SOLAR ENERGY FOR THE CLASSROOM

Pierce Cedar Creek Institute
for ecological education

Provided by Pierce Cedar Creek Institute
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Activity Overview
Grade Level: 6-8

General Description
During this activity, students will review energy concepts and information through the use of a game similar to Jeopardy.

Learning Outcome
Learning outcomes depend on the topics selected. This game serves as an assessment tool to determine what students have learned about various energy concepts.

Science Content Standards
Depends on topics selected

Energy Challenge Game

Materials

- Transparencies and overhead projector
- Post-it notes

Methods

1. Make a list of energy topics on the board (See Energy Challenge Game Topics).
2. Make an overhead transparency of the game board.
3. Cover the answers with slips of paper that can easily be removed (post-its work very well).
4. Have the students play as individuals or as teams.
5. Share the following rules of the game:
   - The students select an energy topic and must select the clues in number amounts in order, beginning with 100.
   - The clue and the topic provide the information for the answer, which must be asked in the form of a question. Example: Topic = Renewable Energy Resources for 100. Clue = This process uses sunlight to produce sugars and release oxygen. Answer = What is photosynthesis?
   - When the topic and number amount are selected the teacher reveals the clue and reads it. Students then raise their hand if they believe they know the question. The player or team that gets the correct answer then chooses the next clue. If they answer incorrectly, the number is subtracted from the score and a different team has the opportunity to answer the questions.
   - When the first topic is complete, students can select another topic. Play as long as you would like. You can keep totals and have prizes for top performers.
   - Using the game format, have students develop additional topics related to energy and share them with the class. Other suggested topics could be nonrenewable energy, energy history, energy then-1900, coal, petroleum, transportation in our community, global energy, and energy conservation.

Source: This activity was adapted from a *PLT Energy & Society* activity entitled *Energy Challenge Game.*

Energy Challenge Game Topics:

FORMS OF ENERGY	RENEWABLE ENERGY SOURCES	POTENTIAL OR KINETIC	ENERGY & SOCIETY
100 MOVING OBJECTS -- LIKE A CAR	100 MOST COMMOMLY USED FORM IS WOOD	100 STORED ENERGY	100 GREATEST SOURCE OF ENERGY FOR THE EARTH
200 THIS FORM OF ENERGY IS STORED IN WOOD, FOSSIL FUELS AND FOOD	200 OBJECT USES NUCLEAR FUSION TO RECH TEMPERATURES OF 15 MILLION DEGREES CENTIGRADE	200 EVERYTHING THAT IS MOVING	200 WIND, WATER, SOLAR AND BIOMASS ARE EXAMPLES OF THIS TYPE OF ENERGY
300 THE SPLITTING IS CALLED FISSION, THE COMING TOGETHER OF ATOMS IS CALLED FUSION	300 SOURCE IS USED TO SPIN PROPELLER LIKE TURBINES	300 SNOW ON TOP OF A MOUNTAIN	300 GROUP OF FUELS PROVIDING ALMOST ALL OF AMERICA'S ENERGY NEEDS
400 WHEN MOVING ELECTRONS ARE FORCED ALONG A PATH OF COPPER WIRE	400 HEAT GENERATED BY NATURAL PROCESSES BENEATH THE EARTH'S SURFACE	400 A WOOD PILE	400 20 GALLONS OF GASOLINE CAN BE REFINED FROM ONE BARREL OF THIS
500 VISIBLE WAVELENGTHS AND INVISIBLE WAVELENGTHS LIKE X-RAYS	500 ONLY RENEWABLE RESOURCE THAT HAS TO BE MADE	500 LEGS PUMPING THE PEDALS OF A BIKE	500 #1 PROVIDER OF ENERGY FOR ELECTRICITY PRODUCTION

Energy Challenge Game Answers:

FORMS OF ENERGY	RENEWABLE ENERGY SOURCES	POTENTIAL OR KINETIC	ENERGY & SOCIETY
100 WHAT IS MECHANICAL ENERGY?	100 WHAT IS BIOMASS?	100 WHAT IS POTENTIAL?	100 WHAT IS SOLAR?
200 WHAT IS CHEMICAL ENERGY?	200 WHAT IS THE SUN?	200 WHAT IS KINETIC?	200 WHAT IS RENEWABLE?
300 WHAT IS NUCLEAR ENERGY?	300 WHAT IS WIND?	300 WHAT IS POTENTIAL?	300 WHAT ARE FOSSIL FUELS?
400 WHAT IS ELECTRICAL ENERGY?	400 WHAT IS GEOTHERMAL?	400 WHAT IS POTENTIAL?	400 WHAT IS PETROLEUM?
500 WHAT IS RADIANT OR LIGHT ENERGY?	500 WHAT IS HYDROGEN?	500 WHAT IS KINETIC?	500 WHAT IS COAL?