

On My Street

Student Objective

The student:

- investigates 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 looking around their neighborhoods 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 help them draw a picture of their neighborhood's alternative energy use.
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

Help us catalog solar uses in your area. Submit photos of photovoltaics, solar thermal or alternative fuels in use in your area to the Energy Whiz web site at <http://energywhiz.com/> . Be sure to include the name of the city the pictures were taken in and the name of your school.

Further Research

1. Make a listing of photovoltaic solar thermal applications on commercial buildings, signs, call boxes, etc. in your town. For assistance, call your electric company, city planning office, department of transportation, billboard company, etc.
2. Arrange to have your local Toyota or Honda dealer bring a hybrid vehicle to school.
3. Find out what materials can be recycled in your area and make a display for a public area of your school.

On My Street

			.1	.2	.3	.4	.5	.6
Energy	Standard 1	SC.B.1.2-		X				
	Standard 2	SC.B.2.2-		X	X			
Processes that Shape the Earth	Standard 1	SC.D.1.2-						
	Standard 2	SC.D.2.2-	X					
Social Studies Standard:		SS.B.2.2.3						

Benchmark SC.B.1.2.2 - The student recognizes various forms of energy.

Grade Level Expectations

The student:

Third

- knows different forms of energy

Fourth

- knows that there are a variety of sources for electricity.

Benchmark SC.B.2.2.2 - The student recognized the costs and risks to society and the environment posed by the use of renewable energy.

Grade Level Expectations

The student:

Third

- knows ways natural resources are important
- classifies resources as renewable or nonrenewable

Fourth

- understands the reasons for energy conservation
- knows the risk factors associated with the use of nonrenewable energy sources.

Benchmark SC.B.2.2.3 - The student knows that the limited supply of usable energy sources places great significance on the development of renewable energy sources.

Grade Level Expectations

The student:

Fifth

- knows that the limited supply of usable energy sources places great significance on the development of renewable energy sources.

Benchmark SC.D.2.2.1 - The student knows that reusing, recycling, and reducing the use of natural resources improve and protect the quality of life.

Grade Level Expectations

The student:

Third

- knows that reusing, recycling, and reducing the use of natural resources improve and protect the quality of life

Fourth

- knows ways in which people can conserve natural resources
- knows ways misuse of natural resources affects the quality of life for all species

Fifth

- extends and refines knowledge of ways people can reuse, recycle, and reduce the use of resources to improve and protect the quality of life.

Benchmark SS.B.2.2.3 - The student understands how human activity affects the physical environment.

Grade Level Expectations

The student:

Third

- understands ways human activity has affected the physical environment in various places and times throughout the world

Fifth

- understands ways human activity has affected the physical environment in various places and times in the United States.

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 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: solar, wind, hydropower (water), geothermal, and biomass

solar thermal - using the sun's radiant energy to heat something.

On My Street

Neighborhood Inventory Sheet

1. On my street, there are _____ people that drive SUVs or trucks.

2. On my street, there are _____ people that drive minivans.

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

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

5. On my street, there are _____ houses with photovoltaic (solar electricity) panels on them.

6. On my street, there are _____ houses with pools.

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

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

On My Street

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 not, 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? _____
