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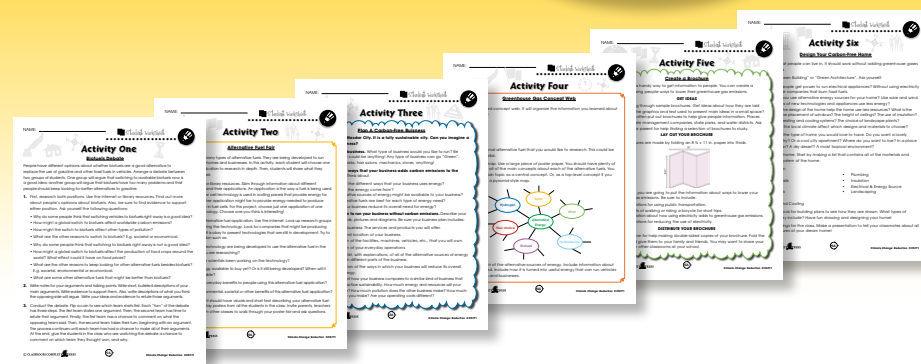
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Alternative Fuels

1. Have you ever heard of the term alternative fuels? Where did you hear about it? Explain what you know about it.

2. Match the term on the left to its definition on the right. You may use a dictionary to help you.

1 vehicle

The rock remains of plants or animals that lived long ago.

A

2 modern

A means of transporting people or goods.

B

3 fossil

Things put into the atmosphere by people.

C

4 solution

About present and recent time.

D

5 emissions

Things in the atmosphere that absorb heat.

E

6 alternative

Having only a certain amount.

F

7 limited

A means to solve problems.

G

8 greenhouse gases

A different way of doing things.

H



Alternative Fuels

Vehicles like cars, buses, trucks, and airplanes, are major sources of greenhouse gas emissions. Yet in modern society, people and goods need to travel from place to place. One solution is the development of **alternative fuels**. Most of the fuels used to power vehicles, such as gasoline, are **fossil fuels**. These are made from the remains of plants that lived millions of years ago. They release a lot of carbon dioxide and other greenhouse gases when they are burned.



Heavy traffic

What are fossil fuels?





Fossil fuels

Alternative fuels are other sources of energy. They do not release as much greenhouse gases and other pollution. Most alternative fuels are also **renewable**. This means that they are replaced by nature faster than they are used up. Fossil fuels are in limited supply. This is because they take millions of years to form. Renewable sources of energy can be used long into the future. Some alternative fuels can be used directly in vehicles. Other alternative sources of energy can be used in power plants.



Alternative Fuels



1. a) Circle the words that are Fossil Fuels.

b) Underline the words that are Alternative Fuels.

biofuel	coal	oil	hydrogen
hydroelectric	gasoline	wind	solar

2. Complete each sentence with terms from the list.

fuel cells	alternative fuels	hydroelectric
wind turbines	solar cells	biofuels

- _____ change energy from the sun into electricity.
- Energy from running water is changed into electricity inside dams that have _____ generators.
- _____ do not release as many greenhouse gases and other pollutants as fossil fuels.
- Fuels made from vegetable oils or plant parts are called _____.
- Water is the only emission from _____.
- _____ change wind energy to electricity.



Alternative Fuels



3. Answer each question with a complete sentence.

a) Why are people making alternative fuels to replace fossil fuels? Give two reasons.

b) Which alternative fuels can provide electricity? Which can be used to power cars?

Research

4. What kind of alternative fuels are being used in your area?

First, find out if any alternative fuels are available for vehicles in your area. Search for biofuel, or biodiesel stations. Also, search for hydrogen fueling stations.

Second, find out what types of alternative sources of energy are being used by your electric company. Find the contact information. Call a customer service representative or visit the company's website. Find out which kinds of alternative sources of energy are used by the company to produce electricity. Try to find out where the energy comes from.

Create a poster. Inform people of the alternative fuels and sources of energy being used in your area. Display your poster at your school or community center.

Create a pamphlet of transportation choices in your region.

Help the people in your community make transportation choices that will help lower greenhouse gas emissions. Many people drive individual vehicles for every trip. However, in many cases there are other choices that use less fossil fuels. You could help people make better choices. Create and distribute a pamphlet of transportation choices in your area.

First, research the transportation choices around where you live. Ask yourself the following questions:

- Where do people travel most often?
- What areas do people live in?
- Where do people work and go to school?
- Where are other common destinations? Like parks, museums and airports.

Then, visit your local planning department. Or, department of transportation, office or website. Look for the following information:

- Bus routes.
- Commuter train routes.
- Carpool lanes.
- Bike paths.
- Pedestrian trails.
- Any other form of public transportation in your area. Like ferries, trolleys or subways.

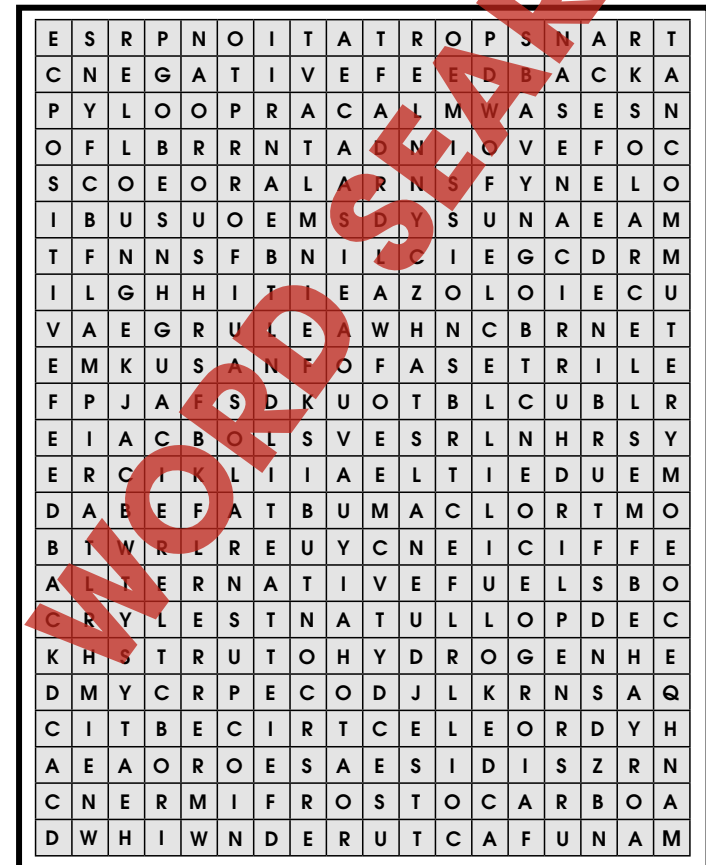
Now, compile all of the information you found into a helpful pamphlet. A pamphlet has a lot of information in a little space. To cover all the information, use lists and brief descriptions. Use graphics, like maps, to help show people other choices besides driving for common routes and destinations. Include a short description of the benefits to people and the environment of making different transportation choices. Design an interesting cover that gets people's attention and tells them what the pamphlet contains.

Finally, distribute your pamphlet. Ask your teacher for help making copies. Leave your pamphlets in areas that people commonly drive to. Like grocery stores, community centers and shopping malls.

Word Search

Find all of the words in the Word Search. Words are written horizontally, vertically, diagonally, and some are even written backwards.

- | | | | |
|-------------------|---------------|-------------------|----------------|
| alternative fuels | emissions | manufactured | solar |
| biofuel | fossil fuel | Masdar | solar cells |
| carpool | fuel cell | negative feedback | transportation |
| commuter | hybrid | pollutants | turbine |
| dam | hydroelectric | positive feedback | urban |
| efficiency | hydrogen | renewable | wind |



Comprehension Quiz

Part C

Answer each question in complete sentences.

1. Explain how changes in **greenhouse gas emissions** will affect Earth's average temperature.

2. Describe two alternative fuels that can be used to power vehicles. Be sure to explain the source of energy in each fuel.

3. Describe two alternative sources of energy that can be used to produce electricity for homes and other buildings.

4. Explain how urban planning can affect climate change.

SUBTOTAL: /17

Alternative Sources of Energy



Wind turbines and solar cells can be used to generate electricity without greenhouse gas emissions.

NAME: _____

After You Read 



Alternative Fuels



3. Answer each question with a complete sentence.

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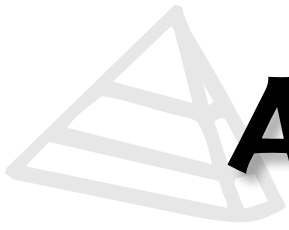
3.

a) Alternative fuels release less greenhouse gases and pollution. Fossil fuels will run out.

b) Solar, wind, hydroelectric can provide electricity. Biofuels, fuel cells can power vehicles.



EASY MARKING ANSWER KEY



Alternative Fuels

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