

On My Street

Student Objective

The student:

- investigate the forms of alternative energy in use in the world around them.
- compiles a list of alternative energy being used in their neighborhood.

Materials

- parents
- paper
- pencil
- Science Journal

Key Words:

alternative energy source
alternative fuel vehicle
energy
energy efficient
hybrid vehicle
photovoltaic (PV) cell
renewable energy source
solar thermal

Time:

1 hour (class time)
1 weekend (outside class)

Internet Sites

<http://geography.about.com/science/geography/cs/censuspopulation1/index.htm>

Resources about every aspect of population, demographics, and censuses.

<http://www.crest.org/index.html>

Renewable energy education module is an online source of sustainable energy information. Includes documents on all forms of renewable energy.

<http://www.ecomall.com>

Environmental focus including solar and renewable energy products.

<http://www.energyoutlet.com>

A resource center promoting electrical energy conservation. Includes consumer tips for buying appliances, as well as construction and remodeling tips, information on tax credits and a list of related links.

Procedure

1. Write the key words on the board. Lead the students in a discussion of what these terms mean. If necessary, explain to the student what they mean.
2. Explain to the student that they will be going around their neighborhood and taking an inventory of what forms of alternative energy their neighbors use.
 - They should include houses with photovoltaic panels, swimming pools with solar heaters or covers, and solar water heaters. They should also include photovoltaic signs and lights.
 - They should see if anyone in the neighborhood drives a car powered with an

alternative fuel (this is where the parents will be extremely helpful).

3. Explain to the students that they will then pick a neighbor or another adult that they know and interview them. This cannot be a family member.
4. When the students bring this information back to the classroom, use it to lead them to draw a picture of their neighborhood's alternative energy use. A map with colored pins may be used in the upper grades.
5. Have the students share their interviews with the rest of the class.
6. Lead the student in a class discussion of the importance of energy conservation (e.g., lowering pollution, conserving our natural resources, taking care of the Earth).

Energy Whiz

Energy Whiz is putting together a scrapbook of solar thermal and photovoltaic applications and alternative fuel vehicles in schools across Florida and the country. Submit your photos of solar energy being used in your community to <http://energywhiz.com/>.

Related Research

1. Research tax incentives for an individual or a business to put in a solar system or buy an alternative fueled vehicle.
2. Write letters to your state congressmen promoting the use of solar energy and requesting legislation such as tax incentives and rebates for individuals and businesses that use renewable energy.

On My Street

			.1	.2	.3	.4	.5	.6	.7
Nature of Matter	Standard 1	SC.A.1.3-							
	Standard 2	SC.A.2.3-			X				
Energy	Standard 1	SC.B.1.3-	X		X				
	Standard 2	SC.B.2.3-		X					
How Living Things Interact With Their Environment	Standard 1	SC.G.1.3-							
	Standard 2	SC.G.2.3-	X						
Language Arts Standards:		LA.C.1.3.1 and LA.C.1.3.4							

Benchmark SC.A.2.3.3 - The student knows that radiation, light, and heat are forms of energy used to cook food, treat diseases, and provide energy.

Grade Level Expectations

The student:

Sixth

- knows forms of radiant energy and their applications to everyday life

Seventh

- knows uses of radiation, light, and thermal energy to improve the quality of life for human beings

Eighth

- extends and refines knowledge of uses of forms of energy to improve the quality of life.

Benchmark SC.B.1.3.1 - The student identifies forms of energy and explains that they can be measured and compared.

Grade Level Expectations

The student:

Sixth

- understands that energy can be converted from one form to another

Seventh

- knows examples of ;uses of energy in the home and ways to measure its use

Eighth

- understands that energy can be transferred by radiation, conduction, and convection

- knows examples of natural and man-made systems in which energy is transferred from one form to another.

Benchmark SC.B.1.3.3 - The student knows the various forms in which energy comes to Earth from the Sun

Grade Level Expectations

The student:

Sixth

- knows types of radiant energy that come to Earth from the Sun

Seventh

- knows the characteristics, effects, and common uses of ultraviolet, visible and infrared light.

Benchmark SC.B.2.3.2 - The student knows that most of the energy used today is derived from burning stored energy collected by organisms millions of years ago (e.g., nonrenewable fossil fuels).

Grade Level Expectations

The student:

Seventh

- knows that fossil fuels are found in the Earth, they are nonrenewable, and the advantages and disadvantages of their use

Eighth

- understands how fossil fuels are formed in the Earth, why they are nonrenewable, and the advantages and disadvantages of their use

Benchmark SC.G.2.3.1 - The student knows that some resources are renewable and others are nonrenewable.

Grade Level Expectations

The student:

Seventh

- understands ways matter is recycled.

Benchmark LA.C.1.3.1 - The student listens and uses information gained for a variety of purposes, such as gaining information from interviews, following directions, and pursuing a personal interest.

Grade Level Expectations

The student:

Sixth

- paraphrases information
- expands and enhances personal interest through listening

Seventh

- formulates questions and conducts an interview
- paraphrases information
- expands and enhances personal interest through listening

Eighth

- formulates questions and conducts an interview
- paraphrases information
- expands and enhances personal interest through listening.

Benchmark LA.C.1.3.4 - The student uses responsive listening skills, including paraphrasing, summarizing, and asking questions for elaboration and clarification.

Grade Level Expectations

The student:

Sixth

- stays alert while listening
- makes eye contact while listening
- demonstrates appropriate body language while listening
- asks pertinent questions during activities such as interviews and discussions
- summarizes main points and supporting details orally and in writing

Seventh

- demonstrates effective listening behaviors for a variety of purposes
- asks appropriate, challenging questions for elaboration or clarification during activities such as interviews and discussion
- summarizes main points and supporting details orally or in writing
- uses information gained for a variety of purposes

Eighth

- demonstrates effective listening behaviors for a variety of purposes
- asks appropriate, challenging questions for elaboration or clarification during activities such as interviews and discussion
- summarizes main points and supporting details orally or in writing
- uses information gained for a variety of purposes.

On My Street

alternative energy source - energy derived from sources that do not use up natural resources or harm the environment

alternative fuel vehicle - a vehicle designed and manufactured or converted to operate on fuels other than gasoline or diesel

energy - the ability to work or cause change

energy efficient - getting the most usable energy out of the fuels that supply power

hybrid vehicle - a vehicle that uses two energy sources, such as one that combines the internal combustion engine of a conventional vehicle with the battery and motor of an electric vehicle, resulting in twice the fuel economy of conventional vehicles

photovoltaic (PV) cell - device that converts solar energy directly into electricity

renewable energy source - source of energy that is virtually inexhaustible and is naturally and quickly replenished. Examples are solar, wind, hydropower (water), geothermal, and biomass.

solar thermal - using the energy of the sun to heat something

On My Street

Neighborhood Inventory Sheet

1. On my street, there are _____ people that drive alternative energy cars (like the new hybrids).

2. On my street, there are _____ houses where the families recycle.

3. On my street, there are _____ houses with photovoltaic panels on them.

4. On my street, there are _____ houses with solar water heaters

5. On my street, there are _____ houses with pools that are heated with solar thermal system (this can include solar covers).

Interview Sheet

Name of student: _____

Name of person being interviewed: _____

Age of person: _____ Occupation of person: _____

1. Do you have any solar panels on your house? If yes, are they solar thermal or photovoltaic?

2. If no, have you thought about putting solar panels on your house?

3. Do you have an energy efficient car?

4. If no, have you thought about purchasing one?

5. What do you think we should do about helping the planet?