

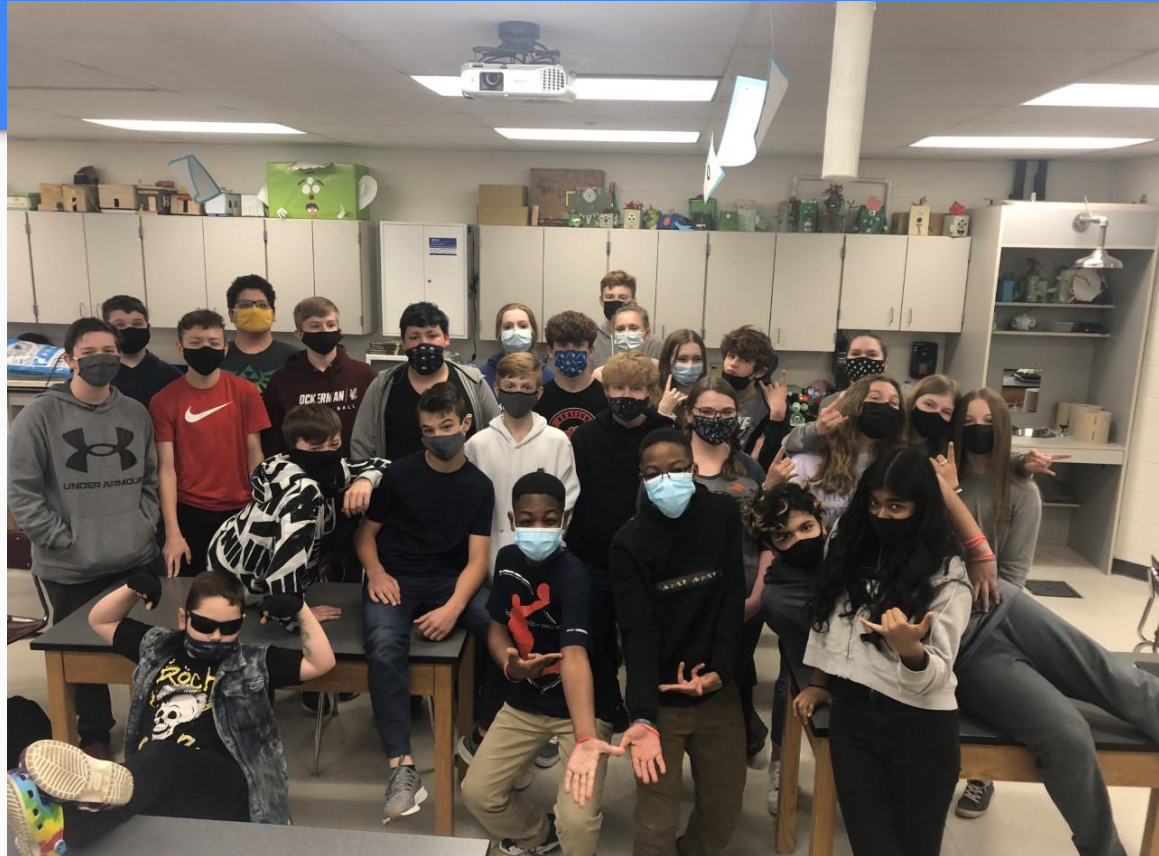
# Ockerman Middle School

## Science Alliance-Energy Addition

**Project Title: The Energy Extravaganza**

**Advisor: Jennifer Davis**

In our Algebra class, we learned a lot about energy. We did labs once a month when we were in person, and we also learned about energy while we were virtual. We did an insulation lab that was fun because it became a competition. We also made circuits and did an activity on renewable energy sources. We also looked into energy use in our school and at home. Energy club did activities with solar and wind energy, and energy transformations.



# Ockerman Middle School

## Science Alliance-Energy

Addition

### **NEED Activities:**

Managing Home Energy Use

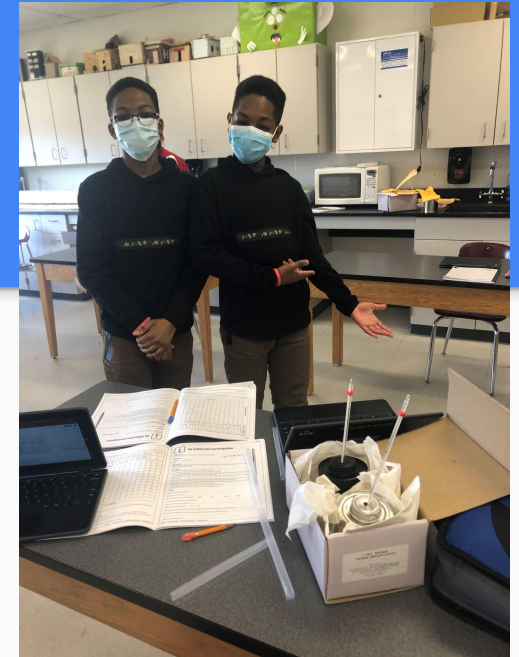
School Energy Experts

Science of Energy

Solar Oven

Circuits (Series)

Candy Collector



# Circuit Activity

Alexis E.

My Favorite experiment was the Circuits. The materials we used were a piece of paper, a marker, 3 small led light bulbs, Electrical tape, and flat batteries. What we did was we used a marker to draw a square on the paper and then put electrical tape on the square leaving spaces to connect the lights and the batteries. Then we took more tape and put a piece of tape on both sides of the batteries. We did the same for the light bulbs. Once it all was connected the lights would light up. This was my favorite experiment because we got to learn about electricity, circuits, and how everything connects.

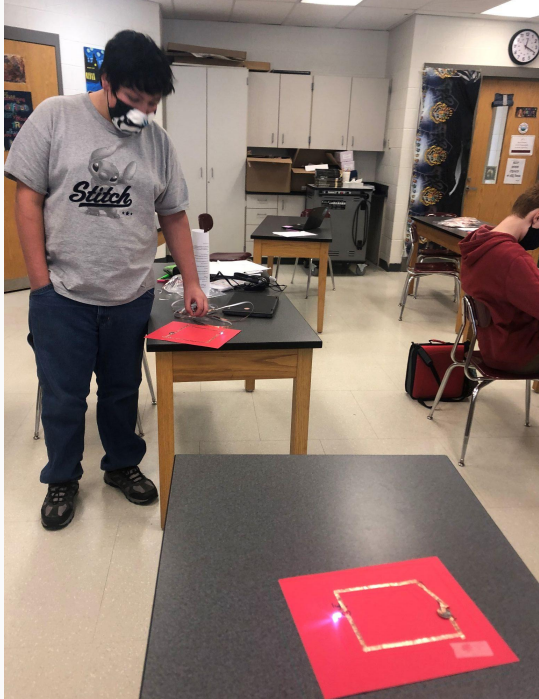
# Circuit Activity

John T

I enjoyed the circuit activity . I thought it was cool and engaging to be hands on . It's important to do it yourself because you can get a real life feel for it . It was also rewarding to finally get the light to light up.



# Circuit Activity

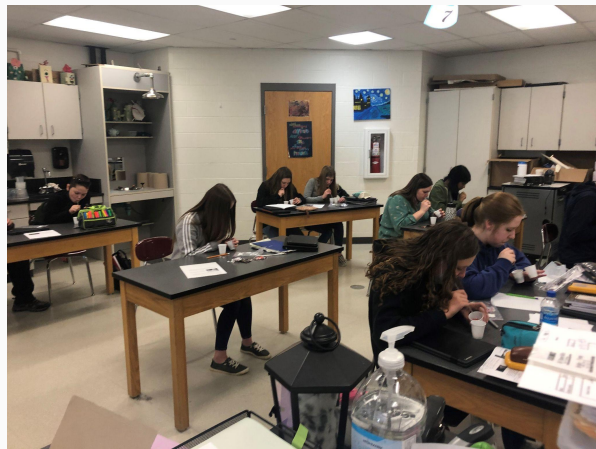


# Candy Collecting

Aubrey C.

In Candy collecting you have a cup full of M&M's and Jellybeans. You take a straw and inhale the candy so it is stuck on the end of the straw, then you put them in another cup. The M&M's stands for non renewable resources that means that you can only use them once, while the Jellybeans you can reuse them as many times as you want because they are reusable resources. Your goal is to get as many candies in the second cup as possible. I liked this activity because it was very hands on and it was kind of a competition with me and my peers. Also extra bonus we get to eat the candy at the end!

# Candy Collecting



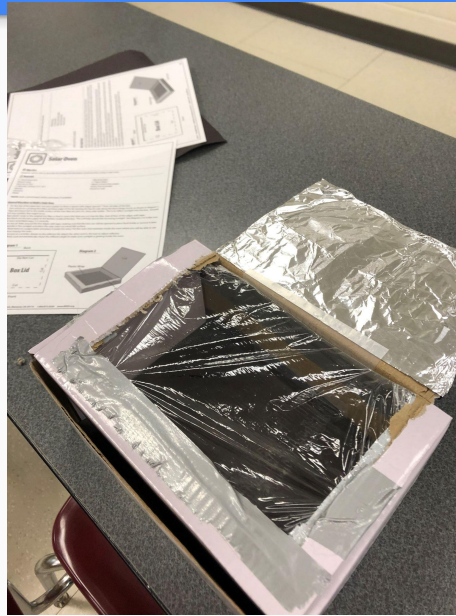
# Solar Oven

Emily L

*I did the solar oven activity with Mrs. Davis. It was really fun! I had trouble putting on the tap and saran wrap. Other than that it was awesome! We tried cooking a pop tart, but it didn't work as much as we wished it would because of the wind. I noticed that the temperature gradually increased when the sun hit the foil on the top right hand corner of the oven because when doing that it went directly into the middle of the pop tart. I also noticed when the sun's rays moved away from the foil that the temperature decreased drastically because of the cool wind blowing and the lack of heat within the oven. Another really important thing I learned is that using the oven is really helpful! It's so much better to use for the environment than a regular oven! It uses the sun as an alternative and overall better resource as fuel! Overall I had so much fun making and using the oven! So much that I plan on taking it home and making s'mores or maybe even mini pizzas!*

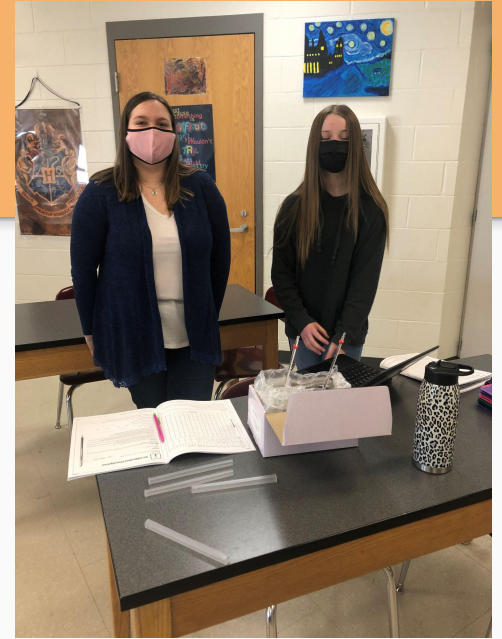
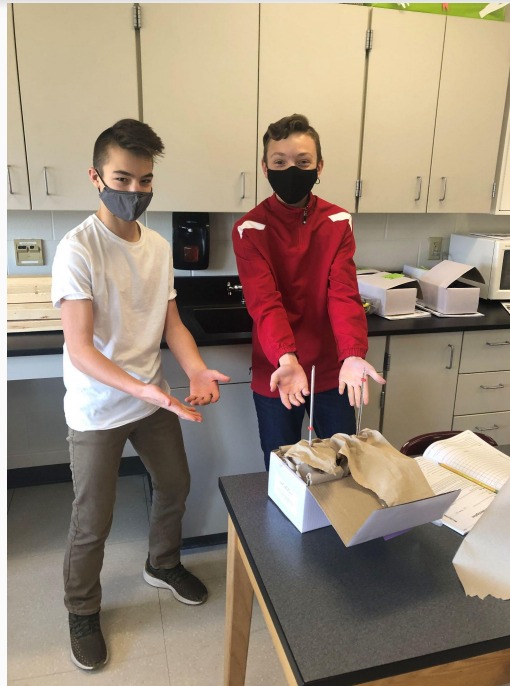


# Solar Oven



# Insulation Investigation

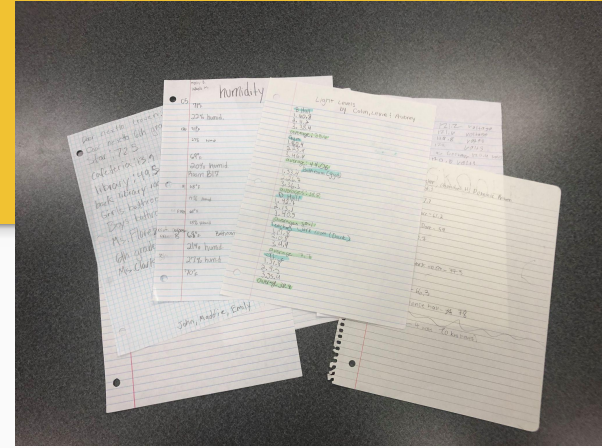
We used different materials to insulate boxes. We had a competition to see which material kept the heat in the containers the best. Some of the results were surprising. The cotton balls and bubble wrap worked the best.



# School Energy Use

We went around the school to take data on how our school uses energy.

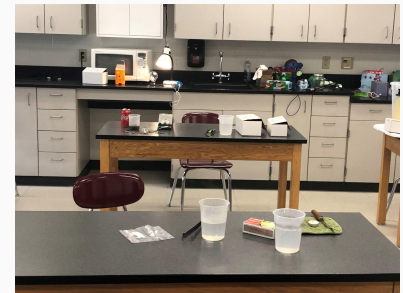
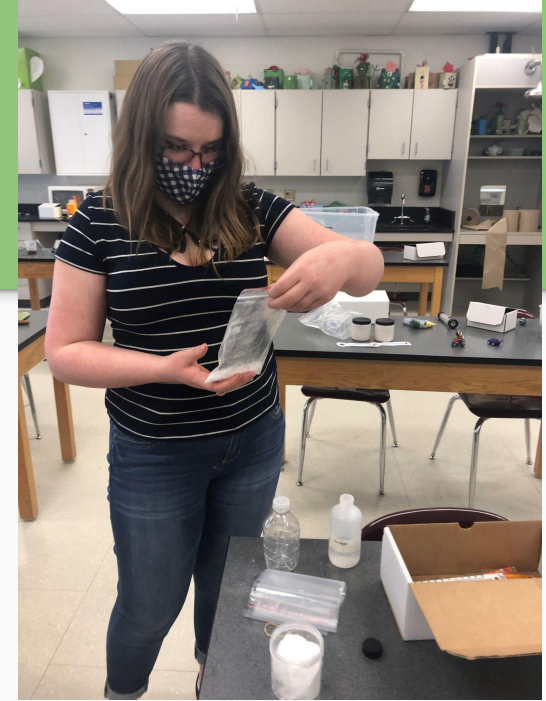
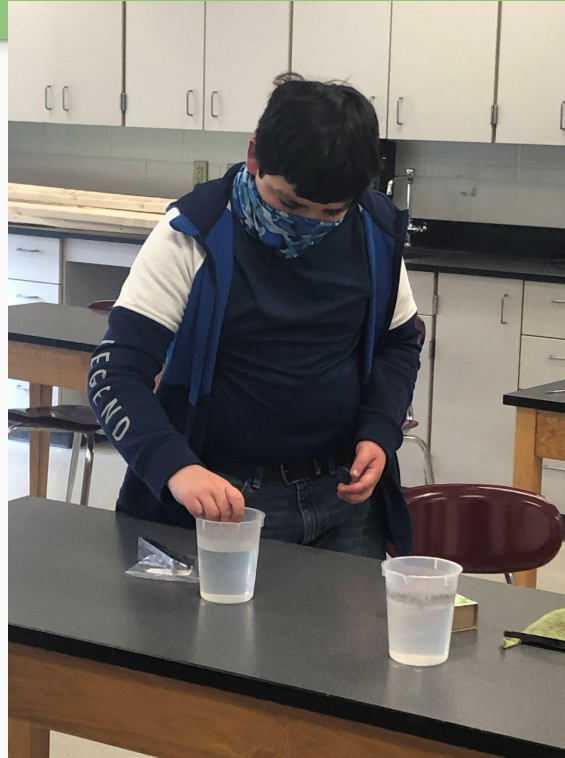
We looked at light levels, humidity, temperatures, and how much energy different appliances used.



# Energy Club Activities

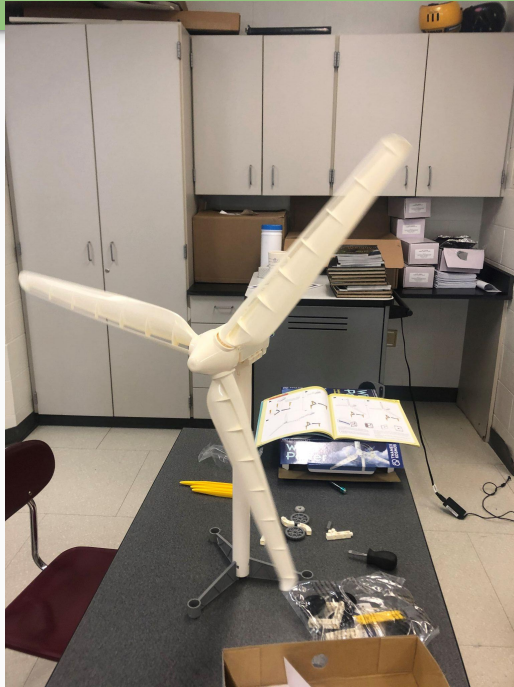
We didn't start energy club until after we were all back in person. We only had 3 meetings so far. One was the solar oven. The other ones were building a wind model that we got from the district energy manager and the Science of Energy stations.

Science of Energy



# Energy Club Activities

## Wind Energy



# What activity did you like the most?

I liked the light bulb one because you got to learn about energy -Alexis E.

I liked the insulation activity because we got to insulate the box. -Wylie G.

I liked the circuit activity because it was very interesting to see the light turn on with the tape and I am very interested in circuits. -Elton F.

Insulation, I liked the competition even though it wasn't supposed to be a competition. -Chanduni H.

I liked thermal can one the best. I liked this one the most because me and my partners cans did really well!  
-Logan T.

The insulation activity because I had the most fun doing it -Emily L.

*Thanks to KY NEED, and Boone Co. District Energy Manager for making this possible!*