



**Fourth Grade, 2018**

**Olde Sawmill Elementary**

**Dublin City Schools, Dublin, Ohio**

**Science Teacher: Erin Faulk**

**Participants: 73, 4th grade students**

**90 2nd grade students attended our Energy Fair**

**60 3rd grade students attended our Energy Fair**

**10 Teachers attended our Energy Fair**

**Our slideshow was created by 17 of our 4th grade students.**

## **Fourth Grade Energy Project!**

**Goal: Learning And Understanding How Energy Is  
Used, Transformed, And Conserved.**

# Energy Basics!

## Goal

Students were understanding the basics of renewable and nonrenewable energy and why some sources are better than others. Students were gaining an understanding of energy transfer.

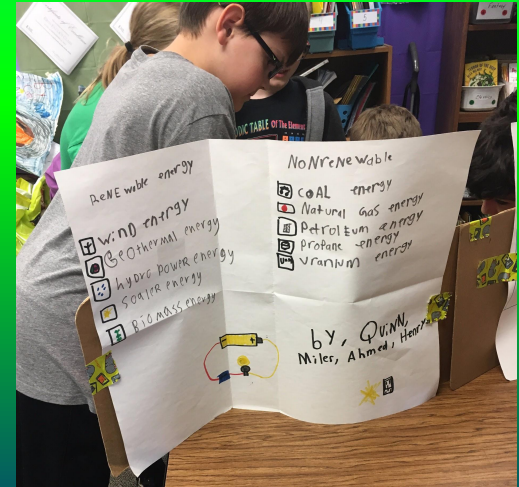
## Resources and participants

E3 Smart Energy student and family guide  
All 73 4th grade students participated in activities.

Leadership: Students worked in partners and chose toys to test the transfer of energy.  
Students acted out transfer of energy.  
Students chose which at home activities and in class activities to try to further their own understanding of renewable and non renewable resources.

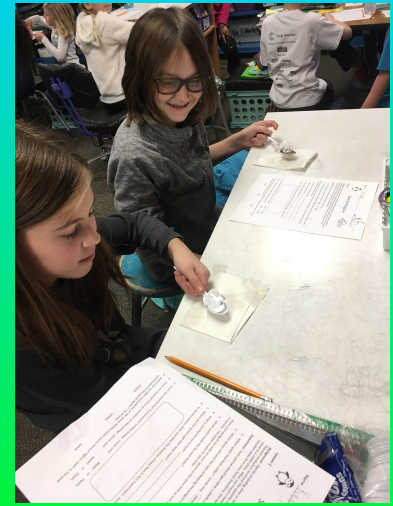
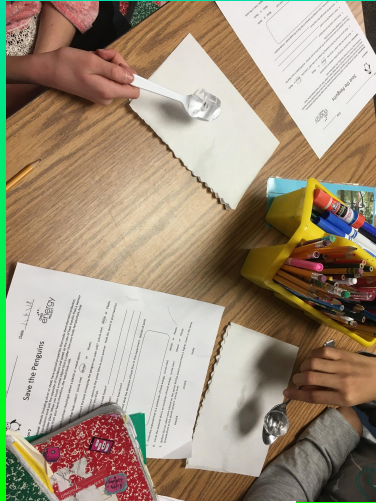
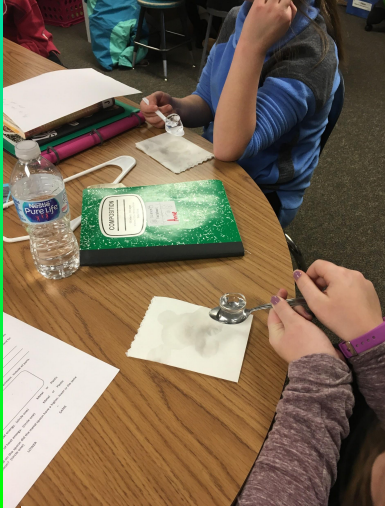
## Activities

- Energy activities at home that we were looking at different energy forms in our own homes.
- Matching game with renewable/nonrenewable resources
- Also we looked at energy transformation with toys.



# Thermal Energy!

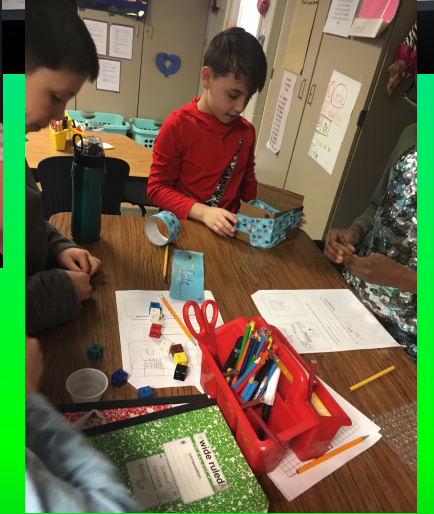
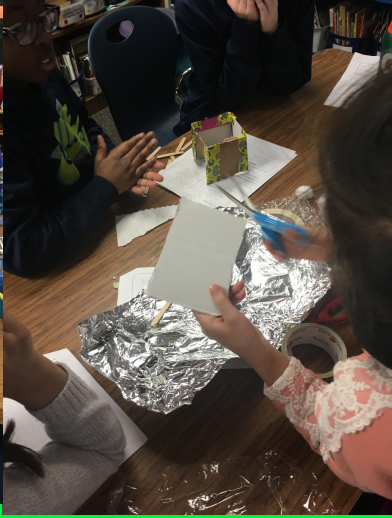
**Goal: Our goal was to understand conductors and insulators of heat!**



The water bottle project was when we put 6 water bottles in different wrappings. Then, we put thermometers in them. After that, we left them overnight to see which wrapping would keep the water bottle the coolest so that you wouldn't have warm water when you want to drink it.

- 70 students participated
- Activities:
- Checking which spoon will melt the ice cube
- Water bottle project
- We were leaders by coming up and wrapping the material around the bottle and hypothesizing which material would make the best insulator.





- 70 kids participated in our penguin dwelling project.
- Our goal was to demonstrate the importance of insulation by making a dwelling for a penguin so the penguin can stay cold.
- Before that we had to understand conductors and insulators.
- We were being leaders by picking our own partners we made are own creative penguin dwelling's!! We chose our own materials and designs.

## Penguin dwellings!

Outcome: Groups that used what they had learned about insulators had more successful dwellings.



# **Electricity**

Our goal is to learn the basics to electricity!

Us  
making  
Snap  
circuits!



Experimenting with  
Snap circuits!

The activities we did were fun here are some:

- Snap circuits, we made the light bulbs shine and motors spin we experimented with different tools to see what worked and what didn't.
- We had baskets of loose electrical materials,(bulbs, batteries, motors, wires, and switches) to create any type of circuits we wanted to try.
- We used energy tubes to create human circuits.
- We tested out insulators and conductors of electricity.

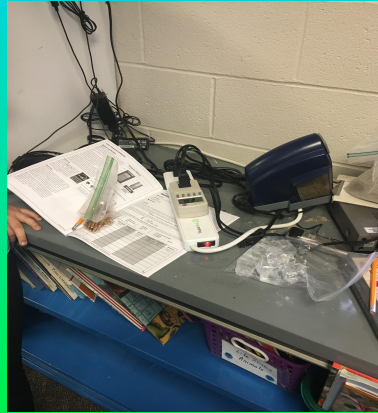
Leadership: when Miss Faulk gave use the kits she let us build what we wanted. We used inquiry to discover how circuits worked.

## Activity

We learned how to use a watt meter and about what appliances use the most watts.

In this unit we were going around the room with partners testing how much watts were in electronic devices with a watt meter.

We also tested different types of lightbulbs to discover which ones create more heat and are less efficient.



## Appliances

- Computer

- Pencil

- sharpener

- Lamp

- Watt meter

- Fan

- X-mas lights

- Power strip

- Plug

- Vacuum

## Leadership:

We chose what appliances to test around the room.

We made decisions about what to do with appliances when not in use.

We took the temperature of various light bulbs.

## Goals

Increase our awareness of electricity efficiency and conservation

To learn how to use a watt meter and about what appliances use the most watts.





Now that we know about efficient light bulbs we get to take some home to use!

## Home Kits!

Materials:

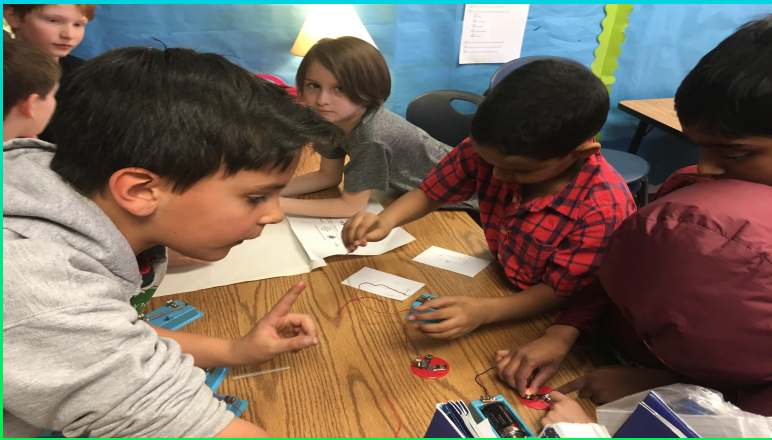
1. 3 lightbulbs (2 9 watts & 1 11 watt)
2. 1 showerhead.
3. 1 nightlight.
4. Self stick weatherstrip.

"I really loved the kits and they were fun to receive. I really liked using everything. But I broke my sink trying to replace it with the other thing. At my house when I was trying to change the faucet my sink broke. I had lots of fun using the things I got! I used everything I could."

~Elena



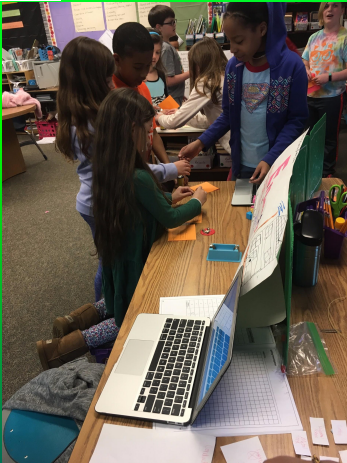
# Our Energy Fair



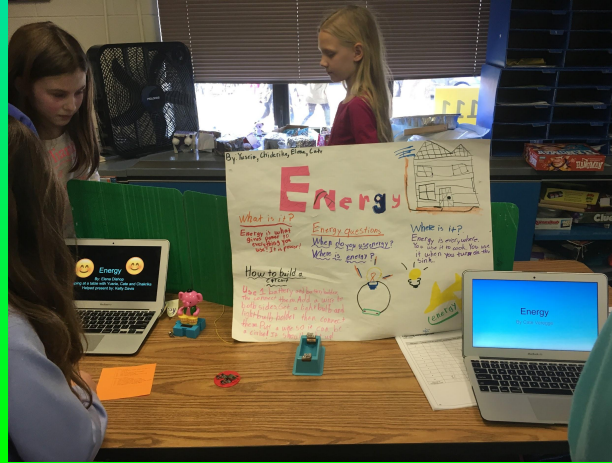
On March 16th, we had an Energy Fair to help the younger kids understand science and teach them what we are learning in science about energy. In 4th grade the kids made slides, posters, sorted insulators and conductors and made circuits. We invited Third grade and Second grade. We are leaders because we got to pick our own groups, pick our projects and help the younger grades learn more science.

# Energy Fair!

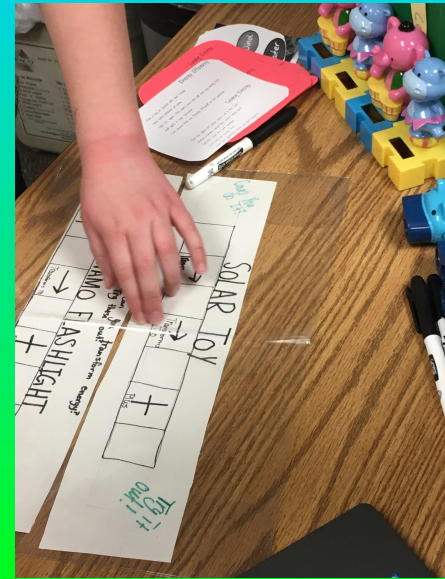
**Goal:** To demonstrate our understanding of types of energy, transformation of energy, circuits, thermal energy, energy efficiency, and energy conservation.



**Activity:** Students could choose any energy related topic and any way that they wanted to present their knowledge

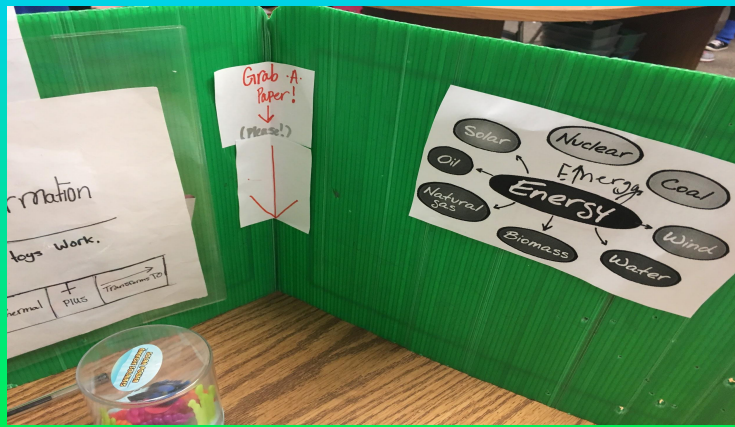


Students set up stations in 4 classrooms and the hallway to present their learning to 150 2nd and 3rd grade students.



Cate did a slideshow on energy. She did forms of energy, transformation of energy & saving energy.

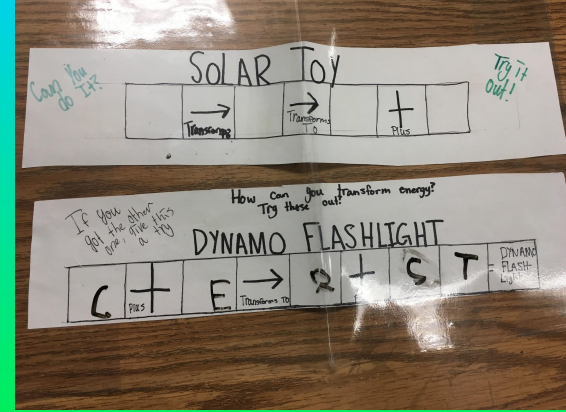




This is Meaghan and Annie's project.

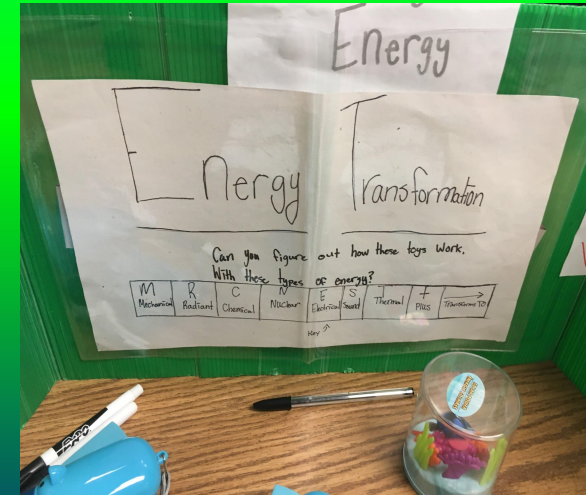
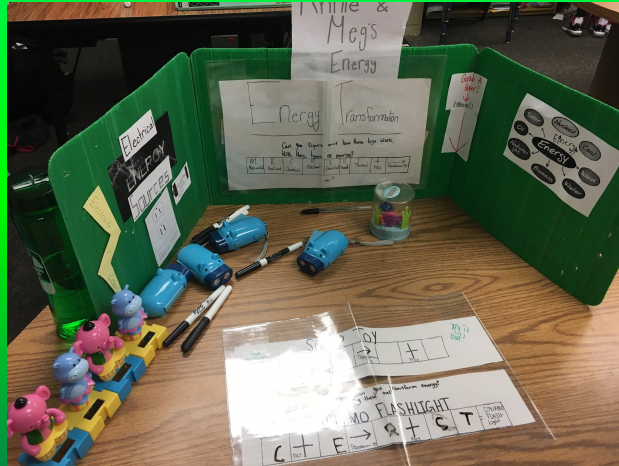
What was your inspiration?

Interview: Annie: We kind of just wanted to teach kids about electricity in their houses.



Annie and Meaghan taught students about forms of energy, transfer of energy using toys, and energy conservation.

They also provided the 2nd and 3rd graders with a take-a-way paper about saving energy and energy efficiency.





## Saving Energy

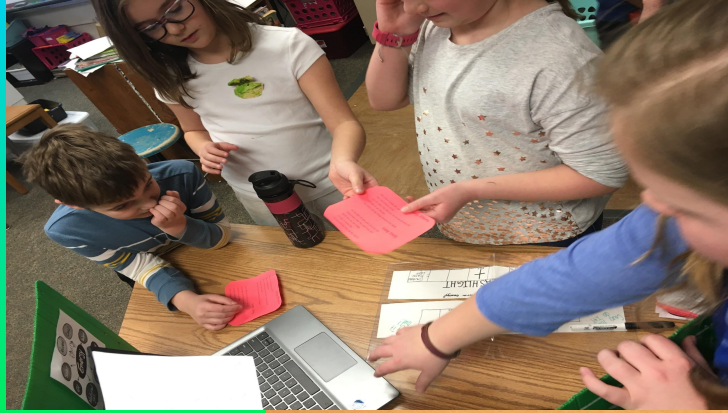
- Turn the lights off when you're not in the room
- Unplug chargers when they aren't being used
- NEVER leave the sink running!
- Cut back on screen time!
- Don't use electricity when you don't need it!

## Energy Efficiency

- Ride a bus or carpool with your friends
- Have extra batteries at home
- Use CFL lights (The swirly ones, this will save you money, too!)
- Half lights in your classroom
- Use devices that say "Energy Efficient" on the package

**Student created take-a-ways about saving energy and energy safety!**

**Leadership: Students came up with the idea and created their own cards for 2nd and 3rd grade students to have as a reminder from the energy fair.**

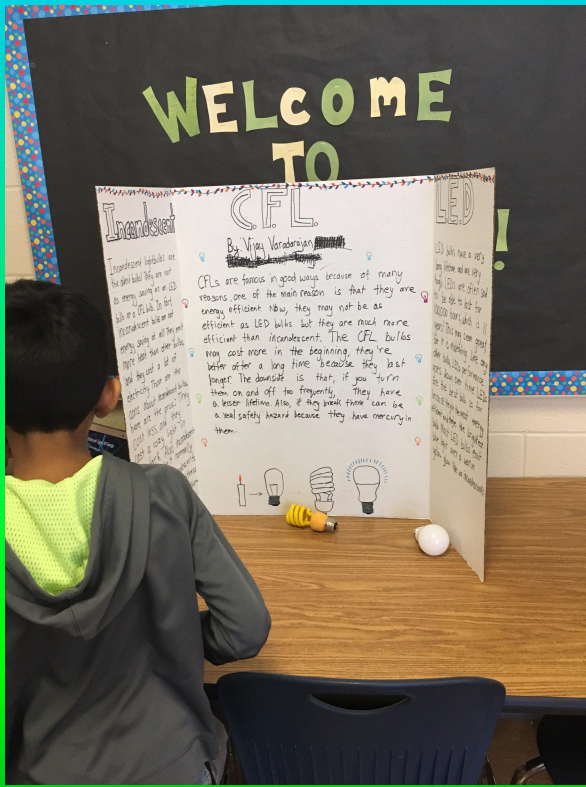


### Saving energy

- 1) Turn off your water when you are not using it.
- 2) Use solar panels (if available)
- 3) Use reusable things
- 4) Turn off the lights when not in use

### Electricity safety:

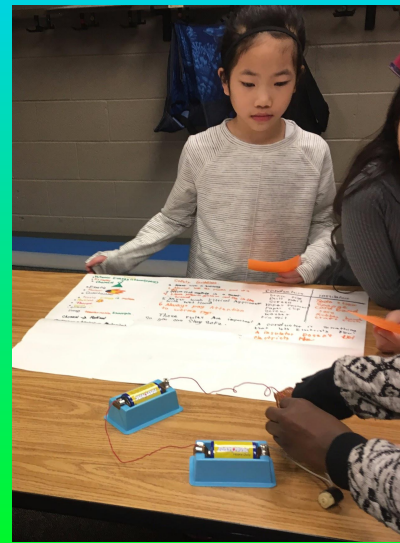
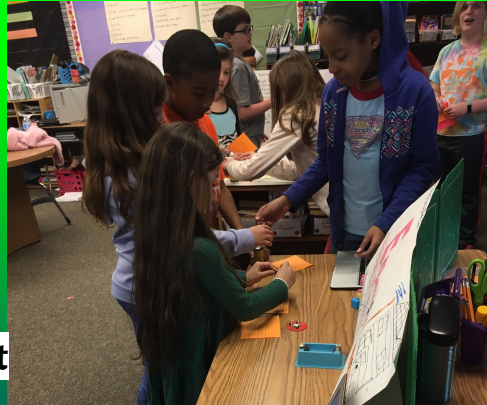
- 1) Don't lick batteries
- 2) Use the plastic part of a plug
- 3) Don't remove flags in the ground
- 4) Don't use electrical appliances near water
- 5) Pay attention to warning signs



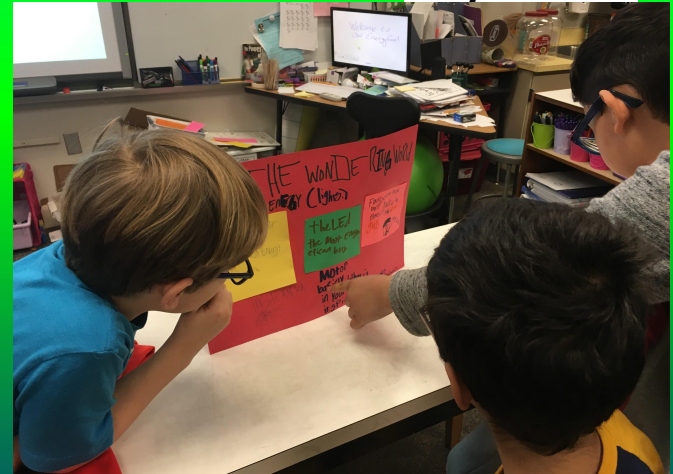
**Outcome:** The third grade students were just starting their own energy lessons and unit. Our energy fair helped to kick off their learning and get them interested to learn more!

This is Vijay's project.  
3 lightbulbs in order from oldest to newest type..

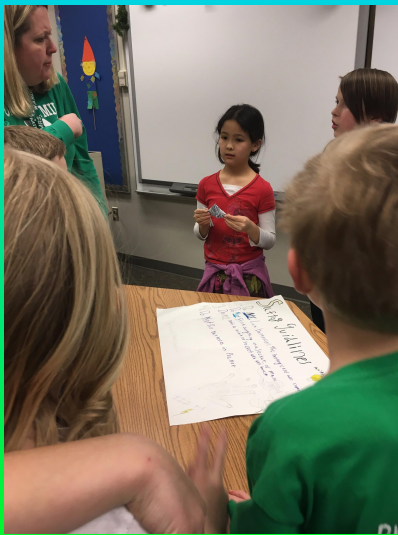
Vijay created a visual about the different types of lightbulbs and explained why the LED bulbs are more efficient. He also had examples of all 3 bulbs to show students.



Several students set up circuit materials for the other students to try. They led students in creating their own circuits and explained why they worked.

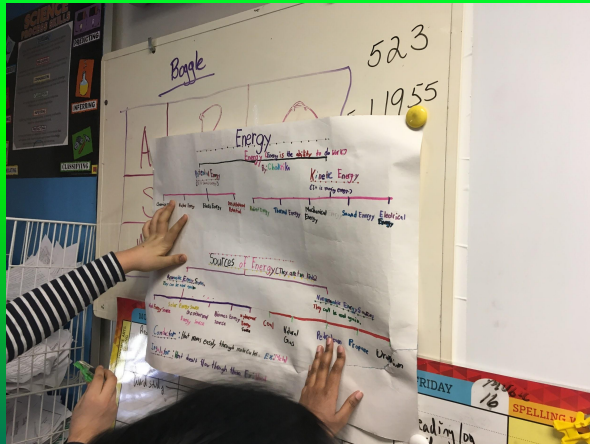
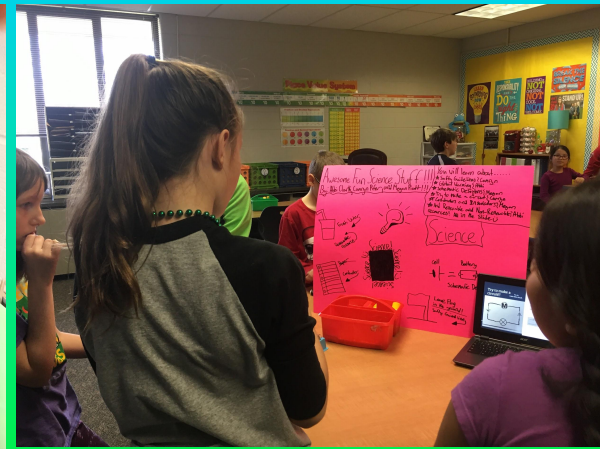
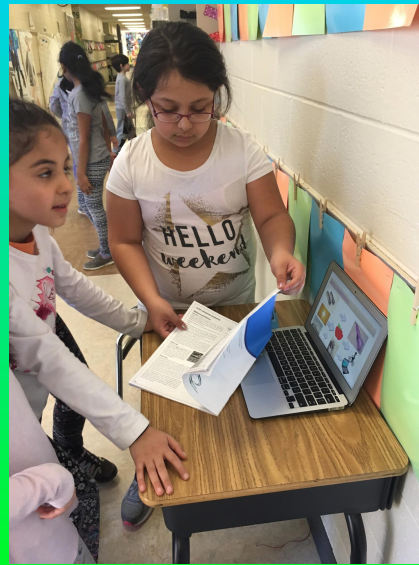






**Energy Fair  
photos!**

**10 Teachers got to  
hear our  
presentations too,  
as well as the 2nd  
and 3rd grade  
students!**



**We chose our own topics and  
how we wanted to present  
them! We had an energetic  
time demonstrating  
everything we had learned  
about energy!**

