

TEST NAME: **2017-18 G8-Science-CA14-P.1.1**
TEST ID: **1976510**
GRADE: **08 - Eighth Grade**
SUBJECT: **Life and Physical Sciences**
TEST CATEGORY: **School Assessment**

Student: _____

Class: _____

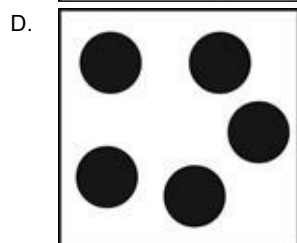
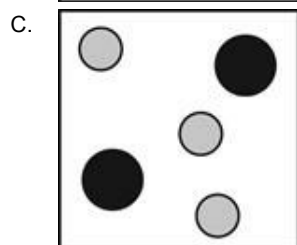
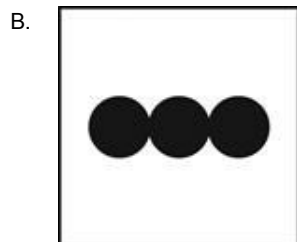
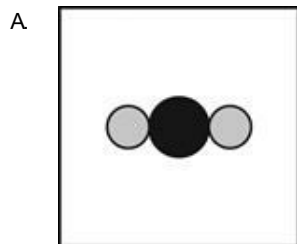
Date: _____

1. Which **best** describes a heterogeneous mixture?
 - A It contains only one type of atom.
 - B It is composed of two or more elements in a fixed pattern.
 - C It contains two or more types of particles which are easily distinguished.
 - D It is composed of two or more substances in which particles are evenly blended.

2. How many more atoms does hydrogen peroxide (H_2O_2) have than water (H_2O)?
 - A one
 - B two
 - C three
 - D four

3. In order to form water, two hydrogen atoms and one oxygen atom must be
 - A mixed.
 - B divided.
 - C bonded.
 - D dissolved.

4. Structural differences between different chemicals can be represented in models of the particles. Which drawing best represents a compound?



5. Which **best** describes water?

- A. a compound
- B. an element
- C. a heterogeneous mixture
- D. a homogeneous mixture

6. When potassium and bromine atoms form chemical bonds, which of these is produced?

- A. an element
- B. a mixture
- C. a compound
- D. a new form of matter

7. Which is a compound?

- A. Nitrogen (N_2)
- B. Neon (Ne)
- C. Ozone (O_3)
- D. Ammonia (NH_3)

8. Which is a substance that is held together by chemical bonds?

- A. element
- B. compound
- C. mixture
- D. solution

9. The table shows the chemical formulas for several common substances.

Chemical Formulas for Common Household Substances

Substance	Formula
water	H_2O
ammonia	NH_3
sugar	$C_6H_{12}O_6$
baking soda	$NaHCO_3$

Which two elements make up household ammonia?

- A. neon and helium
- B. neon and hydrogen
- C. nitrogen and helium
- D. nitrogen and hydrogen

10. Which substance is a compound?

- A. orange juice
- B. salt water
- C. hydrogen
- D. water

11. The formula for methane is CH_4 . How many different elements are in this substance?
- A. 1
 - B. 2
 - C. 4
 - D. 5
12. Which is the **best** example of a pure substance?
- A. peanuts
 - B. milk
 - C. gold
 - D. air

TEST NAME: **Using Periodic Table 8.P.1.2**
TEST ID: **1204901**
GRADE: **08 - Eighth Grade**
SUBJECT: **Life and Physical Sciences**
TEST CATEGORY: **School Assessment**

Student: _____
Class: _____
Date: _____

1. Which statement **best** explains how periods on the periodic table are organized?
 - A increasing atomic number from left to right
 - B increasing number of neutrons from left to right
 - C decreasing number of electrons from left to right
 - D decreasing atomic mass number from left to right

2. A chemist is looking for an element that reacts similarly to the element lithium (Li). Which would be the **best** choice?
 - A gold (Au)
 - B neon (Ne)
 - C fluorine (F)
 - D sodium (Na)

3. Which is the **most** reactive group of nonmetals?
 - A Group 1
 - B Group 5
 - C Group 17

4. Which **best** describes elements that are shiny, malleable, ductile, and good conductors of heat and electricity?
 - A halogens
 - B metals
 - C metalloids
 - D nonmetals

5. Which element is in the same family as chlorine (Cl) and fluorine (F)?
- A. hydrogen (H)
 - B. lithium (Li)
 - C. oxygen (O)
 - D. bromine (Br)
6. What is the significance of metalloids in the periodic table?
- A. They separate liquids from solids.
 - B. They separate metals from nonmetals.
 - C. They combine elements and compounds.
7. Which **best** describes how the current periodic table is arranged?
- A. by atomic mass
 - B. by atomic number
 - C. in alphabetical order by element symbol
 - D. in numerical order by number of neutrons in the nucleus
8. Which **best** describes the reactivity of metals when moving from left to right on the periodic table?
- A. They become less reactive.
 - B. They become more reactive.
 - C. The reactivity remains the same.
 - D. The reactivity decreases, then increases.
9. Which elements are **most likely** to react in the same manner in a chemical reaction?
- A. elements in the same group
 - B. elements in the same period
 - C. elements with similar atomic masses

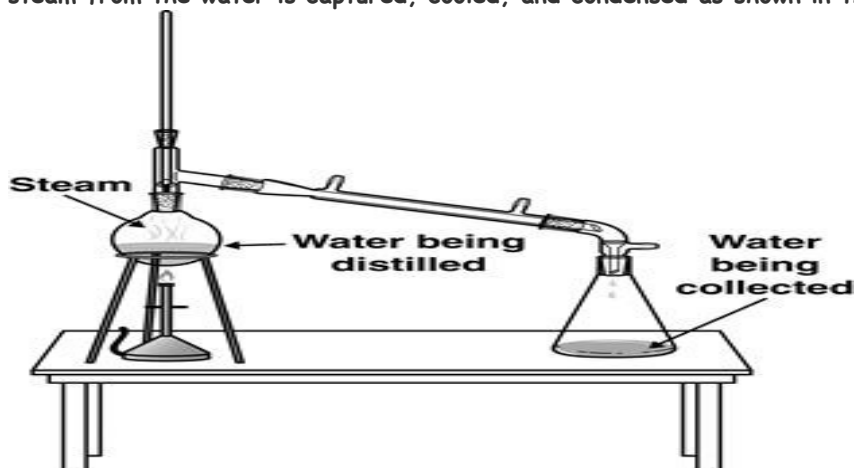
10. Which **best** explains how elements are arranged on the modern periodic table?
- A. Elements are arranged from fewest protons to most protons.
 - B. Elements are arranged from most protons to fewest protons.
 - C. Elements are arranged from fewest neutrons to most neutrons.
11. What do the atomic numbers represent?
- A. number of atoms
 - B. number of protons
 - C. number of neutrons
12. A scientist creates a new synthetic element in a laboratory. Where would the new element **most likely** be placed on the periodic table?
- A. near the top
 - B. near the bottom
 - C. on the far left side
 - D. on the far right side
13. How are elements on the periodic table organized by their properties?
- A. in groups
 - B. by masses
 - C. in periods
14. Which statement best describes the organization of the Periodic Table of the Elements?
- A. All gases are grouped together.
 - B. Gases easily form compounds with other elements.
 - C. Elements within a group have similar properties.
 - D. Elements within a period have the same number of electrons.

15. Which property would be ***most useful*** in placing a newly discovered element in Group 18 (VIIIA) on the periodic table?
- A. reactivity
 - B. malleability
 - C. conductivity
 - D. nonreactivity

8.P.1.3

- **Directions:** Choose the best possible answer choices for the questions found below.
1. As part of a study, a scientist observed a number of different molecular changes in matter. Which of the following observations provides evidence of a physical change?
 - a. Using heat to burn a log in a fireplace
 - b. using light to produce sugar in plants
 - c. a cake that was baked from many ingredients
 - d. a bottle that was broken into many small pieces
 2. Which is a physical change?
 - a. A piece of wood burning
 - b. A copper roof changing color]
 - c. Rust forming on an iron fence
 - d. A sheet of paper shredding
 3. Which is evidence that a chemical reaction has taken place?
 - a. A precipitate is formed.
 - b. The color remains the same.
 - c. The reactants change shape.
 - d. A change in volume is observed.
 4. Which task in the kitchen is an example of a physical change?
 - a. Frying an egg
 - b. Baking a cake
 - c. Melting butter
 - d. Toasting bread
 5. A piece of paper burns, producing heat and light. Which best describes the process of burning?
 - a. Burning is a physical change. The paper mixes with the oxygen in the air, producing heat & light.
 - b. Burning is a chemical change. The paper reacts with the oxygen in the air, producing heat and light.
 - c. Burning is a physical change. The paper changes from a solid to a gas, producing heat and light.
 - d. Burning is a chemical change. The paper breaks down in sunlight, producing heat and light.
 6. Which shows one example of a physical change and one example of a chemical change?
 - a. boiling water and melting wax
 - b. rusting iron and baking a cake
 - c. dissolving powder and shredding paper
 - d. freezing water and burning coal

7. Using a closed system, a student heats 100 milliliters (mL) of distilled water in a flask. The steam from the water is captured, cooled, and condensed as shown in the diagram.



How much water is **MOST** likely collected?

- a. 1mL
 - b. 10mL
 - c. 100mL
 - d. 110mL
8. All of the following are chemical changes *except*
- A. rust forming
 - B. a balloon expanding
 - C. photosynthesis
 - D. baking bread
9. What happens to water molecules during the boiling process?
- a. They move faster and move farther apart as they absorb heat.
 - b. They move faster and remain close together as they absorb heat.
 - c. They move more slowly but move farther apart as they lose heat.
 - d. They move faster and move farther apart as they lose heat.
10. How can a student tell the difference between a physical change and a chemical change in matter?
- A. by measuring the matter's temperature
 - B. by observing the matter's volume
 - C. by observing whether or not the matter actually changes its substance
 - D. by measuring the atoms in the substance
11. Chemical X has a mass of 5 grams, and chemical Y has a mass of 10 grams. If the two chemicals are mixed and a complete chemical reaction takes place, what is most likely the mass of the product?
- a. 5 grams
 - b. 10 grams
 - c. 15 grams
 - d. 50 grams

12. Which is an example of a physical change?
- a. boiling
 - b. burning
 - c. rotting
 - d. rusting
13. The law of conservation of mass states that matter cannot be created nor _____.
- a. Destroyed
 - b. Rearranged
 - c. Transferred
 - d. Changed
14. In any chemical reaction or physical change, the mass of the products is _____ the mass of the reactants.
- a. The relationship cannot be determined
 - b. Equal to
 - c. Less than
 - d. Greater than
15. You are making jello. After mixing the ingredients you pour the liquid in a bowl, cover it tightly, and place it in the fridge. In a short time, it becomes a solid. The mass of the solid jello is
- a. Greater than the mass of the liquid.
 - b. The same as the mass of the liquid.
 - c. Less than the mass of the liquid.
 - d. There is no way to tell.

8.P.1.4 QUIZ

DIRECTIONS: Select the best answer. Mark answers on bubble sheet.

- Which of the following best defines the Law of Conservation of Mass?
 - The mass at the beginning of the reaction equals the mass at the end of the reaction.
 - The mass at the beginning of the reaction is less than the mass at the end of the reaction.
 - The mass at the beginning of the reaction is greater than the mass at the end of the reaction.
- Which **best** represents a balanced equation?
 - 120g of carbon + 20g of oxygen \rightarrow 200g of carbon dioxide
 - 120g of carbon + 50g of oxygen \rightarrow 200g of carbon dioxide
 - 120g of carbon + 80g of oxygen \rightarrow 200g of carbon dioxide
 - 120g of carbon + 120g of oxygen \rightarrow 200g of carbon dioxide
- What is true of a chemical reaction?
 - Products and reactants must be balance.
 - Subscripts must be used with all products and reactants.
 - Energy must be included in the beginning of the reaction.
 - Coefficients must be used with all products and reactants.
- The following chemical reaction occurs. $2\text{H}_2\text{O}_2 \rightarrow 2\text{H}_2\text{O} + \text{O}_2$
How many atoms of hydrogen are involved in the reaction?
 - 1
 - 2
 - 3
 - 4
- The following reaction takes place. $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$
Which **best** describes this balanced equation?
 - There are more products produced than reactants.
 - There are fewer products produced than reactants.
 - Reactants and products are equal in the chemical reaction.
- How many atoms of hydrogen are present in the sugar compound? $\text{C}_6\text{H}_{12}\text{O}_6$
 - 3
 - 6
 - 12
 - 18

Use the following reaction to answer questions 7 - 10. $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$

- Identify the reactant in the above chemical reaction.
 - $2\text{H} + \text{O}_2$
 - $2\text{H}_2\text{O}$
 - $2\text{H} + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
- Identify the product in the above chemical reaction.
 - $2\text{H} + \text{O}_2$
 - $2\text{H}_2\text{O}$
 - $2\text{H} + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
- What **best** describes the product of the above chemical reaction?
 - A compound
 - An element
 - A homogenous mixture
 - A heterogeneous mixture
- Does the above chemical reaction follow the Law of Conservation of Mass?
 - Yes, because there are 2 hydrogen atoms in the reactants and products.
 - Yes, because there are 4 hydrogen atoms in the reactants and products.
 - No, because there are unequal amounts of hydrogen atoms in the reactants and products.
 - No, because there are unequal amounts of oxygen atoms in the reactants and products.

