

## The Periodic Table

- The current Periodic Table is arranged in what order?
  - in order of increasing atomic number
  - in order of increasing atomic mass
  - in order of increasing electrons
  - in order of increasing chemical reactivity
- Elements in the same Group have similar chemical properties because
  - their electrons are inside their nucleus.
  - they have the same number of valence electrons.
  - they have the same number of neutrons in their nucleus.
  - they have similarly-sized nuclei.
- Which of the following elements is MOST reactive?
  - Phosphorus, a metalloid
  - Sulfur, a non-metal
  - Chlorine, a halogen
  - Argon, a noble gas
- Which group of elements contains 8 electrons in its valence shell?
  - noble gases
  - metals
  - non-metals
  - metalloids
- Lithium and sodium are in the same group of elements in the Periodic Table. Which of the following statements is true regarding these two elements?
  - They have the same number of electrons in their valence shell.
  - They have the same number of protons in their nucleus.
  - They are both noble gases.
  - They are in the same row of the Periodic Table.
- Which of the following is NOT a property of most metals?
  - solid at room temperature
  - have luster
  - conduct heat and electricity well
  - do not react readily with any other elements
- Which of the following statements is NOT true of noble gases?
  - Except for helium, they have 8 electrons in their outer subshell.
  - They do not react readily with other elements.
  - They usually exist as ions.
  - They are in Group 18.
- Which of the following is not a group on the Periodic Table?
  - halogens
  - alkali soil metals
  - noble gases
  - actinides
- Which of the following cannot be found on the Periodic Table?
  - magnesium
  - titanium
  - nitrogen
  - aluminum chloride

### Levels of Learning

Expert = 9 = 100  
Practitioner = 8 = 93  
Apprentice = 7 = 86  
Intern = 6 = 79  
Novice = 5 = 72  
Unskilled = 4 = 65  
No Attempt = 0-3 = 58

## The Law of Conservation of Matter

- A solution is made by dissolving 10 grams of salt in 500 grams of water. Identify the mass of the resulting solution.
  - 500g
  - more than 500g but less than 510g
  - 510g
  - more than 510g
- Sheila mixes 10 grams of sulfur dioxide with 12 grams of water, in a 30 gram, stoppered test tube. After the reaction, she finds the mass of the test tube and its contents. What product mass does she record in her lab report?
  - 40g
  - 52g
  - 11g
  - 22g
- Rust forms by the reaction of iron with oxygen to produce iron oxide. An 88g iron nail rusted. The rusted nail (iron oxide) had a mass of 102g. Identify the mass of oxygen that reacted in the rusting of the nail.
  - 14g
  - 88g
  - 102g
  - 200g
- Which two molecules contain an equal number of atoms?  
 $C_2H_3OH$     $C_2H_6$     $KMnO_4$     $H_2SO_4$ 
  - $H_2SO_4$  and  $C_2H_3OH$
  - $C_2H_6$  and  $KMnO_4$
  - $KMnO_4$  and  $H_2SO_4$
  - $C_2H_6$  and  $C_2H_3OH$
- Ms. Hopkins combined sodium metal with chlorine gas to make sodium chloride(table salt). The chemical reaction used up all of the metal and all of the gas. If Ms. Hopkins made 116g of table salt and started with 68g of chlorine gas, then how many grams of sodium metal did he start with?
  - 184g
  - 116g
  - 48g
  - 68g
- You can balance a chemical equation by changing the
  - subscripts.
  - coefficients.
  - reactants.
  - products.
- Which chemical equation below is correctly balanced?
  - $NaOH + 2HCl \rightarrow NaCl + H_2O$
  - $SO_3 + H_2O \rightarrow H_2SO_4$
  - $AgNO_3 + H_2S \rightarrow Ag_2S + HNO_3$
  - $Fe + H_2SO_4 \rightarrow FeSO_4 + 3H_2$
- The Law of Conservation of Matter states that ...
  - the mass of the products is always greater than the mass of the reactants.
  - the mass of the products is always equal to the mass of the reactants.
  - the mass of the products is always less than the mass of the reactants.
  - matter can be created and destroyed.
- What number should go in the blank to balance the chemical equation?  
 $2H_2S + 3O_2 \rightarrow 2H_2O + \underline{\hspace{1cm}}SO_2$ 
  - 1
  - 2
  - 3
  - 4

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## Pure Substances and Mixtures

- How is a mixture different from a compound?
  - Mixtures have two or more components.
  - Each substance in a mixture keeps most of its characteristic properties.
  - Mixtures are commonly found in nature.
  - Solids, liquids, and gases can form mixtures.
- Which of the following is NOT a compound?
  - water
  - ammonia
  - gold
  - salt
- Which of the following substances can be separated into simpler substances only by chemical means?
  - gold
  - water
  - salt water
  - sodium
- Which of the following is a mixture?
  - ammonia
  - sodium chloride
  - CO<sub>2</sub>
  - air
- Which of the following best describes chicken noodle soup?
  - solution
  - compound
  - element
  - mixture
- A mixture that is uniform throughout, such as grape kool-aid, is a \_\_\_\_\_ mixture.
  - heterogeneous
  - homogeneous
  - colloid
  - suspension
- Salsa can be made by combining the following ingredients: diced onions, tomatoes, lime juice, freshly chopped cilantro, crushed garlic, and chipotle seasoning. Salsa is a \_\_\_\_\_ mixture.
  - heterogeneous
  - homogeneous
  - pure substance
  - compound
- Which of the following describes a mixture?
  - formed from two or more substances chemically combined
  - made up of two or more substances joined in a specific ratio
  - made up of two or more substances that keep their identities
  - can be separated only by chemical means
- How do you distinguish between pure substances and mixtures?
  - Mixtures have two or more components.
  - Pure substances are found on the Periodic Table of Elements.
  - Mixtures are commonly found in nature.
  - Pure substances are either elements or compounds. Mixtures are physical combinations of 2 or more elements and compounds. In a mixture the substances combined retain their characteristic properties.

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Student Name \_\_\_\_\_

Pure Substances and Mixtures

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The Periodic Table

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The Law of Conservation of Matter

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