



Energy Sources

Section 1 Fossil Fuels

- A. Energy cannot be created or destroyed according to the law of conservation of energy, but energy can be _____ from one form to another.
- B. _____—formed from decaying remains of ancient plants and animals
1. Burning fossil fuels converts energy from _____ bonds to heat and light.
 2. Chemical energy in fossil fuels is more _____ that in other fuels such as wood.
- C. _____—thick, greenish-brown, highly flammable liquid formed by decayed ancient organisms
1. A process called fractional _____ separates the compounds in petroleum.
 2. Petroleum is used for _____, synthetic fabrics, and other products in addition to its use as a fuel.
- D. _____ is also a product of decayed ancient organisms.
1. It contains more _____ per kilogram than petroleum or coal.
 2. It burns more _____ than other fossil fuels.
 3. It provides about one-fourth of the energy consumed in the _____.
- E. _____—a solid fossil fuel found underground
1. It produces more _____ when burned than petroleum or natural gas
 2. It provides about _____ of the energy produced in the United States.
 3. About 90 percent of coal burned in the United States is used to produce _____.
- F. Electricity is generated when _____ fuels are burned.
1. The burned fuel releases _____ energy.
 2. The thermal energy produces high pressure _____.
 3. The steam spins a _____.
 4. The spinning turbine produces an electric _____.
 5. The electric current is _____ through power lines to consumers.
- G. Only about 35% of the energy in fossil fuel reaches consumers since some energy is _____ in every stage of the process.

Note-taking Worksheet (continued)

H. Fossil fuels have some _____ side effects.

1. Fossil fuels _____ the environment and increase carbon monoxide in the atmosphere.
2. Mining coal can cause _____ problems for miners.

I. Fossil fuels are _____, so it is important to not waste energy.

Section 2 Nuclear Energy

A. About 20% of the electricity in the U.S. comes from _____ power plants.

B. _____ contain a fuel, rods to control nuclear reactions, and a cooling system.

1. Heat is produced by nuclear _____—energy is released when U-235 nuclei split in two after being struck by a neutron.
2. Special rods absorb excess _____ to prevent dangerous chain reactions.

C. Nuclear power plants use the heat of nuclear fission to produce _____.

1. The steam drives a _____.
2. The turbine rotates an electric _____.

D. Nuclear power plants produce _____—radioactive by-products from radioactive materials.

1. _____ wastes contain only a small amount of radioactive material.
2. _____ wastes must be disposed of extremely carefully because they will remain radioactive for tens of thousands of years.

E. Nuclear _____—the joining together of nuclei—is not a practical energy source due to the high temperature fusion requires.

Section 3 Renewable Energy Sources

A. A _____ can be replaced almost as quickly as it is used.

B. Solar energy is converted into electricity by a _____ cell or solar cell.

1. A solar cell converts only 15 to 20 percent of the sun's energy into _____.
2. Energy produced by solar cells is more _____ than energy produced with fossil fuels.
3. Energy from solar cells must be _____ in batteries when the Sun is not shining.

Note-taking Worksheet (continued)

- C. _____ is produced by moving water; it is about twice as efficient as fossil fuels or nuclear power.
- D. _____ uses moving water, but it can only be used in places where high and low tides are different enough.
- E. _____ can be used to generate electricity, but are useful only when the wind blows consistently.
- F. _____—thermal energy contained in hot magma; limited to areas where magma is close to the surface
- G. Alternative fuels include hydrogen gas and _____—renewable organic matter such as wood or animal manure