

# Junior High of Michie Elementary School

## Conservation of Energy

Advisor Ms. Debra Steen

We have completed a lot of energy activities that are connected with our state standards. We used a lot of the NEED Energy activities and online resources to carry out these activities. We have learned a lot. We had some people to give us scrap material for us to use.. We decided to reuse that material to make pillows and throws for a local nursing home. We made over 40 pillows and 3 throws. We have learned about renewable and nonrenewable resources and decided to see how many of these different resources we use at home. We also decided to find out how many light bulbs and the type we have in our houses. After studying the impact of people on the earth we decided to raise awareness of the pollution of our oceans by plastics. We reached approximately 10,000 people.



**A few of us working together.  
Led by Erin, Alyssa, and Eva**

## **Teamwork**

**Goal #1 Focus on deepening energy content knowledge**

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

**Energy Content and Resources: NEED Energy poll, Teacher resources from Energy Camp, NEED Science of Energy, NEED online resources.**

**Student Leadership: 22 students took the poll and 22-45 students were involved in most activities**

**Evaluation: Energy Poll scores were an average of 85% and we weren't able to take the last one.**

**Number reached 100**



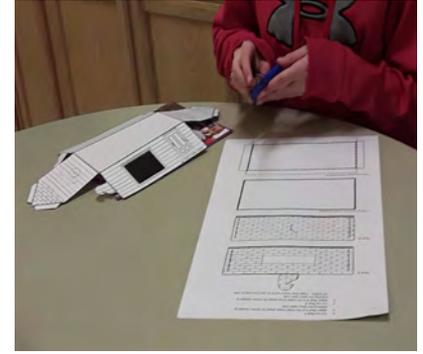
# Solar Energy and Sound Energy



**Solar and Wind Models**



**We built our solar house and place the thermometer inside to check the temperature.**



**Building houses to insulate. Whose house will hold the most energy? Group 3 won.**

**We studied the different parts of the sun and how the sun makes its energy and provides heat and light for the Earth. Our models show the different layers of the sun.**



**Sound vibrations cause the water to rise. Erin showing the Energizers how to do it.**

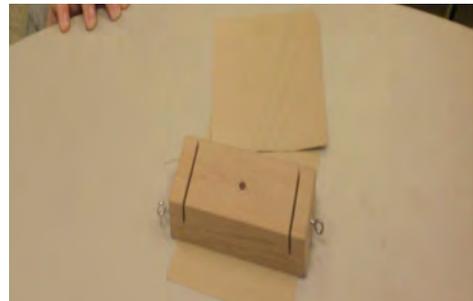


**We made cars that will run off of solar panels or a motor.**



**Water pollution and the clean water act. We are trying to clean polluted water using different resources.**

**We studied the energy of motion and friction.**



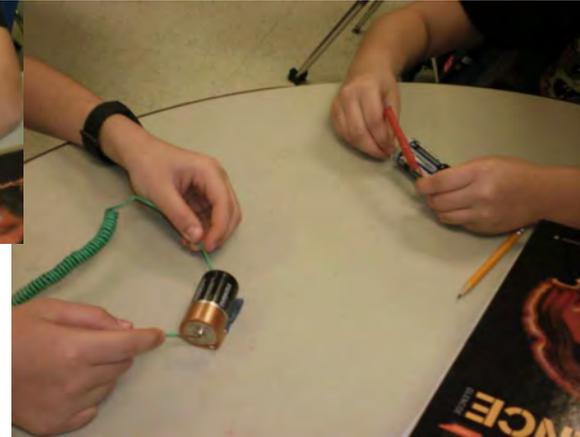
**Connecting circuits with cubelets. We make them roll, lights blink, and it makes noise.**

**Studying hydropower With the water wheel. We generated enough electricity to turn on a strand of lights.**



**Chemical Energy**

**Building electromagnetics using wire, nails and batteries. Watch the wire it can get hot.**



**Goal#2: To promote the reuse of items and products of reused items.**

**Activities and Tasks: Obtain permission from principal and advisor. Collect the scraps of material that have been donated. Decide what we will do with the material.**

**Obtain sewing machine, needles, polyfill and tread.**

**Check out 4ocean and their work.**

**Energy Content and Resources: Parent donation of material. Sewing machine and thread. Director of waste management about 4ocean, NEEDS activities and resources..**

**Student Leadership: 3 students talked to principal and advisor. 5 Students unloaded material. 1 person talked to director of waste management, 26 completed NEEDS activities. 30 students made pillows and 45 students posted about 4ocean.**

**Evaluation: We have made over 40 pillows and 3 throws for a local nursing home. and are still making more keeping the material out of our local landfill and providing people in the community with a little happiness. The ladies who donated the material were happy when they saw the pillows we had made. Got permission to sell 4ocean bracelets made by 4ocean. Reached 10,000 people.**



Some ladies in the community donated some left over material. With the help of our advisor we got a sewing machine. During our activity time she taught us how to design and make patterns, cut the material and how to sew the pillows together. We made basic rectangle and square pillows. We stuffed them with poly-fil that had been used for another project so that was reused too. We made so many pillows we did have to buy more. There were a few large pieces that we made throws for some of the elderly people. This year most of the pillows were made by the girls during activity time. Because of schedule changes the boys did not get an opportunity to make many. The girls went at Christmas to take the pillows and throws to the people at the nursing home.

## Delivering the pillows and singing Christmas songs.



**Reuse of material doing good.  
We have our pillows and are ready to give them to  
the residents. You can tell by the smiles on their  
faces they were happy to see us and loved the  
pillows.**





**Getting ready to spread a little cheer by singing in the halls for the residents. We gave some pillows to people in the lobby and went from room to room to give out more pillows. The people were glad to see us and it made our hearts glad to put smiles on their faces.**



**We have been studying the impact of humans on the earth and one of the things we studied was the pollution of water. We saw animals caught in plastic and a fish that was discovered to have several pounds of plastic in it's stomach. We decided to do a project to promote awareness of water pollution. The project we were working on when school was dismissed was to sell ocean t-shirts and promote the 4ocean group bracelets that are made out of plastic pulled from the ocean. So instead we got online and ask our friends and family to purchase a product from the 4ocean website. For each item purchased a pound of plastic is removed from the ocean. We do not have the numbers for how many things were purchased but we hoped we contributed to the cause in some small way and helped pull plastic out of the ocean. If you would like to purchase go to [www.4ocean.com](http://www.4ocean.com).**

### **4ocean Purpose**

**We're here to clean the ocean and coastlines while working to stop the inflow of plastic by changing consumption habits**



## **Energy Conservation**

**Goal#3:** To promote energy conservation, reducing the carbon footprint by reducing the use of fossil fuels.

**Activities and Tasks:** Obtain permission of principal and sponsor. Collect and compile data, graph data.

**Energy Content and Resources:** Materials about energy conservation reducing the use of fossil fuels, home energy audit, internet NEED Resources, NEED materials online, and teacher resources gained from energy camps.

**Student Leadership:** 4 students talked to principal and advisor. 45 students did the research and compiled the data, made the charts and compiled the summary.

**Evaluation:** We discovered that our homes use a lot of resources that are nonrenewable and not energy efficient. We have suggested ways that we can change this and presented them to our parents. Total reached 150.

**Sponsor:** We had to redo this activity so that it could be done at home with the resources we had available. Some of the material was at school where we are not allowed to return.



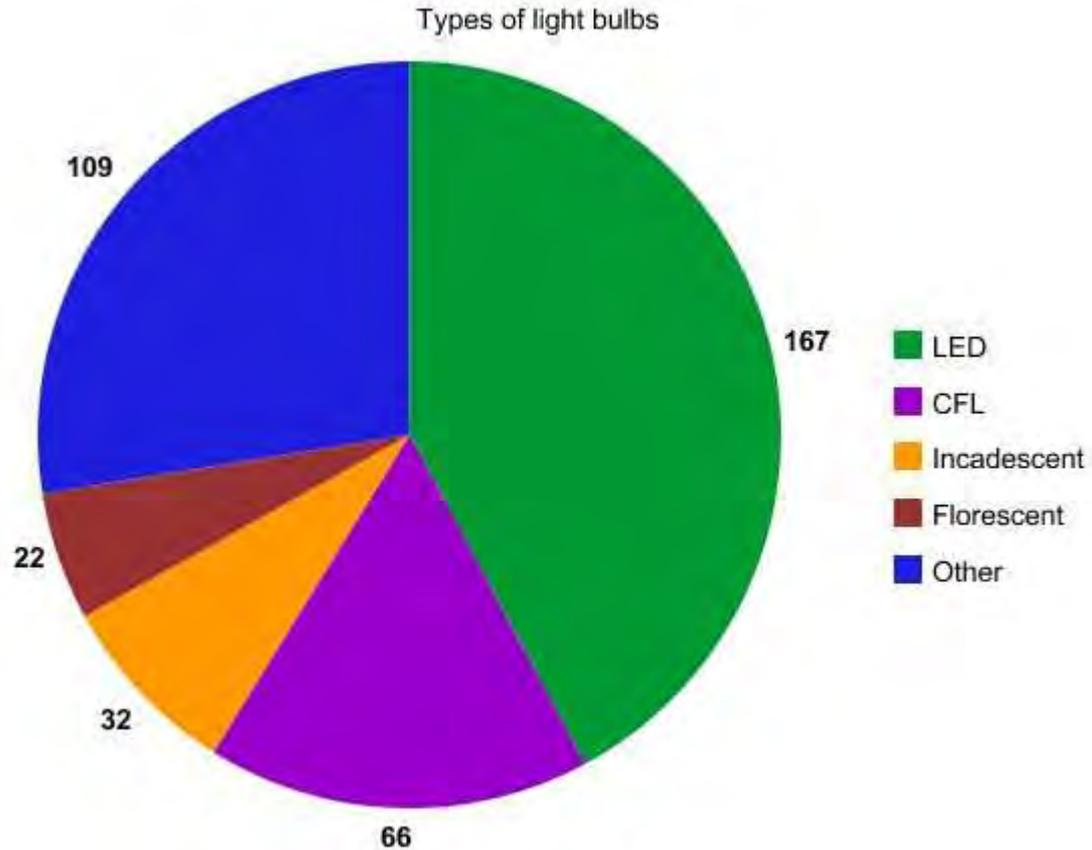
**Fossil Fuels  
Here today and gone  
tomorrow.**

# **Types of Light Bulbs In Our Homes**

**In our homes we were asked by our sponsor to go around our house and count the different types of light bulbs. We counted the light bulbs and sent them to her. She gave us the total and we made a graph using the data. We were then asked to go around our house at three different times of the day and find the number of lights that were left on in the room with nobody in that room. Again we sent them to her and she gave us the total. After we made our graphs we then had to write a paragraph on how we could save energy depending on how many lights and types of lights we had in our house and how many we found left on with nobody in the room.**

**Sponsor note: I will include some of the suggestions made. I tried to save their submissions to download to a slide but the site we are using did not save them in a format that could be used and it would not let me copy and paste. This activity was modified to fit the home school setting.**

# This is a graph of the types of light bulbs in our



# Light Bulbs Left On With Nobody In the Room

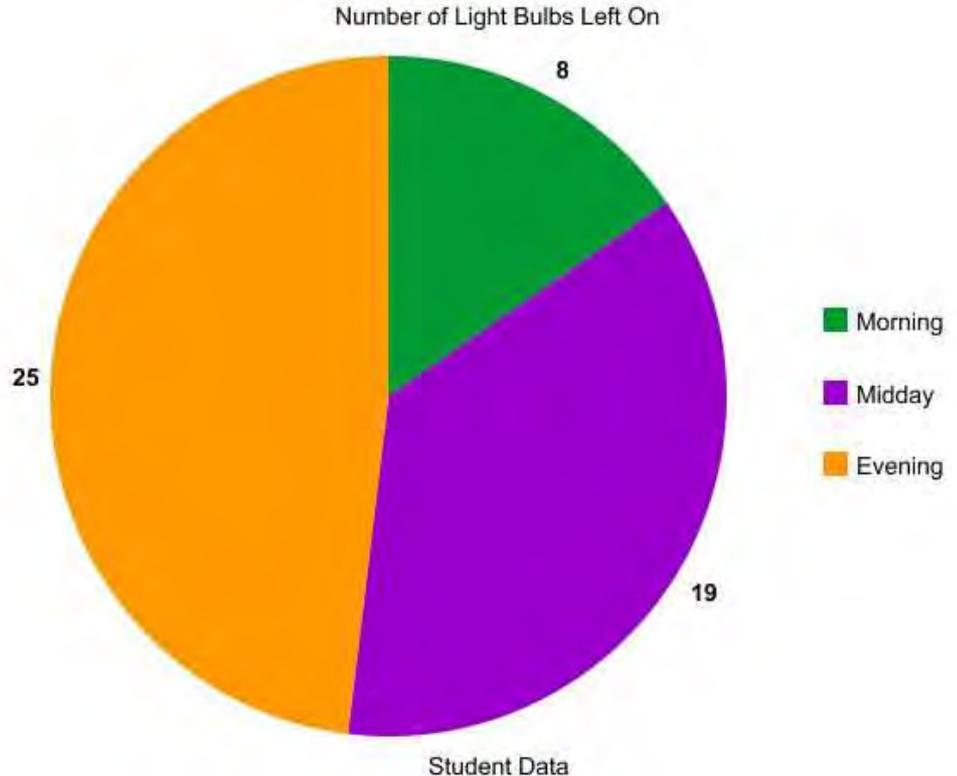
We found that the times when the most lights were left on with nobody in the room was during the midday and evening hours. We thought that the morning hours would have more on than midday because there is more outside light during midday.

**Suggestions for saving energy:**

Turn out the lights when you leave the room.  
Replace the incandescent and other light bulbs with the energy saving LEDs.

Some fluorescent light bulbs stayed on all the time, like over the kitchen sink. This light could be turned off during the day.

Some people had no lights on when nobody was in the room because their parents would get on to them if they left them on.



# Renewable and Nonrenewable Resources

We have been studying renewable and nonrenewable resources. We had to list 5 sources of energy used in or around our homes and determine if it was renewable or nonrenewable. We had to suggest ways that we could change the nonrenewable to a renewable resource or that would be more energy efficient.

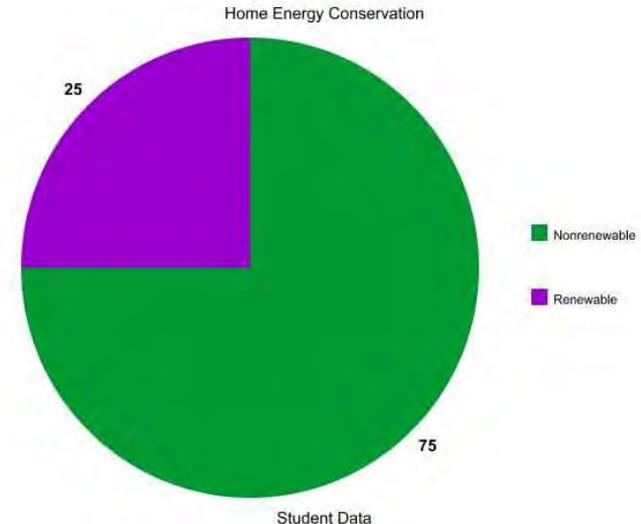
**Because electricity is our biggest usage we could make sure we are using energy efficient appliances, energy efficient light bulbs, and unplug appliances not in use, and turn off lights not in use. We could convert our houses from using electricity to solar panels.**

**We could use geothermal for heating and cooling.**

**Gas usage was also high so we could drive electric cars.**

**We could also make gas that contains more ethanol reducing the carbon footprint.**

**Propane was used on grills. We could change or create something to operate our grills that would be renewable.**



**Our Jr. High Club has had a good year and are looking to next year and thinking about our goals. We helped the Energizers with a few of their activities. We learned a lot about energy this year. We learned about renewable and nonrenewable energy. We learned about energy conservation. We explored electricity and magnetism. We completed several NEED activities in our classroom. We studied the human impact on earth with the study of water, air, and land pollution. We completed service projects that promoted reusing materials. We completed projects that had emphasis on our use of natural resources.**

**Resources:**

**NEED Elementary Poll**

**NEED Energy Works**

**NEED Energy Books and online resources**

**State of TN Energy Camp NEED Activities**

**Sponsor note: The students completed the work at home providing me with the data. I would have loved to download their work directly but what I saved to the computer pulled up with all kinds of extra folders attached and nothing I could find directly to what they submitted. I compiled their remarks as best I could, but the way they stated things was the best part.**