

Science 9: Chemistry Unit Test Review

The test will include questions on the following topics:

- Matter
- Pure substances
 - Elements
 - Compounds
- Mixtures
 - Homogenous Mixtures
 - Heterogeneous Mixtures
- Physical Properties
- Chemical Properties
- Physical Changes
- Chemical Changes
- Proton
 - Protons = atomic #
- Electron
 - Electrons = protons (in atoms)
- Neutron
 - Neutrons = atomic mass – atomic #
- Atom
- Periodic table
 - Period
 - Family
 - Alkali Earth metals
 - Alkaline Earth metals
 - Transition Metals
 - Halogens
 - Noble Gases
 - Metals
 - Non-metals
 - Metalloids
- Bohr-Rutherford Diagrams
- Naming Ionic Compounds

1. Classify the following as either an element or a compound:
 - a. NaOH _____
 - b. Ca _____
 - c. CO₂ _____
 - d. LiF _____
 - e. Kr _____

2. Identify the following as either pure (P) or a mixture (M):
 - a. Sodium _____
 - b. Aluminum foil _____
 - c. Table salt _____
 - d. Gravel _____
 - e. Vegetable soup _____

3. Re-examine your answers above, now further classify pure substances as either: element (E) or compound (C) and mixtures as either homogeneous (ho) or heterogeneous (he):
 - a. Sodium _____
 - b. Aluminum foil _____
 - c. Table salt _____
 - d. Gravel _____
 - e. Vegetable soup _____

4. Identify the following as a physical or chemical property:
 - a. _____ The boiling point of water is 100°C
 - b. _____ Limestone reacts with acid to produce bubbles of gas
 - c. _____ A nickel coin is shiny.
 - d. _____ Alkalis react with water to form a gas

5. Identify the following as either a physical (P) or chemical (C) change:
 - a. Food is digested in the stomach _____
 - b. Ice melts _____
 - c. A pellet of sodium is cut in two _____
 - d. Bicycle rusts _____

6. Complete the following table:

Element	Atomic #	Atomic Mass	Protons	Electrons	Neutrons
Fluorine	9	19			
Nitrogen	7				7
Sodium		23			12
Silicon		28		14	

7. Draw a Bohr-Rutherford diagram for the following elements:
 - a. Hydrogen
 - b. Calcium
 - c. Chlorine

8. How many periods are there on the periodic table?

9. How many families are there on the periodic table?

10. What are the names of the families from the periodic table?

11. Which family is the most reactive of the metals?

12. Which family is the most reactive of the non-metals?

13. What is another name for the Noble gases?

14. What is a metalloid?

15. What are some properties of metals?

16. What are some properties of non-metals?

17. Name the following ionic compounds:
 - a. NaCl
 - b. Li₂O
 - c. SrS
 - d. Ag₂O

18. Write the chemical formula for each of the following:
 - a. Calcium selenide
 - b. Aluminum Chloride
 - c. Potassium oxide
 - d. Silver nitride

19. How many atoms of each element are in H₂O?