BASIC 9

WEEKLY LESSON PLAN – WEEK 4

Strand:	Cycles		**Sub-Strand:**	Earth Sciences	
Content Standard:	B9.2.1.1 Demonstrate an understanding of the Nitrogen cycle as a repeated pattern of change in nature, and how it relates to the environment				
Indicator (s)	B9.2.1.1.2 Describe the importance of the nitrogen cycle to the environment		**Performance Indicator:** Learners can identify the importance of Nitrogen to the soil**.**		
Week Ending	04-10-2024				
Class	B.S.9	**Class Size:**		**Duration:**	
Subject	Science				
Reference	Science Curriculum, Teachers Resource Pack, Learners Resource Pack, Textbook				
Teaching / Learning Resources	Poster, Video and Pictures.		**Core Competencies:**	• Critical Thinking and Problem Solving (CP), • Communication and Collaboration (CC), • Digital Literacy (DL) • Creativity and Innovation	

DAY/DATE	**PHASE 1 : STARTER**	**PHASE 2: MAIN**	**PHASE 3: REFLECTION**
MONDAY	Discuss the meanings of keywords or terminologies in the lesson with the Learners. **Terminologies;** • Nitrogen • Leguminous • Compound • Synthesis • Organism • Decompose • fixation	1. Using a Poster and Pictures, describe the nitrogen fixation process. 2. Assist Learners to identify the types of nitrogen fixation. 3. Show Learners video displaying how the process of nitrogen cycle in Marine ecosystem occurs. 4. Learners brainstorm to explain 5 importance of the nitrogen cycle. **Importance of Nitrogen Cycle** The importance of the nitrogen cycle are as follows: 1. Helps plants to synthesis chlorophyll from the nitrogen compounds. 2. Helps in converting inert nitrogen gas into a usable form for the plants through the biochemical process. 3. In the process of ammonification, the bacteria help in decomposing the animal and plant matter, which indirectly helps to clean up the environment. 4. Nitrates and nitrites are released into the soil, which helps in enriching the soil with the	Through questions and answers, conclude the lesson. **Exercise;** 1. Define the Nitrogen Fixation process. 2. State 5 importanc e of the Nitrogen cycle.

		necessary nutrients required for cultivation. 5. Nitrogen is an integral component of the cell and it forms many crucial compounds and important biomolecules.	
THURSDAY	Ask learners to give examples of luminous crops.	1. Show samples and pictures of leguminous crops to the Learners. 2. Carry out a project to show how certain plants such as leguminous crops can replenish nitrogen in the soil. 3. Discuss with the Learners about the roles of bacterial in leguminous plants. 4. Learners brainstorm to identify the effects of severe conditions on nitrogen fixation.  Leguminous plants constitute one of the largest crop plant families. Considering the importance of legumes for human and animal consumption, researchers struggle to improve our knowledge of the factors contributing to their growth as well as of their interaction with bacteria living on them to be able to increase yields production, avoid crop loss and prevent infectious diseases. 	Reflect on the biological significance of nitrogen fixation to the soil. **Exercise'** 1. State 3 roles of bacterial in leguminous crops. 2. Write 2 effects of severe conditions on nitrogen fixation.

FRIDAY	Review Learners knowledge on the previous lesson.	1. Assist Learners to make searches on the internet using a smart phone connected to the internet to find ways in which nitrogen can be lost from the soil. 2. Discuss the meanings of leaching**,** denitrification and volatilization with the Learners. 3. Learners brainstorm to explain cover crops. 4. Assist Learners to identify 4 factors that determine the amount of nitrogen (N) that can be fixed by different legumes used as cover crops or forage cover crops. **Factors determine the amount of nitrogen (N) that can be fixed by different legumes used as cover crops or forage cover crops:** • Different legumes fix different amounts of N. • Legumes must form effective root nodules to fix N. • Legumes often use available soil N for growth before beginning to fix N. • Well-established legumes fix more N than do seedling legumes. • Legumes do not have equal biomass yield potential.	Through questions and answers, conclude the lesson. **Exercise;** State 5 factors that determines the amount of nitrogen that can be fixed by different legumes used as cover crops.

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