Earth Day Network
and the
Environmental Education Program

Founded by the organizers of the first Earth Day in 1970, Earth Day Network's (EDN) mission is to broaden the environmental movement worldwide and to educate and mobilize people, governments, and corporations to take responsibility for a clean and healthy environment. EDN works in 174 countries with more than 12,000 network members helping to build alliances, and facilitating information exchange and collaboration. In addition, EDN supports a network of over 15,000 K-12 environmental educators, providing them with supplemental materials, classroom and community activities, and opportunities for civic learning and participation.

For more information, please visit Earth Day Network's Web site at www.earthday.net. For additional information concerning EDN's Environmental Education Program and to download educational lessons and resources, visit the Teacher's Corner of EDN's homepage, or send an email to: education@earthday.net.

earth day network

www.earthday.net

Environmental Jeopardy

A Changing Climate

Earth Day Network (EDN) is happy to present the fourth edition of *Environmental Jeopardy*. EDN's Environmental Education Program creates and promotes many valuable classroom resources and lessons, like *Environmental Jeopardy*, designed to encourage civic responsibility and environmental awareness in students of all ages. Make sure you visit the Educators Network by going to the "Teachers Corner" of EDN's Web site, www.earthday.net, to access all editions of Environmental Jeopardy as well as other innovative and engaging resources and lessons that help teachers incorporate environmental issues into a variety of subject areas and grade levels. All of EDN's materials are free to download and easy to use in your educational setting.

The theme for the fourth edition of *Environmental Jeopardy* is "A Changing Climate." The purpose of the questions is to help students understand the complex issue of global warming and what they can do to help slow its advance. In this lesson, "climate change" and "global warming" are used interchangeably. As a supplement to these issues, students may want to take the *Ecological Footprint* or *Bobbie Bigfoot Kids Quiz*, both of which are available on the EDN website. The categories for the fourth edition cover causes of climate change, the history of climate change and climate change science, the potential consequences of global warming, possible solutions, and actions individuals can take.

Environmental Jeopardy is easy to implement in your classroom. Simply download and print out the questions most appropriate for the grade level you teach. You will need Adobe Acrobat Reader and we strongly suggest that you print the questions double-sided. This way the point value will show on one side of the card and the question and answer on the other. If you do not have the capability or are unsure how to print double-sided, you can save this document to a CD, floppy disk, or USB drive and take it to the nearest copy store, which can do it for you. After printing, cut out the category and question cards. Then fit the category cards into the top slots of the game board and the appropriate question cards below them from the lowest point value on top to the highest point value on the bottom of each column. If you do not have a game board, you can either create one on your blackboard or whiteboard and tape up the questions, or you can download it from the Teacher's Corner. Because the board itself requires paper larger than most printers are equipped for (24"x36"), we suggest saving it to a CD, floppy disk, or USB drive and taking it to the nearest copy store, which should be able to print it out to the correct dimensions – 24 inches by 36 inches. Many teachers laminate the question cards and the Environmental Jeopardy game board they create so they can use it with ease in the future.

When setting up the board, make sure the point value side of the question card is visible. Preparing the board will take about 10 minutes. Once the board is ready, simply divide the class into small groups (between 3 and 5 students) so they may learn the value of collaboration. Each group will pick a question according to its point value in a specific category. The teacher will read the question from the back of the card and the group will have thirty seconds to agree on an answer. If they answer the question correctly, they can choose another question. Each group can answer up to three questions in a row before allowing another group to have a turn. If a group does not answer a question correctly, the next group will have a chance to answer the question and then continue with their turn. The team with the most points at the end of the game wins!

To help make the subject matter of this game more relevant to your students we have included "Did you know?" facts with some of the answers and a list of Web sites with additional information about the issues covered.

We hope you and your students enjoy the fourth edition of *Environmental Jeopardy*, and we thank you for making EDN and environmental education a regular part of your curriculum.

Further Research on the Web

Environmental Jeopardy questions are designed to pique your class's interest in environmental issues. In this edition, issues are related to climate change. This list of Web sites will serve as a good start for conducting research and learning more about how global warming affects you and what you can do about it.

1. Earth Day Network: EDN has valuable information throughout its website regarding this version of Environmental Jeopardy, including lesson plans. Here are some places to start:
   a. Earth Day Network homepage: www.earthday.net
   b. Teachers Corner: http://www.earthday.net/involved/teachers/join-Network.aspx
   c. Ecological Footprint: http://www.earthday.net/Footprint/index.asp
   d. EDN's Climate Change Solutions Campaign: http://www.earthday.net/resources/2006materials/default.aspx
2. United Nations Environment Programme (UNEP): http://www.unep.org - an umbrella website for many environmental issues, including freshwater, energy, urban issues, sustainable consumption, and poverty. Follow the links to information for children and youth about global warming.
3. The Environmental Protection Agency: http://www.epa.gov – The EPA is the US government agency mainly responsible for environmental issues. Among other topics, it has lots of good information on climate change.
   a. Global Warming Kids Page: http://www.epa.gov/globalwarming/kids/index.html
   b. High School Web site: http://www.epa.gov/highschool/index.htm
   c. Global Warming Page: http://yosemite.epa.gov/oar/globalwarming.nsf/content/index.html
4. The Pew Center on Global Climate Change: http://www.pewclimate.org/ - a leading center for research and information on global warming. It has both introductory information and more advanced research articles.
5. Energy Action: http://www.energyaction.net/ - a global warming site exclusively for students. Link from the homepage to the "It's Getting Hot In Here" blog, and sign your school up for the "Campus Climate Challenge".
6. Climate Hot Map: http://www.climatehotmap.org/ - An interactive world map that shows signs of global warming and describes what those signs mean. It has information for educators and puts climate change in an interactive and local context.
7. Union of Concerned Scientists Global Warming Page: http://www.ucsusa.org/global_warming/ - contains information associated with the many aspects of global warming with scientific tutorials and accompanying lesson plans.
8. NOAA's Global Warming Site: http://www.ncdc.noaa.gov/oa/climate/globalwarming.html - A site devoted to global warming and maintained by the National Oceanic and Atmospheric Association. Has easy-to-understand answers to frequently asked questions about climate change.

The Categories

A Changing Climate

Below is a brief description of the five categories in this edition.

Causes of Climate Change – Questions in this category deal with the various reasons why we are experiencing global warming. Specific subjects include fossil fuel use, transportation issues, and energy consumption

Climate Change History – Questions in this category focus both on how the climate has changed many times over the Earth's history and major historical developments in the scientific understanding of global warming. Specific subjects include a discussion of how global warming differs from historical climate change, major developments, discoveries, and inventions related to global warming, and the historical formation of substances connected to climate change.

The Outlook: Life and Land – In this category students will learn about the possible consequences of global warming. Subjects include species extinction and/or migration, disease proliferation, the potential for the changing climate to reach a "tipping point", and how melting ice will affect land boundaries as we currently know them.

A Solution to Every Problem – In this category, questions will focus on the possible solutions to global warming. Subjects include future renewable fuel technologies, gasoline standards, urban density and energy use, and existing technologies that help reduce fossil fuel consumption and save money.

What Can You Do? – Questions in this category deal with taking action to preserve the environment and to build awareness. They focus on what non-voting students can do to increase their civic engagement and build awareness about climate change in their communities. Subjects include the value of public transportation, the environmental and economic benefits of saving energy, and purchasing tips that save greenhouse gasses and money.

Category

CLIMATE CHANGE HISTORY

Category

CAUSES OF CLIMATE CHANGE

Environmental Jeopardy, **Primary Level Questions**
Category: Causes of Climate Change

Causes of Climate Change
10 Points

Name two gasses that are linked to climate change. They are often called "greenhouse gasses".

The most common are Carbon Dioxide and Methane, but others include Nitrous Oxide and manmade chemicals such as hydroflourocarbons and perflourocarbons. These gasses rise into the atmosphere and trap heat trying to escape, which means that more heat comes into the Earth than leaves it.

Causes of Climate Change
20 Points

Give two examples of fossil fuels.

Answers could include: coal, oil, or natural gas.

Causes of Climate Change
30 Points

When we heat our homes or turn on a light, we are using energy. Where does this energy come from? How is it created?

Energy is created by a power plant. There are many types of power plants, but the most common are coal, oil, hydroelectric (dams), and nuclear. Of these, the first two contribute the most greenhouse gasses to our atmosphere. When we burn coal or oil we create energy but release a lot of carbon dioxide. The other two types of power plants don't produce as much greenhouse gas emissions, but have other environmental drawbacks. What might these drawbacks be?

Causes of Climate Change
10 Points

Causes of Climate Change
20 Points

Causes of Climate Change
30 Points

Category

A SOLUTION TO EVERY PROBLEM

Category

THE OUTLOOK: LIFE AND LAND

Climate Change History
10 Points

True or false: major climate change has occurred in Earth's history before.

This is true.

Did you know…?
Over the past two million years ice sheets have come and gone over the Northern Hemisphere as many as twenty times. However, the temperature changes responsible for these glacial shifts have always been within a certain boundary. During this period the Earth's climate has been colder than today's, but it has never been much warmer.

Climate Change History
20 Points

Although what caused it is still debated, most scientists believe that climate change was a major factor in the extinction of what famous animal group?

Dinosaurs. There are two major camps of scientists debating how the climate changed quickly and severely enough to exterminate the dinosaurs. One group argues that the change was more gradual: volcanoes erupted more often and the Earth's tectonic plates shifted dramatically, which changed the oceans' currents and created a cooler climate. The other group thinks a large meteor hit the Earth around where the Gulf of Mexico is today and kicked up enough dust to block out the sun, causing a cooler climate .

Climate Change History
30 Points

When animals, including humans, breathe, they breathe out carbon dioxide, which trees and other plants convert to oxygen. Until recently (the last 200 years), though, carbon dioxide has not affected the climate. Why now?

Today we are putting a lot more carbon dioxide into the air than before because we burn coal to create electricity and burn oil to run our cars. Before electricity we didn't need to burn fossil fuels, but today we can't live without them! This is why many scientists are looking at cleaner ways to make electricity.

Climate Change History
10 Points

Climate Change History
20 Points

Climate Change History
30 Points

Category

WHAT CAN YOU DO?

The Outlook: Life and Land
10 Points

Antarctica has more ice than anywhere else on Earth. If temperatures continue to rise, will Antarctica grow, shrink, or stay the same size?

Just as ice melts in your glass on a hot summer day, warmer temperatures on Earth will mean that Antarctica will lose some of its ice, causing it to shrink. What concerns scientists is that when the ice melts it has to go somewhere, and that means into the oceans, causing them to rise. By the year 2100, many predict sea levels will rise between 19 and 37 inches!

The Outlook: Life and Land
20 Points

In 2002, how many of the lower 48 states in the United States experienced below-average seasonal temperatures?

None. This alone, of course, is not evidence of climate change, but the data is similar to other climate change evidence. Since data began being collected, the four years with the highest average temperature were, in order: 1998, 2002, 2003, and 2004. In addition, the 1990s were the warmest decade on record, and the only year in the last decade not among the ten warmest was 1996.

The Outlook: Life and Land
30 Points

Tropical diseases such as malaria live in small geographical areas because they depend on what are called disease "vectors", such as mosquitoes, that can only survive in certain climates to carry them to different hosts (such as you or your teacher). As one consequence of global warming, what do you think some scientists are predicting about the fate of warm weather diseases?

Many scientists believe these diseases will become more common and widespread as larger areas become hospitable to their "vectors".

The Outlook: Life and Land
10 Points

The Outlook: Life and Land
20 Points

The Outlook: Life and Land
30 Points

Environmental Jeopardy, **Primary Level Questions**
Category: A Solution to Every Problem

A Solution to Every Problem
10 Points

What potential source of electricity already gives off heat and light without help from human beings?

The sun.

Did you know…?
Solar power has a promising future. Right now it is too expensive and inefficient to compete with cheaper sources of electricity, but given time, solar power could be our main source of energy: solar panels are simple constructions, the sun can never be used up, and enough potential energy from the sun hits the Earth every day to cover human beings' energy needs ten thousand times over.

A Solution to Every Problem
20 Points

Germany is the world's leading supplier of which clean, renewable source of energy?

Wind power. In the past year alone Germany has increased its capacity to generate wind power by 44% and has more than 11,000 turbines.

Did you know…?
Wind power is one of the fastest growing forms of renewable energy being developed today. Some estimates put the number of Europeans supplied by wind power in ten years at 50 million.

A Solution to Every Problem
30 Points

Large urban areas use a lot of electricity. If you want to improve the environment, would it be better to raise electricity prices in urban areas or lower them?

You should lower them.

Did you know…?
Although urban areas use a lot of electricity, they are also so populous that the amount of electricity used per person is lower than in suburban and rural areas, especially in very dense cities like New York, which has some of the highest electricity bills in the country. If you raise electricity prices for people in urban areas, you encourage them to move outside of the city where driving is more common. You also encourage businesses to move from what could be a subway stop to a parking lot – not exactly an environmentally friendly move.

A Solution to Every Problem
10 Points

A Solution to Every Problem
20 Points

A Solution to Every Problem
30 Points

What Can You Do?
10 Points

In its lifetime, the average car emits 11,560 pounds of carbon dioxide. When all cars in the US are added together, this amount makes up what percentage of total carbon dioxide emissions in the US: 10%; 20%; 30%; 40%?

Forty percent.

Did you know…?

A great way to cut down on the emissions produced by cars is to take public transportation. Subways are run on electricity, which is produced by power plants, but per person carbon dioxide emissions are a fraction of what they are for cars. Additionally, many busses today are run on hybrid technology or natural gas. Consider writing a letter to your senator or representative urging him or her to support hybrid technology or legislation increasing fuel emissions standards.

What Can You Do?
20 Points

By the year 2030, the number of automobiles in the world will increase by what percentage: 10%; 50%; 100%; 150%?

Fifty percent.

Did you know…?

Not all people have access to public transportation, but those who live in dense cities are not only more likely to use public transportation, but also use less energy because they are more likely to live in a smaller house or apartment than those who live in the suburbs or the country. You can support public transportation by organizing a community event that publicizes the benefits of public transportation.

What Can You Do?
30 Points

Compact fluorescent light bulbs cost a lot more than a regular "incandescent" light bulb (about $10.00 vs. $0.75). However, compact fluorescent light bulbs actually save people money. Can you give one reason why you think this might be true?

There are two major reasons why compact fluorescents are cheaper than incandescent light bulbs: first, compact fluorescents use fewer watts to put out the same amount of light (a watt is simply a way of measuring energy), and second, they last far longer, up to ten years! For these two reasons, you buy fewer light bulbs if you use compact fluorescents, and your energy bill will drop. To increase awareness about compact fluorescents, write a letter to your senator urging him or her to support giving tax breaks to people who buy them.

What Can You Do?
10 Points

What Can You Do?
20 Points

What Can You Do?
30 Points

Causes of Climate Change
20 Points

When we heat our homes or turn on a light, we are using energy. Where does this energy come from? How is it created?

Energy is created by a power plant. There are many types of power plants, but the most common are coal, oil, hydroelectric (dams), and nuclear. Of these, the first two contribute the most greenhouse gasses to our atmosphere. When we burn coal or oil we create energy but release a lot of carbon dioxide. The other two types of power plants don't produce as much greenhouse gas emissions, but have other environmental drawbacks. What might these drawbacks be?

Causes of Climate Change
40 Points

More than half of the energy produced in the US comes from coal. For every ton of coal burned, about how many tons of carbon dioxide are produced: 1 ton; 1.5 tons; 2 tons; 2.5 tons; 3 tons?

Two and a half tons of carbon dioxide are produced for every ton of coal burned in a power plant. The reason the byproduct of burning coal is greater than the amount of coal itself is because power plants also use huge amounts of water and limestone to create coal energy.

Did you know…?

Carbon dioxide is not the only byproduct of burning coal, but it is by far the most prevalent and is also the only major one without environmental restrictions. Can you think of other byproducts from coal burning?

Causes of Climate Change
60 Points

The United States emits more greenhouse gas, both per capita and absolutely, than any other country. Which country is second?

China.

Did you know…?

The average Chinese person uses only 10-15 percent of what the average American uses but China also has four to five times the population of the United States. With its economy rapidly expanding and industrializing, many experts expect China to overtake the US as the number one greenhouse gas emitter by the middle of this century.

Causes of Climate Change
80 Points

In 2004, 17 million new cars were sold. Of these, only 100,000, or one half of one percent of the total, were a specific type of vehicle with an environmentally-friendly design. What is the name of these vehicles?

Hybrids.

Did you know…?

Hybrid cars still hold only a small percentage of the car market, but they are growing rapidly. Since 2000, the number of hybrid cars sold in the US has increased by 1,000 percent and market forecasters predict an annual doubling of sales for the next few years.

Causes of Climate Change
100 Points

What country has the largest oil reserves in the world, estimated at 262 billion barrels?

Saudi Arabia.

Did you know…?

The United States is heavily dependent on oil, and because we are the world's biggest oil consumer we must import much of it, which makes it dependent on other countries, including Canada and Mexico (the two biggest importers of oil into the US) in addition to Saudi Arabia (third on the list). Many renewable fuels, on the other hand, can, in theory, be produced domestically by every country on Earth.

Causes of Climate Change
20 Points

Causes of Climate Change
40 Points

Causes of Climate Change
60 Points

Causes of Climate Change
100 Points

Causes of Climate Change
80 Points

Climate Change History
20 Points

True or false: major climate change has occurred in Earth's history before.

This is true.

Did you know…?

Over the past two million years ice sheets have come and gone over the Northern Hemisphere as many as twenty times. However, the temperature changes responsible for these glacial shifts have always been within a certain boundary. During this period the Earth's climate has been colder than today's, but it has never been much warmer.

Climate Change History
40 Points

Ten thousand years ago, when the last ice age ended and glaciers began receding, the concentration of carbon dioxide in the atmosphere was approximately 260 parts per million (ppm). About what is it today: 200 ppm; 320 ppm; 380 ppm; 440 ppm?

380 ppm.

Did you know…?

The carbon dioxide level did not start rising above the ppm level of ten thousand years ago until the late 18th century when industrialization began. If the trend continues we will reach 500 ppm by the middle of this century. This would be enough to increase the average global temperature by at least three degrees, making it hotter than at any point in the past two million years.

Climate Change History
60 Points

In 1908 the Swedish chemist Svante August Arrhenius was the first person to make what prediction after studying the potential effects of the industrial revolution?

He predicted the greenhouse effect. Arrhenius was ignored at the time, but this was possibly a good thing. Instead of predicting negative effects from global warming, he was pleased that people in the future would "live under a warmer sky and a less harsh environment than we were granted."

Climate Change History
80 Points

Over many, many years ancient organic material (plants and animals) decomposed under the right conditions to form fossil fuels. Oil and natural gas are formed when organic material decomposes without access to oxygen. What is formed when organic matter accumulates in moist areas such as peat bogs?

Coal.

Did you know…?

The longer coal is fossilized the more potential energy it holds. However, there are environmental drawbacks to every form of coal. The lowest form, lignite, is inefficient and usually passed over when other forms are available. Anthracite, the highest form, has a high energy content but also produces more carbon dioxide and sulfur per ton than other forms.

Climate Change History
100 Points

The first solar cell – which converts light energy into electricity – was built by Charles Fritts in 1883. Who was president of the United States?

Chester A. Arthur. Okay, so it might have been hard to come up with that answer, but not as hard as it was for scientists to make solar cells efficient. Fritts' cell had an energy conversion efficiency rate of less than one percent. By 1954, this number was only up to six percent. Solar cells, nonetheless, show tremendous promise as a future energy producer. They are simple constructions and harvest an inexhaustible energy source cheaply without producing any greenhouse gasses.

Climate Change History
20 Points

Climate Change History
40 Points

Climate Change History
60 Points

Climate Change History
100 Points

Climate Change History
80 Points

The Outlook: Life and Land
20 Points

Tropical diseases such as malaria are contained in narrow geographical areas because they depend on what are called disease "vectors" that can only survive in certain climates, such as mosquitoes, to carry them to different hosts. As one consequence of global warming, what do you think some scientists are predicting about the fate of warm weather diseases?

Many scientists believe these diseases will become more common and widespread as larger areas become hospitable to their "vectors".

The Outlook: Life and Land
40 Points

In 2004 a study was published in which 19 biologists compiled data on 1,100 species of plants and animals from different regions of the planet. Based on their research they projected that something catastrophic would happen to 15 to 37 percent of them by the middle of this century. What do you think it would be?

Extinction. There are, of course, far more than 1,100 different species of plants and animals on Earth today, but if these scientists are correct in their prediction and their sample turns out to be representative of the total number of species existing on the Earth today, this is indeed an alarming outlook!

The Outlook: Life and Land
60 Points

Tuvalu is a collection of islands in the South Pacific with an average height above sea level of six feet. Articles have recently come out about the future of these islands. What do you think this predicted future is?

Many believe they will be some of the first islands to disappear underwater as a result of rising sea levels. When this will occur is unknown, but according to the Sierra Club Magazine, the Intergovernmental Panel on Climate Change estimates that sea levels could rise by as much as 2.8 feet by the end of this century.

The Outlook: Life and Land
80 Points

While humans are producing carbon dioxide by burning fossil fuels, forests are removing some of it and converting it into oxygen. Climate change experts give forests a name when they speak of them performing this job. What is it?

Carbon sinks. Many scientists believe that carbon sinks absorb about half of all the carbon dioxide emitted today. With heavy deforestation and an increase in emissions, however, this percentage is falling.

Did you know…?
New technologies are already being researched to store carbon deep underground, in the oceans, and in biomass above ground. These technologies have the potential to vastly increase our carbon collecting abilities, but must be accompanied by emission reductions if we are to live sustainably.

The Outlook: Life and Land
100 Points

Two percent of the world's water is ice, mostly in the form of icebergs and glaciers. Antarctica contains the majority of this ice. Which country has the highest percentage of its land area covered by ice?

Greenland. Two percent of the world's water is trapped in ice, and while this may not seem like much, sea levels are significantly lower now than they would be if all of this ice melted, as some feel is a possibility as the Earth gets warmer. The melting of the West Antarctic Ice Sheet alone could raise sea levels 20 feet, enough to put many coastal cities and low-lying islands underwater.

The Outlook: Life and Land
100 Points

The Outlook: Life and Land
20 Points

The Outlook: Life and Land
40 Points

The Outlook: Life and Land
60 Points

The Outlook: Life and Land
80 Points

A Solution to Every Problem
100 Points

Biodiesel is a fuel that can replace standard petroleum gas and reduces greenhouse gas emissions by up to 75%. Biodiesel is usually made from three major sources. What is one?

Vegetable oil, animal fat, or recycled restaurant grease are all possible answers.

Did you know…?
There are many benefits to biodiesel. If you have a diesel engine already, a combination of 20% biodiesel and 80% petroleum can run your car without modifications. If you want to run on only biodiesel, you have to modify your engine, but you might also be able to work out a deal with a local restaurant to take their used vegetable oil or grease. After you refine it you've got some pretty cheap fuel!

A Solution to Every Problem
80 Points

Large urban areas use a lot of electricity, most of which comes from burning coal. If you want to improve the environment, would it be better to raise electricity prices in urban areas or lower them?

You should lower them.

Did you know…?
Although urban areas use a lot of electricity, they are also so populous that the amount of electricity used per person is quite low, especially in very dense cities like New York, which has some of the highest electricity bills in the country. If you raise electricity prices for people in urban areas, you encourage them to move outside of the city where driving is more common. You also encourage businesses to move from what could be a subway stop to a parking lot – not exactly an environmentally friendly move.

A Solution to Every Problem
20 Points

Name the treaty, agreed on in 1997 and signed by 156 countries over the next two years, which sets greenhouse gas emissions targets for developed nations. It went into effect in 2005.

The Kyoto Protocol. Many on both sides of the issue have criticized the protocol either because they say it does not go far enough, or that it exempts major greenhouse gas contributors such as India and China. Proponents of the agreement see it as a significant first step towards sustainability. The United States has not ratified the agreement.

A Solution to Every Problem
40 Points

Toyota makes one of the most efficient hybrid vehicles, the Prius, and one of the most inefficient SUVs, the Land Cruiser. The former averages 55 miles per gallon, and the latter averages 15 mpg. If you were to drive 15,000 miles in a year and the cost of gas per gallon was $2.20, how much money would you save driving the Prius: $600; $1,000; $1,600; $2,000?

$1,600.

Did you know…?
The Prius not only saves money on gas, but buyers of hybrid vehicles also receive tax incentives from the government. Additionally, Prius drivers emit only 3.5 tons of carbon dioxide into the air each year, whereas Land Cruiser drivers emit 12.8 tons.

A Solution to Every Problem
60 Points

What is the most abundant element in the universe? It is used to power fuel cells.

Hydrogen.

Did you know…?
Although the technology is still too complicated to be competitive, hydrogen fuel cell cars are already being developed. The upside of hydrogen fuel cells is their only byproducts are water and heat. The downside is that producing hydrogen for use in a fuel cell takes an incredible amount of energy, which today might come from burning fossil fuels. New, environmentally friendly ways of producing fuel-ready hydrogen are currently being developed.

A Solution to Every Problem
20 Points

A Solution to Every Problem
40 Points

A Solution to Every Problem
60 Points

A Solution to Every Problem
80 Points

A Solution to Every Problem
100 Points

What Can You Do?
100 Points

One sixth of all US energy consumption is used by what "cool" appliance?

Air conditioners.

Did you know…?
If you live in a mild climate, air conditioners shouldn't be necessary and simply opening the windows can be equally effective. Of course, if you live in a very hot climate, you can buy a window air conditioner which uses less energy than a central air conditioner; or you can buy an energy efficient one, which is about 25% more efficient.

What Can You Do?
20 Points

Food production and transportation in the United States accounts for what percentage of our total fossil fuel consumption: 7%; 17%; 27%?

A whopping 17% of the US's fossil fuel consumption is food-related. You can help cut down on this number by buying locally grown foods, which aren't transported as far.

Did you know…?
You can also reduce your fossil fuel consumption by buying organic foods. Organic farms have been shown to use 50% less energy than conventional farms. Organic, locally grown food is also healthy for you! Get more people to buy organic foods by organizing community awareness meetings that emphasize the benefits of organic and locally grown foods.

What Can You Do?
80 Points

The average US household spends $1500 a year on what necessity that keeps the lights on and the heat running?

Energy. One of the easiest ways to save energy is to buy Energy Star appliances. Energy Star is a program supported by the US government which sets strict energy standards on appliances. In 2004, the US saved $10 billion and the equivalent greenhouse gas emissions of 20 million cars through its use of Energy Star appliances. Write a letter to your senator or representative urging him or her to support legislation that gives tax breaks to people who buy energy-efficient appliances.

What Can You Do?
40 Points

In its lifetime, the average car emits 11,560 pounds of carbon dioxide. When all cars in the US are added together, this amount makes up what percentage of total carbon dioxide emissions in the US: 10%; 20%; 30%; 40%?

Forty percent.

Did you know…?
A great way to cut down on the emissions produced by cars is to take public transportation. Subways are run on electricity, which is produced by power plants, but per person carbon dioxide emissions are a fraction of what they are for cars. Additionally, many busses today are run on hybrid technology or natural gas. Consider writing a letter to your senator or representative urging him or her to support hybrid technology or legislation increasing fuel emissions standards.

What Can You Do?
60 Points

Thirteen billion pounds of carbon dioxide would be saved if each US household replaced one of what luminescent device with what is called a "compact fluorescent"?

Light bulbs.

Did you know…?
Normal light bulbs are called "incandescent" light bulbs. The reason compact fluorescent light bulbs prevent carbon dioxide emissions is that they are more efficient. Incandescent light bulbs emit more heat than they do light, while a 25-watt compact fluorescent emits the same amount of light as a 100-wat incandescent. And while compact fluorescents are more expensive (about $10 each), they actually are less expensive in the long run since they last up to ten years and lower your electric bill!

What Can You Do?
20 Points

What Can You Do?
40 Points

What Can You Do?
60 Points

What Can You Do?
100 Points

What Can You Do?
80 Points