Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_

**Chapter 5 Test Study Guide (8th grade) – Matter: Properties and Its Changes**

1. What are physical properties? List three physical properties of matter.

2. The four states of matter are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3. The ability to react with oxygen, rust, or be flammable/combustible are all examples of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ properties.

4. What is a chemical property? List four of them.

5. Melting, freezing, and boiling points are some of the physical properties of matter.

6. When something freezes, it changes from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; when it melts, it goes from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and when it boils, it transitions from a \_\_\_\_\_\_\_\_\_\_\_\_\_ to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

7. Density is calculated by dividing mass by volume (m/V), thus, density depends on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

8. What is solubility?

9. The mass of the products of a chemical reaction is the same as the mass of the reactants. The amount that you started with (reactants) equals the amount that s produced (products)).

10. The physical property that determines how easily heat and electricity pass through a material is called \_\_\_\_\_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | conductivity | c. | hardness |
| b. | density | d. | weight |

11. The state of matter of a material depends on its temperature because changes in energy produced changes in state.

12. To calculate volume, multiply length x width x height. Calculate the volume of an object with a height of 2.9cm, a width of 2.1cm, a mass of 12.5g, and a length of 10cm. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cm3

13. How are particles arranged in a solid, liquid, and gas?

Solid =

Liquid =

Gas =

14. Volume displacement is the technique used to find the volume of an irregular-shaped solid.

15. The law of conservation of mass states that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 16. If two objects have the same volume but different masses, their densities will be different.

 17. What number should be in place of the question mark to keep the law of conservation of mass true? \_\_\_\_\_\_\_\_\_

 2Na + 2H2O  ?NaOH + H2

Reactants: 2 Na, 4 H, and 2 O.

Products: \_\_\_\_\_Na, + \_\_\_\_\_O + \_\_\_\_\_\_ H + 2 H

18. If a piece of silver has a density of 17.2 grams per cubic centimeter (g/cm3) and a volume of 1.5 cm3, what is its mass in grams? Remember that D = M/V. Please show your work.

19. An object’s mass does not change on the moon. Its weight will decrease.

20. Which of the following is the most likely physical property shared by the metals Copper (Cu), Aluminum (Al), and Zinc (Zn)? A. low boiling point, B. low melting point, C. high magnetism, D. high conductivity

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_

KEY **Chapter 5 Test Study Guide (8th grade) – Matter: Properties and Its Changes**

1. What are physical properties? List three physical properties of matter.

Physical properties of matter are those that can be observed without changing the identity of the substance. Examples include color, shape, size, ductility, malleability, and luster (shininess).

2. The four states of matter are solid, liquid, gas and plasma.

3. The ability to react with oxygen, rust, or be flammable/combustible are all examples of chemical properties.

4. What is a chemical property? List four of them.

A chemical property is the ability of a substance to be changed into something new. Four chemical properties are flammability, rust, oxidation, and reactivity.

5. Melting, freezing, and boiling points are some of the physical properties of matter.

6. When something freezes, it changes from a liquid to a solid; when it melts, it goes from a solid to a liquid and when it boils, it transitions from a liquid to a gas.

7. Density is calculated by dividing mass by volume (m/V), thus, density depends on mass and volume.

8. What is solubility? Solubility is the ability of a substance to be dissolved in another substance. For example, sugar is soluble in water.

9. The mass of the products of a chemical reaction is the same as the mass of the reactants. The amount that you started with (reactants) equals the amount that s produced (products)).

10. The physical property that determines how easily heat and electricity pass through a material is called \_\_\_\_\_\_\_\_\_\_\_\_.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | conductivity | c. | hardness |
| b. | density | d. | weight |

11. The state of matter of a material depends on its temperature because changes in energy produced changes in state.

12. To calculate volume, multiply length x width x height. Calculate the volume of an object with a height of 2.9cm, a width of 2.1cm, a mass of 12.5g, and a length of 10cm. 60.9 cm3

(2.9cm x 2.1cm x 10cm) = 60.9 cm3

13. How are particles arranged in a solid, liquid, and gas?

Solid = particles are tightly packed and move/vibrate slowly.

Liquid = particles are spaced slightly apart and move at medium speed

Gas = particles are far apart and move rapidly (“the party particles”)

14. Volume displacement is the technique used to find the volume of an irregular-shaped solid.

15. The law of conservation of mass states that matter is neither created nor destroyed. Therefore, the total mass before a chemical reaction is the same as the total mass after the chemical reaction.

 16. If two objects have the same volume but different masses, their densities will be different.

 17. What number should be in place of the question mark to keep the law of conservation of mass true? 2

 2Na + 2H2O  ?NaOH + H2

Reactants: 2 Na, 4 H, and 2 O.

Products: 2 Na, + 2 O + 2 H + 2 H

18. If a piece of silver has a density of 17.2 grams per cubic centimeter (g/cm3) and a volume of 1.5 cm3, what is its mass in grams? Remember that D = M/V. Please show your work.

1st: write the formula and what you are given. [Density = Mass/Volume or D=M/V]. We are given D = 17.2 g/cm3 and V = 1.5 g/cm3.

2nd: What are you solving for in the problem? M = ?

3rd: Rearrange the formula to solve for the unknown variable. Mass = Density \* Volume or M = D\*V.

4th: Substitute the given values into the formula. M = 17.2 g/cm3 \* 1.5 g/cm3

5th: Solve for Mass. M = 25.8g

19. An object’s mass does not change on the moon. Its weight will decrease.

20. Which of the following is the most likely physical property shared by the metals Copper (Cu), Aluminum (Al), and Zinc (Zn)? A. low boiling point, B. low melting point, C. high magnetism, D. high conductivity