

# The Energizers Of Michie Elementary School Jr High Energy Conservation Advisor-Ms. Debra Steen

Our Junior High Energy Club has had an amazing year this year. We have participated in many energy education activities. We learned about different types of energy and its usage. We learned about houses and conserving energy through proper insulation. We learned how to determine energy loads and how to measure if there is energy loss around doors. We have participated in recycling efforts through our school and Pepsico. Because of our energy efforts in the past, this year we were invited by TVA Energy Right to participate in their School Uplift Program. We accepted that invitation and proceeded to find out what our challenges would be. As part of this program we did a community outreach to provide energy sources and tips for them to use. The Energy Club taught grades Kindergarten through 6th grade different lessons on the different types of energy and energy conservation. We colored sheets, played trivia, made posters, and even gave an energy quiz. We hung posters on the walls of the school about different energy tips. We set our challenge goal to reduce our energy usage by two percent. The TVA engineer provided us with ways to accomplish this and we set about trying to accomplish these goals.

Our Energy Club consist of 20-25 members that vary on a daily basis. Stella is our president. Jax is our VP. these are a few of our members.



# Re-energize

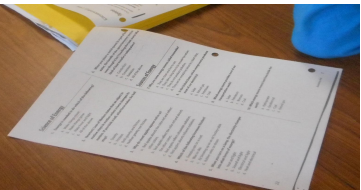
## Goal #1 Focus on deepening energy content knowledge

**Activities and Tasks:** Obtain permission from advisor, take the NEED Energy poll, participate in energy activities

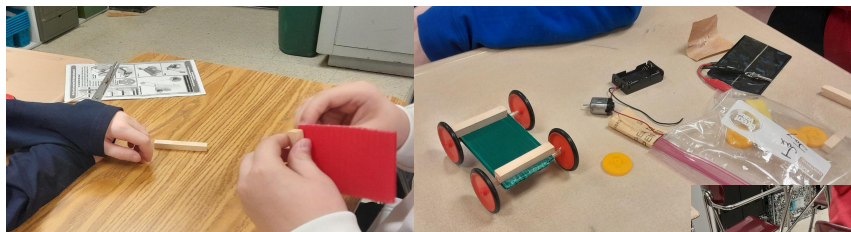
**Energy Content and Resources:** NEED Energy poll, Teacher resources, Science of Energy, Energy House, and other resources.

**Student Leadership:** 27 students took the poll and 43 students were involved in the activities.

**Evaluation:** Energy Poll scores were an average of 85% and upon completion were an average of 98%



Energy Poll



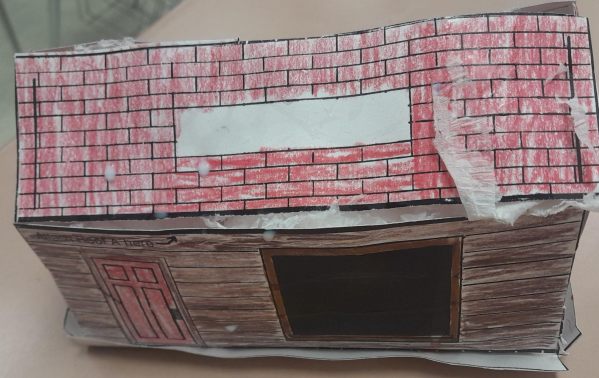
We made solar cars using plastic board, gears, rubber bands, and rubber tires, and motor. We attached a solar panel to the motor to make it turn the motor that engaged the wheel.

Plasma Ball.  
Energy at work.

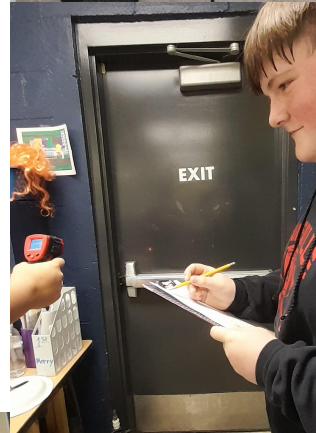
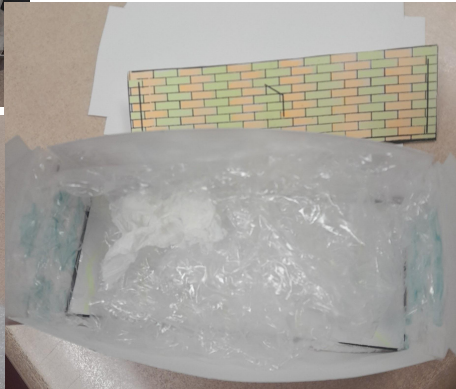


Cubelets. We connect them and it will roll, make a sound, has a light, and will rotate around 360 degrees.

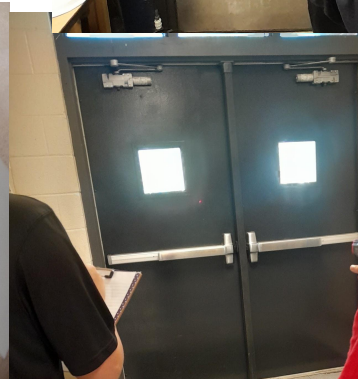




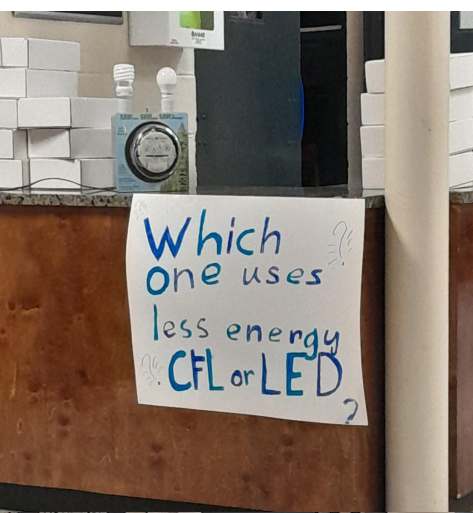
**We made houses and insulated them with different materials. Which house is insulated the best? We placed hot hands in the house to see which one would hold the heat the longest.**



**We learned to check the power loads of different machines. They pull a load even if they are not running. We also checked the energy loss around doors. Because we learned some of the doors weather stripping was bad and losing heat, they were fixed. A few doors were replaced.**



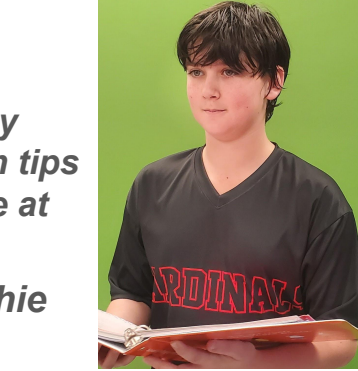




Hi I'm \_\_\_\_\_ with your at home energy tip of the day!

One way to save on your energy bills is to take shorter and colder showers. Not ice cold, but just not as hot as you usually take them. Just a little cooler water will help you save energy. Another way is to swap light bulbs for LED bulbs in your lamps and ceiling fixtures. These are great ways to save money each month.

Hope these tips help you save money on your energy bills! Now back to the studio



***News crew giving energy conservation tips to the people at home and school. Michie News***

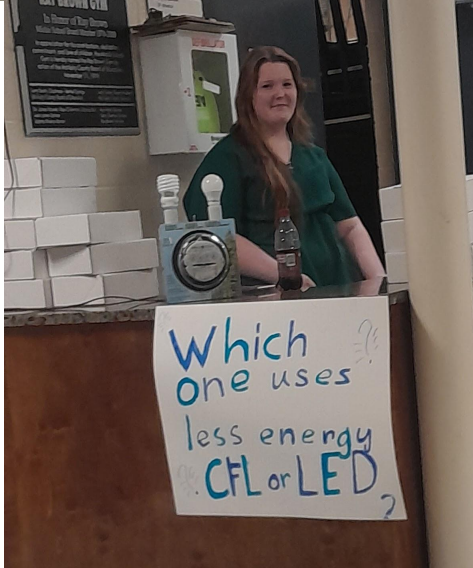


Hi I'm \_\_\_\_\_ with your at home energy tip of the day. When you go shopping for new appliances look for the energy star. These appliances use less energy and can lower your bill. You can also use more renewable energy such as solar energy and wind energy.

I hope these tips helped you save on energy bills! Now back to the studio.

Hi I'm \_\_\_\_\_ with your at home energy tip of the day One way to save energy is to monitor your at home energy usage. Look at your bill each month so you can see what you are actually using. Also, in the summer time you can close curtains to make sure that you don't have sunlight shining through your windows. When it is colder outside, you can open your curtains so the sunshine can warm the room!

**Community outreach. We are handing out NEED energy conservation kits to the people at the ball game. Some went all the way to Red Bay Alabama. We had a good night demonstrating which light bulb conserved the most energy.**





The coloring books they colored on the different types of energy.



## Lesson Plan: Conserving Energy

Lesson 1: Conservation of energy and identifying different types of energy

### Solar energy facts

- Comes directly from the sun
- Renewable energy source
- Solar panels are used to collect solar energy
- Largest energy source
- Can be used for heating homes and water

### Nuclear power facts

- Made when uranium atoms are broken up into smaller atoms
- Used to spin turbines
- Heats water to make steam
- Nonrenewable

### Wind energy facts

- Generated from wind
- Generated from wind turbines
- Clean for the environment
- Renewable

### Hydroelectricity

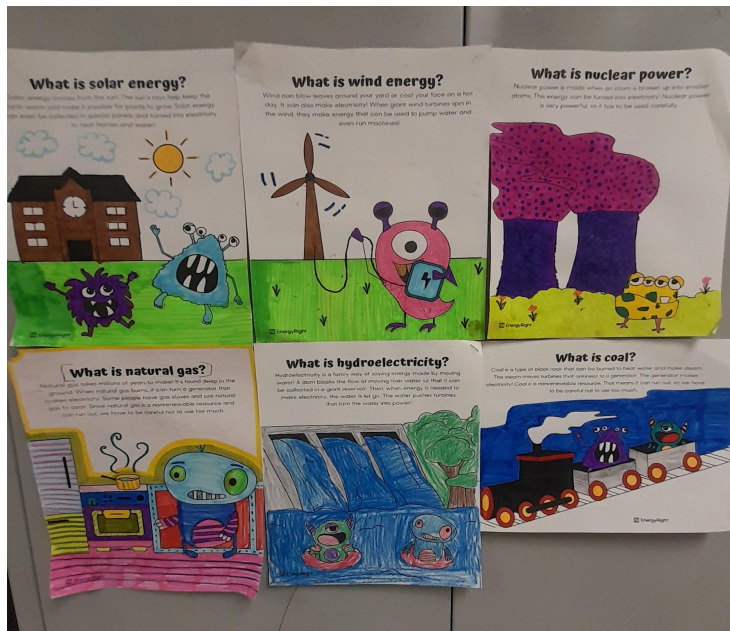
- Electricity by moving water
- Creates less pollution
- Renewable
- Oldest energy source

### Natural gas

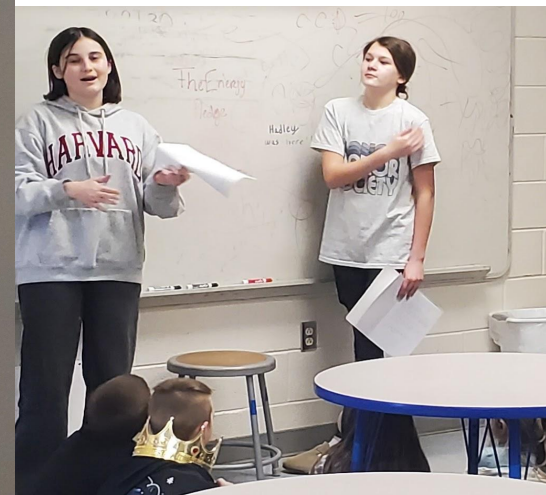
- Fossil Fuel
- Affordable and safe for the environment
- Nonrenewable

### Coal

- Nonrenewable
- Used to power trains
- Black or dark brown in color
- Can be used to heat water to make steam, then steam moves to generators and produces electricity



Teaching the different classes about the different types of energy.



# Lesson Plan: Conserving Energy

## Lesson 2: The Energy Pledge

### Step 1: Identify the Pledge

What energy saving behaviors could be practiced to preserve energy?

- Change light bulbs to LED bulbs, they offer significant energy savings compared to other light bulbs.
- Wash clothes in cold water if possible
- Clean or replace filters in your home regularly, old or dirty filters make systems work harder and run longer than necessary.
- Air seal your home, this can save up to 10% on home heating and cooling costs.
- Use natural light if possible
- When cooking and baking, DO NOT look into the oven, the temperatures could drop up to 25 degrees Fahrenheit, making your oven need to use more energy to return to your temperature

### Step 2: Adopt the pledge

Activity: Create pledge cards.

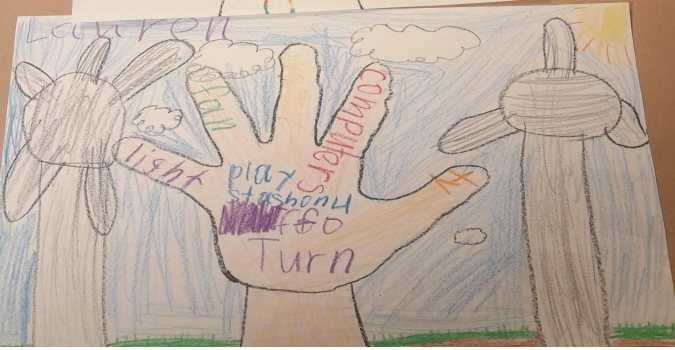
- 1) Give students piece of paper
- 2) Have students trace their hand onto the paper (help if needed)
- 3) Cut out hands
- 4) On each finger write a way of how students can conserve energy
- 5) Write name on the palm of the students hand
- 6) Hang the hand on the wall by sign that says "our energy pledge" or around the classroom

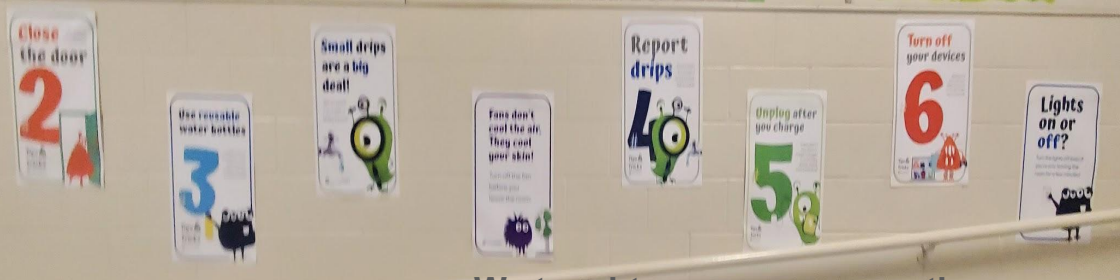
### Step 3: Reinforce the pledge

At the beginning of each meeting, ask who has followed the pledge and then ask for examples.



**WAYS TO CONSERVE ENERGY.  
THE ENERGY PLEDGE!**





## We taught energy conservation lessons, hung energy tips in the halls and played Energy Trivia

### Lesson Plan: Conserving Energy

Lesson 3: Trivia Review

Step 1) Split into two teams

### Questions (answers are highlighted)

- What technology needs to be powered down at the end of every day?
  - Notebook
  - Calculator
  - Laptop**
  - Backpack
- When should you turn off lights in a room?
  - In the middle of the day
  - Never
  - When everyone leaves the room**
- Which of the following do NOT use electricity?
  - TV
  - Clock
  - Desk**
- Which of the following makes electricity?
  - Sun
  - Wind
  - Rivers and dams
  - All of the above**

- Which of the following uses electricity?
  - Printer
  - Laptop
  - Monitor
  - All of the above**

- Which appliance uses the most electricity?
  - Oven
  - Dishwasher
  - Microwave
  - Refrigerator**

- Which device still uses electricity even when turned off?
  - TV
  - Cellphone
  - Laptop
  - All of the above**

- Which of the following is a nonrenewable resource?
  - Coal**
  - Hydropower
  - Wind energy
  - Solar energy

- Which of the following uses electricity?
  - Printer
  - Cellphone
  - Fan
  - All of the above**

**NOTE:** If finished early, create a poster that represents how to power down a classroom. Then let the students vote on their favorite one. **STUDENTS CANNOT VOTE FOR THEMSELVES!** After that, students present their posters.

GET INTO GROUPS OF 3

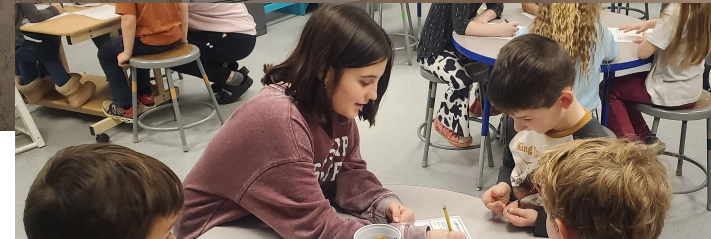
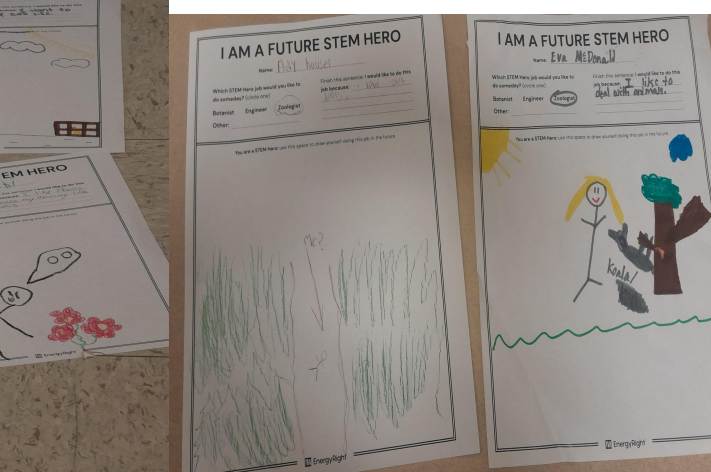




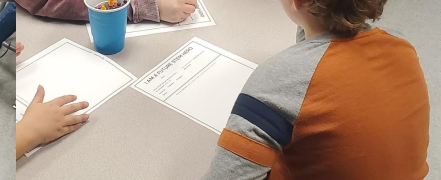
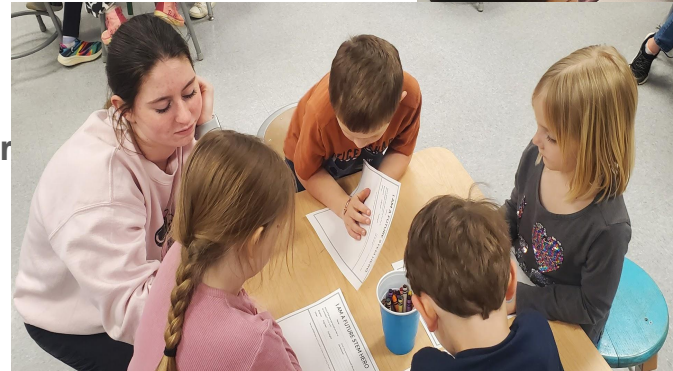
# Lesson Plan: Conserving Energy

## Lesson 4: STEM heroes

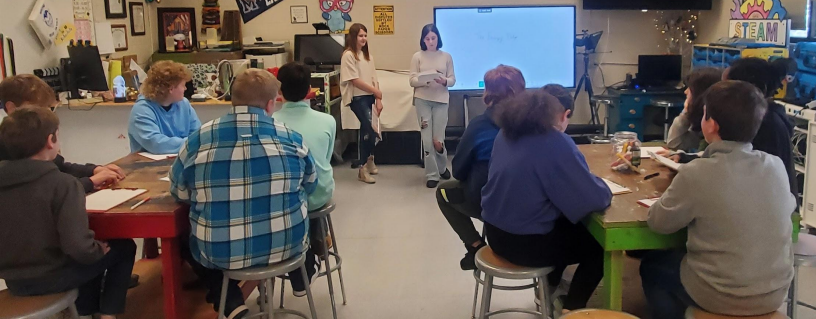
- 1. Botanist**  
A botanist studies plant life, they work in botanical labs to study the effects of pollution on plants. Botanists get paid 49k - 110k per year.  
[TVA.com/powerd-by-people-you-know/Adam-Datt](http://TVA.com/powerd-by-people-you-know/Adam-Datt)
  - 2. Reactor Engineer**  
Reactor engineers are the technical authority responsible for the oversight of research, design, maintenance, and operating power plants. Their salary is anywhere from 67k to 144k per year.  
[TVA.com/powerd-by-people-you-know/David-Yancey](http://TVA.com/powerd-by-people-you-know/David-Yancey)
  - 3. Zoologist**  
A zoologist studies animals that are both in captivity and in the wild. Their average salary.  
[TVA.com/powerd-by-people-you-know/Liz-Hamrick](http://TVA.com/powerd-by-people-you-know/Liz-Hamrick)
- Show videos from the links and then hand out STEM heroes worksheet



Helping  
the  
students  
with their  
project.



Some of our STEM  
heroes: botanist,  
engineer, and zoologist.



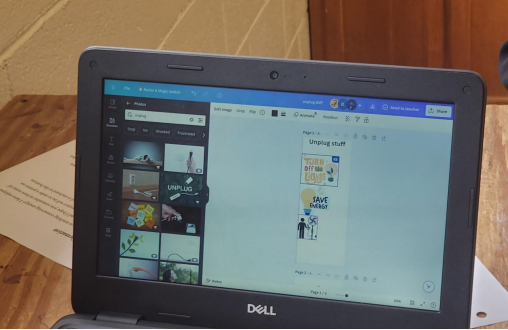
Teaching the students “reduce, reuse and recycle”. Coloring and posters. What powers my community?

# Lesson Plan: Conserving Energy

Lesson 5: Community Month

- 1) Pass out the papers and use the opportunity to ask questions to the class about “The Three R’s” (Reduce, Reuse, and Recycle)
- 2) Do the “What powers my community worksheet
- 3) Have students discuss this subject while they color
- 4) Ask the students after completing the sheet if they learned anything new





### Poster Information

This is my last lesson teaching conserving energy! I have enjoyed teaching you so much, and I hope you remember at least some of this at a later date. Your last project will be to make a poster on Canva and turn it in to me, my email is enclosed at the bottom.

#### Instructions:

- Break into groups of three.
- Make an informational poster on how you can power down anything in classrooms, homes, workplaces or anywhere else that you can think of.
- Put a picture next to any ideas that you have, and make sure you have at least five ideas.
- I will come one more time for you to present your posters
- Your class will vote on the best poster **YOU MAY NOT VOTE FOR YOURSELF**

## The younger students made posters on paper. The older students made them on canva.



I have enjoyed teaching your class and I am grateful for each of you!

# Classroom Door Competition Energy Conservation



Reduce,  
Reuse,  
Recycle!

We Save Energy  
because  
We ♥ Earth

**BRIGHT**  
for  
**Energy**  
**CONSERVATION**

**BIOMASS**  
**RENEWABLE ENERGY SOURCES**  
**HYDRO**  
**SOLAR**  
**TIDAL**  
**WIND**  
**GEOTHERMAL**

**Did You Know**  
**Earth is in**  
**Our Hands!**  
**We Want**  
**THE GREEN LIGHT**

**SAVE ENERGY**  
**SAVE MONEY**

37

48

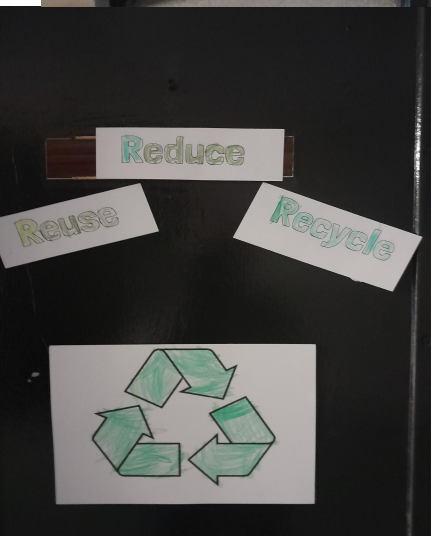
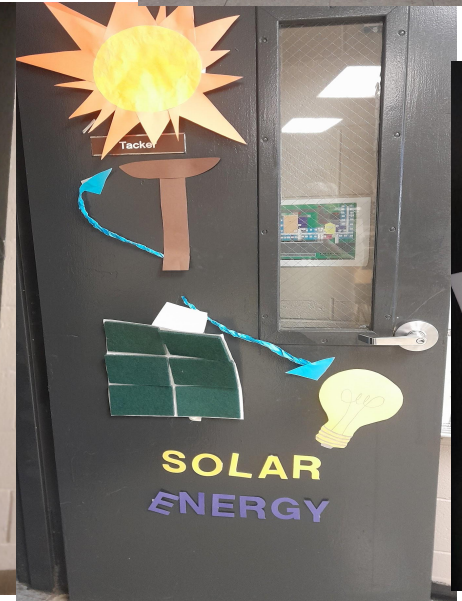
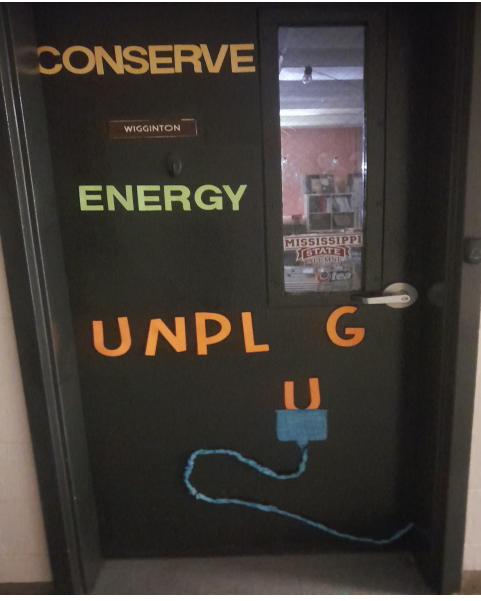
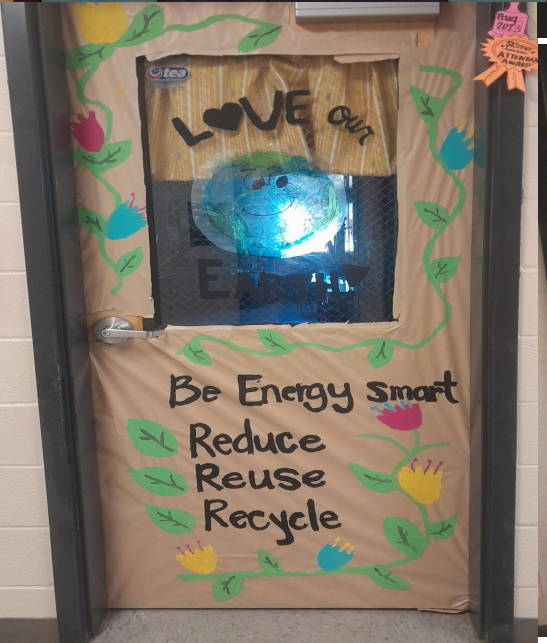
Do your  
part ~  
Conserve  
Energy!

We  
are  
Hoppy  
TO SAVE  
Energy

**NOTORIOUS  
P.I.G.**

**SAVING THE**  
Don't say you're not in  
the room...  
We rappin'?

We rappin'?



**We have had a good year and have completed a lot of NEED Activities that were not pictured in this scrapbook. We have learned a lot and have reached a lot of people through local papers, our morning school news, and social media pages.**

**We have participated in the TVA Energy Right School Uplift challenge. During this challenge we have learned a lot about energy usage. How we use energy and how we can save energy. We have taught grades Kindergarten through the sixth grade about energy conservation. We have helped them complete projects that have to do with energy conservation, the three R's, how energy is used in the school and at home and ways to save at both places. We have made posters with the students concerning the types of energy, the three R's, what power sources used in our community and STEM heroes.**

**We have hung posters in the hall that educate people about energy conservation and ways to look for energy savings.**

**We had a classroom door competition on Energy Conservation with awards being given for Most Creative, Most Unique, Best Overall, Most Informative, and Most Interactive.**

**We have used NEED Activities and Resources such as the energy conservation home kits, the energy houses used for insulation and other energy activities and the energy audit.**

**We have recycled over 9000 pounds of recycling materials that were entered into the Pepsico Recycling Program.**

**We have reached about 15,000 people as a result of our work.**

**We have worked hard on our TVA Energy Right School Uplift Project. We will not hear until May 2, during a media release, the results that were entered and the documentation we provided. We know that so far we have earned a grant for \$10,000 and are finalist in the grant for \$25,000. These funds are a reward for the students and teachers hard work during this project. We voted as a school on how these funds would be spent. The outcome was for the funds to be spent on a robotics project and a teacher snack bar, so that refrigerators etc. could be centrally located, reducing our energy usage.**

**We look forward to an active year next year continuing our energy education.**