

WKS
Types of Substances
(Ionic, Covalent, Metallic)

Name _____
Period _____ Data _____

- 1) What combination of atoms (metals or non-metals) are in each of these substances?
a) Ionic _____ b) covalent _____ c) metallic _____
- 2) Determine what type of substance is made from the following combinations of elements.
Choices are ionic, covalent or metallic
a) C and O _____ d) H and F _____ g) S and O _____
b) K and N _____ e) N and P _____ h) C and H _____
c) Cu and Zn _____ f) Pb and I _____ i) Al and Mo _____
- 3) In covalent substances, electrons are shared between atoms. Why is it favorable for non-metal atoms to **share** electrons when they react to form covalent substances? (*Discuss relative electronegativity values of the atoms.*)
- 4) a) What is an ion? _____ What is a cation? _____ What is an anion? _____
b) Ionic substances have ions in them. These ions formed when a metal reacted with a nonmetal by transferring electrons. Why is it favorable for metals and non-metals to **transfer** electrons when they react to form ionic substances?
- 5) There are no such things as molecules of MgO. Describe the structure of MgO (What particles does it consist of and how are those particles arranged?). Why is MgO brittle?
- 6) Describe the basic structure of sodium metal. Then, explain why it is malleable and conducts electricity.