

Weekly Concept Consider Our Resources

Essential Question

Why are natural resources valuable?



Go Digital!



Essential EARTH

Water. Trees. Land. Oil. Minerals. These are just a few of the earth's valuable natural resources.

- ▶ Salt is one of our most important natural resources. In this salt marsh, people work to extract salt from the water.
- ▶ Natural resources are a necessity for us, but many are limited. As people use natural resources, they must remember to conserve and protect them, too.

Talk About It



Talk about words you have learned about the value of natural resources. Then talk about a natural resource you could not live without.



Vocabulary

Use the picture and the sentences to talk with a partner about each word.



absorb

A sponge will **absorb**, or soak up, the spilled coffee.

What else will absorb the liquid?



affect

Adding honey will **affect** the sweetness of the cereal.

How will adding salt affect a food?



circulates

Blood **circulates** from the heart through the body and back to the heart.

What else do you know of that circulates?



conserve

I **conserve** energy by turning off lights when I leave a room.

What is an antonym for conserve?



cycle

When the dryer completes its **cycle**, I will remove the clothes.

What other kinds of cycles can you think of?



glaciers

Huge **glaciers** made of thick ice can be found in freezing waters.

What would happen if the glaciers melted?



necessity

A guide dog or cane is a **necessity** to help visually impaired people cross a street.

What tool is a necessity for helping deaf people communicate?



seeps

The latex from the rubber tree **seeps**, or flows slowly, into a bucket.

If water seeps up from the ground, how quickly will it spread?

Your Turn

COLLABORATE



Pick three words. Write three questions for your partner to answer.

Go Digital! Use the online visual glossary

Power from NATURE

Wind turbines are placed in open areas.



Essential Question

Why are natural resources valuable?

Read about the ways natural resources provide energy.

Renewable and Nonrenewable Energy

Click! You just turned on a lamp. A faraway power plant most likely supplied the electricity for that lamp by burning coal. Coal, which has to be extracted from deep within the earth, is a natural resource.

Natural resources are nature's gifts, the riches that exist in the natural world. They include metals and minerals, along with vegetation, soil, and animals in the wild. They include the things that are a **necessity** for all life—water, air, and sunlight.

One important use for natural resources is to provide energy. Energy makes things work. It runs our cars, computers, heating and

cooling systems, kitchen appliances, telephones, televisions, and industrial machinery. Where do we get all this energy? Natural resources serve as energy sources.

Energy sources are divided into two categories. Renewable energy sources—such as sunlight and wind—can be renewed, or continuously refilled. They do not run out. In contrast, nonrenewable energy sources can be depleted, or used up. Coal, natural gas, and oil—also called petroleum—fall into this category. Only a limited amount of these substances, called fossil fuels, exists. Nuclear energy is also nonrenewable because it requires uranium. Amounts of uranium are finite, or limited.

(bkgd) John A. Karachewski; (l) Digital Vision/Getty Images; (r) Keith Wood/Stone/Getty Images



Cooling towers at a nuclear facility



A natural gas pipeline

From the start of human history, people used renewable energy. For example, sails captured wind to move ships, and wood was burned to cook food. Then, about 150 years ago, human energy needs exploded. New machines required more energy. New ways to harness, or control, energy for use had to be developed. From the 19th century on, most energy has come from nonrenewable sources.

Challenges and Problems

Nonrenewable energy has filled our needs on a huge scale. However, satisfying our energy hunger has been challenging. Supplies of coal, natural gas, oil, and uranium are buried underground. They must be discovered and extracted. Also, human technology is needed to transform natural resources into

usable forms of energy. For example, gasoline has to be manufactured from oil and then delivered to customers.

Although nonrenewable energy sources have filled our needs, continuing to use them poses problems. They not only can run out but also can pollute the environment. Burning coal produces gases that can poison the air. Some scientists argue that these gases have heated up our atmosphere. They say global warming will **affect** our climate so dramatically that **glaciers** will melt and sea levels will rise.

In addition, it is not just our atmosphere that can be polluted. Oil from spills often **seeps** into the ocean. Extracting natural gas can pollute a site's surroundings. Nuclear energy creates dangerous waste.

U.S. Energy Use from 1949–2010

Types of Energy, Percentage of Energy Used by Year (approximate)

SOURCE OF ENERGY	1949	1969	1989	2010
Fossil Fuels	91%	93%	86%	83%
Nuclear Power	0%	1%	6%	9%
Renewable Energy	9%	6%	8%	8%

What are solutions to our energy challenges? We must find some answers. One possibility is a return to renewable energy, which generally causes less pollution than fossil fuels. However, renewable energy is currently expensive and complex to harness on a large scale

Solutions for the Future

Solar power, or power from the sun, shows promise. Solar panels on houses can **absorb** the sun's energy to provide heat. Nonetheless, because Earth rotates on its axis and **circulates** in a yearly **cycle** around the sun, the sun's energy is less available at certain times and seasons and in different places. It will take innovation and investment to maximize our use of solar power and other renewable energy.

Oil rigs for drilling oil are often found offshore.



Solar panels on the roof help provide heat and electricity.

We also can learn to use nonrenewable energy more wisely. Government and private industry have a role to play in protecting our natural resources and in reducing pollution. Moreover, individuals can try to **conserve** energy. We can remember to turn off lights, TVs, computers, and other devices when we are not using them. Small personal efforts can add up to big changes in our energy future.

Make Connections

Talk about some of the ways natural resources are valuable. **ESSENTIAL QUESTION**

What ways does the text suggest that individuals can save energy? What are some other things you can do personally to save energy? **TEXT TO SELF**

