

# Water Energy Savers

**A.K. Suter Elementary**  
**Pensacola, FL**  
**sponsor - Cindy Bradley**

INVEST IN OUR PLANET

This year I began the challenge of taking on the NEED Project solo. Over the years I have learned so much from NEED and Debbie Pate. This year we started with the basics. We have used many NEED lesson plans and activities, ordered projects from Amazon, and had parents send in items. We also did some of my old, but good favorites too! The solar ovens were a huge hit, Candy Collector really hit home with my students, and Sidekick Circuits were the best.

We also performed community education. We decorated drink holders for our friends at Starbucks and grocery bags for 2 Publix supermarkets with energy conservation pleas. We invited John Stanton from Pensacola Energy in to talk with us about what our city is doing to conserve energy. And our BIG project was creating a slide about recycling for our very own Pensacola Blue Wahoos, our local double A baseball team. It was shown at many games and seen by tens of thousands ! We are constantly educating more and more people on energy and energy conservation!

# Goal 1: Increase student awareness of alternative energy sources.



## **Energy Content Activites:**

1. Miss Bradley will teach her class about different energy sources.
2. Students will participate in hands-on activities using NEED resources.
3. Students will work together in small groups to conduct investigations and participate in activities.
4. Parents and guest speakers will assist in student learning.

## **Student Leadership:**

1. Students will plan, organize, and assist others in small group and individual activities.

## **Resources:**

NEED Solar Kit, Energy from the Sun workbooks, Wonders of the Wind workbooks, NEED Facebook page, NEED Science of Energy, NEED Energy Games, NEED Renewable and Nonrenewable poster, NEED Sidekicks.

## **Evaluation:**

1. Class discussions after activities
2. Posters made by students
3. Outcome of activities and investigations
4. NEED evaluations
5. Student cooperation and interest in activities





## THE 10 ENERGY SOURCES

RENEWABLE	NONRENEWABLE
<p><b>BIOBISS</b> Anything that is alive, or anything that was alive a short time ago is called biomass. Trees, crops, garbage, and animal waste are all biomass. Most of the biomass we use for energy today is wood.</p>	<p><b>COAL</b> Coal was formed millions to hundreds of millions of years ago from plants. Coal is often shiny, black rock. Coal is a fossil fuel that we burn for energy.*</p>
<p><b>GEOTHERMAL</b> Geothermal energy is heat from inside the Earth. The inside of the Earth is very hot. Sometimes this heat comes near the surface. We can use this heat to warm our houses. We can generate electricity with it.</p>	<p><b>NATURAL GAS</b> Natural gas is a mixture of gases you can't see, smell, or taste. We often add an odor to it so we can smell it. It has a lot of energy in it. You can burn it to make heat. Natural gas is a fossil fuel.*</p>
<p><b>HYDROPOWER</b> Hydropower is energy created by moving water. Moving water has a lot of energy. We use that energy to generate electricity.</p>	<p><b>PETROLEUM</b> Petroleum is a liquid that is found underground. Sometimes we call it oil. Oil can be as thick and black as tar or as thin as water. Petroleum is a fossil fuel* that has a lot of energy we release when we burn it.</p>
<p><b>SOLAR</b> The sun provides lots of energy to the Earth. We call it solar energy. It travels from the sun to the Earth in rays. The energy from the sun makes rain, wind blow, and plants grow.</p>	<p><b>PROPANE</b> Propane is the gas we use to heat our backyard grills and operate machines in warehouses. You cannot see it, smell it, or taste it, but you can burn it to produce heat energy. Propane is a fossil fuel.*</p>
<p><b>WIND</b> Wind is moving air. We can use the energy in wind to do work.</p>	<p><b>URANIUM</b> Uranium is a mineral found in rocks in the ground. We split uranium atoms to release energy to produce nuclear power plants.</p>

\*FOSSIL FUEL: Formed millions to hundreds of millions of years ago from the remains of living organisms. The plants and animals received their energy when they were alive from the sun. It was stored in them when they died.

www.NEED.org



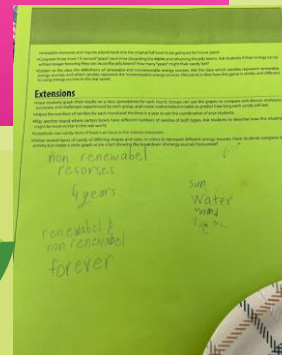
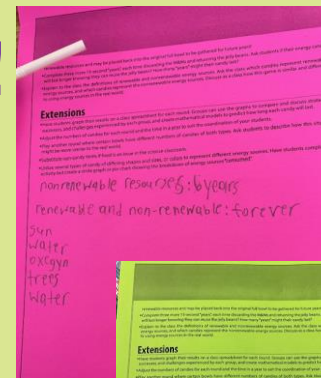
We began the year learning about different forms of energy. We made posters to show our understanding. We also learned about which energy sources are renewable and nonrenewable. **Learning About Energy!**

We didn't like it when our towns ran out of nonrenewable resources. Candy Collector really helped us understand the need for renewable resources. Why aren't we using more of these already?



### Renewable vs. Non-Renewable

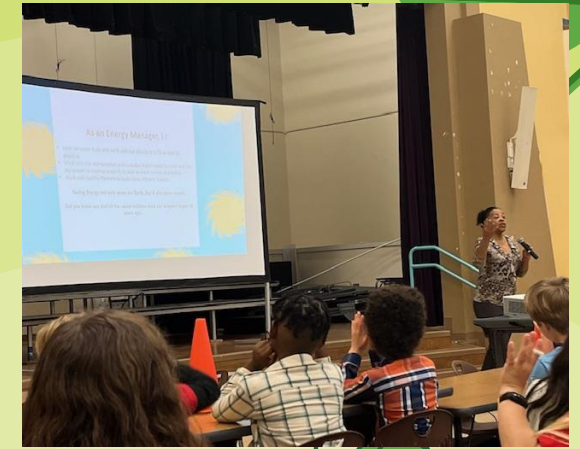
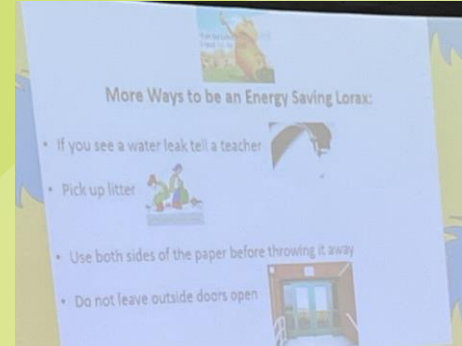
- Renewable Sources
  - Sources of energy that can be regenerated in a short amount of time.
  - Jelly Beans
- Non-Renewable Sources
  - Sources of energy that take MILLIONS of years to regenerate.



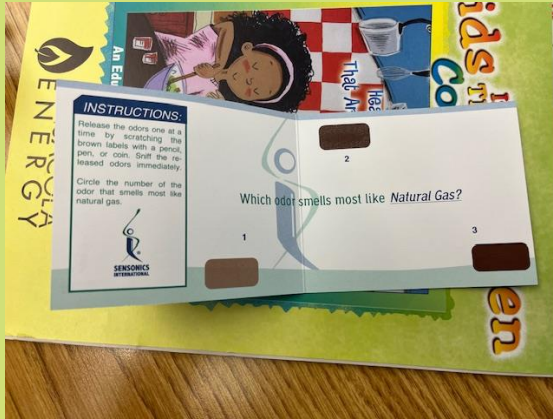
We invited John Stanton from Pensacola Energy to talk with us about what the city of Pensacola is doing to conserve energy.



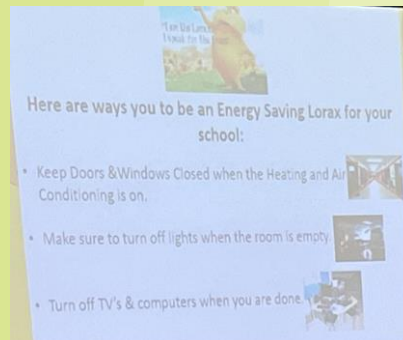
# Guest Speakers



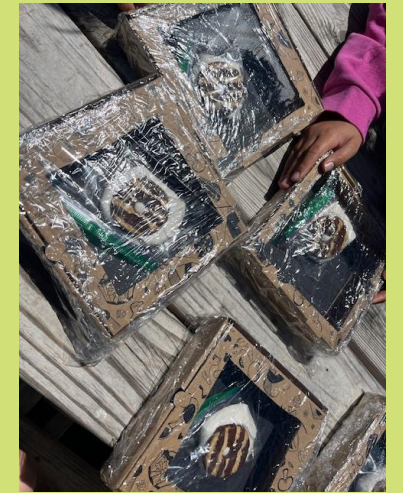
We also invited our school district energy management manager in to speak with the entire third grade. She taught us how to save energy at home and at school. She even brought us wild flower seeds to plant!



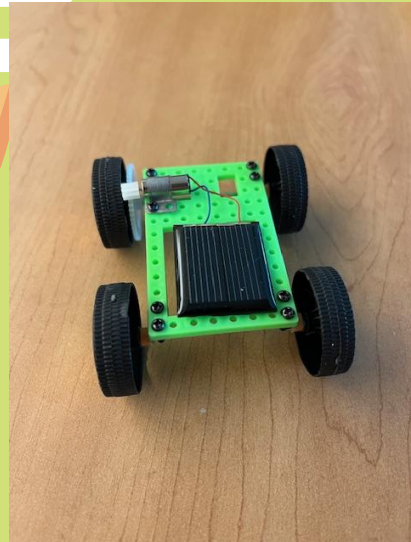
He brought in cards with the scent of Natural Gas for us to smell. It was gross! Watch our video!



# Solar Energy



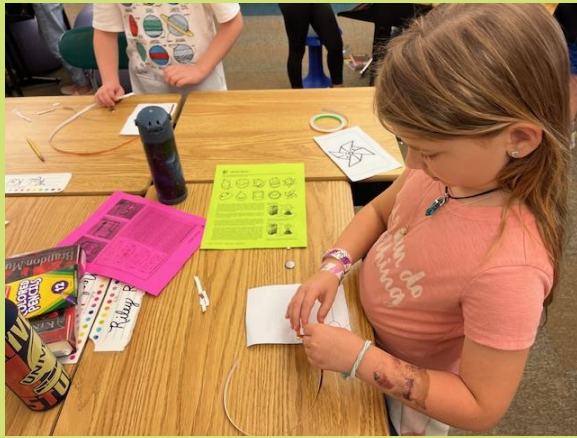
Solar cars, solar houses, solar ovens, oh my!!



We made s'mores in our solar ovens!



# Sidekicks & Solar Beads



We loved making our Sidekick Circuits and UV bead chameleons!



VIDEO



**Beaded Chameleon**

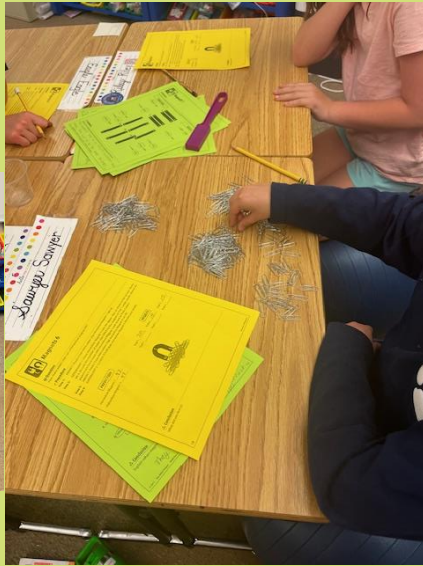
**Materials**

- 1. A long green pipe cleaner (one needed for the chameleon's body)
- 2. A short pipe cleaner (one needed for the tail)
- 3. 20 UV sensitive beads
- 4. 20 UV sensitive markers
- 5. 20 UV sensitive markers
- 6. 20 UV sensitive markers

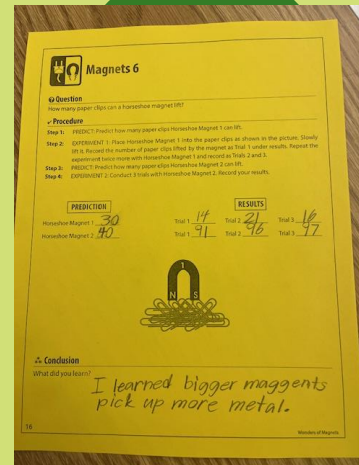
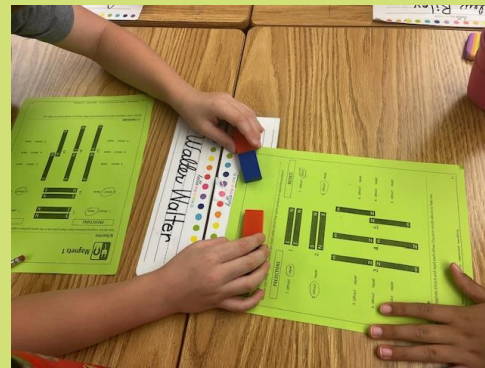
**Directions**

1. Have students gather beaded materials, items could be recycled or from nature. Suggestions include pine cones, fall grass, sticks, leaves, rocks.
2. Read & Color of the Day by you choose.
  - Discuss with your students - what is the theme of this story? (accepting who you are.)
  - While this is a fun picture book, and chameleons do change color, this is not a scientific book. It's a common misconception that chameleons change color due to their surroundings. Their actual colors already provide camouflage for the habitat. Chameleons actually change color when their emotions change, and their colors are a way that it communicates. They also change color to regulate the changes in temperature, light, or humidity.
3. Have with your students that chameleons need 12 hours a day of UV light rays. The beads they used to make their chameleons will change color when they detect UV rays. Ask if they can determine what light source provides UV rays. Have students explain their surroundings can determine what light source provides UV rays. Have students explain their surroundings with their chameleons. Some students may try to hold their chameleons closer to an artificial light source. Some may go to the window. If they do not have access to windows in your classroom, take your students to a "field trip" outside so they can put their chameleons in the sun.
4. Explain that while chameleons do need lots of UV rays, they cannot become too hot. They are cold blooded creatures and must use the surroundings around them to regulate their temperature. Natural chameleon habitats include areas where the heat can rise in and out of sunlight to get the UV light it needs and move into the shade when needed.

# Wind Energy



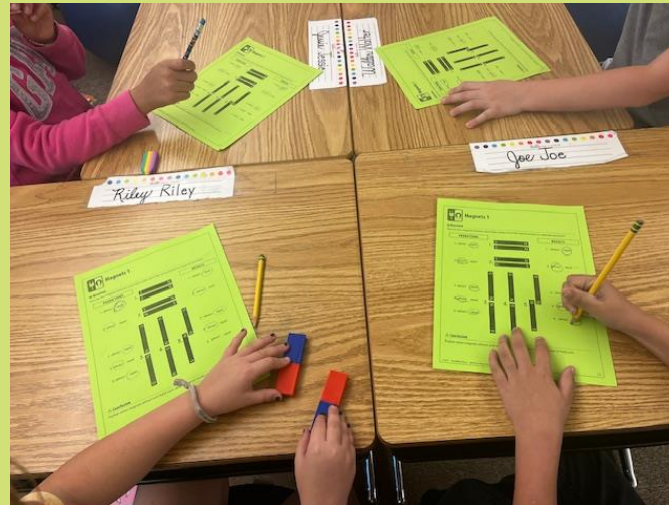
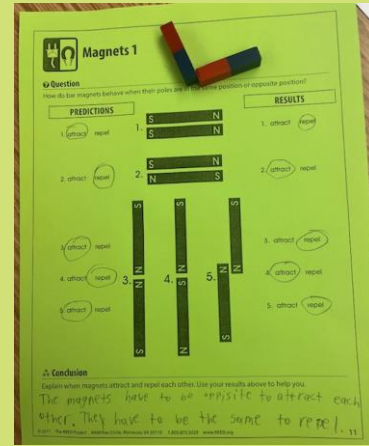
# Magnets



While learning about wind energy, we built a wind turbine and went outside with our pinwheels to study how wind works!



We enjoyed learning about magnets and their poles using NEED materials!



## Goal 2: Increase community awareness by sharing what we've learned.

### **Energy Content Activities:**

1. Decorate "Energy Savers" grocery bags for Publix and Apple Market encouraging recycling.
2. Decorate cold/hot sleeves for Starbucks.
3. Make bookmarks for our local public library.
4. Taught other local students about UV light.
5. Invited John Stanton from Pensacola Energy to teach him about our energy activities and learn about how our city uses energy.
6. Partnered with our local MLB baseball team, the Blue Wahoo's, to teach the public about recycling.

### **Student Leadership:**

1. NEED students taught a representative from Pensacola Energy about energy.
2. Students took lead role in activities.
3. Students educated their families and involved them in activities.
4. NEED students taught Gulf Breeze students about UV light.

### **Resources:**

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### **Evaluation:**

1. Class discussions during and after activities
2. Project assessment by teacher
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# Educating Starbucks & Publix customers



This Starbucks sees about 700 people per day!



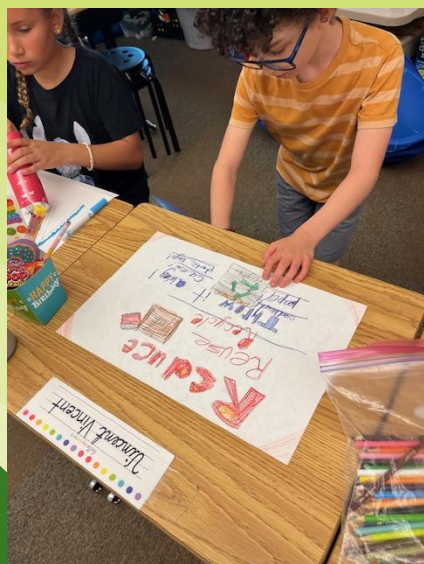
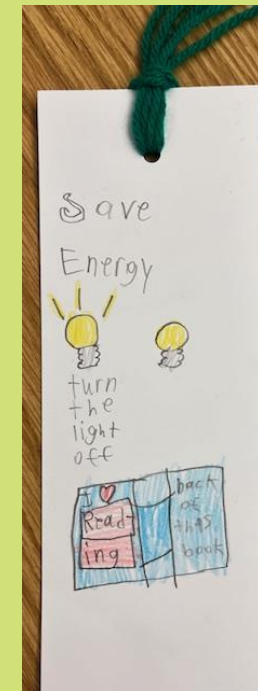
We decorated Starbucks drink holders and Publix grocery bags with energy saving messages. We were even able to hand them out to customers!



Publix used some of the bags and put others on display. One Publix see about 5,000 people per day and the other one sees 10,000!



# Georgio's Pizza and the Public Library

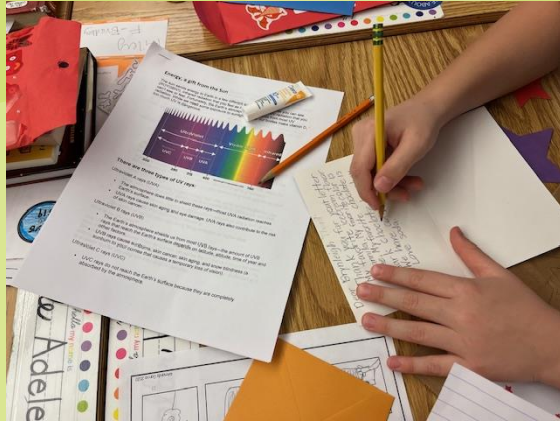
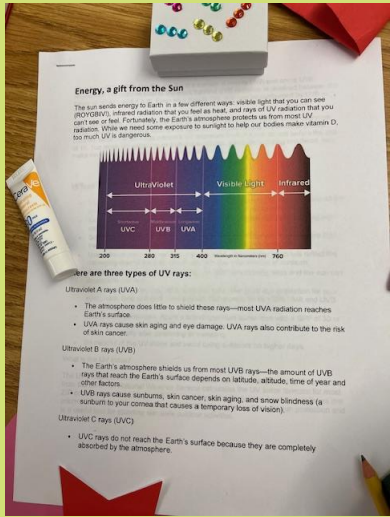


We made placemats for a local pizza restaurant called Georgio's. They get over 500 customers a day! And they promised to use the placemats for the next couple of months!



Every year we make bookmarks for our local public library. This year we made 200 for them. We are told that the kids there love them!

# Pen Pals



This year we had Pen Pals from Gulf Breeze Elementary. We sent them UV bead bracelets and information on UV rays. We were so excited to educate other third graders with our NEED resources!



We even sent them some sunscreen to protect them from the UV rays!

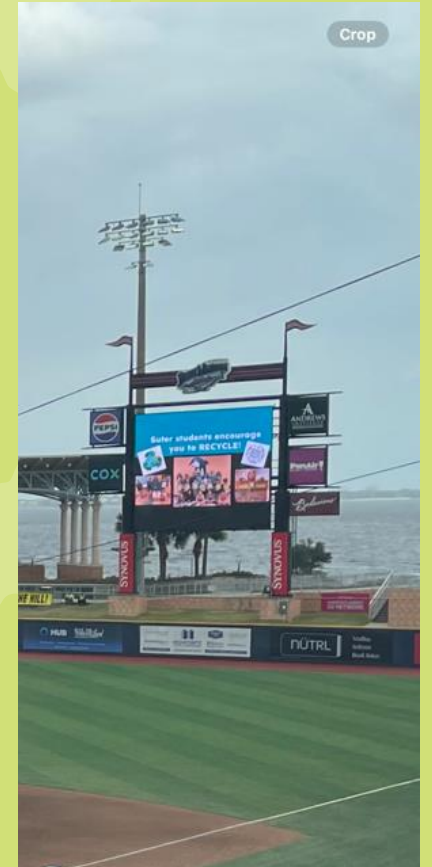


# The Blue Wahoos!!

We have partnered up with our local MLB baseball team, The Blue Wahoos, to spread energy awareness and recycling! We had the opportunity to put a slide on their giant video monitor during games. The stadium seats over 5,000 people! That means at least 5,000 people will get to view our slide every game! Now that's a home run!



Wow! Look at us on the HUGE monitor!



# This is our team!



We would like to send a big THANK YOU to NEED for designing such an amazing curriculum! We had so much fun this year with all of our activities! I have parents begging for their kids to be in my class so that they can do these projects. Other classes see us having fun while learning and want to join! I tribute that to my friends at the NEED Project!



We have bins set up around school to encourage all 563 students to recycles!