

Read the article “Nonrenewable Resources” before answering Numbers 1 through 5.

Nonrenewable Resources

Fuels used to produce energy come from many different sources, some of which are nonrenewable. These resources have a limited supply and cannot be replaced, so once they are used, they are gone forever.

Some examples of nonrenewable resources are coal, oil, and natural gas. They are usually found in deposits deep underground. Scientists look for these resources in areas that were covered by water before the time of the dinosaurs. Dead plants and animals were buried under layers of rock and soil, and then heat and pressure were applied to the remains. After millions of years, these fuels were created.

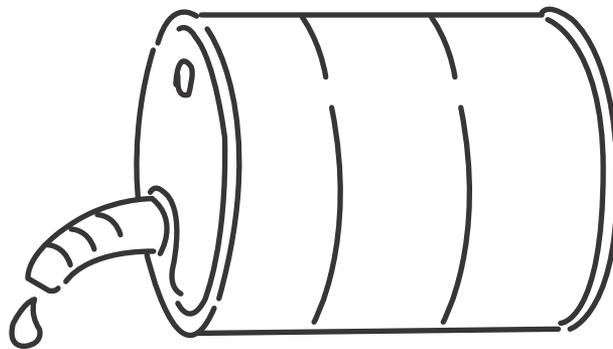
Throughout time, our use of these resources has changed. Oil has been used as a fuel for many years. Before the 1890s, the main product made from oil was kerosene, which heated homes and lit lamps. The invention of the automobile created a need for gasoline, which replaced kerosene as the main product made from oil. The amount of gasoline needed increased as the number of cars on the road got larger, and oil became the most used energy source.

Like oil, natural gas has been used for a long time. One early use of natural gas was lighting street lamps in the predawn hours. In the past, natural gas had problems as a fuel source. The wooden pipes used to carry natural gas leaked. It was hard to move gas safely. The invention of strong pipes that did not leak changed the gas industry by allowing natural gas to be carried far from where it was found. Today, people use natural gas to heat their homes and water. Natural gas may be used to preheat your oven when you want to bake something, and it powers clothes dryers, fireplaces, and gas grills.

Coal burns like oil and natural gas. Coal is a black or brownish-black rock that is removed from the ground using giant machines. There are four types of coal. Microscopes are used to help determine the type of coal. Each type of coal burns differently and is used for different things.

Coal has had many uses. In the past, it was used to make items for the military, such as shot and shells. It was burned to produce steam for train engines and steamboats, and it was also used as fuel to heat homes. Today, coal is used to create almost half of all the electricity generated in the United States. It is used by the cement, steel, and paper industries. By-products of coal are used to make plastics, tar, and medicine. Coal is also used to make steel, which is used to make building materials and automobiles.

Nonrenewable resources provide electricity that powers many things. They are used to create products we use every day. Oil, coal, and natural gas have been used as fuel for many years. Our use of these fuels has changed over time, and it will most likely continue to change.



Now answer Numbers 1 through 5. Base your answers on “Nonrenewable Resources.”

- 1 This question has two parts. First, answer part A. Then, answer part B.

Part A: Which sentence **best** describes what the article is about?

- (A) Natural gas has been used as a fuel for many years.
- (B) Coal was used to power train engines and steamboats.
- (C) Before the 1890s, the main product made from oil was kerosene.
- (D) The uses for nonrenewable resources have changed through time.

Part B: Which detail from the article **best** supports your answer in part A?

- (A) Nonrenewable resources help to provide electricity.
- (B) There are different types of coal buried in the ground.
- (C) Gasoline replaced kerosene as the main product made from oil.
- (D) Fuels were created from dead plants and animals over millions of years.

- 2 Read the sentence from the article.

Fuels used to produce energy come from many different sources, some of which are nonrenewable.

The prefix *non-* means “not.” What does it mean if something is nonrenewable?

- (A) It will always be available.
- (B) It can be made in factories.
- (C) It is at risk of being used up.
- (D) It is always increasing in amount.

3 Which of the following are examples of nonrenewable resources? Pick **three** choices.

- (A)** animals
- (B)** coal
- (C)** gas
- (D)** oil
- (E)** paper
- (F)** plants

4 Underline the sentence in the paragraph that shows how a problem was solved in the gas industry.

Like oil, natural gas has been used for a long time. One early use of natural gas was lighting street lamps in the predawn hours. In the past, natural gas had problems as a fuel source. The wooden pipes used to carry natural gas leaked. It was hard to move gas safely. The invention of strong pipes that did not leak changed the gas industry by allowing natural gas to be carried far from where it was found. Today, people use natural gas to heat their homes and water. Natural gas may be used to preheat your oven when you want to bake something, and it powers clothes dryers, fireplaces, and gas grills.

- 5 This question has two parts. First, answer part A. Then, answer part B.

Part A: Read the sentence from the article.

Microscopes are used to help determine the type of coal.

The prefix *micro-* means “tiny.” What do microscopes do?

- (A) They allow you to look at very small things.
- (B) They make large things look smaller than they are.
- (C) They allow you to look at things that were once very small.
- (D) They make small things larger so you can see them without a machine.

Part B: Which other words have the same prefix as the word microscopes? Pick **two** choices.

- (A) macaroni
- (B) machetes
- (C) microphones
- (D) microwave
- (E) periscope
- (F) telescopes

Read the article “Renewable Resources” before answering Numbers 6 through 10.

Renewable Resources

Renewable resources are used to produce energy. Renewable resources are nondepletable, which means that they can never be used up. On the other hand, nonrenewable resources can be depleted, or used up. In the past, it was more expensive to use renewable resources than nonrenewable resources to produce energy. But today, the price of nonrenewable resources, such as oil and natural gas, has increased. Scientists are searching for new ways to use renewable resources.

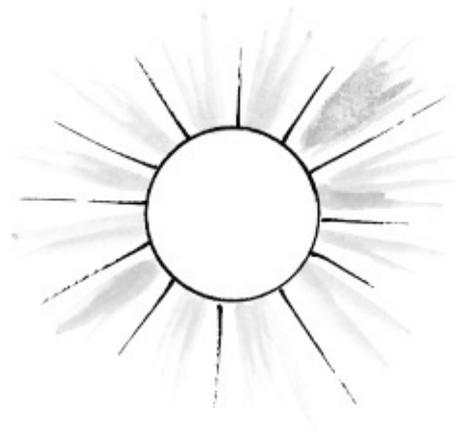
One renewable resource is biomass, which is a material that comes from plants and animals and contains microorganisms. You cannot see these tiny organisms without a microscope. This resource is renewable because there will always be plants and animals. Wood is a type of biomass that once created most of the energy used. People burned wood to produce heat, but this changed when people began to use other fuels. Today, some people still use wood to heat their homes and to cook. Most wood fuel is used by the paper and wood industries, which burn their wood scraps to produce electricity.

Another renewable resource is geothermal energy, which comes from heat within Earth. This heat is always in the ground and is recovered as steam or hot water. Geothermal energy can be seen at a hot spring. This natural pool is filled with water heated underground. Long ago, people used hot springs for bathing, cooking, and heating, and today, some people still bathe in hot springs. Geothermal energy can be used to heat buildings, and it is also used for drying food and gold mining.

Water is another renewable resource. Hydropower is created when water falls or flows. Water is one of the oldest energy sources. For instance, it was used to turn a paddle wheel to grind grain thousands of years ago. Today, about one-third of the power that comes from renewable resources comes from hydropower.

GO ON →

The sun is a renewable resource because it does not stop shining. You can feel solar energy when you feel the warmth of the sun's rays. During World War II, there was a limited supply of electricity, so to increase the electric supply in our country, buildings were designed so that the windows, walls, and floors collected and stored solar energy. Today, some homes and businesses use solar panels to collect solar energy.



The wind is a powerful renewable resource. Wind power has been used since ancient times as an energy source. Windmills have pumped water, have ground wheat and corn, and have generated electricity. Today, windmills are a nonstandard way of generating power. However, their popularity is growing. Some areas of the country have seen an increase in the number of windmills that are used to generate electricity. Using windmills requires some preplanning. You need another energy source for days when the wind does not blow.

Renewable resources have been used for thousands of years. Some people are looking at renewable resources in new ways. They are finding ways to replace some nonrenewable resources.

Name: _____ Date: _____

Now answer Numbers 6 through 10. Base your answers on “Renewable Resources.”

- 6 Complete the chart to show the main idea of the article and **two** details that support the main idea. Write the sentences from the list. Not all of the sentences will be used.

Main Idea
Supporting Details

Sentences:
Windmills generate electricity using wind power.
Hydropower is one of the earliest forms of power.
The price of nonrenewable resources has increased.
Renewable resources come from sources that cannot be depleted.

7 Which of the following are types of biomass? Pick **three** choices.

- (A) animals
- (B) oil
- (C) plants
- (D) steam
- (E) water
- (F) wood

8 This question has two parts. First, answer part A. Then, answer part B.

Part A: Which statement explains why geothermal energy is a renewable resource?

- (A) Earth will always produce heat.
- (B) Hot springs will always have hot water.
- (C) There will always be heat coming from the sun.
- (D) The flow of water will always produce electricity.

Part B: Which sentence from the article **best** supports your answer in part A?

- (A) "Most wood fuel is used by the paper and wood industries, which burn their wood scraps to produce electricity."
- (B) "This heat is always in the ground and is recovered as steam or hot water."
- (C) "Geothermal energy can be used to heat buildings, and it is also used for drying food and gold mining."
- (D) "Today, about one-third of the power that comes from renewable resources comes from hydropower."

- 9 Read the sentence from the article.

Today, windmills are a nonstandard way of generating power.

If the prefix *non-* means “not,” what is a nonstandard way of doing something?

- (A) an old way of doing it
- (B) the best way of doing it
- (C) not the usual way of doing it
- (D) not the correct way of doing it

- 10 This question has two parts. First, answer part A. Then, answer part B.

Part A: Read the sentence from the article.

Using windmills requires some preplanning.

The prefix *pre-* means “before.” What does the word preplanning mean?

- (A) forgetting to plan
- (B) planning ahead
- (C) waiting to plan
- (D) planning again

Part B: Which word has the same prefix as preplanning?

- (A) prefer
- (B) preview
- (C) president
- (D) pressure



