

NOTES

**Notes: Geology Chapter 3: Natural Resources**

<p><b>What are natural resources?</b></p>	<ul style="list-style-type: none"> <li>• Natural Resources provide materials and _____.</li> <li>– People use natural resources to make _____, build cities, _____ their homes, and make their lives more comfortable.</li> <li>– <b>Natural resource:</b> any _____ source, organism, or substance found in _____ that people use.</li> <li>– People also know that there are _____ AND _____ in using natural resources; for example, coal produces _____ but also smoke that _____ the air.</li> </ul>
<p><b>What are the 2 types of resources?</b></p>	<ul style="list-style-type: none"> <li>• Natural resources can be classified as _____ and _____.</li> <li>• <b>Renewable resource:</b> a natural resource that can be _____ in nature at about the _____ as it is used.</li> <li>• <b>Nonrenewable resource:</b> a natural resource that exists in a _____ amount or that is used up _____ than it can be _____ in nature.             <ul style="list-style-type: none"> <li>– The supply of any nonrenewable resource is _____.</li> </ul> </li> </ul>
<p><b>What are fossil fuels?</b></p>	<ul style="list-style-type: none"> <li>• Fossil Fuels supply most of society's _____.</li> <li>• <b>Fossil fuel:</b> a _____ energy source formed from ancient plants and _____ buried in Earth's crust for _____ of years.             <ul style="list-style-type: none"> <li>– Includes _____, coal, and natural _____.</li> <li>– The energy in fossil fuels represents a form of stored _____, since ancient organisms depended on the _____.</li> </ul> </li> <li>• Fossil fuels burn _____ and produce a lot of _____. They are used to run most of the _____ plants that generate _____.</li> <li>• Burning fossil fuels produces excess _____, harmful acids, and other forms of _____.</li> </ul>
<p><b>What are resources used for?</b></p>	<ul style="list-style-type: none"> <li>• Fossil fuels, _____, and plants supply materials for modern products.             <ul style="list-style-type: none"> <li>– Many of the products you use come from _____.                 <ul style="list-style-type: none"> <li>• Ex. Oil is broken down into different parts that are used to make _____</li> </ul> </li> <li>– Minerals are found in _____, airplanes, tools, wires, and _____ chips.</li> <li>– Plants are used to make another large group of products.                 <ul style="list-style-type: none"> <li>• Ex. _____ is used to build homes and to make furniture, utensils, and _____</li> <li>• Plants are also rich sources of _____, fibers, and _____.</li> </ul> </li> <li>– Fossil fuels must be burned to generate _____ for the factories and businesses that make these _____.</li> <li>– Factory waste can _____ air, _____, and soil.</li> </ul> </li> </ul>
<p><b>What is conservation?</b></p>	<ul style="list-style-type: none"> <li>• Conservation involves _____ waste and reusing _____ resources.             <ul style="list-style-type: none"> <li>– The trash amount per person has _____.</li> <li>– Conservation programs try to _____ our natural resources, protect our _____, and slow the amount of _____ produced.</li> <li>– Conservation means _____, restoring, and _____ natural resources so they last _____.                 <ul style="list-style-type: none"> <li>• We need to _____ the amount of pollution.</li> <li>• There are _____ ways to conserve:                     <ul style="list-style-type: none"> <li>– _____ → cut back</li> <li>– _____ → use more than once</li> </ul> </li> </ul> </li> </ul> </li> </ul>
<p><b>What is recycling?</b></p>	<ul style="list-style-type: none"> <li>• Recycling involves _____ and extending natural resources.</li> <li>• _____: The _____ of materials that people would otherwise _____             <ul style="list-style-type: none"> <li>– Ex. Glass, _____ cans, certain _____, paper</li> </ul> </li> <li>• Not every item can be _____ or reused.             <ul style="list-style-type: none"> <li>– Recycling is only _____ of the solution to our _____ problem.</li> <li>– Recycling takes time, _____, and _____, but can help extend available resources, and protect human _____ and the environment.</li> </ul> </li> </ul>
<p><b>How do we get electricity?</b></p>	<ul style="list-style-type: none"> <li>• Fossil Fuels are the most _____ used sources of energy, but _____ power is also used to produce _____.</li> <li>• In _____ fuel power plants, water is _____ to make _____ that turns a turbine, which drives a generator to make electricity. _____ fossil fuels (like wood or coal) _____ the water.</li> <li>• In nuclear power plants, nuclear _____ is used to _____ the water.</li> </ul>
<p><b>What is nuclear fission?</b></p>	<ul style="list-style-type: none"> <li>• <b>Nuclear fission:</b> the process in which the _____ of a radioactive atom is _____, forming lighter elements and releasing a _____ amount of _____.             <ul style="list-style-type: none"> <li>– Nuclear power plants use _____ atoms as fuel.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>- When a uranium nucleus splits, it forms 2 _____ nuclei and releases a few neutrons and a large amount of _____ in the form of light and _____.</li> <li>• Although nuclear fission produces a lot of _____, it also produces radioactive _____ that can cause death and _____ if living things are exposed to it long enough.</li> <li>• Nuclear waste will remain _____ for thousands of years, so countries using it face the challenge of _____ it safely.</li> </ul>
<p><b>How do we use renewable resources?</b></p>	<ul style="list-style-type: none"> <li>• _____ resources are used to produce electricity and _____.</li> <li>- Sources of renewable energy are moving _____, wind, Earth's internal heat, _____, living matter, and hydrogen. <ul style="list-style-type: none"> <li>• These energy sources are in _____ supply and usually produce electricity or _____ with little or no _____.</li> <li>• These energy sources also help to preserve the _____ and protect human _____.</li> </ul> </li> <li>- Renewable resources provide only a _____ percentage of energy used because these resources can't produce enough _____ to pay for the _____ of developing them on a _____ scale.</li> </ul>
<p><b>Renewable energy: Hydroelectric Power</b></p>	<ul style="list-style-type: none"> <li>• <b>Hydroelectric energy:</b> electricity produced by moving _____.</li> <li>- People can use _____ water to produce electricity.</li> <li>- Because hydroelectric power doesn't _____ any fuel, it produces no _____.</li> <li>- Building _____ can cause problems for the environment by _____ wildlife habitats, interfering with _____ of fish, and making it harder to raise crops and livestock (some areas at the end of the river may receive _____ water).</li> </ul>
<p><b>Renewable Energy: Solar Power</b></p>	<ul style="list-style-type: none"> <li>• Solar cells were created to _____ the sun's _____.</li> <li>• _____ <b>cell:</b> a special _____ device that converts light energy to _____.</li> <li>- In a solar cell, when _____ strikes the cell, _____ move from the lower layer to the upper layer, producing an _____ current.</li> <li>- Solar cells can be _____ together in solar _____.</li> <li>- Sunlight is an _____ source of _____ energy but current methods of collecting sunlight are _____ and somewhat _____.</li> </ul>
<p><b>Renewable Energy: Geothermal Energy</b></p>	<ul style="list-style-type: none"> <li>• <b>Geothermal Energy:</b> energy produced by _____ within Earth's _____.</li> <li>- Geothermal energy comes from underground _____ that is heated by _____.</li> <li>- In the U.S., geothermal energy provides electricity for nearly _____ homes.</li> <li>- Geothermal energy is _____ and renewable but is _____ to areas where hot water is close to the _____.</li> </ul>
<p><b>Renewable Energy: Wind Energy</b></p>	<ul style="list-style-type: none"> <li>• For thousands of years, people have used _____ energy to move ships, grind _____, and pump water. Today, people use wind energy to generate _____.</li> <li>• The modern _____ is made of metal and plastic. The _____ turn a set of gears that drives the generator to produce _____.</li> <li>• Wind _____ are areas with hundreds of _____.</li> <li>• Wind energy is clean and _____, but depends on strong winds blowing most of the time and wind farms take up a lot of _____.</li> </ul>
<p><b>Renewable Energy: Biomass Energy</b></p>	<ul style="list-style-type: none"> <li>• Biomass energy: _____ matter, like _____ (corn starch → ethanol) and animal _____, that can be used as _____.</li> <li>• Biomass _____ stations burn _____ and other plant material to produce electricity.</li> <li>• _____ than fossil fuels.</li> <li>• Although biomass is a _____ resource, burning biomass can produce a lot of carbon dioxide (_____).</li> </ul>
<p><b>Renewable Energy: Hydrogen Fuel Cells</b></p>	<ul style="list-style-type: none"> <li>• Hydrogen is the _____ atom, is a flammable gas, and must be handled with _____.</li> <li>• Hydrogen is used in a hydrogen _____ cell, which is a device that produces _____ by separating hydrogen into protons and _____.</li> <li>• Hydrogen fuel cells are used to supply electrical energy on _____ and space stations and is being tested on other forms of _____.</li> <li>• Hydrogen is a _____ source of energy and produces _____ and _____ as byproducts.</li> <li>• However, hydrogen fuel is very _____ and takes a great deal of energy, time, and _____.</li> </ul>

**What is global warming?**

- The average \_\_\_\_\_ of the Earth are \_\_\_\_\_, and the rate of increase is getting faster and \_\_\_\_\_.
- It is caused by increase greenhouse \_\_\_\_\_ (like \_\_\_\_\_) in the atmosphere that \_\_\_\_\_ heat and cause the Earth to \_\_\_\_\_ up.
- The Earth does go through \_\_\_\_\_ warming and cooling cycles, but the current warming is happening too \_\_\_\_\_ and is too \_\_\_\_\_ to be natural.