



## ELEMENTARY SCHOOL 2021-2022

### Energy Efficiency & Conservation Hand-On Activity: 2nd – 3rd grade



**Title:** School Energy Audit

**Objective:** Students will conduct an energy audit around their school to learn about the items that waste the most energy and to identify what they can do to conserve/reduce electricity consumption. Students will then create a plan for reducing their energy use at home and school.

**Materials:** pencils/pens

**Estimated Time Needed:** 90 minutes

**Background Information:** Most of the electricity that powers homes and schools are produced through non-renewable sources, such as power plants that burn coal or oil. Coal or oil fuels are burned to heat water and produce steam. The steam turns a windmill-like machine called a turbine. The turbine is part of a machine called a generator, which converts the energy from the rotating turbine into electricity. Burning fuels produces carbon dioxide and other pollutants. Carbon dioxide is a powerful greenhouse gas that adds to global warming. In order to reduce greenhouse gasses, energy efficiency related to the equipment we select to do a certain job is important. For example, a 4-door sedan and pickup truck will both carry us to the store, but the sedan will probably do so using less fuel. It is more efficient. Using efficient appliances, electronics, and lighting can help reduce energy use and cost at home, while still performing the same tasks.

#### Procedures:

1. As a class watch [What if We Burned ALL the Fossil Fuels?](#) Discuss what are the negative effects of burning fuels like coal and oil. List 3 discussed in the video.
2. Students find the definitions for the following vocabulary words:
  - Energy Efficiency
  - Fossil Fuels
  - Renewable Resources
  - Alternative Energy
  - Greenhouse gas
4. Students conduct [Activity 1: School Energy Audit](#)
5. Students identify one action that can be done at school to reduce/conserve electricity.
6. Create an action plan for the year. Ex. Who will monitor the lights? When will the computers be turned off and/or unplugged? Etc.

#### Guiding Questions:

- Where does our electricity come from?
- What appliances waste the most energy in our homes?
- How can we conserve energy in our homes and schools?
- How does the sun, wind, and water help to make energy?

**Evaluation:** Send sample plans created to save energy at school.



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#### Additional Resources:

- [The NEED website](#) (National Energy Education Development) Project
- Video explaining advantages & disadvantages of 3 forms of renewable energy. [The Power of Sun, Wind, and Water](#)
- Video: [Learn all about fossil fuels, what they are, and where they come from](#)

#### Benchmarks:

##### 2<sup>nd</sup> Grade

##### Science

- SC.2.N.1.1 Question, Investigate, Explain
- SC.2.N.1.2 Compare Observations, Explain Differences

##### 3<sup>rd</sup> Grade

##### Science

- SC.3.P.8.3 Comparing Properties of Materials
- SC.3.N.1.1 Question, Investigate and Explain
- SC.3.N.1.3 Record Keeping
- SC.3.N.1.5 Scientist Collaboration
- SC.3.N.3.1 Basic Application of Skills & Concepts

##### Gifted

- G.K12.5.3.2c Communication – Perform
- G.K12.6.2.3c Perform - Evaluate