ELEMENTARY SCHOOL 2021-2022

Energy Efficiency & Conservation

Community Building: Pre K– 1st grade

Title: Energy Use Collage

Objective: Students will identify different types of energy and create a collage to show what needs or doesn't need electricity.

Materials:

- Construction paper
- Glue sticks
- Magazine and image cutouts

Estimated Time Needed: 60 minutes

Vocabulary:

potential/stored energy - Potential energy is the stored energy an object has because of its position or state. A bicycle on top of a hill, a book held over your head, and a stretched spring all have potential energy

kinetic/motion energy - Kinetic energy is the energy an object has due to its motion

Electricity - Flow of tiny particles called electrons and protons. It can also mean the energy you get when electrons flow from place to place.

Power -The rate at which energy is used

Energy - The ability to do work or to make something move or change in some way. Electricity is one type of kinetic/motion energy.

Procedures:

1. Introduce the concept of energy; as a class, watch a short video explaining energy.
2. List different types of energy, including stored/potential and motion/kinetic energy.
3. As a class or individually fill- out the kinetic vs. potential worksheet (full lesson available in Additional Resources)
4. Define electricity and how we use electricity. Then, explain that electricity is a form of kinetic energy. Point out items around the room that use electricity.
5. Conduct a class discussion to identify which of those items use the most electricity (use Additional Resources for average usage of various appliances from the link in the Saving Electricity website).
6. Have students sort through pre-cut graphics and sort through items that need or don't need electricity.
7. Once items are sorted allow students to create a collage of their images. Explain that the sun is the source of all energy. The sun's energy is stored in coal, petroleum, natural gas, food, water and wind. For older students, discuss how solar energy can help meet energy needs.

Guiding Questions:

- What items need or use energy?
- Why do we make electricity?
- Why is it important to have renewable energy to power electricity needs?
- What are different types of energy?

Evaluation: Send/share the images of students' collages.

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Additional Resources:

- Potential & Kinetic Energy Lesson (Education.com)
- Fun with the Sun Lessons for K-2 Students
- Alaska Energy Smart Lessons for K-2 Students
- NEED Curriculum coloring sheet (National Energy Education Development Project)
- Average electricity usage for various appliances
- Value of Solar (article from Solar United Neighbors website)

Benchmarks:

Pre K - VI.

Scientific Inquiry

E. ENVIRONMENT.1. Demonstrates awareness of relationship to people, objects and living/non-living things in their environment

- Benchmark a. Demonstrates how people use objects and natural resources in the environment
- Benchmark c. Identifies examples of organized efforts to protect the environment

Kindergarten

Science

- SC.K.N.1.1 Collaborate
- SC.K.N.1.2 Make Observations

1st Grade

Gifted

- G.K12.2.3.1d. Explore the nature of questioning, always aware that better questions deliver the potential for more complete information.
- G.K12.4.2.2b. Organize facts and information using various methods to predict potential outcomes.