

Every day is
ENERGY DAY
when you're an
ENERGY EAGLE!

ENERGY EAGLES

2022 - 2023

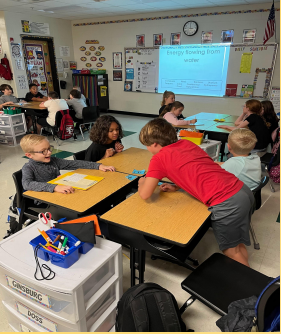
BREMEN ELEMENTARY SCHOOL

BREMEN, KENTUCKY

Advisors: Mandy Toomey & Emily Gardner

The Energy Eagles have had another busy school year! We worked hard to prepare an awesome Energy Day experience for our whole school to learn and start loving energy as much as we do! You will be able to tell how much they enjoyed their day as you go on this journey with our team!

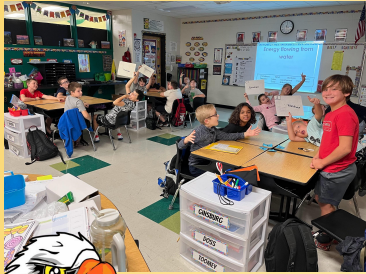




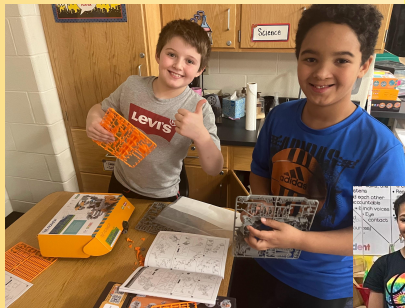
To start our year as Energy Eagles, we played ice breaker games and games to help us remember what we have learned about energy forms and sources.



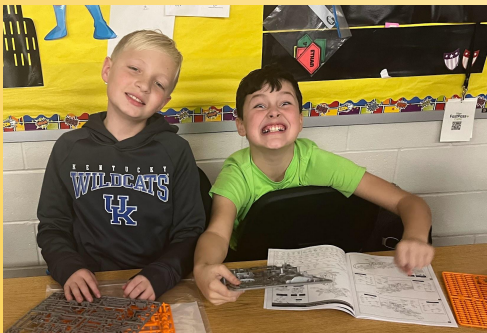
We also learned a lot about solar energy. we took out miniature solar panels connected to fans or other really cool disks to see where they got the most sun and moved the fastest.



Goal 1: Learning about energy!



With money donated to our energy team, we bought solar robots!



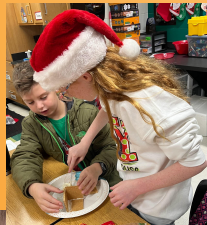


GINGERBREAD ENERGY HOUSES

Our constraints were the amount of supplies and time!
 Criteria: There couldn't be any cracks between the walls or the foundation!

In this STEM activity from NEED, we used starburst (solar panels), peppermint (smart meter), graham crackers (foundation and walls), Twizzler Pull and Peel (weatherstripping), and icing, marshmallows, and gumdrops (insulation).

Some houses looked better than



Goal 1

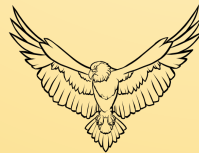


No matter the outcome, we had fun and those houses were delicious!

A visit from our school district Energy Manager Mr. Eric Bletzinger

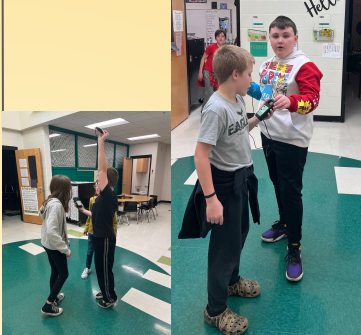
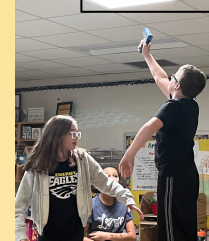


Mr. Bletzinger came to our school and talked to us about his job. He shared ways that we can conserve energy at school and at home. He also talked about energy efficiency. One cool fact that he shared with us is that since the beginning of the school year, our district has saved almost \$40,000 in energy costs! He told us that we helped to make that possible!

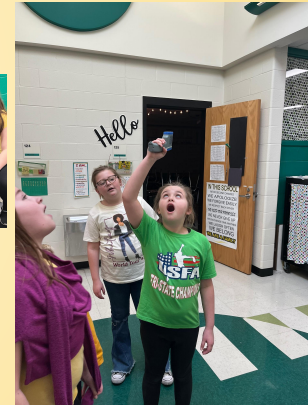


School Energy Audit

Infrared Thermometers

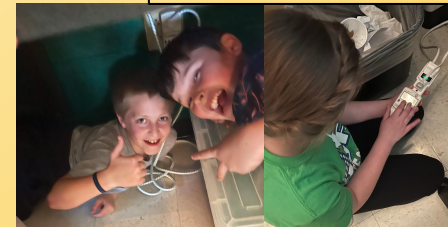


Light Meters

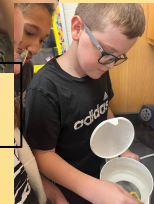


We discovered that the skylight in pod was 100 degrees while our thermostat was set to 72 degrees! We have to use a lot of energy to cool down our pod!

Electricity Usage Monitor Plug



Thermometers



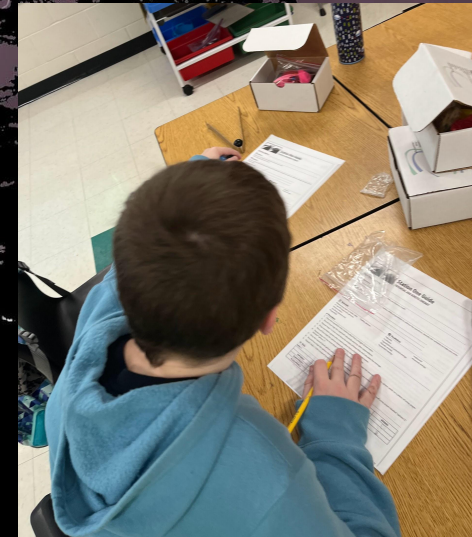
Goal 1

Our team wanted to share all that we love about energy with the rest of our school...so we decided to hold an ENERGY DAY!



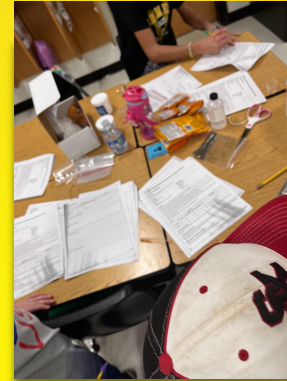
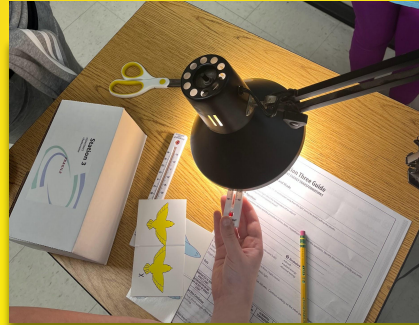
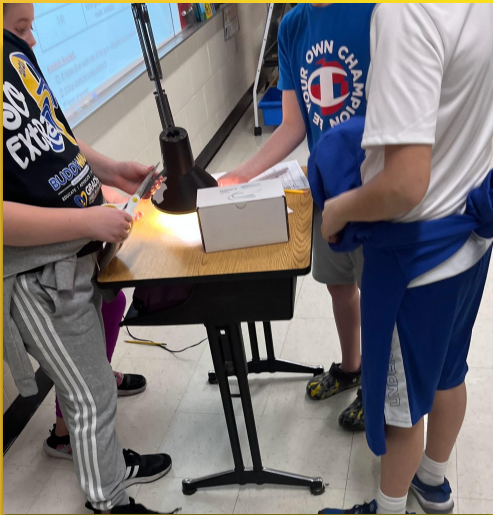
**Goal 2:
ENERGY DAY PLANNING**

We had 5 stations. Each station focused on certain energy topics. We had to do a lot of work!

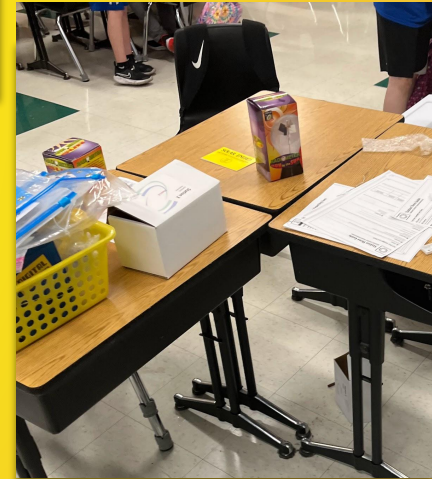
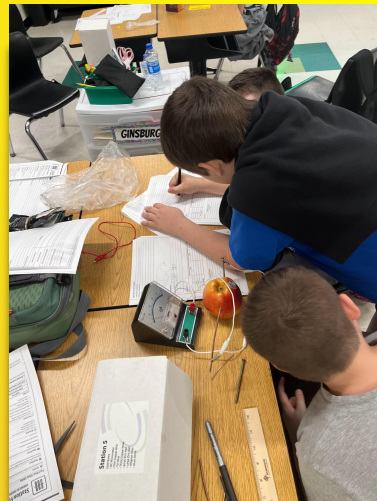


Planning for the **BIG** day

Testing



Retesting



Rehearsing

LIVE NOW ●

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ENERGY EAGLE NEWS

Now Streaming: Goal 3: Energy Eagles Student Energy Team amazed BES students and staff at Energy Day 2023!

Goal 3

Station 1

Potential and Kinetic energy

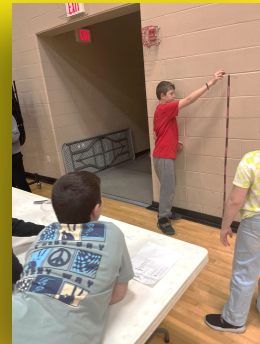
K-2

We used a yoyo to show students a simple demonstration of potential and kinetic energy. We had the measuring tape on a table and used the toy car for the next demonstration. We told them that when the car was standing still and built up more potential energy as you pull the car back. When you let the car go, it started to move all of the potential energy is released and it transforms into kinetic energy and changes back as the car slows down. We had them to pull the car back different lengths to see the connection between potential and kinetic energy.



3-5

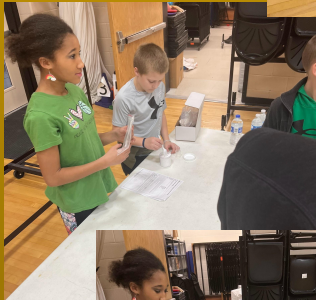
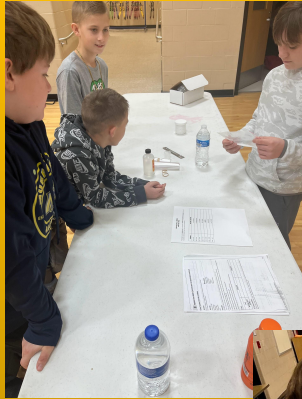
In their demonstration, we had a bowl of hot water, tongs, and two spheres. One sphere was the happy sphere is neoprene rubber and the other one was the sad sphere is polynorbornene rubber. They both react differently when placed in the hot water. The students were amazed! They thought we did a magic trick!

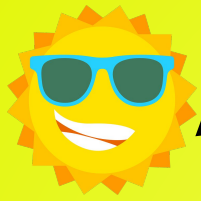


Station 2

Exothermic and Endothermic Processes

In our station, we used baking soda and vinegar to show an endothermic reaction. Not only did the mixture foam up, but when we put a thermometer in it, the students got to see that it changed temperatures - it got colder! We described to the students what was taking place. Then, we carefully mixed calcium chloride and water to show an exothermic reaction and measured the temperature. We asked the students if they had ever heard of or seen calcium chloride before and we discussed how we use it to put on roads and sidewalks when they are icy or snowy.





RADIANT ENERGY

Station 3

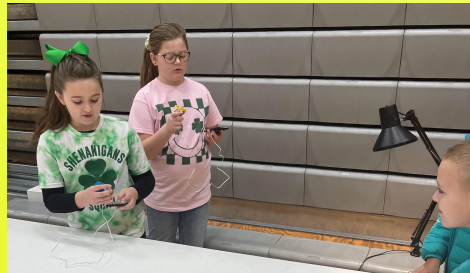
In our station, we had two different activities that we shared with other students during Energy Day. Brennan showed how a radiometer works. He talked about how black side absorbs most of the radiant energy from the light while the white side reflects most of the radiant energy. This causes it to turn inside of the bulb. The hotter the bulb got, the faster it spun.



Goal 3



Sydney and Harper showed the kids miniature solar panels and how to attach motors to them with wires. When you place them under the lamp the fan or disk started to spin. The kids really liked holding the solar panels under the light to see how the amount of radiant energy makes the fan or disk spin fast or slow.



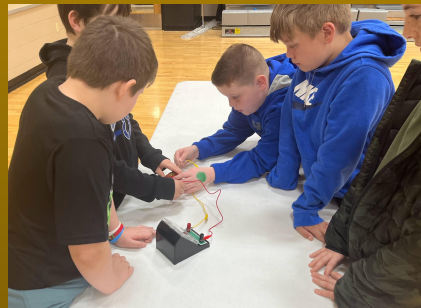
Station 4 Chemical Energy

In our station, we had two different projects that we showed to different grade levels.

Glow Sticks Investigation: The chemical reaction in the glow sticks caused them to give off radiant energy. The amount of radiant energy that each glow stick gave off depended on whether it was in hot water, cold water, or room temperature. The hot water caused the glow stick to absorb some thermal energy which made the radiant energy to get brighter which made it burn out quicker. The cold water made the radiant energy dimmer and burned out the slowest because it did not get as much. The room temperature glow stick was right in the middle for time and brightness!



Goal 3



Apple Battery Investigation: We put a nail and a piece of copper wire into an apple at different lengths to see if electricity would flow through the apple and how much. We used a microammeter to measure how much current was flowing through the circuit. The malic acid in the apple is what allowed the electricity to move through the apple.

Station 5

Electrical Energy

What did our team do?

Our team talked to all of the grades about motors, magnets, and batteries.

Let's go in depth!

First, we used the D battery in the chamber with a wire to create an electromagnet. We had the students move the electromagnet above the compass to move the needle. We discussed what made the needle move. Next, we showed the students the motor and the copper coils and magnets. We told them that when you hook the 9 volt battery that the chemical energy will change to electrical energy and then make the motor work - WHAM! Mechanical energy!

Goal 3



Goal 4: Reflection Time!

After our first ever Energy Day, we wanted to see what everyone liked and didn't like about our day. We split up into groups to make surveys to that were shared with students in 2nd - 5th grade, teachers, and our own team members!

Some of their responses are on the next slide!



Here's what are teachers and students said about energy day!



My favorite part was the glow sticks and how they got brighter in hot water and dimmer in cold water! It was so cool!

- 4th grader

I liked the happy and sad spheres! It would be a fun magic trick to show my grandpa!

- 2nd grader

The students were so knowledgeable! I learned so much!
-Kindergarten teacher

Energy Day was so fun! I hope we have one next year, too!

-3rd grader

Our Energy Eagles are really exceptional! I am so proud of them!

- Principal Sharp

Goal 4



Being an Energy Eagle is more than knowing about energy, it's about teaching others about why we should be energy efficient, energy conservers, and energy engineers!

Every day is
ENERGY
DAY when
you're an
ENERGY
EAGLE!

Goal 4

