

THIRD TERM

WEEKLY LESSON NOTES

WEEK 2

Week Ending:		DAY:	Subject: Science
Duration: 100mins		Strand: Systems	
Class: B9	Class Size:		Sub Strand: Farming Systems
Content Standard: B9.3.4.1 Demonstrate knowledge and skills in the preparation of different types of manure from animal and plant waste		Indicator: B9.3.4.1.2 Demonstrate the preparation of different types of manure	Lesson: 1 of 2
Performance Indicator: Learners can prepare manure from the different plant and animal wastes		Core Competencies: Critical Thinking and Problem Solving (CP), Communication and Collaboration (CC) Digital Literacy (DL), Creativity and Innovation	
References: Science Curriculum Pg. 106			
Key words: Pictures of different plant and animal wastes (e.g., straw, leaves, manure)			
Phase/Duration	Learners Activities		Resources
PHASE 1: STARTER	<p>Show pictures of different plants and ask learners: What happens to plant waste after harvest? (e.g., leaves fall, stalks remain) Then, show pictures of animal waste. Ask: What happens to animal dung?</p> <p>Briefly introduce the concept of manure and its role in agriculture.</p> <p>Explain that manure is a natural fertilizer made from decomposed plant and animal waste.</p>		
PHASE 2: NEW LEARNING	<p>Divide learners into pairs or small groups. Ask them to brainstorm a list of different plant and animal wastes they can think of.</p> <p>Encourage them to consider waste materials from their own communities.</p> <p>As a class, create a large chart on the board with two sections: "Plant Waste" and "Animal Waste."</p> <p>Learners take turns suggesting waste materials and placing them in the appropriate category.</p>		

Facilitate a discussion about how these plant and animal wastes can be used to make manure.

Introduce the concept of composting as the process of decomposition.

Explain that manure needs time, moisture, and air to decompose properly.

Ask learners to consider the specific plant and animal wastes available in their community.

Discuss how these locally available resources can be used to prepare manure effectively.

Manure Using Animal Waste	Manure Using Plant Waste
<ul style="list-style-type: none"> ● Gather animal manure from sources such as livestock farms, poultry farms, or stables. ● Common types of animal waste used for manure include cow dung, horse manure, chicken droppings, and goat/sheep manure. 	<ul style="list-style-type: none"> ● Gather various types of plant waste such as grass clippings, leaves, pruned branches, vegetable scraps, and fruit peels. ● Avoid using diseased plant materials or weeds with seeds to prevent potential issues in the compost.
<ul style="list-style-type: none"> ● Place the collected animal waste in a compost bin or pile. ● Add other organic materials such as straw, hay, leaves, or kitchen scraps to the compost pile to provide a balanced mix of carbon and nitrogen. 	<p>Shred or chop larger plant materials into smaller pieces to speed up the composting process and facilitate decomposition.</p>
<ul style="list-style-type: none"> ● Keep the compost pile moist but not waterlogged. Use a hose to water the pile occasionally if needed. ● Turn the compost pile regularly using a pitchfork or compost turner to aerate it and promote decomposition. 	<ul style="list-style-type: none"> ● Create layers of alternating green (nitrogen-rich) and brown (carbon-rich) materials in a compost bin or pile. ● Green materials include fresh plant waste, kitchen scraps, and coffee grounds. Brown materials include dried leaves, straw, and cardboard.
<ul style="list-style-type: none"> ● Let the composting process take place over several weeks to months, depending on environmental conditions and the type of waste used. ● During decomposition, microorganisms break down the organic matter into nutrient-rich compost. 	<ul style="list-style-type: none"> ● Keep the compost pile moist but not soggy. Water the pile as needed to maintain proper moisture levels. ● Turn the compost pile regularly to aerate it and mix the materials, which helps speed up decomposition.
<ul style="list-style-type: none"> ● Once the composted animal waste has turned into dark, crumbly material with an earthy smell, it is ready to use as manure. ● Spread the composted manure over garden beds, fields, or plant containers 	<ul style="list-style-type: none"> ● Let the composting process occur over several weeks to months, depending on factors like temperature and the size of the compost pile.

	<p>to improve soil fertility and provide essential nutrients for plant growth.</p>	<ul style="list-style-type: none"> • As the plant waste decomposes, it transforms into nutrient-rich compost suitable for use as manure. 	
		<ul style="list-style-type: none"> • Once the composted plant waste has broken down into a dark, crumbly texture with an earthy smell, it is ready to use. • Spread the composted plant waste over garden beds, around trees and shrubs, or in vegetable patches to enrich the soil and promote healthy plant growth. 	
<p>PHASE 3: REFLECTION</p>	<p>Assessment</p> <ol style="list-style-type: none"> 1. List 3 examples each of plant and animal waste that can be used to make manure. 2. Describe two benefits of using manure in agriculture 		
	<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: Systems	
Class: B9	Class Size:		Sub Strand: Farming Systems
Content Standard: B9.3.4.1 Demonstrate knowledge and skills in the preparation of different types of manure from animal and plant waste		Indicator: B9.3.4.1.3 Prepare different types of manure.	Lesson: 1 of 2
Performance Indicator: Learners can participate in the cleaning, sorting, and composting process for manure creation		Core Competencies: Critical Thinking and Problem Solving (CP), Communication and Collaboration (CC) Digital Literacy (DL), Creativity and Innovation	
References: Science Curriculum Pg. 106			
Key words: Manure, Composting, Curing			
Phase/Duration	Learners Activities	Resources	
PHASE 1: STARTER	<p>Briefly review the concept of manure and its importance as a natural fertilizer (from previous lesson or quick discussion).</p> <p>Show pictures or samples of different materials used for manure preparation (plant waste, animal waste).</p> <p>Ask learners: How can we turn these materials into something useful for our school garden?</p>		
PHASE 2: NEW LEARNING	<p>Ensure learners understand the importance of wearing gloves and masks while handling organic waste.</p> <p>Discuss proper lifting techniques to avoid injury.</p> <p>Learners collect plant and animal waste materials designated for the project, ensuring adherence to school safety guidelines.</p> <p>In a designated area, learners work in pairs to clean and sort the collected waste. This may involve removing unwanted materials like plastic or metal, and breaking down larger pieces of plant material.</p> <p>Learners help create the compost pile in the designated bin/area. Layer the cleaned and sorted plant and animal waste materials, ensuring a good mix of brown (carbon-rich) and green (nitrogen-rich) materials for optimal decomposition.</p> <p>Learners add water to the compost pile to maintain a moist but not soggy environment.</p>	<p>Safety Gear (gloves, masks) Shovels, Rakes, Pitchforks (appropriate for the number of learners) Wheelbarrows or buckets</p>	

	<p>If time allows, learners can participate in turning the compost pile with shovels or pitchforks every few weeks to aerate the materials and promote even decomposition.</p> <p>Explain that the compost pile needs time (usually several months) to decompose completely and become mature manure.</p> <p>Briefly discuss how the finished manure can be used in the school garden to improve soil fertility and plant growth.</p>	
<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>	