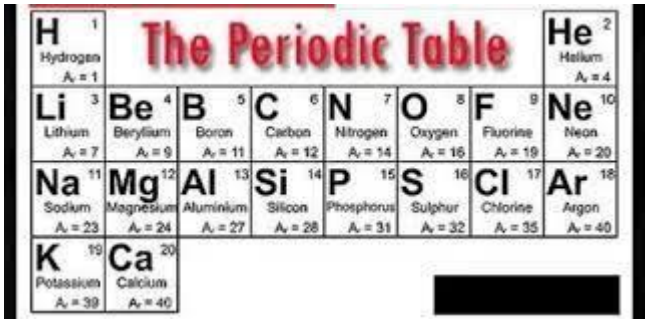
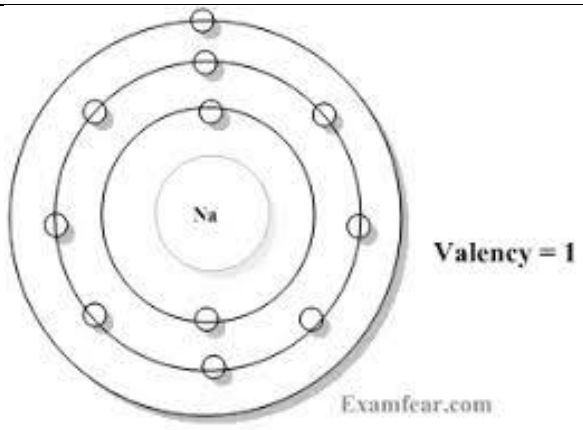
BASIC 7

WEEKLY LESSON PLAN – WEEK 3

Strand:	Diversity of Matters		**Sub-Strand:**	Materials	
Content Standard:	B7.1.1.2 Understand the periodic table as different elements made up of metals and non- metals and noble gases arranged in an order.				
Indicator (s)	B7.1.1.2.1 Demonstrate the knowledge of the orderly arrangement of metals, non-metals and noble gases in the Periodic Table		**Performance Indicator:** Learners can distinguish between metals and nin-metals.		
Week Ending	27-09-2024				
Class	B.S.7	**Class Size:**		**Duration:**	
Subject	Science				
Reference	Science Curriculum, Teachers Resource Pack, Learners Resource Pack.				
Teaching / Learning Resources	Nail, knife, Periodic Table, Pictures, Power Point Presentation.		**Core Competencies:**	• Digital Literacy • Critical Thinking and Problem Solving	

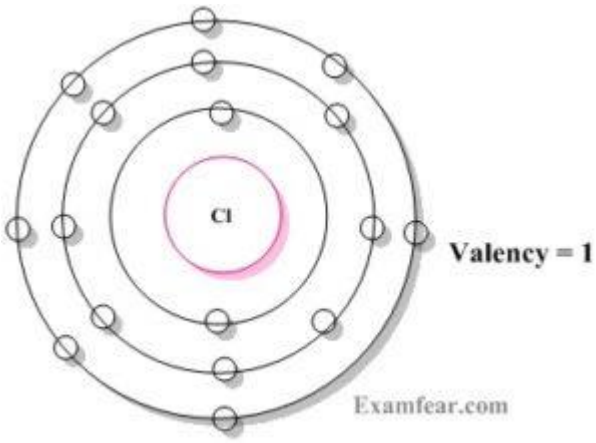
DAYS	**PHASE 1 : STARTER**	**PHASE 2: MAIN**	**PHASE 3: REFLECTION**
MONDAY	Show Learners Video and pictures of the Periodic table to observe.	1. Assist Learners to identify the first 20 elements using the periodic table. 2. Discuss the chemical symbols of the first 20 elements. 3. Learners in small groups to discuss and report to the class how the chemical symbols of the first 20 elements are derived.  [redacted] **Atomic Number** / **Element** / **Symbol** 1 / Hydrogen / H 2 / Helium / He 3 / Lithium / Li 4 / Beryllium / Be 5 / Boron / B 6 / Carbon / C	**Group Work** Arrange the first 20 elements in order.

		7 Nitrogen N 8 Oxygen O 9 Fluorine F 10 Neon Ne 11 Sodium Na 12 Magnesium Mg 13 Aluminium Al 14 Silicon Si 15 Phosphorus P 16 Sulphur S 17 Chlorine Cl 18 Argon Ar 19 Potassium K 20 Calcium Ca	
WEDNESDAY	Discuss the meaning of Valency with Learners.	1. Assist Learners to identify the methods of determining valency for the first 20 elements. 2. Learners brainstorm to find the valency of elements on the basis of chemical formula. 3. Discuss the uses of Valency with the Learners. **Examples of Valency** **Valency of Sodium** The atomic number of sodium is 11 (Z=11). The electronic configuration of sodium can be written as 2, 8, 1. 2, 8, 1 electron are distributed in the shells K, L, M respectively. Therefore, valence electron in sodium is 1 and it needs to lose 1 electron from the outermost orbit to attain octet. Hence, the valency of sodium is 1.	Reflect on the uses of Valency for the first 20 elements. **Exercise;** 1. Differentiate between Valency and oxidation number. 2. Calculate for the valency of the first 20 elements.



Valency of Chlorine

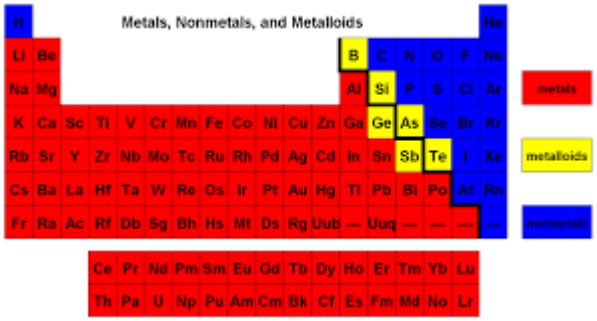
The atomic number of chlorine is 17 (Z=17).
The electronic configuration of chlorine can be written as 2, 8, 7. 2, 8, 7 electrons are distributed in the shells K, L, M respectively. Therefore, valence electron in chlorine is 7 and it needs to gain 1 electron from the outermost orbit to attain octet. Hence, the valency of chlorine is 1.



Examples of Valency on the basis of Chemical Formula

Ammonia (NH_3)

We know valency is the capacity of an atom to combine with a particular number of atoms of another element. In the case of ammonia, one nitrogen atom combines with 3 hydrogen atoms. The atomic number of hydrogens is 7. The electronic configuration is 2, 5. 2, 5 electrons are distributed in the orbits K, L. Therefore, a nitrogen atom needs to gain 3 electrons in its outermost orbit to complete octet.

FRIDAY	Discuss the differences between Metals and Non-metals with the Learners.	1. Using a Power Point Presentation, classify examples of metals, non-metals and noble gases in the periodic table. 2. Assist Learners to arrange the first 20 elements in order of atomic numbers using the periodic table. 3. Learners brainstorm to identify elements with the same properties. **Metals** – Sodium, Lithium, Calcium, Barium, Magnesium, Lead, Bismuth, Indium, Iron, Copper, Nickel, Zinc, etc. **Non-metals** – Bromine, Iodine, Helium, Argon, Krypton, Neon, Phosphorous, Sulphur, etc. **Metalloids** – Tellurium, Polonium, Antimony, Arsenic, etc. **Position in the Periodic Table** • Metals are present on the left side of the periodic table • Non-metals are on the right in the periodic table • Metalloids are in the centre of the periodic table 	Through questions and answers, conclude the lesson. **Exercise;** 1. Write 3 examples each; i. Metals ii. Non-Metals iii. Noble Gases. 2. Write 4 examples of elements with the same properties.

Name of Teacher: **School:** **District:**