

Renewable Energy Sources

Objective:

Students will understand renewable electric power generation energy sources.

Materials and Curriculum
Correlations ▼

► Introduction

A renewable resource is any resource that can be naturally replenished. Some examples include water, the sun and wind. These resources can then be used as energy sources, including those that generate electricity for consumers. Each renewable has its own method for generating electricity, whether through chemical processes or conversion of kinetic energy.

The benefits of renewable resources are numerous, but their main appeal is that they produce less pollution. For example, hydrogen fuel produces water as waste and does not require combustion to generate electricity.

One of the main drawbacks of using renewables for power generation is the inconsistency of their availability. Wind power needs a strong wind. Solar needs low cloud coverage and biomass relies on the variable growth rate of living things.

Procedure

1. Have students research various sources of renewable energy: wind, solar, biomass and geothermal.
2. Have students review information on renewable energy fuel sources such as geothermal, solar and wind.
3. Have students work individually or in groups to develop a creative delivery method of teaching the class about their chosen renewable fuel source. Delivery methods may be:
 - Create an edible replica of the fuel source (uncooked spaghetti wind turbine, gelatin and cookie layer landfill, peanut butter sandwich fuel cell, wafer cookie solar PV array, etc.). Replicas must list ingredients and what components they represent. Please ensure no one in your classroom has an allergy to any food items used.
 - Write a Haiku for each renewable fuel source.
 - Choose a song and rewrite the lyrics to reflect information about a renewable resource.
 - Develop a board game with informational cards and decision-making questions.
 - Have students write a brief report about their chosen renewable fuel source to accompany their project.

To Know and Do More

Have students research the latest technologies that can advance the use of renewable fuel sources. Are there recent innovative developments?

Materials Needed:

- Internet for research
- Art and craft supplies

Curriculum Correlations

K-ESS2 - 2
K-ESS3 - 3
4-PS3 - 2

4-PS3 - 4
4-ESS3 - 1
5-ESS3 - 1

MS-ESS3 - 4
HS-ESS3 - 1