

## Skills Worksheet

# Chapter Review

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**USING KEY TERMS**

Complete each of the following sentences by choosing the correct term from the word bank.

compound                      element                      suspension                      solubility  
solution                      metal                      nonmetal                      solute

1. A(n) \_\_\_\_\_ has a definite ratio of components.
2. The ability of one substance to dissolve in another substance is the \_\_\_\_\_ of the solute.
3. A(n) \_\_\_\_\_ can be separated by filtration.
4. A(n) \_\_\_\_\_ is a pure substance that cannot be broken down into simpler substances by chemical means.
5. A(n) \_\_\_\_\_ is an element that is brittle and dull.
6. The \_\_\_\_\_ is the substance that dissolves to form a solution.

**UNDERSTANDING KEY IDEAS****Multiple Choice**

- \_\_\_\_\_ 7. Which of the following increases the solubility of a gas in a liquid?
  - a. increasing the temperature of the liquid
  - b. increasing the amount of gas in the liquid
  - c. decreasing the temperature of the liquid
  - d. decreasing the amount of liquid
- \_\_\_\_\_ 8. Which of the following best describes chicken noodle soup?
  - a. element
  - b. mixture
  - c. compound
  - d. solution
- \_\_\_\_\_ 9. Which of the following statements describes elements?
  - a. All of the particles in the same element are different.
  - b. Elements can be broken down into simpler substances.
  - c. Elements have unique sets of properties.
  - d. Elements cannot be joined together in chemical reactions.
- \_\_\_\_\_ 10. A solution that contains a large amount of solute is best described as
  - a. insoluble.
  - b. concentrated.
  - c. dilute.
  - d. weak.

**Chapter Review *continued***

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- \_\_\_\_\_ 11. Which of the following substances can be separated into simpler substances only by chemical means?
- a. sodium
  - b. salt water
  - c. water
  - d. gold
- \_\_\_\_\_ 12. Which of the following would not increase the rate at which a solid dissolves?
- a. decreasing the temperature
  - b. crushing the solid
  - c. stirring
  - d. increasing the temperature
- \_\_\_\_\_ 13. In which classification of matter are components chemically combined?
- a. a solution
  - b. a colloid
  - c. a compound
  - d. a suspension
- \_\_\_\_\_ 14. An element that conducts thermal energy well and is easily shaped is a
- a. metal.
  - b. metalloid.
  - c. nonmetal.
  - d. None of the above

**Short Answer**

15. What is the difference between an element and a compound?

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16. When nail polish is dissolved in acetone, which substance is the solute, and which is the solvent?

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**Math Skills**

17. What is the concentration of a solution prepared by mixing 50 g of salt with 200 mL of water? Show your work below.

**Chapter Review** *continued*

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18. How many grams of sugar must be dissolved in 150 mL of water to make a solution that has a concentration of 0.6 g/mL? Show your work below.

**CRITICAL THINKING**

19. **Concept Mapping** Use the following terms to create a concept map: *matter, element, compound, mixture, solution, suspension, and colloid.*

**Chapter Review** *continued*

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20. **Forming Hypotheses** To keep the “fizz” in carbonated beverages after they have been opened, should you store them in a refrigerator or in a cabinet? Explain.

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21. **Making Inferences** A light green powder is heated in a test tube. A gas is given off, and the solid becomes black. In which classification of matter does the green powder belong? Explain your reasoning.

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22. **Predicting Consequences** Why is it desirable to know the exact concentration of solutions rather than whether they are concentrated or dilute?

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23. **Applying Concepts** Describe a procedure to separate a mixture of salt, finely ground pepper, and pebbles.

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Chapter Review *continued***INTERPRETING GRAPHICS**

Dr. Sol Vent did an experiment to find the solubility of a compound. The data below were collected using 100 mL of water. Use the table below to answer the questions that follow.

Temperature (°C)	10	25	40	60	95
Dissolved solute (g)	150	70	34	25	15

24. Use a computer or graph paper to construct a graph of Dr. Vent's results. Examine the graph. To increase the solubility, would you increase or decrease the temperature? Explain.

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25. If 200 mL of water were used instead of 100 mL, how many grams of the compound would dissolve at 40°C?

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26. Based on the solubility of this compound, is this compound a solid, liquid, or gas? Explain your answer.

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