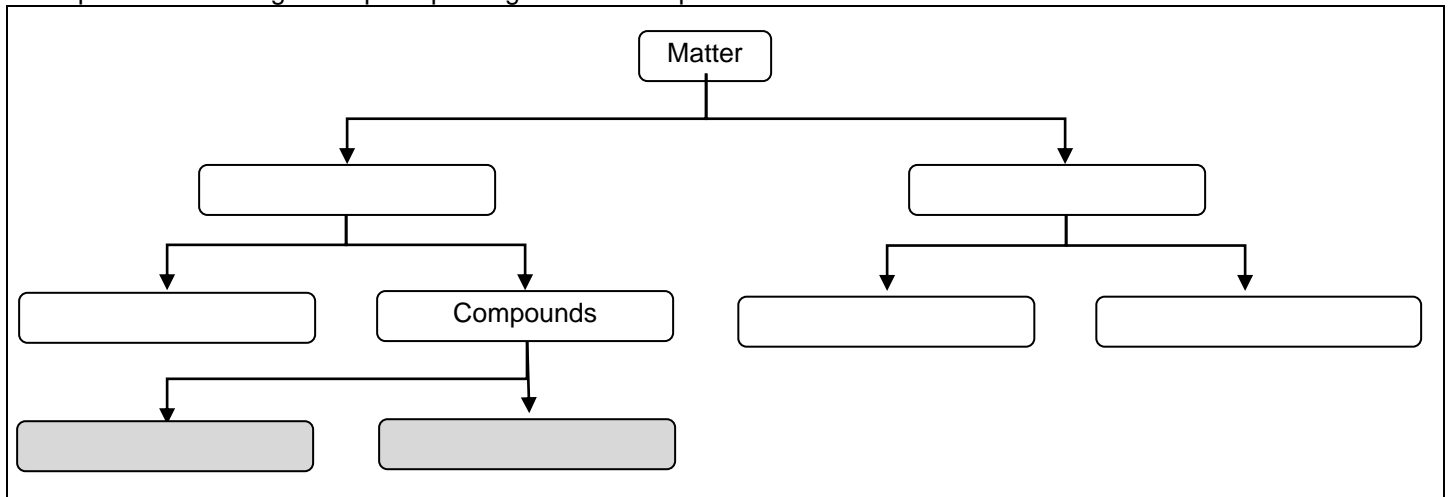


Diagnostic Review: Chemistry

Part A – Classification of Matter

1. Complete the following concept map and give one example of each



2. Explain the difference between the following

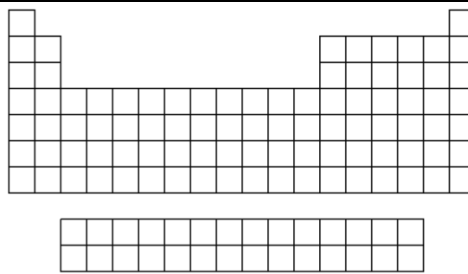
a. Pure substance and mixture

b. Elements and Compounds

Part B – The Periodic Table

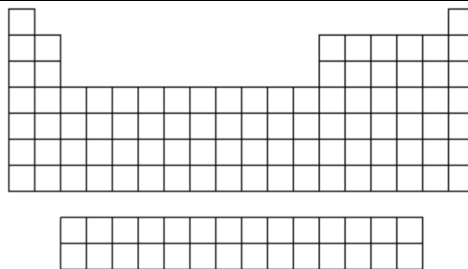
Label the following on the periodic table

- a. Metals
- b. Non-metals
- c. Metalloids



Label the following on the periodic table

- a. Noble Gases
- b. Alkali Metals
- c. Halogens
- d. Alkaline Earth Metals



Part C – Counting Atoms

1. Fill in the following chart, by writing the name and number of each type of atom

Mg(NO ₃) ₂	
Type of Atom (Name)	# of atoms

3 K ₂ SO ₄	
Type of Atom (Name)	# of atoms

Part D – Models of the Atom

1. Complete the following table by drawing a diagram to represent each model of the atom, then write a brief description to explain what you have drawn

Model	Diagram	Description
Dalton		
Thompson		
Bohr		
Rutherford		

Part E – Bohr Rutherford Diagrams

1. Complete the following chart

	Sodium	Oxygen	Potassium
Atomic Number			
Atomic Mass			
# of protons			
# of electrons			
# of neutrons			
Bohr-Rutherford Diagram			

2. Draw Bohr-Rutherford diagrams of the atoms and ions for the following elements, then write the ion's symbol (include the charge).

Element	Bohr-Rutherford diagram of atom	Bohr-Rutherford diagram of ion	Ion symbol
Nitrogen			
Calcium			

Part F – Compounds

1. Explain the difference between ionic compounds and molecular compounds

2. Show how Aluminum and Fluorine form an ionic compound by drawing the Bohr-Rutherford diagrams for the neutral atoms then show how electrons are transferred to form stable ions. Finally write the chemical name and formula for the compound formed

Aluminum and Fluorine	
Bohr-Rutherford Diagrams of Atoms	Bohr-Rutherford Diagrams of Stable Ions
Chemical Name	Chemical Formula

3. Draw diagrams for the following molecular compounds. You may find a double or triple bond in some of these molecules.

a. nitrogen trifluoride, NF_3	b. formaldehyde, CH_2O
--	--