

FIRST TERM

WEEKLY LESSON NOTES

WEEK 2

Week Ending: 13-10-2023	DAY:	Subject: Science
Duration: 100mins		Strand: Diversity Of Matter
Class: B9	Class Size:	Sub Strand: Materials
Content Standard: B9.1.1.1 Show an understanding of formation of binary chemical compounds and their uses (Acids, Bases and Salts)	Indicator: B9.1.1.1.3 Describe the characteristics of common acids, bases and salts.	Lesson: 1 of 2
Performance Indicator: Learners can describe the characteristics of common acids, bases and salts		Core Competencies: DL 5.3: CI 6.8: DL 5.1: CI 6.6:
References: Science Curriculum Pg. 88		
New words: Acid, Base (or Alkali), Salt, pH Scale, Indicator		
Phase/Duration	Learners Activities	Resources
PHASE 1: STARTER	<p>Display three unlabeled containers: one with vinegar, one with baking soda, and one with table salt.</p> <p>Ask students: "Can you guess which one is an acid, which one is a base, and which one is a salt?"</p> <p>Share learning indicators and introduce the lesson.</p>	
PHASE 2: NEW LEARNING	<p>Divide students into small groups. Provide each group with a set of labeled samples (but not clearly marked as acid, base, or salt). Examples: lemon juice, soap solution, table salt.</p> <p>Equip each group with indicators like litmus paper.</p> <p>Ask each group to test each sample and classify them as an acid, base, or salt based on their observations and knowledge.</p> <p>Discuss the results as a class.</p> <p>Brainstorm learners to explain what acids, bases and salts are and give examples.</p> <p><i>Acids are substances that can donate a proton (H^+) to another substance and usually have a pH less than 7. They taste sour, can turn blue litmus paper red, and react with bases to form water and a salt. Examples: Hydrochloric acid (HCl), sulfuric acid (H_2SO_4), citric acid (found in citrus fruits), and acetic acid (found in vinegar).</i></p> <p><i>Bases are substances that can accept a proton (H^+) and usually have a pH greater than 7. They feel slippery to the touch, can turn red litmus paper blue, and react with acids to form water and a salt. Alkalis are bases that are soluble in water.</i></p>	vinegar, baking soda, table salt

	<p><i>Examples: Sodium hydroxide (NaOH), potassium hydroxide (KOH), and magnesium hydroxide (Mg(OH)₂).</i></p> <p>Salts are ionic compounds formed by the neutralization reaction between an acid and a base. They are made up of cations (from the base) and anions (from the acid) and can conduct electricity in molten or dissolved states.</p> <p><i>Examples: Sodium chloride (NaCl), potassium nitrate (KNO₃), and magnesium sulfate (MgSO₄).</i></p> <p>Provide each group with colored pH scale templates, markers, and a set of common substances (like orange juice, cleaning products, water, etc.).</p> <p>Ask them to use indicators (litmus paper or universal indicator solution) to test each substance and place them on their pH scale according to the results.</p> <p>Encourage groups to display and explain their pH scale models to the class.</p> <p><u>Assessment</u></p> <ol style="list-style-type: none"> 1. What is the difference between an acid and a base in terms of pH value? 2. If a substance has a pH value of 7, how would you classify it? 3. Name a common indicator that can be used to test the nature of a substance. How does it show the difference between acids and bases? 4. If you have a solution that turns blue litmus paper red, how would you classify it? 	
<p>PHASE 3: REFLECTION</p>	<p>Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.</p> <p>Take feedback from learners and summarize the lesson.</p>	

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Duration: 100mins		Strand: Diversity Of Matter	
Class: B9	Class Size:		Sub Strand: Materials
Content Standard: B9.1.1.2 Demonstrate knowledge of atomic bonding in the formation of chemical compounds		Indicator: B9.1.1.2.1 Recognize that chemical bond results from the attraction between atoms in a compound	Lesson: 2 of 2
Performance Indicator: Learners can describe the attraction between atoms in a compound		Core Competencies: DL 5.3: CI 6.8: DL 5.1: CI 6.6:	
References: Science Curriculum Pg. 88			
New words: Chemical bond, Atom, Ionic bond, Covalent bond, Metallic bond			
Phase/Duration	Learners Activities	Resources	
PHASE 1: STARTER	<p>Show students a magnet and some iron filings. Ask them: "What makes these iron filings stick to the magnet?"</p> <p>After some discussion, segue into the concept of attraction between atoms, just as there's an attraction between the magnet and iron filings..</p> <p>Share learning indicators and introduce the lesson.</p>		
PHASE 2: NEW LEARNING	<p>Display diagrams and models illustrating ionic, covalent, and metallic bonds.</p> <p>Discuss the main characteristics of each bond type. Engage students in a matching activity where they match the bond type to its description.</p> <p>Using atomic structure diagrams, demonstrate how bonds form. For example, show how an atom donating an electron (like sodium) and an atom accepting an electron (like chlorine) form an ionic bond.</p> <p>Let students use physical bond models or kits to simulate bond formations, encouraging them to explain their understanding as they do so.</p> <p>Display samples or pictures of various substances. Ask students to identify the type of bonding in each substance based on their learning.</p> <p>Discuss the properties of each substance that make its bonding type evident (e.g., the conductivity of metals due to metallic bonding).</p> <p><u>Assessment</u></p> <ol style="list-style-type: none"> 1. What is the main difference between ionic and covalent bonds in terms of electron transfer or sharing? 2. Which type of bond involves the 'sea of electrons' concept? 3. Why do you think metals are generally good conductors of electricity? 	<p>Diagrams showing atomic structures of different elements</p> <p>Pictures and charts</p>	

	4. Name a common substance for each type of bond: ionic, covalent, and metallic.	
PHASE 3: REFLECTION	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	