

Northwood Elementary:

Exploring and Encouraging Energy Efficiency!

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For a good part of the year, our 3rd and 4th Grade STEM students have been exploring energy sources, energy efficiency, and energy conservation. In our first Project-Based Learning project, students were posed with the essential question, “How can we design a school that will use Earth’s resources wisely and promote learning in the 21st Century?” Students designed a 3-D, scaled model of a school, implementing energy conservation techniques into their design such as renewable energy sources appropriate for the location, light sensors, natural lighting, and utilizing their spaces wisely.

In the 2nd phase of our energy explorations, students were posed with the prompt of teaching others about energy conservations. Through a grant from NOAA, students were able to attend the DP&L energy fair in order to gain more knowledge and get ideas for educating about energy concepts. Each student received their own Watt Meters in order to conduct energy explorations at home. In groups, students researched and planned a lesson plan teaching the importance of energy efficiency and conservation and tactics to do so. Finally, students travelled to our Early Learning Center and taught their energy lessons to 8 different 1st Grade classes. Students got 1st Graders excited about saving energy through technology including interactive websites, iMovies they made, videos, and on-line energy games. In addition, they incorporated hands-on activities such as Energy Bingo, Jeopardy, and “Stand Up, Sit Down” games.

Goal I: To explore energy efficiency concepts in building designs

▶ Energy Exploration Activities

- ▶ Students were visited by a local architect that spoke to students about building design with energy efficiency in mind
- ▶ Students researched how to include energy efficiency in homes and schools
- ▶ Students designed 3-D, scaled models of a school with energy efficiency concepts infused into their designs.

▶ Student Leadership

- ▶ Students had to present and defend their designs to our superintendent, our business administrator, our principal, and an architect.



Goal 2: To learn about energy efficiency and how to educate others on conservation concepts

▶ Energy Exploration Activities

- ▶ Students attended the Ohio Energy Project's Energy Fair to learn about energy concepts and to get ideas for implementing lessons
- ▶ Students received their own watt meters to conduct testing at home and make conclusions about vampire power and energy consumption at home
- ▶ Students conducted energy investigations in the classroom with watt meters and researched energy concepts on their own.
- ▶ Students participated in a Reader's Theatre about nonrenewable and renewable energy

▶ Student Leadership

- ▶ Students had to communicate their findings from their home energy explorations to their families and share ideas for reducing the amount of energy use within their homes.
- ▶ Students shared the iMovie of their reader's theatre with their homeroom classes.



Goal 3: To educate younger students about the importance of energy conservation and how to do so

▶ Energy Exploration Activities

- ▶ Student groups developed lesson plans for 1st Graders that focused on the importance of conserving energy, how to be energy efficient, and other energy concepts.

▶ Student Leadership

- ▶ Students visited our Early Learning Center and taught a 45 minute lesson that they developed using a combination of iMovies, videos, interactive websites, energy games, and direct instruction.

