

Physical Science

Quiz 4: Metals, Non-Metals, and Metalloids

Name: _____ Date: _____ Period: _____

Multiple Choices. Write the letter of your best choice on the blank before the number

_____ 1. Which of the following elements is the poorest conductor of electric current?

- a. germanium
- b. magnesium
- c. aluminum
- d. helium

_____ 2. Which of the following elements should be the best conductor of electric current?

- a. germanium
- b. sulfur
- c. aluminum
- d. helium

_____ 3. The elements to the right of the zigzag line on the periodic table are called

- a. nonmetals.
- b. metals.
- c. metalloids.
- d. conductors.

_____ 4. Most metals are:

- a. solid
- b. bad conductors of electric current.
- c. dull.
- d. not malleable.

_____ 5. Most nonmetals are:

- a. gases at room temperature.
- b. bad conductors of electric current.
- c. dull in appearance.
- d. all of the above

_____ 6. Most metalloids are

- a. gases at room temperature.
- b. bad conductors of electric current.
- c. semiconductors.
- d. not malleable.

11-12. Identify the following as metals, nonmetals, or metalloids using the periodic table.

- (a) Silicon _____
- (b) fluorine _____
- (c) uranium _____
- (d) mercury _____
- (e) arsenic _____
- (f) iridium _____

13-15 List three differences in the physical properties between metals and nonmetals.

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Periodic Table of the Elements

<i>Write the name or symbol of the element on the numbered blanks below</i>														antimony 51	tellurium 52	53 I	xenon 54
55 Cs francium	56 Ba	lutetium 71	hafnium 72 Hf	tantalum 73	tungsten 74 W	rhenium 75	osmium 76 Os	iridium 77	platinum 78 Pt	gold 79	mercury 80 Hg						
		lanthanum 57	58 Ce	praseodymium 59	neodymium 60	promethium 61 Pm	62 Sm	63 Eu	gadolinium 64	65 Tb	dysprosium 66	holmium 67	68 Er	thulium 69	70 Yb		

- 51. _____
- 52. _____
- 53. _____
- 54. _____
- 55. _____
- 56. _____
- 57. _____
- 58. _____
- 59. _____
- 60. _____

- 61. _____
- 62. _____
- 63. _____
- 64. _____
- 65. _____
- 66. _____
- 67. _____
- 68. _____
- 69. _____
- 70. _____

- 71. _____
- 72. _____
- 73. _____
- 74. _____
- 75. _____
- 76. _____
- 77. _____
- 78. _____
- 79. _____
- 80. _____

Physical Science

Lab: Metals, Non Metals, Metalloids

Name: _____ Date: _____ Period: _____

Purpose: To investigate several properties of seven elements and based on those properties identify each element as metal, nonmetal, or metalloid.

Materials: Seven elements, Conductivity tester, Hammer, 1M HCl,

Procedure:

1. At each lab table a different element is located. You will perform the same tests and/or observations at each station. You will move at the direction of the teacher.
2. Appearance: Observe and record the appearance of each element, including physical properties such as color, luster, and form.
3. Conductivity: You will test the conductivity of each element. An element is either a conductor or a nonconductor.
4. Crushing: Gently tap each element with your hammer. Each element is either brittle (shatters when struck) or malleable (flattens in a thin sheet).
5. Reactivity with acid: Place a small piece of the element in a well place with 15-20 drops of 1M HCl. Remember the indicators of a chemical reaction.
6. Observe and record your results at each lab station.

Data Table:

Element	Appearance	Conductivity	Result of Crushing	Reaction with HCl
A.				
B.				
C.				
D.				
E.				
F.				
G.				

Classify the elements as Metal, Non Metal, or Metalloid

Put a check mark (✓) on the space provided.

Element	Metal	Non Metal	Metalloid
A.			
B.			
C.			
D.			
E.			
F.			
G.			

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Worksheet: Elements

Name: _____ Date: _____ Period: _____



An Elemental Tale: The Gold Dust Kid

The Kid mounted his trusty steed, old [B] _____. His shooting [Fe] _____ strapped to his side, he headed out for the bright [Ne] _____ lights of Toronto, aiming to rob the mid-day stage. There was sure to be a load of precious [U] _____ aboard, and probably [K] _____, too. Inhaling a deep breath of [O] _____ he coughed on the [S] _____ from the nearby mills. Since the [Hg] _____ was climbing, he quenched his thirst with some H₂O, tasting the [Cl] _____ all big cities like Brockville had. As he headed north his bones ached from [Ca] _____ deposits built up over the years of riding the [Zn] _____ trail. Overhead a [He] _____-filled balloon floated in the breeze; the sun beat down like burning [P] _____.

Soon he spotted the stage, guarded only by a sheriff with a [Sn] _____ badge. "Halt," he yelled. "or I'll fill you full of [Pb] _____." The sheriff drew his gun, but alas, was too slow. The Kid's gun, blazing like flaming [Mg] _____ did the [Cu] _____ in. Anyone who drew on the Kid should know his life wasn't worth a plugged [Ni] _____. A [Pt] _____ blonde riding beside the [Al] _____-framed coach rode for her life when the Kid pulled out some [N] _____ compounds, preparing to blow the safe to atoms.

Suddenly, a shout rang out, "Hi Ho [Ag] _____ and a masked man on a white horse raced across the [Si] _____ sands like [Na] _____ skittering on H₂O. A [H] _____ bomb would not have stopped the lawman; the Kid had met his doom. The rest of his life was to be spent behind [Co] _____ steel bars, a warning to all who flirt with danger. Your first detention may be the initial step in a [C] _____ copy life of the saga of the [Au] _____ dust Kid.

