Northview Elementary School

Spread the Word: Energy is Everywhere!

Prekindergarten through fifth-grade students continue to learn about energy-themed concepts, obtain clarification on ideas, and enhance prior knowledge. The school's Green team members in fifth grade facilitated sessions after receiving training to inform other students about the benefits of solar energy, explain renewable and non-renewable energy sources, share forms of energy and energy conservation by leading others in applying and experimenting with various energy projects for real-world experiences. The fifth-grade Green team members also engaged in the energy innovation challenge. They led energy-focused stations during an energy fair to engage the community on topics through tasks, that included Energy Knockdown Game, Energy Source Matching Game, Energy Jumble, Energy Conservation Contract, Energy Equations, Top Three, Energy Pursuit, Energy Safety, Candy Collector, Bumper Stumpers, Light a Bulb, and provided Energy resources to families. Comments from Northview Elementary students, staff, and the community showed that individuals received a newer and deeper understanding of energy contents

through the interactions during the events.



Goal 1: To prepare fifth grade Green team members as facilitators for energy-focused projects

Activities and Tasks

- Student Green team(SGT) members engaged in exploring energy-themed activities.
- SGT received instruction provided by the National Energy Education Development (NEED) curriculum.
- The tasks completed were contents explaining energy (What is Energy?), History of Energy, Saving Energy Facts of Light, Energy House, Energy Round Up, Energy Source Match, Energy Knockdown, and Energy Bumper Stumpers.
- SGT prepared to teach their peers and students in prekindergarten through fourth grade by interacting with the contents provided through different energy stations representing the themes.

Energy Content and Resources

- Elementary and Intermediate Infobook from NEED Project
- Intermediate Science of Energy from Need Project
- Primary Energy Carnival Guide from NEED Project
- Sidekick Circuits
- NEED website: <u>www.need.org</u>
- 5th Grade Science: Energy, from Youtube

Student Leadership

- 18 Student leaders trained as facilitators.
- Student leaders will work with 620 students in prekindergarten through fifth grade.

- SGT members reflected on the preparation and shared their readiness.
- SGT members conducted self evaluations to determine stations that will be their preferences to facilitate.



Energy Source Match Game-matching energy sources with the definitions and visual representations

Energy Knockdown-identifying renewable and non renewable sources.



Energy Bumper Stumpers-unscrambling the energy licence plates



Energy Round Up-identifying energy sources from the facts





Energy Transformations-hand generated flashlight and graphic used to learn how energy changes from one form to another

5th Grade Green team members are learning, collaborating, and preparing to be facilitators as a group.



Saving Energy-being reminded about the reasons for reducing, reusing, and recycling to minimize waste



Forms of Energy-learning about potential and kinetic energy

Light a Bulb-understanding the basic concept of how electricity works





What is Energy?-learning that energy may change but is does not disappear

5th Grade Green team members are learning, collaborating, and preparing to be facilitators as a group.

Goal 2: To provide fifth grade students the opportunity to engage in NEED's energy innovation challenge.

Activities and Tasks

- Students selected Energy House and Solar Oven as energy contents to build and test.
- Students researched the energy topics for ideas.
- Students designed the energy items in groups of two.
- The groups tested the finished products.

Energy Content and Resources

- Energy House directions and kit from NEED Project
- Energy from the Sun Kit from NEED Project
- NEED website: <u>www.need.org</u>
- Materials for insulation, solar oven boxes, chocolate bars, graham crackers, and marshmallow

Student Leadership

• 20 student leaders worked in groups of two

- Students checked the energy houses temperatures and compared results to determine the house with the best insulation.
- Students tested the solar oven by making smores, and were all successful.
- The students were questioned about the finished products and the responses showed students gained a solid understanding.



Energy House-building and testing models that is insulated to save energy



Solar Oven-designing an alternative cooking appliance that uses renewable energy and is free

5th Grade Green team members are learning, collaborating, and designing energy innovation challenge projects in groups.



- Up to 200 degrees
- Portable
- Very good for the environment
- Free.
- Easy use
- Easy and fun to make





OVEN BECAUSE IT USES SOLAR PROMEE INSTEAD OF ELECTRICITY AND SAVES MOONEY. LAYLASON NOW THAT YOU KNOW WHAT IT IS YOU USE IT BY YOU OPEN THE TOP RAT OF THE PIZZA BOT THAT YOU CUT OUT THEN OPEN THE LID, NEXT YOU RTOOD INSIDE THE OVEN ON THE ALACK PAPER AND CLOSE THE LID, THEN YOU NUT IT UNDER THE SUN WITH A WOODEN SKEWER UNDER THE FIRST LID AND WAIT FOR IT TO COOK. CAMILLA: WE MADE IT WITH A PIZZA BOT, BLACK PAPER, A WOODEN SKEWER, AND SOME FOLL. SO, ALL YOU HAVE TO BOTS OUT OUT A LITTLE LID ON THE PIZZA LID, THEN COVER IT WITH FOLL. THEN COVER THE OPEN PART WITH A AVOIDEN SKEWER UNDER THE PIZZA LID AND PUT SOME FOIL INSIDE, THEN PUT BLACK PAPER ON TOP. BOLD THE FOLL-COVERED LID WITH A WOODEN SKEWER AND YOUR DONE! ALL: BY I

SCRIPT





Unlike regular²ovens the solar oven has many good impacts on the environment and us. For example, if you use the solar oven instead of a regular oven it can save you money on your electric bill. Another example is it uses a clean and renewable source of energy, the sun. Our last example, it decreases pollution, global warming, and other negative things harming our environment.



HI MY NAME IS LAYLA, I'M CAMILLA, I'M MADISON. LAYLA AND DWE ARE GOUNG TO BE TALKING ADUIT A SOLAL OVEN. CAMILLA: IF YOU'PE Wonderling what's a solal oven, a solal oven is a type of oven that needs the sun. Madison: a solal oven is a great substitute for an



In conclusion, the use of a solar oven is a better way to use/conserve energy. These solar ovens save money, energy, and he/ps the environment. I hope next time you bake a pizza you're using a solar oven.

5th Grade Green team members are researching, learning, collaborating, and testing energy innovative challenge projects in groups.

Goal 3: To engage every student in prekindergarten through fifth grade in energy-themed topics facilitated by third through fifth grade Green team members

Activities and Tasks

- SGT members worked with third through fifth graders and facilitated eight stations which were Energy Round Up, Facts of Light, Candy Collector, Energy Source Match Game, Energy House, Bumper Stumpers, Energy Round-Up, and Energy Safety.
- SGT members also worked with first and second graders on UV Bead Solar Chameleon activity.
- The kindergarteners learned to make bracelets with solar beads after receiving a lesson on the effect of the sun on people and the facilitators requested that the bracelets be observed outdoors.
- SGT members visited the prekindergarten classrooms and discussed the benefits and dangers of the sun after students watched a video about the Sun. The children identified pictures of objects on the worksheet provided about the Sun.
- The tasks were completed with all the grades within five days.

Energy Content and Resources

- Elementary and Intermediate Infobook from NEED Project
- Intermediate Science of Energy from NEED Project
- Primary Energy Carnival Guide from NEED Project
- Need website: <u>www.need.org</u>
- Wonders of the Sun kit from NEED Project
- Energy Carnival from NEED Project
- Energy Games and Icebreakers from NEED Project
- Sun Safety worksheet & How the Sun affects the Earth | Science videos for kids | Kids Academy

Student Leadership

• 20 student leaders facilitated the tasks provided to 620 students.

- SGT members received positive feedback from other students and their educators.
- SGT members reflected on the events and shared that it was a success because students were engaged.











Prekindergarteners identify items that benefit from the sun.











Kindergardeners made solar bracelets to examine outdoors.

Student Green team members led sessions that informed prekindergarten through second grade students about the impact of a renewable source, the Sun. Students also learn about the dangers of too much Sun. The solar beads were explained as containing ultraviolet light.

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Energy House-Third graders are learning about the effect of proper house insulation





Energy Knockdown-Third graders test their knowledge on renewable and non renewable sources

Energy Bumper Stumpersidentifying energy licence plate names





Energy Round Up & Energy Knockdown-Fourth graders identify energy forms and sources





Facts of Light-Fifth graders compare light bulbs for energy efficiency

Candy Collector-Fifth graders learn about renewable and nonrenewable energy sources

Student Green team members led sessions that informed third through fifth grade students about energy conservation, energy sources, energy vocabulary, energy forms, through games.

Goal 4: To engage the community in energy-focused topics, which are facilitated by fifth-grade Green team members, through hands-on experience

Activities and Tasks

- SGT members facilitated an energy fair for the community.
- The students led eleven stations which were Energy Knockdown Game, Energy Source Matching Game, Energy Jumble, Energy Conservation Contract, Energy Equations, Top Three, Energy Pursuit, Energy Safety, Candy Collector, Energy Bumper Stumpers, and Light a Bulb.
- SGT members were trained and knowledgeable about each station and led energy-themed tasks assigned.
- SGT members stamped the energy carnival reward cards for every individual that engaged at the station they were leading.
- SGT members reminded participants to visit Station 12 for resources and prizes after engaging with nine stations.

Energy Content and Resources

- Elementary Infobook from NEED Project
- Primary Energy Carnival Guide from NEED Project
- Energy Carnival from NEED Project
- NEED website: <u>www.need.org</u>
- Energy Games and Icebreakers from NEED Project
- Sidekick Circuits

Student Leadership

• 7 student leaders were supported by 5 adults, and over 100 individuals, including children engaged at the stations.

- SGT members were able to manage stations with minimal support.
- Many attendees including adults shared that they gained new knowledge.











Energy Conservation Contract-families shared how energy is used at home on the survey, and were given the contract to as a reminder to save energy



Energy Equation-solving energy math problems



Candy Collector-students learn how long non-renewable sources may last



Energy Jumble- families unscramble words to find clue

Energy Safety-students learned about the dangers and gears that protects



Energy Bumper Stumpersidentifying energy terms

Student Green team members led sessions that engage participants in learning, researching, and completing a variety of energy themed games to create further awareness of the benefits of energy, and reasons for conserving energy.

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Top Three-providing top three answers to energy questions

Energy Source Matchidentify definitions





Energy Pursuit-responding to questions in five energy categories



Light a Bulb-experiencing how electricity works



Energy Knockdown-identify correct answers by responding to renewable and non-renewable questions





Resources and Prizes Station - attendees visited after gaining nine stamps on the energy carnival reward card

Student Green team members led sessions that engage participants in learning, researching, and completing a variety of energy themed games to create further awareness of the benefits of energy, and reasons for conserving energy.

Goal 5: To engage students in extending energy conservation practice of recycling to food composting through discussion and modeling with visual boards by the student Green team

Activities and Tasks

- SGT members completed visual boards after reading about, Saving Energy, and categorized food elements for trash, recycle, and compost.
- SGT members presented the models to every grade level from prekindergarten through fifth grade during the lunch periods.

• Students continue to recycle, and are now composting with support from the student Green team. Energy Content and Resources

- Using and Saving Energy Guide Book from NEED Project
- NEED website : <u>www.need.org</u>
- Prince George's County Public Schools' (PGCPS) Green Center Personnel Support
- PGCPS Recycling Dept's Support
- Prince George's County Support
- All About Recycling | Recycling For Kids | Earth Day | Twinkl USA: Video

Student Leadership

• 23 student leaders are supporting their peers by demonstrating items for trash, recycling and composting

- SGT members applied questioning to ensure their peers understood left over food disposal procedures.
- SGT members volunteer and model proper food waste disposal.





Recycling & Composting Boards-team members are designing boards



Team members are displaying food waste disposal expectation visual boards





Students are raising hands to answer questions about composing



Composting Visual Presentation-students are responding to questions about composting



Compost Bin-students are composting

Student Green team members collaborated, designed, shared, and modeled items for the correct disposal bins. The team is ensuring every student is recycling and composting every day at lunch.