

Physical Science – Chapter 6 Worksheet #4

- Circle the letter of the metal with the highest melting point.
a) gold b) vanadium c) titanium d) tungsten
- True / False (circle one)* The properties of a metal are related to bonds within the metal.
- Describe a metallic bond.
- The cations in a metal form a lattice. What holds the lattice in place?
- True / False (circle one)* The more valence electrons a metal has, the stronger its metallic bonds will be.
- Some of the properties of metals can be explained by the _____ of the electrons within a metal lattice.
- Name two important properties of metals that can be explained by metallic bonding.
a) _____ b) _____
- Circle the letter of the percentage of gold in jewelry that is labeled 18-karat gold.
a) 18% b) 50% c) 75 % d) 100%
- True / False (circle one)* When a metal such as copper is mixed with gold, the gold becomes softer.
- Describe an alloy.
- How do the hardness and strength of bronze compare to the hardness and strength of copper and tin alone?
- Name two factors that scientists can vary to design alloys with specific properties.
- Complete the following table.

Comparing Bronze and Brass			
Alloy	Component Metals	Comparative Hardness of Bronze and Brass	Comparative Speed of Weathering
Bronze	Copper, tin		Weathers more slowly
Brass		Softer	

- When carbon is added to iron, the lattice becomes _____ than a lattice that contains only iron.
- Circle the letters of the elements that all types of steel contain.
a) carbon b) chromium c) iron d) manganese
- Circle the letters of each correct description of stainless steel.
a) stainless steel contains more carbon than chromium
b) chromium forms an oxide that protects stainless steel from rusting
c) stainless steel is more brittle than steels that contain more carbon
d) stainless steel contains more than 3% carbon by mass
- Explain why pure aluminum is not the best material for the body of a plane.
- What type of alloy is used to make airplane parts that need to be extremely lightweight?