

S8P1-2

1. Putting sand and salt together makes

- A. a compound.
 - B. an element.
 - C. a mixture.
 - D. a solution.
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2. All of the substances on the periodic table are classified as elements because they

- A. are pure substances.
 - B. are composed of atoms.
 - C. cannot be broken down into other substances.
 - D. cannot be dissolved in water or other liquids.
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3. Salt (NaCl) is a common substance. Salt is which of these?

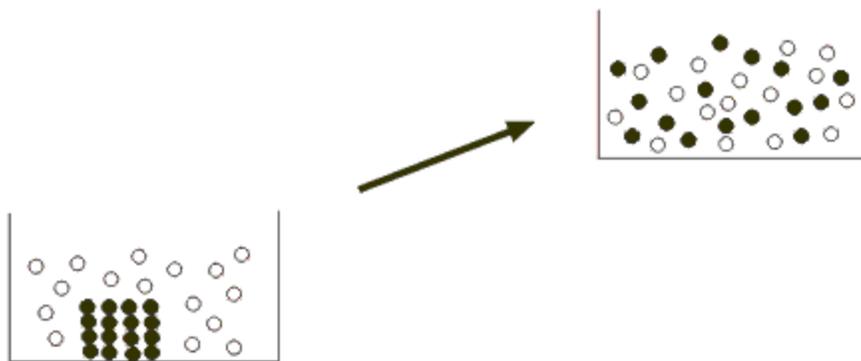
- A. atom
 - B. element
 - C. compound
 - D. mixture
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4.

Compare and contrast mixtures and compounds. Which statement is true about mixtures and compounds?

- A. Both mixtures and compounds are the same throughout.
 - B. Mixtures and compounds are made of two or more elements in a definite proportion.
 - C. Mixtures must be separated by chemical methods and compounds by physical methods.
 - D. Mixtures contain two or more elements physically combined and compounds contain two or more elements chemically combined.
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5.



The substance produced in the change above would BEST be described as a

- A. pure substance.
- B. solution.
- C. molecule.
- D. compound.

6. Which of these is best classified as a mixture?

- A. Carbon dioxide
- B. Water
- C. Soil
- D. Iron

7. Which statement about the molecules in ice and the molecules in liquid water is correct?

- A. The molecules in ice have more energy than the molecules in liquid water.
 - B. The molecules in ice contain different atoms than the molecules in liquid water.
 - C. The molecules in ice have more electric charge than the molecules in liquid water.
 - D. The molecules in ice are less free to move than the molecules in liquid water.
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8. Moisture that collects on the outside of a cold glass results from the process of

- A. evaporation.
 - B. condensation.
 - C. sublimation.
 - D. vaporization.
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9. A hot air balloon rises because

- A. molecules become lighter when heated.
 - B. molecules move faster and farther apart when heated.
 - C. molecules are less attracted by gravity when heated.
 - D. molecules become charged and repel each other when heated.
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10. The solid, liquid, and gaseous states of water differ from each other in

- A. the mass of the individual atoms.
 - B. the size of the individual atoms.
 - C. the net electrical charge of the individual molecules.
 - D. the average speed of movement of the individual molecules.
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11. The molecules in a test tube filled with cold water move more slowly than the molecules in a large tank of warm water. What is responsible for this difference in molecule speed?

- A. pressure
 - B. volume
 - C. weight
 - D. heat
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12. What will happen to the metallic liquid in a thermometer if the thermometer is placed in very hot water?

- A. It will go up.
 - B. It will go down.
 - C. It will disappear.
 - D. It will not change.
-

13. What will happen to the metallic liquid in a thermometer if it is placed in very cold water?

- A. The metallic liquid will go up.
 - B. The metallic liquid will go down.
 - C. The metallic liquid will disappear.
 - D. The metallic liquid will not change.
-

14. Oxygen naturally occurs in which physical state?

- A. solid
 - B. liquid
 - C. gas
 - D. plasma
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15.

Carol placed a lid over a pot of boiling water. After five minutes, she removed the lid and noticed water drops had formed all over the lid's inner surface. Which statement describes the change in the water vapor molecules as they changed to liquid?

- A. Heat energy at the lid's surface increased.
 - B. The water molecules average speed increased.
 - C. The water molecules were pushed closer together.
 - D. The attractive force between the water molecules decreased.
-

16.

Based on the following characteristics, classify the state of matter.

high energy
found in stars
consists of freely moving charged particles

- A. gas
- B. solid
- C. plasma
- D. liquid

17. If 1 kg of the compound toluene melts at -95°C , then 500 g of toluene will

- A. melt at -47.5°C .
- B. melt at -95°C .
- C. boil at 95°C .
- D. boil at 47.5°C .

This online assessment item contains material that has been released to the public by the Massachusetts Department of Education.

18. The drawing below represents a bit used in a power drill.



Which of the following metals is **most** suitable for making this drill bit?

- A. aluminum
- B. copper
- C. gold
- D. steel

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19. Which statement is correct concerning the mass of a ball of clay?

- A. The mass changes as the altitude of the ball of clay changes.
 - B. The mass changes as the shape of the ball of clay changes.
 - C. The mass of the ball of clay is unchanged by altitude or shape.
 - D. The mass is doubled when the ball of clay is divided into two equal pieces.
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20. Mary wants to find the density of a small stone. Which tools will she need?

- A. a meterstick and a thermometer
- B. a thermometer and a balance
- C. a balance and a graduated cylinder
- D. a graduated cylinder and a meterstick

Answer Key

1. C) a mixture.
 2. C) cannot be broken down into other substances.
 3. C) compound
 4. D) Mixtures contain two or more elements physically combined and compounds contain two or more elements chemically combined.
 5. B) solution.
 6. C) Soil
 7. D) The molecules in ice are less free to move than the molecules in liquid water.
 8. B) condensation.
 9. B) molecules move faster and farther apart when heated.
 10. D) the average speed of movement of the individual molecules.
 11. D) heat
 12. A) It will go up.
 13. B) The metallic liquid will go down.
 14. C) gas
 15. C) The water molecules were pushed closer together.
 16. C) plasma
 17. B) melt at -95°C .
 18. D) steel
 19. C) The mass of the ball of clay is unchanged by altitude or shape.
 20. C) a balance and a graduated cylinder
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