

Morningside Elementary

5th Grade NEED Project

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Our 5th graders enjoyed studying energy this year through the use of NEED materials. We studied and practiced all of the experiments in the Science of Energy unit and then taught other 5th grade students. Our class was videoed while we were teaching the Science of Energy, and then featured on the district video for our school. All students in 5th grade participated in the Energy Expo and then several leaders went to a community Science festival where we presented our learning and conducted hands on demonstrations for festival attendees. The festival was an all day event that allowed us to reach out to the community and educate others about energy sources and how energy can transform.

Goal 1: To learn the Science of Energy

Energy Content Activities

1. Students studied potential and kinetic energy.
2. Students learned the NEED Energy Chants.
3. Students divided into groups and learned a Science of Energy experiment.
4. Students presented their experiment to other 5th graders.
5. Students were videoed and a segment of their lesson was used in the school video produced by the district.

Student Leadership

1. Students were in charge of learning their experiment and planning their presentation for other students.
2. Students were given the script to study, but they could not use the script the day they were teaching.

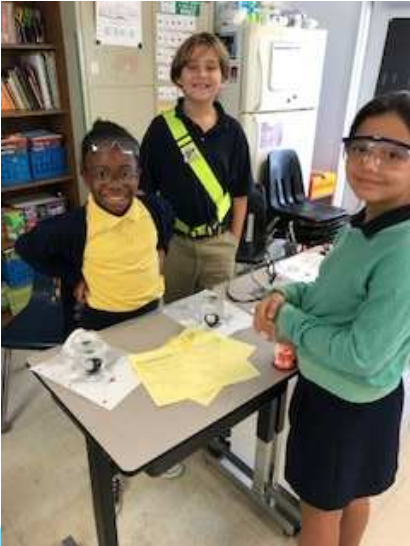
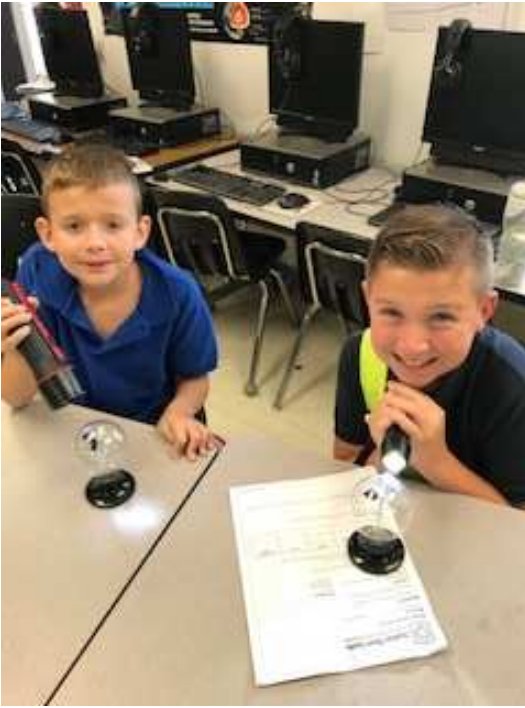
Resources

1. Elementary Science of Energy Unit
2. NEED Energy Infobooks
3. NEED Energy Chants

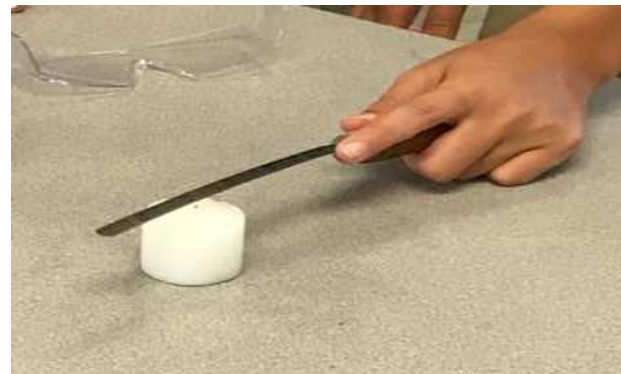
Evaluation:

1. Unit test on energy
2. Student interest and participation
3. Teacher monitoring of presentations
4. Feedback from other students about presentations

Science of Energy



- Station One- Potential and Kinetic Energy
- Station Two- Endothermic and Exothermic Reactions
- Station Three- Radiant Energy Transformations
- Station Four- Thermal Energy and Motion Energy
- Station Five- Chemical Energy
- Station Six- Electrical Energy



We practiced our experiments with students in our class before we presented them to other students.

What is electrical energy?

Electrical energy is the movement of electrons.

Lightning and electricity are examples.

What is a circuit?

A circuit is a path that an electric current can follow

Energy Transforms



Chemical



Thermal

Forms of Energy



The glow stick that was in the cold water absorbed some of the heat energy from the glow stick, which slowed down the reaction. The glow stick was not as bright. The glow stick in the hot water absorbed some of the heat energy from the hot water. The added energy made the chemicals react faster, which made the glow stick brighter.



Radiant

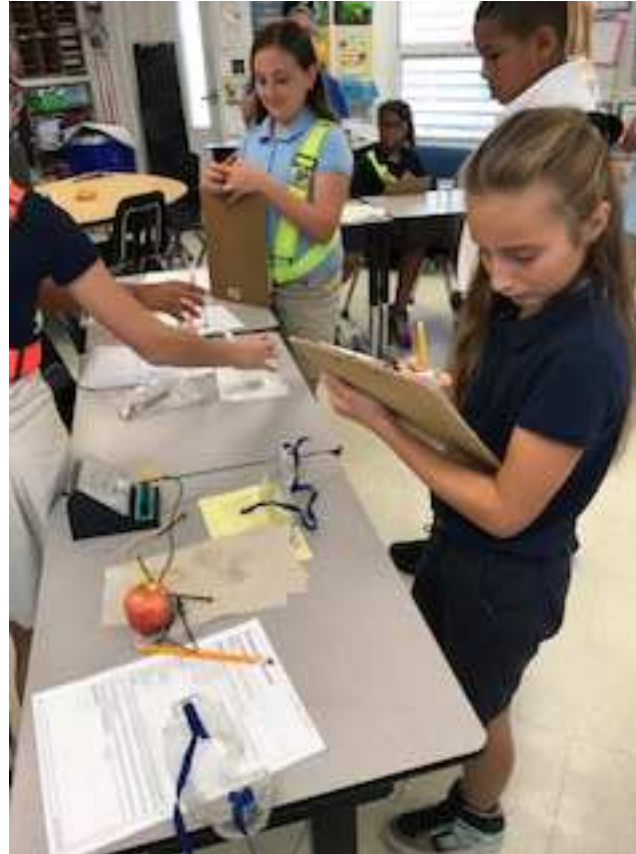
Thermal

Motion

Kids Teaching Kids



The battery and motor take electrical energy and transform it into motion.



How does energy transform in an apple battery?
The chemical energy in the apple is converted to electrical energy.

Goal 2: To have an Energy Expo at the Indian River Lagoon Science Festival

Energy Content Activities

1. All 5th grade students studied a source of energy and created a poster on their source.
2. Students presented their posters to the class.
3. Students attended the Indian River Lagoon Science Festival where they displayed their posters and presented hands on demonstrations for festival attendees.

Student Leadership

1. Students were in charge of researching their energy source and designing their poster.
2. Students were in charge of running the table for our school at the festival.

Resources

1. Energy Expo Unit
2. NEED Energy Infobooks
3. Science of Energy hands on experiment materials

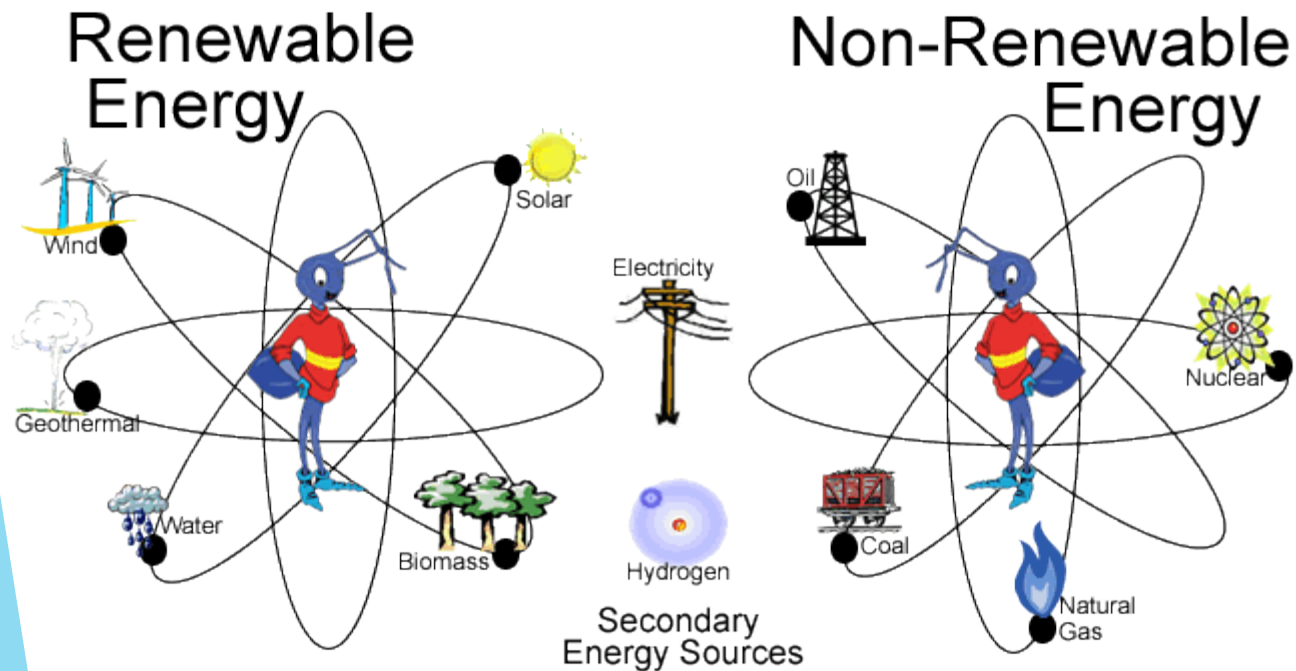
Evaluation:

1. Teacher monitoring of student presentations at the festival
2. Unit test on energy
3. Evaluation of student posters for the Energy Expo

Creating our Energy Expo Posters



We presented our energy posters to our class before we took them to the festival.



The Indian River Lagoon Festival gave us a chance to teach members of our community about energy. Here is some info about the festival:

IRL SCIENCE FESTIVAL

About

OUR MISSION

Helping people realize that science is relevant, interesting, fun and an important part of their lives by promoting community knowledge and experience with science-based organizations in the local area.

OUR BIG EVENT

The Indian River Lagoon Science Festival features a variety of science- and technology-related activities, all with the goal of making science accessible, interactive, relevant and fun for both children and adults.

About 10,000 people spent
1.9 hours each at the 2016 Festival.
~94% Rated it very good or excellent.
96% Learned something new about science

SCIENCE, TECHNOLOGY, ENGINEERING AND MATH (STEM) EXHIBITORS IN 2017:

Morningside Elementary - NEED Energy Expo and Demo

The “Wheel of Energy” was popular at the festival. Guests could spin the wheel to get an energy question. Morningside students discussed the answers with guests and then gave them an energy source tattoo. Students also demonstrated some of the Science of Energy experiments and explained the coal formation model.



Kids teaching Kids and adults!



Renewable and Nonrenewable Sources Of Energy



Indian River Lagoon Science Festival

Click the link to see the video about our school.
5th graders can be seen teaching the Science of
Energy experiments
to other students.

<https://www.youtube.com/watch?v=Yy7IvmFDqfU>



Morningside Elementary had
a great time learning about energy
and teaching others what we learned.

