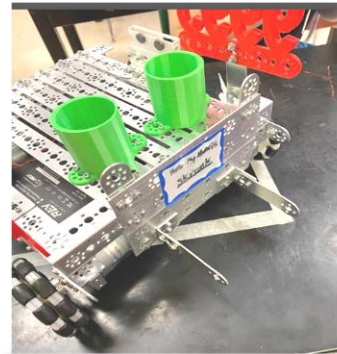




# Southern Guilford Storm Energy Wise Team “R & R Does Not Mean Rest and Relaxation”

Mark Case, Sr. Advisor

## Robotics



Our energy wise team is also our robotics team. We use the proceeds we make from recycling to fund our robotics competition. When you have all girls come out for the interest meeting, what do you do?

## Recruitment



## Recycling

You show everyone what girl power is all about!

## 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.

### STUDENT LEADERSHIP

Students from the 2022 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. We involved the English department to have students write our legislators to change the laws to allow more windmills in North Carolina

### 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

Twelve classes for a total 376 students participated. Almost every group was able to create electricity. We had two categories to win: amount of electricity and aesthetics. Every team took extra time and care to create a work of art windmill. We sent a letter to our state representative asking to look into changing the laws to allow more wind power in our state.



## 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

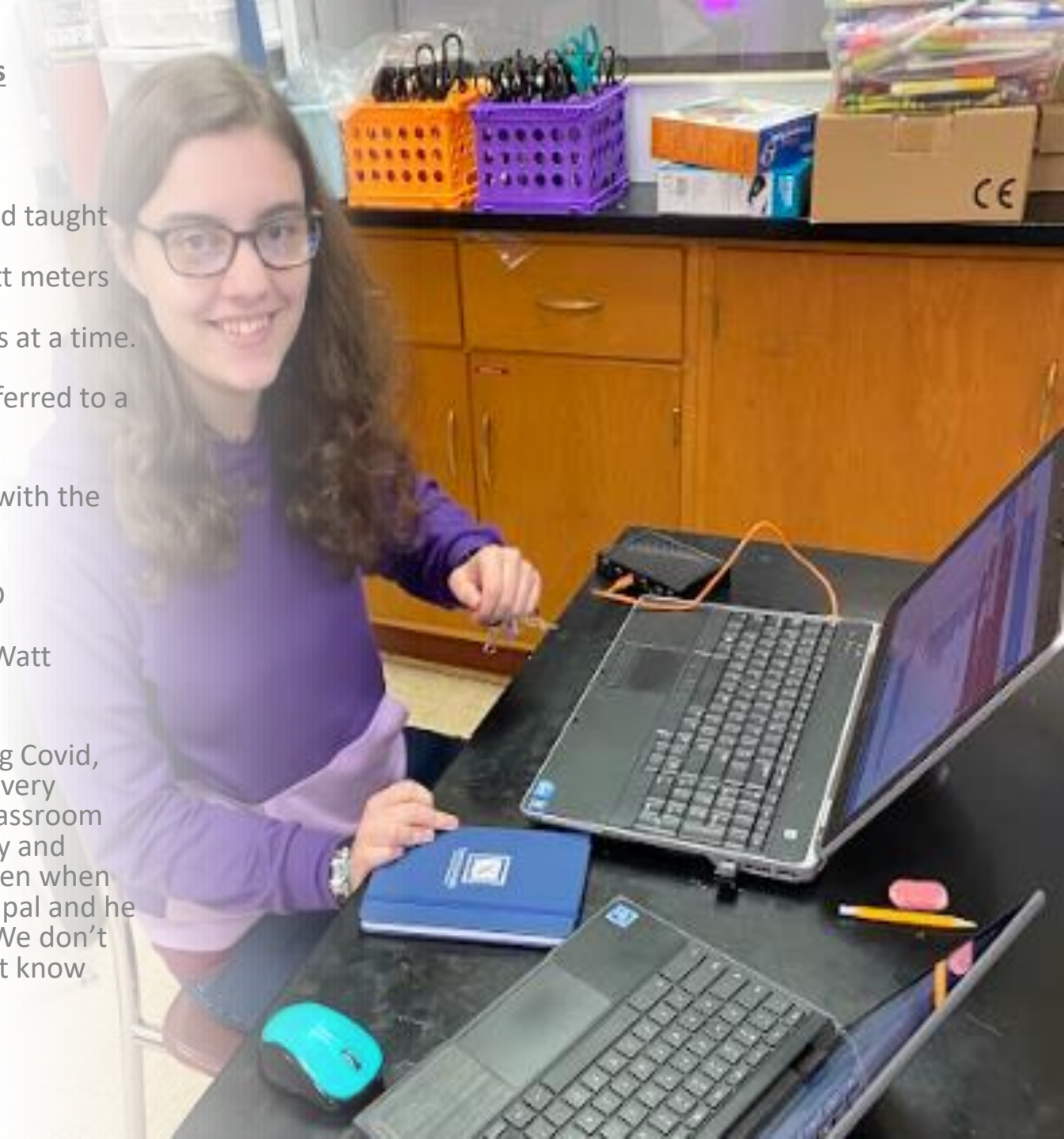
After collecting the data we met with the principal about our energy use.

### RESOURCES

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

### EVALUATION

Wow, do we waste energy. During Covid, our school went to 1:1 devices. Every student has a computer. Every classroom has charging stations. We got lazy and everything seems to be left on even when not in use. We showed the principal and he was shocked what we leave on. We don't have a solution yet. We just don't know where to start.



## 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 750,000 items collected.

## **SUMMARY**

Within the time period selected, your school has recycled...

| Weight   | Energy Saved   | Greenhouse Gas Emissions Avoided   | Trees Saved  |
|--|--|--|--|
|  |  |    |  |
| Weight equivalent to that of a humpback whale.                                     | Enough energy to power an average-sized elementary school for an entire year.      | An amount of greenhouse gases (GHG) that otherwise could have been offset by trees within 100 acres of U.S. forestland over the course of a full year. | Enough paper to avoid converting an acre of oak forest into paper.                   |

## Goal # 4 - Robotics

School: Southern Guilford High

### ENERGY CONTENT ACTIVITIES

Energy education and community outreach

### STUDENT LEADERSHIP

Our robotics team is an all female team. As we go to competitions, we see how much energy is wasted: Lights, doors open, chargers left on: everywhere we look, energy is wasted. We use our team location to help educate other teams how to save energy.

### RESOURCES

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

### EVALUATION

The StormBots competed in two qualifiers this year. We did not make it to state playoffs. However, our school hosted the state playoffs for First Lego League and First Tech Challenge. We were able to have a booth showing teams how we waste energy and encourage them to make a change. We reached over 3000 people with all the events.





- **Goal # 5 - Spread the Word**
- **School: Southern Guilford High**
- **ENERGY CONTENT ACTIVITIES**
  - Energy Education
- **STUDENT LEADERSHIP**
- The StormBots and Energy Wise Team were invited to the Hour of Code at the North Carolina Department of Instruction because we are an all female team. We went to show what an all female team can accomplish with engineering and saving energy
  - **RESOURCES**
    - Activity Bus and time
  - **EVALUATION**
    - We were the only all female team at the DPI Hour of Code. Dr. Catherine Truitt is the State Superintendent of Schools. Since we were the only all female team at the hour of code, she made a special stop to find out what we were doing with Robotics and Recycling. She awarded our program a \$3000 grant to fund our robotics team for the year!



- **Goal # 6 - Outreach**
- **School: Southern Guilford High**
- **ENERGY CONTENT ACTIVITIES**
  - Energy Education

- **STUDENT LEADERSHIP**

- Our energy team brought the robot to three local elementary schools this year. It was the hook we used to get kids to talk about energy and recycling. Our robot is made from spare parts.

- **RESOURCES**

- Activity Bus, FTC Robotics competition field and time

- **EVALUATION**

- We reached 844 elementary kids with our program! We wanted them to know you don't need a full kit to make something work. It was a success. Several kids asked to get robotics into their school. We were able to find orphaned kits and supplies and helped them get going.

## Reflecting Upon Success

- Our group grew throughout the year. As more girls found out we were an all female robotics and energy team, more wanted to join.
- We were featured on three different television stations
- We've reached over 5000 people directly and according to the TV, over 250,000 people!
- We may not have saved energy directly, but we sure let a lot of people know!

