



Renewable and Nonrenewable Sources of Energy

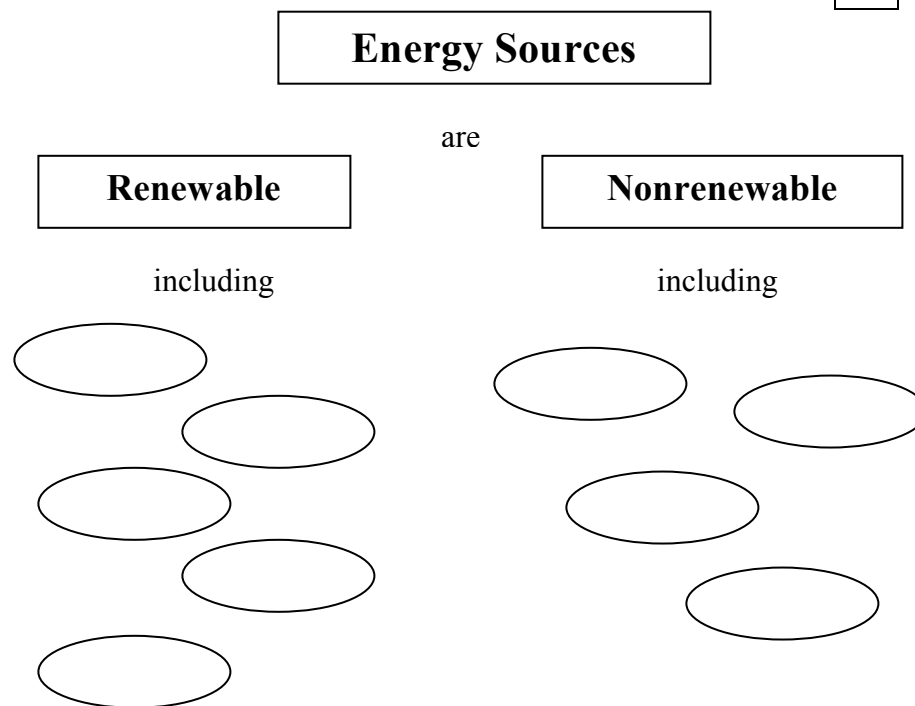
You have learned about the different types of energy such as chemical, mechanical, radiant and nuclear. You have also learned that energy can be changed from one form to another. A major energy transformation in our lives is the one that changes various energy sources into electricity. Energy sources can be either renewable or nonrenewable.

Renewable energy sources are those that can be replaced in a relatively short period of time. Examples of renewable resources are solar energy, wind energy, biomass and hydropower. Nonrenewable energy sources cannot be replaced as they are used. They take millions of years to form. Examples of nonrenewable energy sources are the metal uranium used as the nuclear energy source and fossil fuels such as coal, natural gas and oil. A fossil fuel is formed from the buried remains of plants and animals that lived millions of years ago

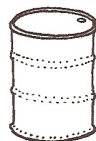
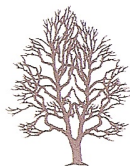
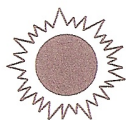
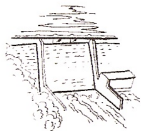
Materials: Packet of Energy Sources cards for each set of partners, Energy Source Posters

What To Do:

1. Your teacher will give you and your partner a set of cards that show an energy source.
2. Classify these energy sources on the cards as renewable or nonrenewable.
3. Fill in the graphic organizer on the next page.












4. Your teacher will give each table an Energy Sources Poster.
5. Determine under which category it fits.
6. Your teacher will have two columns on the board - Renewable and Nonrenewable. When your table is called place your poster in the correct category.
7. Write the name of each energy source next to the symbol on the next page.
8. Write whether it is renewable or nonrenewable next to the name.



Renewable and Nonrenewable energy sources can be converted into secondary energy sources like electricity and transportation. Observe the graphic below and answer the questions.

U.S. energy consumption by source, 2015

	biomass <i>renewable</i> heating, electricity, transportation	4.8%		petroleum <i>nonrenewable</i> transportation, manufacturing	36.2%
	hydropower <i>renewable</i> electricity	2.4%		natural gas <i>nonrenewable</i> heating, manufacturing, electricity	29%
	geothermal <i>renewable</i> heating, electricity	0.2%		coal <i>nonrenewable</i> electricity, manufacturing	16.1%
	wind <i>renewable</i> electricity	1.9%		uranium <i>nonrenewable</i> electricity	8.5%
	solar <i>renewable</i> light, heating, electricity	0.5%			

Sum of individual percentages may not equal 100 because net imports of coal coke and of electricity are not included.
Source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 1.3, March 2016, preliminary data

Questions:

1. What is the total percentage of our energy consumption is renewable? _____
2. What is the total percentage of our energy consumption is nonrenewable? _____
3. Which energy source is NOT used for electricity?

4. Which energy source has the highest percentage?

5. Which energy source has the lowest percentage?



Name _____ period _____

EXIT TICKET

Renewable and Nonrenewable Sources of Energy

1. Renewable resources are those that –
 - A. cannot be replaced after they are used up.
 - B. can be replaced after 100 years
 - C. can be replaced after a short amount of time
2. Nonrenewable resources are those that –
 - A. cannot be replaced after they are used up.
 - B. can be replaced after 100 years.
 - C. can be replaced after a short amount of time.
3. Examples of renewable resources are –
 - A. oil and natural gas
 - B. wind and solar
 - C. coal and biomass
4. Examples of nonrenewable resources are -
 - A. oil and natural gas
 - B. wind and solar
 - C. coal and biomass
5. Where do fossil fuels come from?
 - A. Fossil rocks in the ground
 - B. Grass and trees that have been rotting in a pond for about 100 years.
 - C. Remains plants and animal that lived millions of years ago.



Name _____ period _____

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