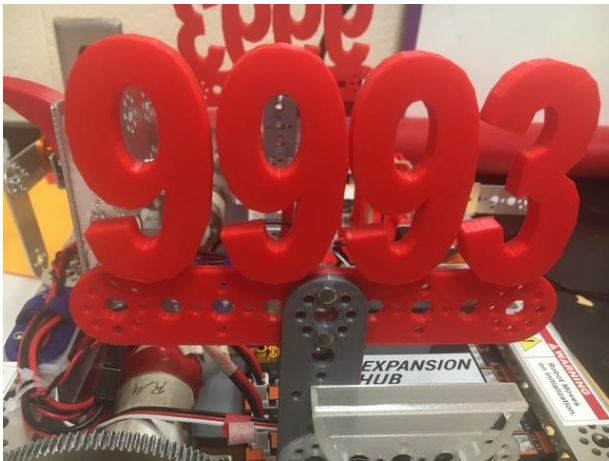




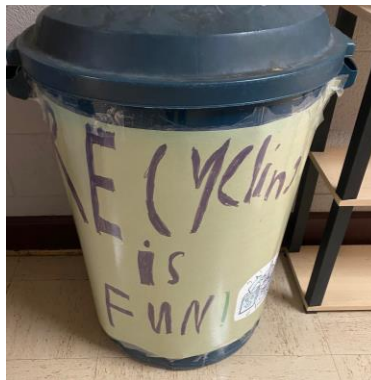
Energy Demand is HIGH for the Storm

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.



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

Recycling

Goal # 1 - 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

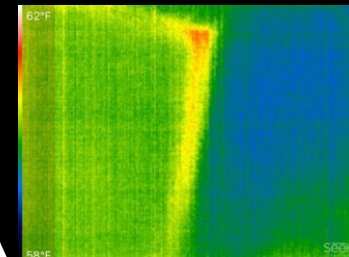
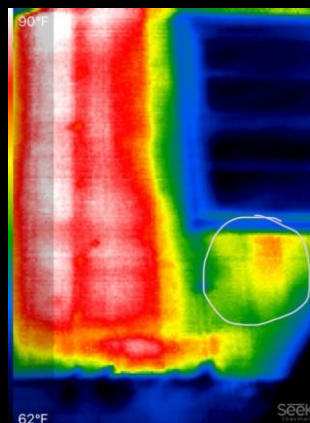
After collecting the data we met with the principal about our energy use.

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 97 families so far this year.



We used some of our earnings from contests to add an Android thermal image camera to our check out kits. We now have two iPhone and one Android thermal imaging cameras.



Goal # 2 - 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 for the second year in a row with over 155,000 POUNDS collected.

Over 1200 people all year participated. (36,000 hours?)

08/01/2024 - 04/11/2025



You have recycled materials weighing more than a HUMPHACK WHALE!

[Learn More](#)



By recycling you have saved as much energy as it would have taken to power an average sized elementary school for a full year. That's 625,959 kilowatt hours!

[Learn More](#)



By recycling you have avoided the production of greenhouse gases equivalent to driving a vehicle for 230,000 miles. That's like driving to the moon!

[Learn More](#)



By recycling you have avoided the production of greenhouse gases that otherwise could have been offset by trees within 100 acres of U.S.



You have recycled an amount of paper that could have been derived from 10 acres of pine forest!

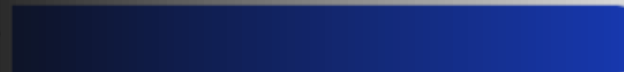
[Learn More](#)



By recycling instead of landfilling, you have saved an estimated 17,393 cubic feet of landfill space.

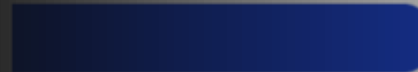
[Learn More](#)

Nov



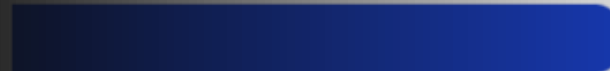
16,351 lbs

Dec



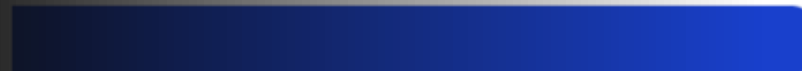
10,841 lbs

Jan



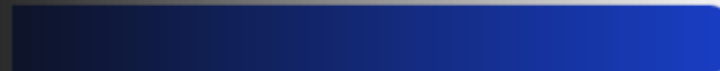
15,778 lbs

Feb



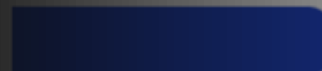
20,886 lbs

Mar



18,750 lbs

Apr



8,351 lbs

Goal # 3 - Energy Outreach
School: Southern Guilford High

ENERGY CONTENT ACTIVITIES

Energy education and community outreach Energy Fair

STUDENT LEADERSHIP

Our robotics program.



RESOURCES

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

EVALUATION

Southern Guilford was invited to talk about energy by demonstrating our robots at the Greensboro Fun Fourth. Over 20,000 people flooded the streets and came by to try their hand at driving the robot after doing one of the energy activities.

Goal # 4 - Energy Outreach

School: Southern Guilford High

ENERGY CONTENT ACTIVITIES

Energy education and community outreach Energy Fair

STUDENT LEADERSHIP

Our robotics program.

RESOURCES

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

EVALUATION

Southern Guilford held a fall festival and the robotics team featured an energy fair where we taught about kinetic and potential energy transfer, thermal energy and more. After the public finished one station, the got to race the robots! Over 275 people came to the fair. We wore the battery out of three robots!





Goal # 5 - Robotics (StormBots in pink!)

School: Southern Guilford High

ENERGY CONTENT ACTIVITIES

Energy education and community outreach

STUDENT LEADERSHIP

Our all girl team reached out to the other all girl teams in the state. North Carolina had nine all girl teams this year. We had to get tighter for a group picture. Of course, the conversation went to “how to keep the robot running and the battery not dying quickly.” The StormBots showed the trickle charger that uses 1/10 the electricity to charge the batteries.

RESOURCES

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

EVALUATION

Two teams got on Amazon immediately and ordered the trickle charger for their robots. There were over 1200 people in attendance for the competition to watch the 9 all girl teams in action that day.



Goal # 6 - Teaching Teachers

School: Southern Guilford High

ENERGY CONTENT ACTIVITIES

Energy education and community outreach

STUDENT LEADERSHIP

The robotics team was invited to the DAY OF AI at the NC Department of Instruction. They were one of the featured high school programs that talked about STEM. Energy is used in every day of our lives, even robotics. The students gave classes in driving the robot and caught the attention of Sal Khan, founder of Khan Academy.

RESOURCES

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

EVALUATION

The conference had over 2000 attending that took time to come through the expo center. The kids were busy most of the day explaining how energy is used from charging our phones to running robots.



Presenting at
Honda Jet



Reviewing our
thermal images

Reflecting Upon Success

- We are tired and we are not done. If we converted everything to hours, we had 41,455 contact hours this year. Over 27,000 people reached!
- It is helpful to have more people doing the work. We got better at public speaking and writing.
 - We found out HONDA JET is hiring robot drivers!