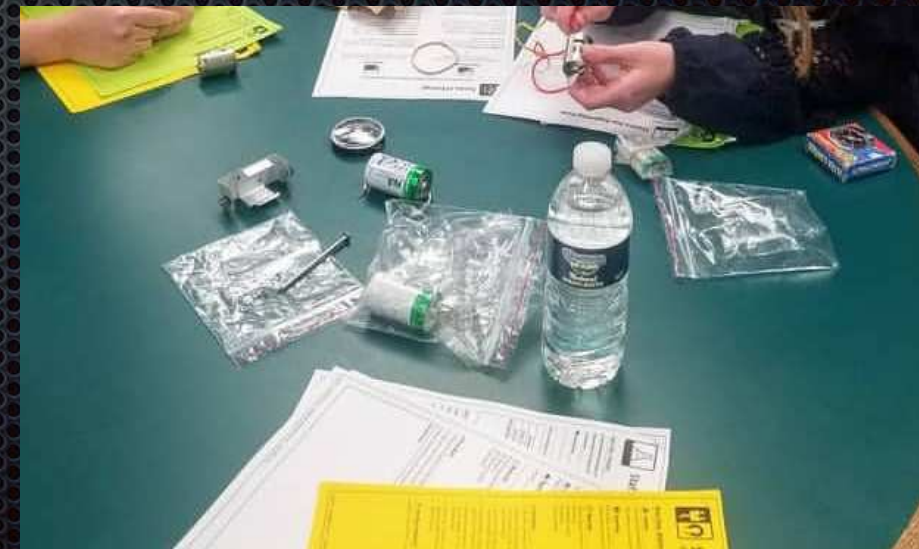
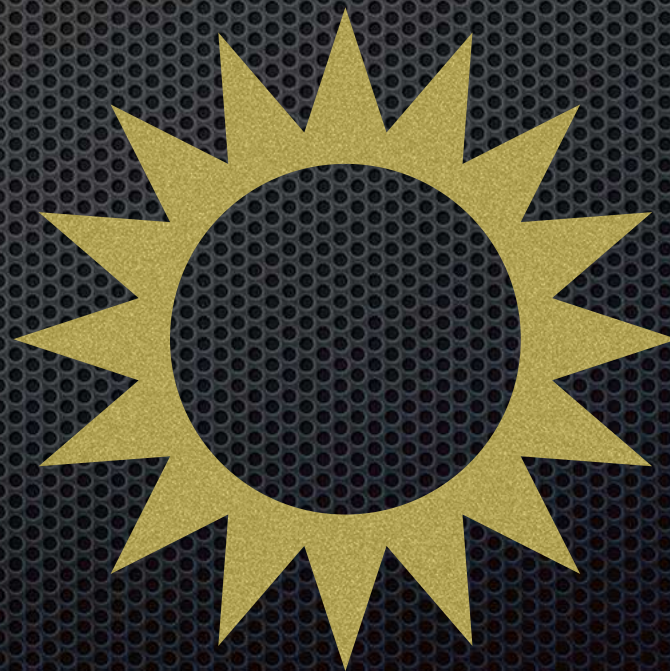
Student Leadership: We decide what goals we want to meet and what we will do to meet them. The goal is always to benefit the community and we take it upon ourselves to tell them what we are doing, because when they do not know they can not be bettered. We decide how we want our community to act.

Evaluation: Frankly, I am not a fan of social media, in terms of maintaining a personal account, but the possibilities are endless in terms of community impact and the spread of ideas. Using these available tools to better those around us is a skill which will last a lifetime. Letting others know and in some cases help us meet our goals, financially or logistically, is what NEED is all about. The only thing that will happen in the years to come is more involvement from those around us.



FUTURE PLANS AND GOALS

1. **RE-ENTER ALL CONTESTS**
2. **INVOLVE THE ENTIRE SCHOOL DISTRICT**
3. **EXPAND THE TREX COMPETITION TO THE ENTIRE TOWN**
4. **GENERATE LEGISLATIVE CHANGE**
5. **GRASP THE POWER OF CODING KNOWLEDGE**
6. **WORK WITH OTHER NEED PROGRAMS**
7. **HAVE A BIGGER GROUP**
8. **RENOVATE OUR COURTYARD**
9. **TAKE MORE DATA AND SHARE IT**
10. **HAVE MORE MEANINGFUL CONVERSATIONS WITH OTHERS
ABOUT THE PRESSING ISSUES OUR NEED CLUB EXAMINES**





Thank you NEED
Program! This year we
were inspired again and
will continue to improve
whatever we can in this
world.



TOTAL HOURS = 912