

# The Energizers of Michie Elementary School

## Reduce, Reuse, Recycle

Advisor Ms. Debra Steen

We have conducted and participated in many energy activities. encouraging energy conservation, reducing, reusing, and recycling. We have provided energy conservation tips on our Michie News site. Parents have installed energy conservation kits saving on their power bills, and conserving on water. We have reused milk cartons for planting and competitions and collected jeans for the homeless. We have involved our school and community in our recycling program. Encouraging recycling by participating in the Keep America Beautiful recycling contest, in which we are waiting to find out our place in the community division, and by providing containers for recycling, and recycling aluminum cans. We have been nominated for the Governor's Environmental Stewardship Award and awaiting the results. We have been nominated by our county for an award for our achievements. Our energy efforts in education have helped our county achieve recognition for its efforts in recycling for economic growth. We are making a change in our school, community, and county.



**A few of us working together.  
Led by Lori, Jack, Will**

## **Reenergizing Teamwork**

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

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

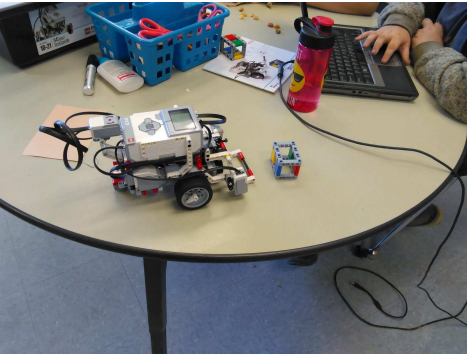
**Energy Content and Resources: NEED Energy poll, Teacher resources from Energy Camp, NEED Science of Energy**

**Student Leadership: 12 students took the poll and 10 to 15 students were involved in most activities**

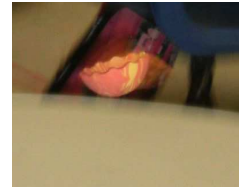
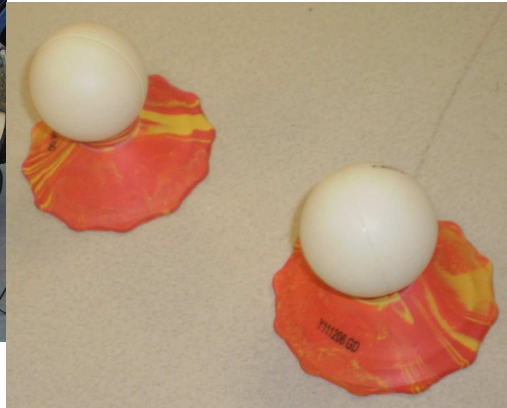
**Evaluation: Energy Poll scores were an average of 80% and upon completion were an average of 95% Number reached 250.**



# Mechanical, Solar, Wind and Sound Energy



Our robotics that we use to monitor solar, wind, and hydropower components of energy.



How far will they go?  
They went to the other side of the room. Potential Energy



Sound Energy  
Can I get the water to rise?



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Making  
our solar  
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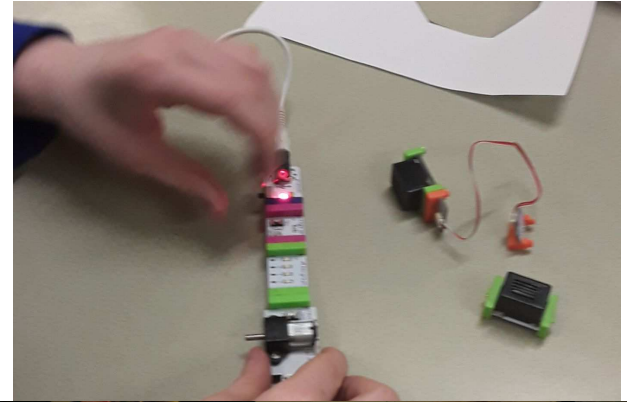
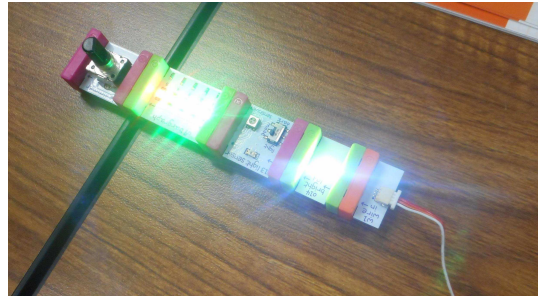




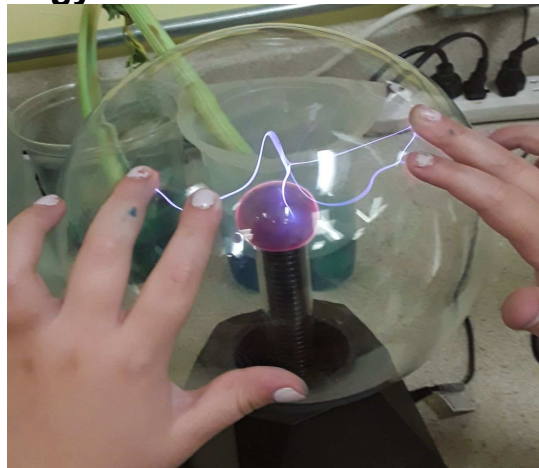
# Open and Closed Circuits, Chemical Energy, Electricity at Work



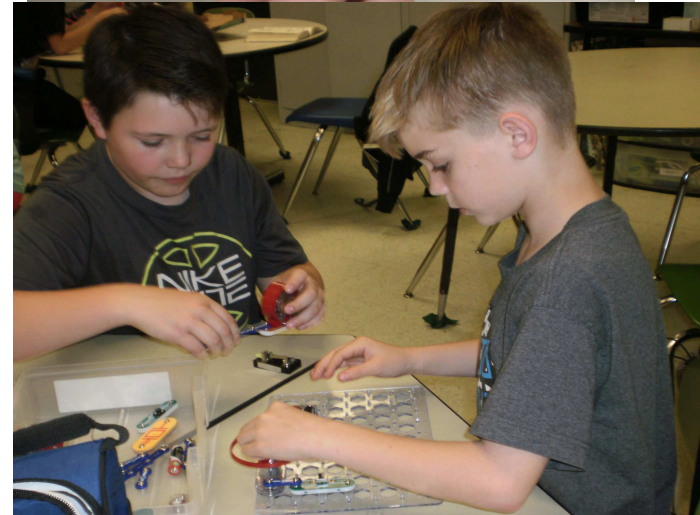
Little Bit Circuits



Our Rockets. Chemical Energy



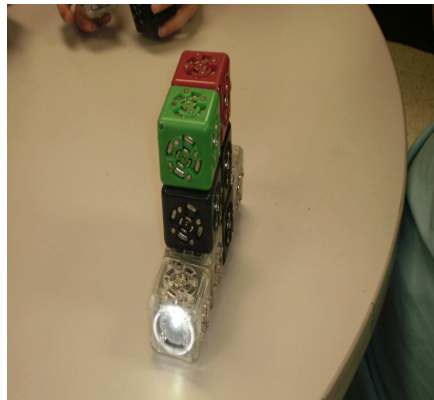
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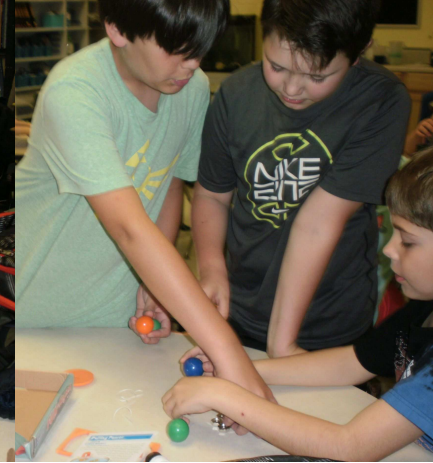
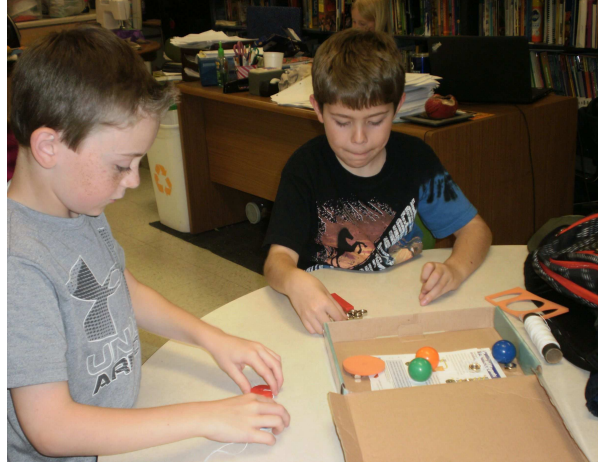




**Cubelets.  
Connect  
them and  
make  
lights  
flash,  
drive and  
spin, and  
make  
sounds.**



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**Hydropower.  
Explaining how the  
water turns the  
generator.**



**We turned the  
lights on. Will it  
light up the  
bigger light  
bulb? Yes it  
did.**







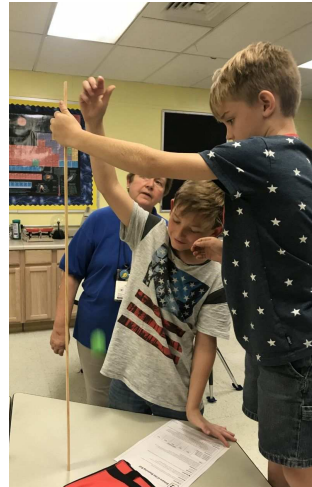
Happy and sad balls. Choose which one will bounce. Will temperature affect how it bounces? Yes, adding heat makes it bounce higher.H



Super bounce ball. How far will it travel if dropped at different heights?



Checking the splatter pattern after dropping the ball.



Answering the questions.





# REDUCE

**Goal#2: To promote energy conservation by reducing the amount of energy used.**

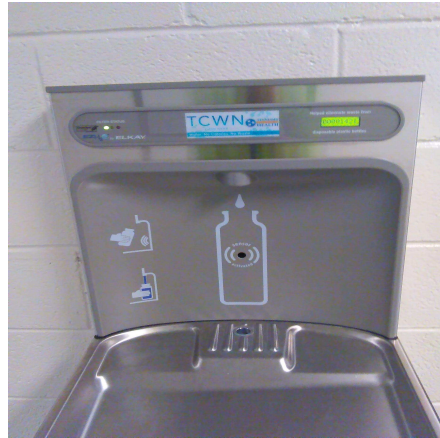
**Activities and Tasks:** Obtain permission from the principal, consult with our advisor, do school energy audit, present findings to principal, write letter for parents, send home energy conservation survey (STAR), obtain energy kits, send home energy kits, collect data from home energy kits.

**Energy Content and Resources:** NEED Energy Audit Kit, STAR survey, NEED Home Energy Conservation Kits. Renewable resources.

**Student Leadership:** 11 students conducted school audit, 4 wrote parent letters, 5 passed out parent letters and survey, 9 took home energy conservation kits, 15 collected and analyzed data,

**Evaluation:** Our students are utilizing our refillable water bottle water fountains saving on the use of plastics. We are still using our solar panels to run our hydroponics. Home energy usage has been reduced. 370 students are affected by the panels, 370 surveys went home, and 72 letters went home. We had 9 parents participate in the home energy conservation kits. Over 31,000 people reached via media, newspapers and letters.

**Still using our refillable water fountains. Over 9400 per fountain**



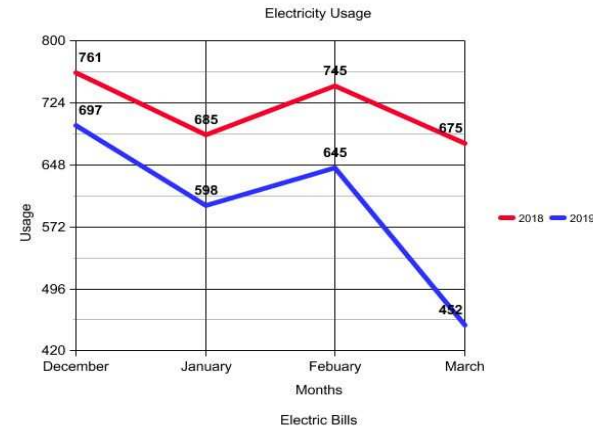
We compared incandescent, CFL, and LED light bulbs. The LED uses less energy.



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**There were nine 4th grade parents that agreed to take the energy conservation challenged. We graphed the average results.**



# Reuse

**Goal#3: To promote the reuse of items**

**Activities and Tasks: Obtain permission from principal and advisor, contact waste management director, save milk and juice cartons, place article in newspaper, send home letters, collect jeans, count and find a place to donate jeans, deliver jeans, plan farm day, obtain volunteers to help.**

**Energy Content and Resources: Promote recycling, energy conservation, local farmers and volunteers. Providing events like Pickwick Electric and electric safety, puffy stuff biodegradable packaging material, reusing milk cartons for planting, and biodegradable containers for flower seeds.**

**Student Leadership: 4 students talked to principal and advisor. We all help planned farm day and blue jean drive with dividing task. 6 students helped deliver jeans, we all help empty recycled containers.**

**Evaluation: We collected over 250 pairs of jeans, farm day was a great success and enjoyed by all with recycled milk cartons and many other sustainable products. Approximately 80,000 or more reached through newspaper, media and Ag websites.**



**What is PUFFY STUFF?**  
Puffy Stuff is an all-natural packaging material made from grain protein. Unlike other plant-based loose fill, PUFFY STUFF is completely biodegradable by 50% within 100% consumed by bacteria.

**Benefits compared to corn starch and conventional loose fill:**

- 100% biodegradable
- Zero petrochemicals
- Unaffected by oil prices
- Competitive cost
- Easy disposal
- Reusable
- Hypoallergenic
- Static free
- Performs better in tests

**How does it break down?**  
Upon direct contact with water, the loose fill degrades to inert proteins which are quickly consumed by soil bacteria.

**Is it environmentally safe?**  
Absolutely, as safe as any grain. PUFFY STUFF is made from three ingredients. All of which are 100% safe for the environment.

**Will it shrink away like corn starch loosefill?**  
No. PUFFY STUFF is hydrophobic and is not subject to shrinking in humid conditions.

**Is it harmful to wildlife or pets?**  
No. Although not particularly tasty, PUFFY STUFF is even edible and digests easily. Try it!

**Does it attract pests?**  
No. Processing removes all food value from the grain and, in turn, the attraction of mice and other pests.

**Does it have an odor?**  
PUFFY STUFF has a faint smell similar to popcorn. This will not transfer to your product. PUFFY STUFF actually absorbs odors!

**Is it static-free?**  
Yes. By retaining a small amount of moisture, it conducts the static charge away resulting in no cling or damage to electrical and other sensitive devices.

**Can it be reused?**  
Absolutely.

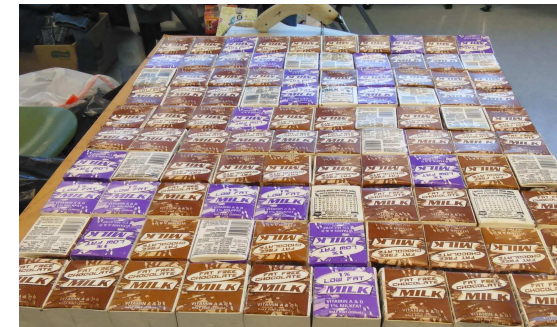
**Where is it disposed?**  
If not reused, PUFFY STUFF can be thrown away, put in a landfill, or even hoed down in your garden as fertilizer.

**How durable is Puffy Stuff?**  
The product has a high density for rugged durability. It will not break or allow product migration and damage during shipping.

Office: 187-PUFEYUSA • Fax: 615-444-5433 • puffystufftn.com  
123 West Market St., Lebanon, TN 37087



We have the students in the school to collect milk cartons so that we can use them for plants.





# Teens for Jeans

Reusing new or slightly used jeans for the homeless. Our students and community donated over 250 jeans. We donated them to a place in our county that helps those in need.

## Teens for Jeans

Collecting Jeans for Youth Experiencing Homelessness for National Teens for Jeans Campaign.

The Energizers (Michie Elem. School Energy Club) are collecting jeans for Teens for Jeans, a national campaign. Teens for Jeans encourages young people across the country to run a jeans drive in their school or community to help provide clothing for youth experiencing homelessness.

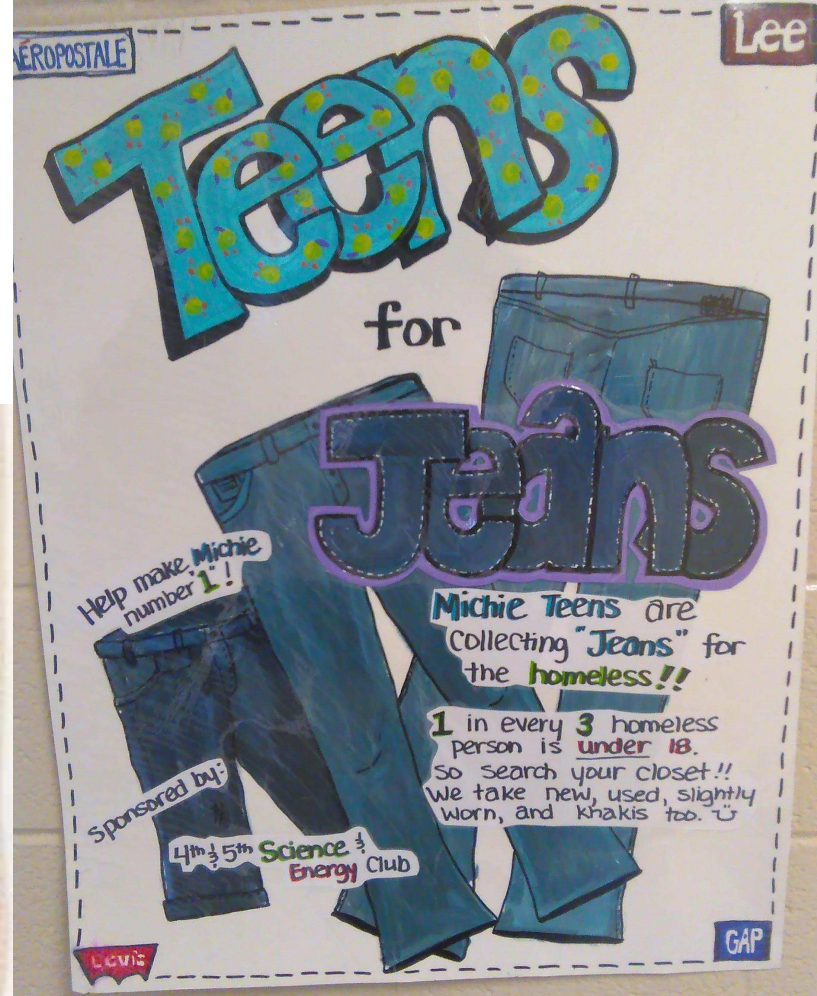
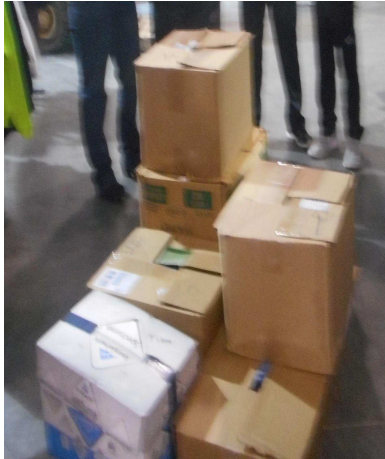
Over a million young people experience homelessness in the United States every year and one of the most requested items for young people in homeless shelters is a pair of jeans. In the past eight years, young people across the country have collected over 5 million pairs of jeans through Teens for

Jeans. The Energizers Club has participated for the last three years and has collected several hundred pairs of jeans. Our goal this year is to collect more than 8000 pairs of jeans. Please help us reach our goal. We can conserve energy by reusing jeans and help other people at the same time.

Members of the community, county, and school can support the Energizers by dropping off their gently used denim at Michie Elementary School, located on Highway 57 East, until Feb. 25th.

These jeans can be any size from baby to adult. They will also accept khaki pants. The jeans can be pants or shorts. If you have any questions please contact the sponsor, Ms. Steen at Michie School, 731-632-3602.

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# Carton to Garden Contest

This year we ask each K-8th grade student to collect milk cartons for our Farm Day. Each student will decorate one carton to plant their tomato plant, and the other cartons were used for the 4th and 5th grade to plant cucumber plants for the students to take home on Farm Day. We collected over 1500 milk cartons.





Farm Day is now an annual event with a focus on farming and recycling. Students in K-6 collected at least two milk cartons and decorated one of them. Reusing these cartons as a container to plant tomato plants. The rest collected were used to plant cucumbers for students to take home. There is also a booth with puffy stuff that the Energizers run that is biodegradable and made out of milo plants manufactured in the state of Tennessee.

Filling biodegradable containers with soil.





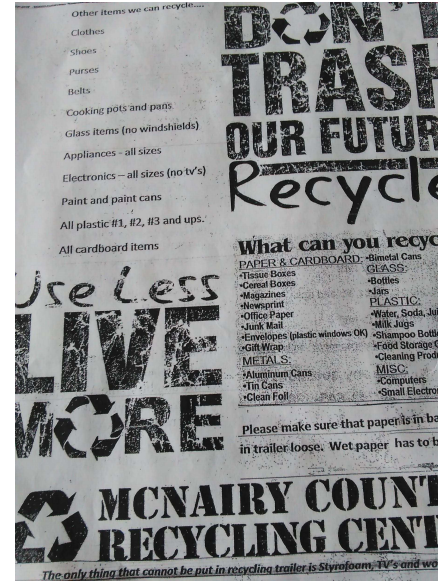
## Goal #4 To promote recycling at home, school and the community.

**Activities and Tasks:** Obtain permission from principal, contact our county waste management director, enter the recycling contest, hold a Go Green Recycling pep rally, send notes home, enter the aluminum can recycling contest and the Milk Carton Contest for reuse for garden purposes, and Farm Day, Participate in the Pepsi Recyclable Challenges.

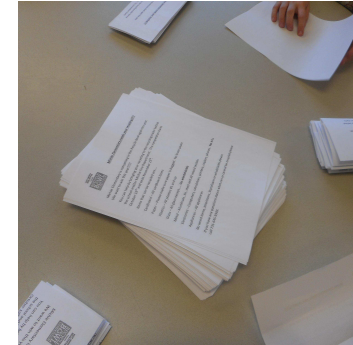
**Energy Content and Resources:** Renewable resources, promote energy conservation,

**Student Leadership:** 15 students folded parent letters, 2 student contacted newspaper, 10 students advertised on Michie News, 15 students conducted the Go Green Recycle Pep Rally,

**Evaluation:** We were nominated for the Good Sports Always Recycle but did not place. We also were nominated for the Governor's Environmental Stewardship Award and are awaiting results. We held an America Recycles day in November. We participated in the community division of the Keep America Beautiful Recycle Bowl, the Al the Can Roundup, with over 80,000 reached



Include with letters on back to parents and community.







# Keep America Beautiful Recycling Bowl

We participated in the Community Division of the recycling bowl competition. We had a total of over 270,000 pounds of recycling for the middle of Oct. to the middle of Nov. We placed ads in the paper, stuffed the water bills with recycling information, held a recycle day for recycle month and started it all off with a Recycle-Go Green Pep Rally. People from all over the county got behind our competition. We also had over 2000 pounds for Pepsi Recycle for 2 months.



Letters folded for the water bills.

Dear Parents and Community,  
 Michie School and Michie Community has been entered into the Keep America Beautiful Recycling Bowl Competition. The competition run from October 16th-Nov. 15th 2017. We have been second in the Nation for the Community division for the last two years. We are trying to get first place. We need your help. Let's come together as a community and show the world that Michie can make a difference in the world.

To do this we need to recycle all that we can and bring it to the recycling trailer that is at the back of Michie School. There may be one or two in Michie but I haven't been told where they are going to put the second trailer yet. On the back of this sheet you will find a list of the things that be recycled. Items do not have to be sorted. All paper items need to be placed in a plastic bag so they will not get wet. Please no trash. Nothing a lot of food etc, wood, styrofoam, TV's, or tires. Electronics, large appliances can be placed in the trailers.

We will also collect aluminum cans for recycling and they can be put the trailer or in front of the green house by the school. We can count the toward two recycling competitions. Please place cans in plastic bags for handling purposes. You may also have them weighed and bring the we slip to school to my attention and they can be counted toward our recycle goal. We need over 250,000 lbs during this month at least.

#### Teens for Jeans

One in every three homeless person is under the age of 18. "Teens for is a service project being sponsored by the 4<sup>th</sup> and 5<sup>th</sup> grades too. Sera closet and find the jeans that you can no longer use and bring them to The jeans can be new or used and any size. You can also bring khakis. These will also be weighed and counted toward our recycling bowl.

Thank you for participating. Let's make Michie number one

The Energizers (4<sup>th</sup> and 5<sup>th</sup> grade Science and Energy Club



**Michie Elementary needs your recycling!!!**

**RECYCLE BOWL COMPETITION**

**Michie Elementary is competing in the Recycle Bowl again this year. Last year we placed 3rd in the Nation, this year we want to win!!!!**

You can help by bringing your recycling to the recycling trailer behind the school (available 24 hours) and/or Michie City Hall (8:00 a.m. - 4:30 p.m. weekdays).

**The competition starts October 20th and ends November 15th**

**Items that can be recycled are....**

- Cardboard** - All cardboard items
- Paper** - Please make sure paper is banded. No loose paper.
- Plastics** - All plastics #1 and up
- Glass** - No windshields
- Metal** - Aluminum, tin and all mixed metals
- Electronics** - Computers, calculators, printers, copiers, No TVs.
- Appliances** - All appliances

No wood items, televisions, styrofoam or windshields please.

**If you have any questions about what can or cannot be recycled please call 731-645-5909.**

**KEEP TENNESSEE Beautiful**

*2nd Place Community Division Winner*

Keep Tennessee Beautiful awards  
**MICHIE ELEMENTARY SCHOOL**  
 this certificate of appreciation  
 recognizes Outstanding Service  
 to the mission and vision of Keep America Beautiful



**The Energizers have had a good year and are already looking to next year. Awaiting several results from nominations and contest. Our county nominated us for a new award this year and we are waiting to here from it. We help our county with the education component of our program, and our recycling being used for a part of our county Green Rating, our Michie School News on You Tube, newspaper articles in three area newspapers and their websites , notes we send home from school, and word of mouth we have reached tens of thousands of people. Our recycling program has increased the amount that is recycled to the extent that they have to empty our recycle trailer sometimes twice a week but at least once a week. We have placed another recycle trailer because of the interest in recycling. We hope to keep building our program and encouraging others to recyle.**

**Resources:**

**NEED Elementary Poll**

**NEED Energy Works**

**NEED Home Energy Kits**

**NEED Energy Audit Kits**

**NEED Energy Books and online resources**

**State of TN Energy Camp NEED Activities**