Strand:	Cycles	**Sub-Strand:**	Crop Production

BASIC 9

WEEKLY LESSON PLAN – WEEK 12

Content Standard:	B9.2.3.1 Show an understanding of differences in maturities of different crops grown in different soils and different seed beds				
Indicator (s)	B9.2.3.1.1 Observe and describe differences in maturation of crops grown in different soils and on different seed beds		**Performance Indicator:** Learners can identify the growth stages of plants.		
Week Ending	29-11-2024				
Class	B.S.9	**Class Size:**		**Duration:**	
Subject	Science				
Reference	Science Curriculum, Teachers Resource Pack, Learners Resource Pack, Textbook.				
Teaching / Learning Resources	Chart, Poster, Pictures, YouTube videos		**Core Competencies:**	• Critical Thinking and Problem Solving Communication and Collaboration.	

DAY/DATE	**PHASE 1 : STARTER**	**PHASE 2: MAIN**	**PHASE 3: REFLECTION**
MONDAY	Discuss with the learners about the meanings of "Soil' and "Soil Profile".	1. Assist Learners to explain how soil types affect the growth of crops. 2. Discuss with the Learners about the differences in maturity stages among the different crops on different soils and seed beds. 3. Using a Poster displaying the meaning of "Organic matter", explain the concept of organic matter to the Learners. **How To Improve Different Soil Types** You can enhance ground quality and plant growth in different soil types using amendment techniques suitable for the soil type. Improvement practices include adjusting the soil pH level, drainage, moisture retention, and adding specific organic amendments. The advantage of amendments is that they incorporate free or inexpensive supplements, such as green manure, compost, leaves, and grass clippings, improving any soil type for plants. **The Best Soil Types For Farming** Any farmer will tell you that the best type of soil is the one that yields a plentiful harvest with the least amount of tillage and fertilizer applied. But do the best types of soil exist? Both scientists and growers agree that loam is the easiest to work with yet the most fertile. Because of its precisely balanced	Learners brainstorm to identify ways of improving soil fertility to support plant growth. **Exercise;** What is Organic Matter?

		composition of 40% silt, 40% sand, and 20% clay, loamy soil maximizes positive effects while utilizing each component's most outstanding qualities. However, there is no need to feel down about any type of soil. Knowing the soil types you are working with allows you to make the best possible amendments and choose the plants that produce the most fruit. Whether it is loam, sand, or any other type, it is still required to cultivate and keep an eye out for any changes	
THURSDAY	Lead a class discussion to identify the effects of different soils and seed beds on crop maturation	1. Learners brainstorm to identify factors that influence plant development and productivity. 2. Assist Learners to explain how these factors influence plant development and productivity 3. Discuss with the Learners about the implications for agricultural practices and crop management **Factors that influence plant development and productivity.** • **Light**: Adequate light exposure is essential for plant growth and development. Insufficient light can lead to stunted growth, while excessive light can cause stress and reduced productivity. • **Temperature**: Temperature fluctuations can affect plant growth hormones, influencing development and productivity. Optimal temperatures vary among plant species, but generally range from 15°C to 30°C (59°F to 86°F). • **Water**: Water availability and quality significantly impact plant growth. Drought can cause stress, while excessive water can lead to nutrient deficiencies and reduced productivity. • **Nutrients**: Macronutrients like calcium and micronutrients like iron play crucial roles in plant development and productivity. Deficiencies or excesses can impair growth and yield. • **Humidity**: Humidity levels can influence plant growth, particularly in regions with high evapotranspiration rates. Optimal humidity ranges vary among plant species. • **Soil pH**: Soil pH affects nutrient availability, with some nutrients becoming unavailable at extreme pH levels. This can impact plant development and productivity. • **Salt levels**: Soil salinity can be a significant barrier to plant growth and productivity, particularly for sensitive species.	Reflect on the factors that influence plant development and productivity. **Exercise;** Explain 5 factors that influence plant development and productivity.

FRIDAY	Demonstrate to conduct an experiments to investigate the effects of specific soil characteristics (e.g., pH, nutrient availability) or seed bed features (e.g., mulching, irrigation) on crop maturation.	1. Invite a guest speaker from the agricultural industry to discuss the practical applications of these findings in real-world farming practices. 2. Assist Learners to describe differences in maturation of plants. 3. Discuss with the Learners to develop understanding of the complex interactions between crops, soils, and seed beds. **Effects of irrigation on crop maturation.** **Irrigation** plays a crucial role in crop maturation by: • **Regulating Water Availability**: Irrigation ensures a consistent supply of water, allowing crops to grow and mature uniformly. This is particularly important in areas with unpredictable rainfall patterns or during periods of drought. • **Optimizing Soil Moisture**: Irrigation maintains optimal soil moisture levels, which promotes healthy root growth, nutrient uptake, and photosynthesis. This, in turn, enhances crop maturation and yield. • **Reducing Water Stress**: Irrigation mitigates water stress, a common constraint on crop growth and maturation. By providing adequate water, irrigation helps crops recover from stress and continue to develop normally. • **Enhancing Nutrient Uptake**: Irrigation facilitates nutrient uptake by crops, as water-soluble nutrients are more readily available to plants. This promotes healthy growth and maturation. • **Controlling Temperature**: Irrigation can help regulate soil temperature, which is essential for optimal crop growth and maturation. Cooler soil temperatures, for example, can benefit warm-season crops like corn and soybeans. • **Influencing Plant Hormone Regulation**: Irrigation affects the balance of plant hormones, such as auxins and cytokinins, which regulate cell elongation, cell division, and root growth. This, in turn, influences crop maturation and yield. **Specific Effects on Crop Maturation** • **Faster Germination**: Irrigation can accelerate germination rates, allowing crops to emerge more quickly and get a head start on maturation. • **Increased Leaf Area**: Irrigation promotes healthy leaf growth, which is essential for photosynthesis and overall crop maturation. • **Improved Root Development**: Adequate irrigation fosters robust root systems, enabling crops to access water and nutrients more efficiently and	Through questions and answers, conclude the lesson. **Exercise;** State and explain 5 effects of irrigation on crop maturation.

		supporting healthy maturation. • **Enhanced Fruit Set and Development**: Irrigation can improve fruit set and development in crops like tomatoes, peppers, and cucumbers, leading to higher yields and better quality produce	

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