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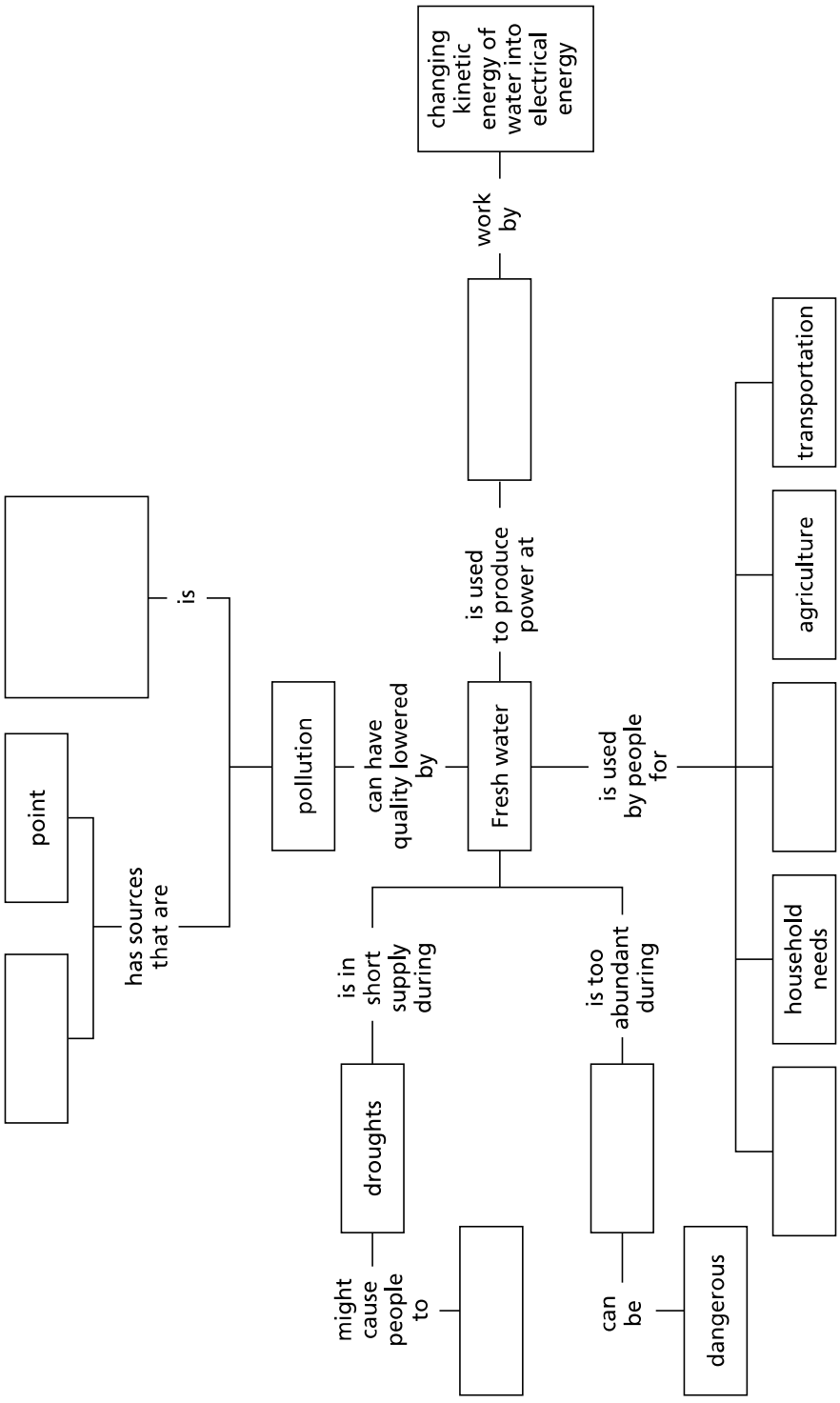
Connecting Concepts

Develop a concept map that uses the key concepts and key terms from this chapter. Keep in mind the big idea of this chapter. The concept map shown is one way to organize the information in this chapter. You may use an extra sheet of paper.



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Key Terms

Solve the clues with key terms from Chapter 3. Then put the numbered letters in order to reveal the message.

Clues	Key Terms
1. Combined level of calcium and magnesium in water	___ ___ ___ ___ ___ ___ ___ ___ (1, 2)
2. Sticky globs created during water treatment	___ ___ ___ ___ ___ (3)
3. Chemical intended to kill insects or other pests	___ ___ ___ ___ ___ ___ ___ ___ ___ (4, 5)
4. Amount of one substance in a certain volume of another	___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ (6, 7)
5. Type of underground tank that contains bacteria for treating wastewater	___ ___ ___ ___ ___ ___ (8, 9)
6. Using a resource wisely	___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ (10, 11)
7. Sediments that settle out during waste water treatment	___ ___ ___ ___ ___ ___ (12)
8. Water containing human wastes	___ ___ ___ ___ ___ ___ (13, 14)
9. Process of passing water through screens to remove objects	___ ___ ___ ___ ___ ___ ___ ___ ___ ___ (15)
10. Process of removing salt from water	___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ (16)
11. Water shortage due to long periods of low precipitation	___ ___ ___ ___ ___ ___ ___ (17)

Hidden Message

___	___	___	___		___	___	___	___	___	___	___	___
1	2	3	4		5	6	7	8	9	10	11	12

___	___	___	___	___
13	14	15	16	17

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Freshwater Resources

Multiple Choice

Write the letter of the correct answer on the line at the left.

____ **1.** The amount of one substance in a certain volume of another substance is called a

a. drought.
b. concentration.
c. coagulation.
d. leach field.

____ **2.** A high coliform count is an indicator that the water may contain

a. high levels of minerals.
b. high pH levels.
c. great kinetic energy.
d. large numbers of disease-causing organisms.

____ **3.** What is added to drinking water to kill bacteria and other organisms?

a. sand
b. alum
c. chlorine
d. dissolved solids

____ **4.** Wastewater and the different kinds of waste in it are called

a. sludge.
b. floc.
c. sewage.
d. hardness.

____ **5.** A condition in which an area gets less precipitation than normal for a few years is a

a. drought.
b. pollutant.
c. floc.
d. demand.

____ **6.** Using a resource wisely so that it will not be used up is called

a. filtration.
b. conservation.
c. distillation.
d. coagulation.

____ **7.** The result of sulfur and nitrogen reacting with water in the atmosphere is

a. sludge.
b. desalination.
c. acid rain.
d. potential energy.

____ **8.** Chemicals intended to kill insects and other organisms that damage crops are called

a. pesticides.
b. aquifers.
c. fertilizers.
d. flocs.

____ **9.** Which of the following can break down toxic chemicals in rivers and lakes?

a. septic tanks
b. sludge
c. acid rain
d. bacteria

____ **10.** A hydroelectric power plant changes the energy of moving water into

a. electrical energy
b. industrial wastes
c. reservoirs
d. kinetic energy

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Completion

Fill in the line to complete each statement.

11. In a process called _____, particles in water clump together onto flocs.

12. When water is carried into fields in open irrigation ditches, much of it is lost to _____.

13. Any substance that causes water pollution is called a _____.

14. The process of obtaining fresh water from salt water is called _____.

15. The kind of energy that an object has when it is moving is called _____ energy.

True or False

If the statement is true, write true. *If it is false, change the underlined word or words to make the statement true.*

_____ **16.** Water quality is a measure of the substances in water besides water molecules.

_____ **17.** A water shortage occurs when there is too great a supply in an area.

_____ **18.** Oil that washes off a road into a stream is an example of a nonpoint source of pollution.

_____ **19.** Because of sewage pollution, people should boil water for drinking and cooking after a drought.

_____ **20.** Water stored behind a dam has kinetic energy.

Using Science Skills

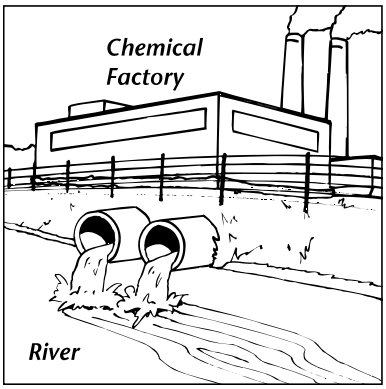
Use the illustration below to answer the questions that follow.

21. Observing What is occurring in the illustration that could affect a drinking-water supply?

_____

_____

_____



22. Classifying Is this an example of a point source of pollution or a nonpoint source? Explain.

_____

_____

_____

_____

23. Drawing Conclusions What could the company do to stop the harm being done to the water in the river?

_____

_____

Essay

Write an answer for each of the following.

24. What is the purpose of drinking-water treatment? Describe a typical treatment process at a city plant.

_____

_____

_____

_____

_____

25. How do fertilizers in agricultural runoff affect lakes and ponds?

_____

_____

_____

_____

_____

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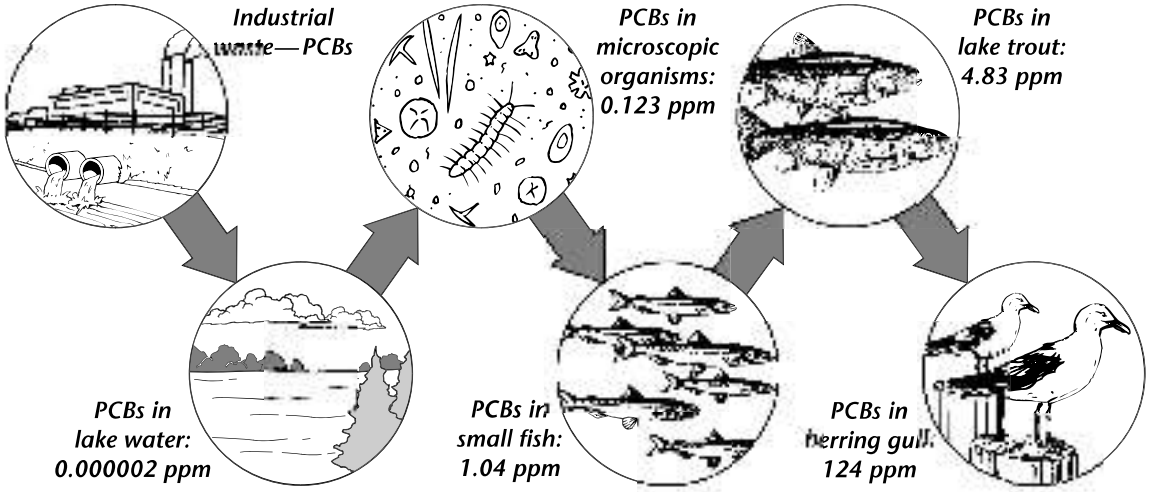
Using Science Skills

Use the flow chart below to answer the following questions. If you need more space, use the back of this sheet.



26. Interpreting Data PCBs are a type of industrial pollutant. Refer to the flowchart and describe how the concentration of PCBs changes. Explain why this change occurs.

_____

_____

27. Relating Cause and Effect Explain how humans could be affected by PCB pollution.

_____

_____

Essay

Write an answer for each of the following. Use the back of this sheet if you need more space.

28. Explain how a water shortage can be caused by changes in either supply or demand.

_____

_____

29. Explain what causes acid rain. How does acid rain affect wildlife?

_____

_____

30. How can moving water produce electricity?

_____

_____