

Geology Review Sheet #2

5 Renewable and 5 Non-Renewable Resources

RENEWABLE

1. **SOLAR ENERGY** - IT IS RENEWABLE BECAUSE THE SUN MAKES ENERGY - ENOUGH EVERY DAY TO SUPPLY ELECTRICITY TO THE UNITED STATES FOR A YEAR. THE SUN'S ENERGY IS CONVERTED INTO A USEFUL FORM OF ENERGY.
2. **WIND** - IT IS RENEWABLE BECAUSE THE MOVEMENT OF WIND CREATES ENERGY.
3. **PLANTS** - IT IS RENEWABLE BECAUSE THE CHEMICAL ENERGY IN PLANTS GETS PASSED ON TO ANIMALS AND PEOPLE THAT EAT THEM.
4. **WATER** - IT IS RENEWABLE BECAUSE WE'LL NEVER RUN OUT OF IT AND YOU CAN CLEAN WATER TO USE AS DRINKING WATER. WATER EVAPORATES FROM THE OCEANS AND IS TRANSPORTED BACK TO THE CONTINENTS AS PRECIPITATION (RAIN, SNOW, DEW, FOG, FROST)
5. **TREES** - IT IS RENEWABLE BECAUSE IT TAKES IN CO₂ AND RELEASES OXYGEN, WHICH HELPS CLEAN THE AIR. IT IS USED FOR PAPER WHICH CAN BE REUSED AND RECYCLED.

NON-RENEWABLE

1. **COAL** - IT IS NON-RENEWABLE BECAUSE IT TAKES MILLIONS OF YEARS TO FORM, AND IS BEING USED MUCH FASTER THAN NATURAL PROCESSES CAN REPLACE THEM.
2. **OIL** - IT IS NON-RENEWABLE BECAUSE IT TAKES MILLIONS OF YEARS TO FORM, AND IS BEING USED MUCH FASTER THAN NATURAL PROCESSES CAN REPLACE THEM.
3. **NATURAL GAS** - IT IS NON-RENEWABLE BECAUSE IT TAKES MILLIONS OF YEARS TO FORM, AND IS BEING USED MUCH FASTER THAN NATURAL PROCESSES CAN REPLACE THEM.
4. **ALUMINUM** - IT IS NON-RENEWABLE BECAUSE
5. **COPPER** - IT IS NON-RENEWABLE BECAUSE IT IS A MINERAL RESOURCE THAT FORMED FROM GEOLOGICAL PROCESSES MILLIONS OF YEARS AGO.

6. WHY ARE COAL, OIL, AND NATURAL GAS CALLED FOSSIL FUELS?

They are composed of fossils, the remains of organisms that lived as long ago as 500 million years. Oil and gas originated as organisms in the oceans, such as phytoplankton, that over time became incorporated into the sediments on the ocean floor. Coal is the fossilized remains of trees and other plants that were buried in the Earth. Over millions of years, these remains were subjected to pressure, temperature, and chemical processes to become transformed into coal.

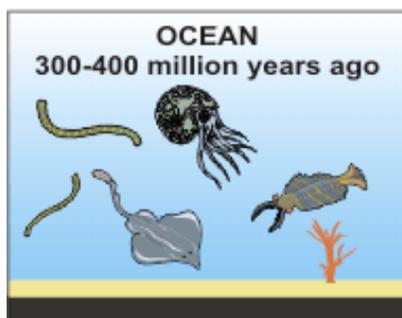
1. NAME THE FOUR STAGES IN THE FORMATION OF COAL.

Starts as Peat, then lignite, then Bituminous coal, and finally anthracite coal.

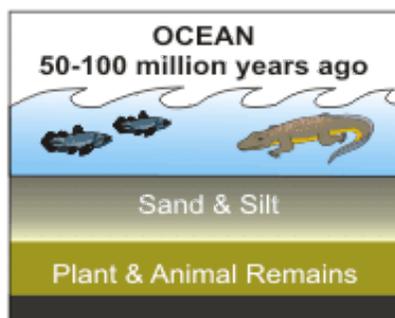
2. DESCRIBE WHERE PETROLEUM AND NATURAL GAS FORM.

Millions of years ago, the remains of plants and animals decayed and built up in thick layers. This decayed matter from plants and animals is called organic material meaning it was once alive. Over time, the mud and soil changed to rock, covered the organic material and trapped it beneath the rock. Pressure and heat changed some of this organic material into coal, some into oil (petroleum), and some into natural gas - tiny bubbles of odorless gas. The main ingredient in natural gas is methane, a gas (or compound) composed of one carbon atom and four hydrogen atoms.

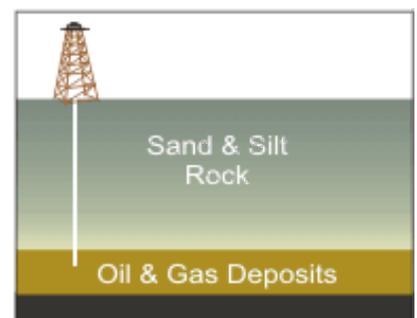
PETROLEUM & NATURAL GAS FORMATION



Tiny sea plants and animals died and were buried on the ocean floor. Over time, they were covered by layers of silt and sand.



Over millions of years, the remains were buried deeper and deeper. The enormous heat and pressure turned them into oil and gas.



Today, we drill down through layers of sand, silt, and rock to reach the rock formations that contain oil and gas deposits.

3. IDENTIFY TWO WAYS EACH OF THE FOLLOWING FUELS ARE USED.

A. COAL - 1.) *As a solid fuel to produce electricity and heat through combustion (burning).* 2.) *Manufacturing coke - early pure carbon produced when soft coal is heated in the absence of air.*

B. PETROLEUM - 1.) *Fuel* 2.) *Wax - used to package things like frozen food.*

C. NATURAL GAS - 1.) *Furnaces* 2.) *Clothes Dryers*

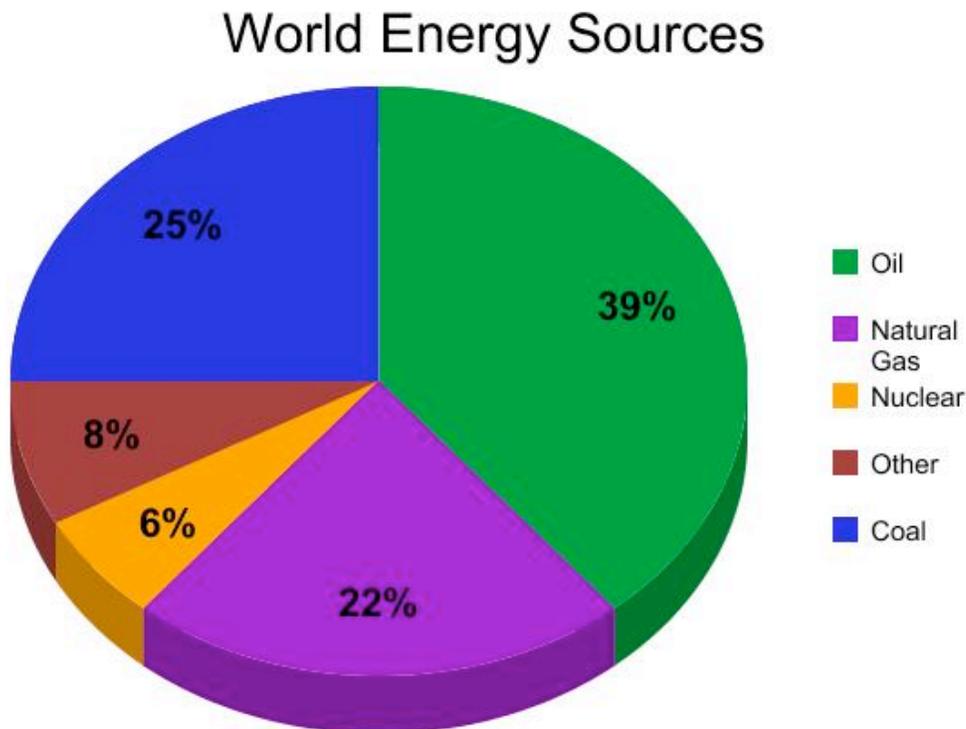
4. WHAT ARE SOME PROBLEMS ASSOCIATED WITH THE USE OF FOSSIL FUELS?

Some problems associated with the use of fossil fuels are that they release Carbon Dioxide (CO₂), which pollutes the atmosphere. It is one of the greenhouse gasses and it contributes to global warming.

PART B SKILLS DEVELOPMENT

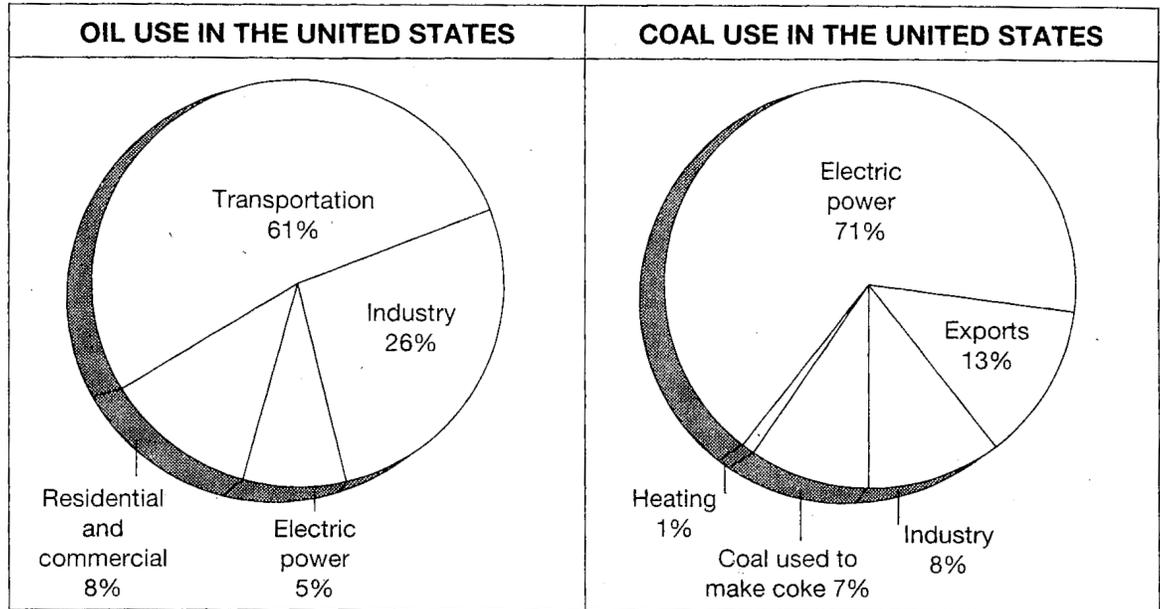
Make a graph

USE THE INFORMATION GIVEN ON P. 690 OF THE TEXT TO LABEL EACH SECTION OF THE CIRCLE GRAPH IN FIGURE 1. GIVE FIGURE 1 A TITLE.



■ Interpreting Charts: Understanding the Main Ideas

The following charts show how oil and coal are used as sources of energy in the United States. Study the charts and answer the questions that follow.



1. WHAT IS OIL MAINLY USED FOR? *Transportation*
2. WHAT IS MOST OF THE COAL IN THIS COUNTRY USED FOR?
Electric Power
3. DOES INDUSTRY RELY MORE ON OIL OR ON COAL FOR ENERGY?
Oil
4. WHAT PERCENTAGE OF THE COAL PRODUCED IN THE UNITED STATES IS EXPORTED TO OTHER COUNTRIES? *13%*
5. NAME A RENEWABLE RESOURCE: (CAN BE REUSED)
Water
6. NAME A NON-RENEWABLE RESOURCE: (CANNOT BE REUSED)
Fossil Fuels like coal, oil, and natural gas.