



Southern Guilford High School

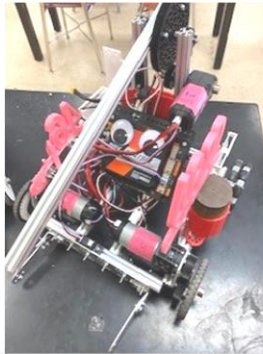
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Southern Guilford Storm Energy Wise Team Expansion of the Universe (well the teams!)

Mark Case, Sr. Advisor

Robotics



When your school demographics changes, you need to change with it. Our school has had an increase of first generation non-native students from many countries. One goal was to give them a safe place to feel welcome



Robotics and Recycling is a universal language to help bring everyone together

Recycling

Goal # 1 - Let the Wind Blow

School: Southern Guilford High ENERGY CONTENT ACTIVITIES

The goal was to create a competition to create the most electricity from wind. Can we beat what was done last year?

STUDENT LEADERSHIP

Students from the 2023 team visited each earth science and physical science class to lead the Wind Can Do Work NEED activity. We created a Donors Choose grant to purchase the magnets and wire we would need.

RESOURCES

NEED Wind Can Do Work and Wind Can Create Electricity plans, magnets, magnetic wire, toilet paper tubes and recycled water bottles and paper.

EVALUATION

Nine classes participated in the challenge. Students formed teams to create windmills to either generate power OR appeal to the aesthetics.

Students found it was MUCH more difficult to create electricity than to save it!

Nearly 300 students were involved this year.





Goal # 2 - Sponsor Energy Audits
School: Southern Guilford High

ENERGY CONTENT ACTIVITIES

We used the energy audit kits and taught the PTA how to use them and collect data. Kill-A-Watt meters were loaned to students and parents for two days at a time. As each meter was returned, the data was transferred to a master file.

STUDENT LEADERSHIP

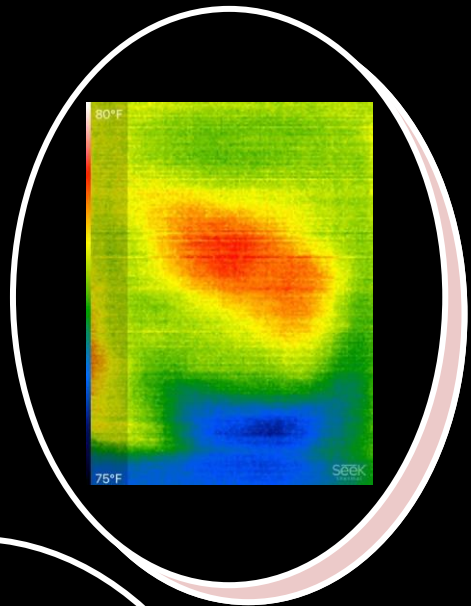
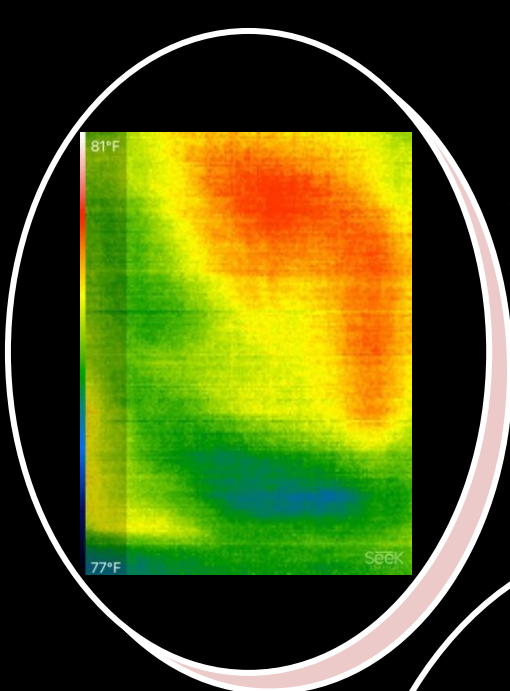
After collecting the data we met with the principal about our energy use.

RESOURCES

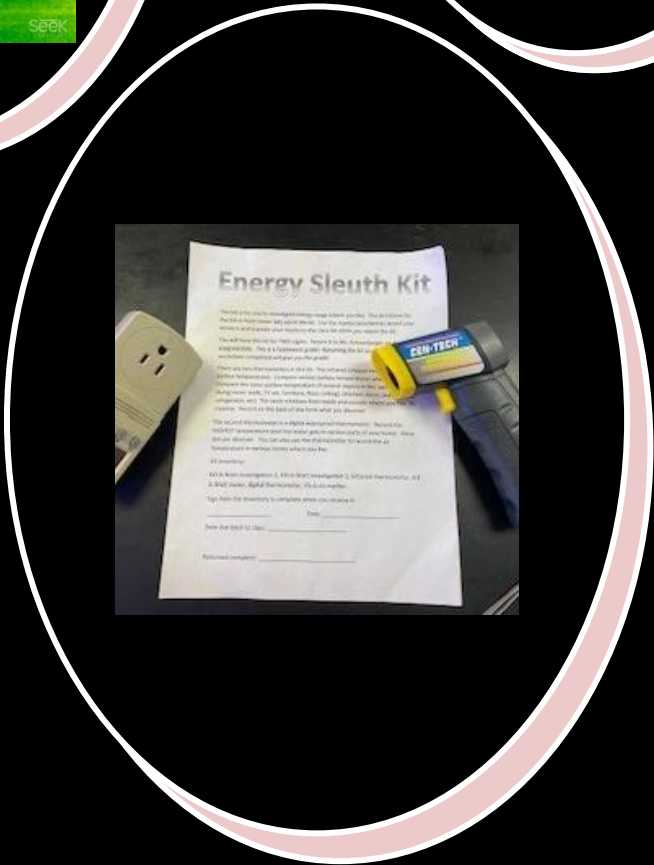
NEED Blueprint for Success, NEED Secondary Energy Infobook, worksheets and Kill-A-Watt meters

EVALUATION

Homes are not efficient! The thermal cameras showed EVERY SINGLE HOUSE leaked heat!
Our program went out to 77 families so far this year.



New this year!
With the money we made, we bought a thermal camera to attach to phones. We sent them home with the energy kits for people to see where heat is leaking their homes!



Goal # 3 - Recycling

School: Southern Guilford High

ENERGY CONTENT ACTIVITIES

We use the Pepsi Recycling program to keep track of our energy savings

STUDENT LEADERSHIP

We went to science classrooms to recruit students to report their recycling at home on the Pepsi Recycle website.

RESOURCES

PepsiRecycling.com

EVALUATION

We placed second place in the nation with over 175,000 POUNDS collected.



A fully loaded Boeing 777 weighs 175,000 pounds!



If everything we saved was string, we could go around the earth TWICE!



Saved enough energy to power our next door middle school for two months!

Goal # 4 - Robotics

School: Southern Guilford High

ENERGY CONTENT ACTIVITIES

Energy education and community outreach

STUDENT LEADERSHIP

Our robotics program GREW! We had three teams this year: an all girls team, mixed boys and girls AND a team of first generation to US students.

RESOURCES

NEED Blueprint for success, NEED Secondary Energy Infobook, FTC Robotics handbook, PITSCO.COM, 3D printers

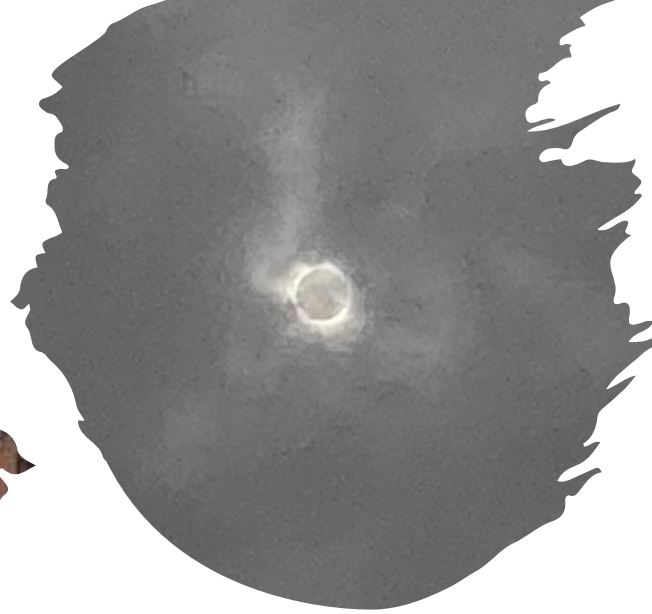
EVALUATION

All three teams competed three times. The all girl team made it to state (but did not do well...☹)

Our new adventure was the first generation students from other countries. We found the robotics program gave them a common goal and they quickly learned more about America that way

Between the six events, our groups were in front of over 5000 people!





- **Goal # 5 - Outreach- Eclipse Viewing**

- **School: Southern Guilford High**

- **ENERGY CONTENT ACTIVITIES**

- Energy Education

- **STUDENT LEADERSHIP**

- Our team went VERY low tech on putting together an eclipse viewing party. To get enough glasses for our school, well, we didn't have anywhere near enough money. So, we borrowed Mr. Case's solar telescope filter and made pinhole cameras. We set up viewing party slots in 15 minute sections on the tennis court.

- **RESOURCES**

- Solar filter, card stock and push pin

- **EVALUATION**

- Over 300 high school students and nearly 75 parents came to the viewing party. We explained how the astronauts on the ISS were doing the same exact party as us, very low tech!

Reflecting Upon Success

- It was real hard.
- Mr. Case made us become leaders. We had no idea how hard it was to lead kids.
- We saved a lot of energy
- We taught hundreds of people of people
 - We reached thousands of people
- We gave a safe place for students new to the USA.
- We learned it can be fun!

