

Skills Worksheet

Directed Reading**Section: Renewable Energy**

1. If worldwide energy consumption increases as predicted, in how many years will the world's supply of fossil fuels be used up?

2. Why is nuclear energy not considered the best replacement for fossil fuels?

3. What is the name of resources that can be replaced as they are used or within a human life span?

GEOTHERMAL ENERGY

_____ 4. What flows far beneath Earth's surface in many locations?

- a. nuclear energy
- b. fossil fuels
- c. water
- d. natural gas

_____ 5. How does water beneath the surface become heated?

- a. by the atmosphere
- b. by heat absorbed by Earth's surface
- c. by steam produced by the sun
- d. by rocks heated by nearby magma

_____ 6. Geothermal energy comes from

- a. deep within Earth.
- b. Earth's surface.
- c. a small distance below Earth's surface.
- d. the atmosphere.

Directed Reading *continued*

- _____ 7. Which is NOT a way that geothermal energy has been harnessed?
a. using geothermal steam to drive turbines
b. mining ores
c. pumping water into hot rocks
d. drilling wells to reach hot water
- _____ 8. Which place obtains 85% of its home heating from geothermal power?
a. San Francisco
b. Japan
c. France
d. Iceland

SOLAR ENERGY

9. How long does it take the sun to provide enough energy to meet Earth's energy needs for one year?

10. What is solar energy?

11. What is the chief challenge engineers face with regard to solar energy?

In the space provided, write the letter of the definition that best matches the term or phrase.

- | | |
|-----------------------------|--|
| _____ 12. solar collector | a. a system that converts solar energy directly into electricity for small objects |
| _____ 13. active system | b. a system that converts sunlight into heat energy without moving parts |
| _____ 14. photovoltaic cell | c. a device such as a box with a glass top that converts sunlight into heat energy |
| _____ 15. passive system | d. a system for using solar energy that uses solar collectors |

Directed Reading *continued*

16. Describe how a solar collector might work.

17. What is a disadvantage of solar collectors?

ENERGY FROM MOVING WATER

18. What are two sources of energy from moving water?

19. What is electricity produced by running water called?

20. How much of the United States' electricity comes from hydroelectric power plants?

21. Why is a dam necessary for a hydroelectric plant?

22. What happens inside a hydroelectric plant?

23. How have people made use of tides as a source of energy?

Directed Reading *continued*

ENERGY FROM BIOMASS

- _____ 24. Which is NOT an example of biomass?
- a. paper waste
 - b. manure
 - c. coal
 - d. wood
- _____ 25. Where is biomass a major source of energy?
- a. in many developing countries
 - b. in the United States
 - c. in Europe
 - d. in many industrial countries
- _____ 26. What percentage of trees that are cut down are used as an energy source?
- a. 100%
 - b. 25%
 - c. less than 50%
 - d. more than 50%
- _____ 27. The action of bacteria on biomass can produce
- a. natural gas and petroleum.
 - b. gases and liquids that can be burned as fuel.
 - c. fire and water.
 - d. electricity and nuclear fission.

ENERGY FROM WIND

28. What causes wind?
- _____
29. What devices convert wind energy into mechanical energy?
- _____
30. In what kinds of places is wind energy currently producing electricity?
- _____
31. What is the name for a group of hundreds of giant wind turbines?
- _____
32. How much energy might such large groups of wind turbines produce?
- _____
33. What is the main disadvantage of wind energy?
- _____