



Name _____

Vocabulary Review

Use the terms in the box to complete the sentences.

chemical changes
compound
liquid
physical changes
solution

- Matter that has a definite volume but no definite shape is a(n) _____.
- A mixture that has the same composition throughout is called a(n) _____.
- Changes to the identity of matter are called _____.
- Changes in which the form or shape of a substance changes but the substance is still the same type of matter are called _____.
- Matter that cannot be broken into a simpler substance is a(n) _____.

Science Concepts

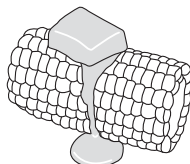
Fill in the letter of the choice that best answers the question.

6. Joseph put water, sugar, and yeast into a balloon. Then he put the balloon in a warm place for 1 hour. Which of the following is most like the change happening in Joseph's balloon?

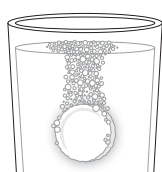
(A)



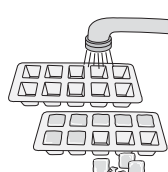
(C)



(B)



(D)



7. Daniel put water, sugar, and yeast into a balloon. Then he measured the mass of the balloon. He put the balloon in a warm place for 2 hours. Then he measured the mass again. He repeated his experiment three times to get more data. Predict how the mass of the balloon changed.

(F) same mass

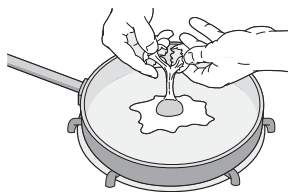
(H) more mass

(G) less mass

(I) no more mass

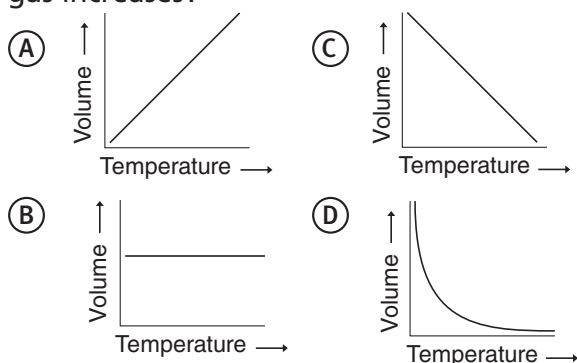
8. Which of these correctly describes a change in the state of water?
- (A) liquid water \rightarrow melts \rightarrow solid water
 - (B) liquid water \rightarrow boils \rightarrow water vapor
 - (C) solid water \rightarrow condenses \rightarrow liquid water
 - (D) water vapor \rightarrow evaporates \rightarrow liquid water

9. When an egg is cracked and put in a hot pan, it flows easily. After it cooks for a minute, the egg becomes solid.



Why does the egg change?

- (F) Breaking the shell is a physical change in the egg that makes it solid.
 - (G) Breaking the shell is a chemical change that makes the egg become solid.
 - (H) Heating the egg on the stove causes the egg to evaporate and become solid.
 - (I) Adding heat causes a chemical change in the particles of the egg that makes it solid.
10. The volume of a given mass of gas is one of its physical properties that can change. Which graph shows how the volume of a gas changes as the temperature of the gas increases?



11. Stacey tried to remove a metal lid from a glass jar, but the lid was too tight. Her mother held the jar so that the lid was in hot water for a minute. Then Stacey was able to turn the lid easily. How did the hot water make the lid easier to remove?
- (F) Heating the glass jar made it expand, so the lid turned easily.
 - (G) As the metal lid was heated, it expanded so that it was not as tight.
 - (H) Water on the metal lid made it easier to hold, so it was easier to turn.
 - (I) The water corroded the metal, so it did not hold as tightly to the glass.

12. Which of these statements best describes the effect of temperature on chemical changes?

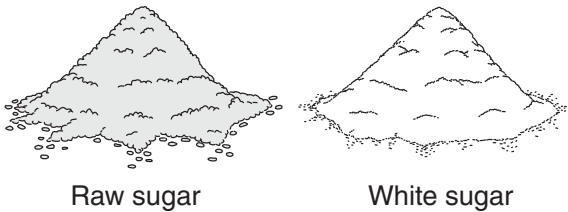
- (A) Chemical changes generally happen faster at higher temperatures.
- (B) Chemical changes generally happen slower at higher temperatures.
- (C) Chemical changes are not affected by a change in temperature.
- (D) Chemical changes happen only if the temperature is very hot.

13. What does the modern atomic theory state?

- (F) An atom is mostly empty space.
- (G) All atoms are made up of hundreds of smaller particles.
- (H) Atoms of different elements are exactly the same.
- (I) Atoms of different kinds combine to form different elements.

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14. Claire is studying how quickly sugar dissolves in warm and cold water. First, she dissolves a 4 g sample of raw sugar, as shown in the following figure, in both warm and cold water. Then she dissolves a 4 g sample of white sugar, as shown in the following figure, in both warm and cold water.



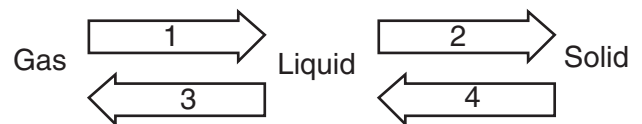
In which of the following solutions would the sugar dissolve the slowest?

- (A) raw sugar, cold water
 - (B) raw sugar, warm water
 - (C) white sugar, cold water
 - (D) white sugar, warm water
15. Mrs. Lopez is a chemist who is studying salt crystals. She wants to slow the rate at which the crystals dissolve in a solution of water. What could she do to slow the dissolving rate?
- (F) Crush the salt.
 - (G) Heat the solution.
 - (H) Cool the solution.
 - (I) Stir the solution.
16. Nadia has a mixture of oil and water. She wants to separate the mixture. How can she do this?
- (A) by using a magnet to attract the oil
 - (B) by pouring the mixture through a sieve
 - (C) by evaporating the water from the mixture
 - (D) by letting the oil float to the top and skimming it off

17. A container holds a mixture of glass shards and iron filings. What is the best way to separate the glass shards from the iron filings?

- (F) Use a magnet.
- (G) Heat the mixture.
- (H) Sort them by size.
- (I) Separate them by shape.

18. This diagram shows what happens when water changes state.



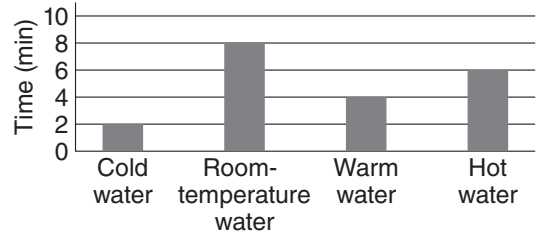
Which statement correctly explains some of the changes shown in the diagram?

- (A) Temperature increases in steps 1 and 2.
- (B) Energy of water particles decreases in steps 1 and 2.
- (C) Energy of water particles decreases in steps 3 and 4.
- (D) Motion of water particles decreases in steps 3 and 4.

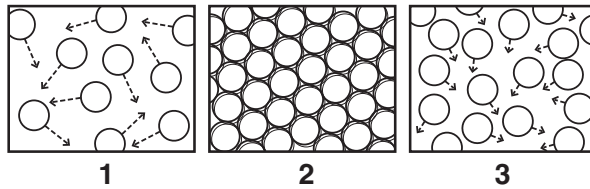
Apply Inquiry and Review the Big Idea

Write the answer to these questions.

19. Kym tested how quickly 10 g of sugar dissolved in 1 L of water at different temperatures. A graph of her results is shown here. What were Kym's variables? Based on her graph, make a claim about whether she correctly labeled her beakers of water. Use evidence and reasoning to support your claim.



20. Frank was learning about states of matter in science class. He made some drawings but forgot to label them. Describe what each of Frank's drawings shows below.



21. Tam was given four equal-sized cubes with different masses, as listed below.

copper: 71.2 g

balsa wood: 1.6 g

brass: 68.0 g

plastic: 9.6 g

What did Tam observe about the volumes of the cubes? Explain.

Tam used these data to order the cubes according to the amount of matter they contain, from least to greatest. What order did she give, and why?
