

SMART AGRICULTURE



MAURITIUS INSTITUTE OF EDUCATION under the aegis of



MINISTRY OF EDUCATION AND HUMAN RESOURCE



ACKNOWLEDGE

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VERTICAL FARMING - A SMART WAY TO GROW FOOD

Lesson 16
**Vertical Farming – A Smart Way to
Grow Food**



Duration:
35 minutes



Grade:
7





Vertical Farming - A Smart Way to Grow Food

Lesson Aim

This lesson aims to help learners to discover vertical farming as a smart way to grow food, which is a solution to the problem of limited space.

Lesson Overview

In this fun and hands-on lesson, learners will discover an easy way to grow food when there isn't much space. We will begin by talking about how cities are becoming more crowded and what this means for farming. Then, we will introduce **vertical farming** using simple pictures and real-life examples. The main activity will be constructing collectively a simple a vertical farm using recycled resources such as plastic bottles.

Learning Objectives

At the end of this lesson, learners will be able to:

1. Explain in simple words the definition of vertical farming.
2. Identify two reasons why vertical farming is useful.
3. Construct a simple mini vertical garden using recycled resources.

Materials Required

- Plastic bottles (1.5L or 2L, cut beforehand)
- Soil
- Seeds or small plants
- String or wire to hang the bottles
- Scissors
- Markers
- Visuals/posters showing vertical farms



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Lesson Structure

Part of Lesson	Time	What's Happening
Warm-Up & Discussion	5 minutes	Simple chat about how more people = less land to grow food
Introduction	5 minutes	What is vertical farming? (Visuals and everyday examples are used)
Why It's Important	5 minutes	Talk about how vertical farming helps us save space and grow food in the city.
Practical Activity	15 minutes	Learners make a small vertical farm using plastic bottles.
Reflection Time	5 minutes	Learners draw/write in journals, and the teacher takes notes on learner involvement.



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Step-by-step guide

Step-by-Step Guide

1. Warm-Up: Let's think together

Start by asking questions such as:

- “Where do we grow most of our food?”
- “What happens when cities become crowded?”
- “Can we still grow food if there’s no space on the ground?”



Figure 1: Crowded Area v/s Open Farm Area

Disclaimer: This image is created by Sora, Generative AI.

Use pictures of city streets vs open farm. Encourage learners to speak, even just through the use of words or pointing to pictures.



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Learning Activity

2. Introduction to Vertical Farming

Start the introduction by sharing the following sentence:

“Instead of growing food across the land, we can grow it up, like a tall building. That’s called vertical farming.”

Show simple pictures and ask these questions:

- “What do you see?”
- “Where are the plants growing?”



Figure 2: A Simple Vertical Farming System

Disclaimer: This image is created by Sora, Generative AI.



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Learning Activity

3. Why Vertical Farming Matters?

Explanations:

- - It saves a lot of space.
- - It helps people grow food in small places, like cities.
- - It uses less water and grows food all year.

4. Let's Make One!

Step-by-step guide:

1. Give learners pre-cut plastic bottles.
2. Guide them to fill bottles with soil.
3. Help plant seeds or seedlings.
4. Show how to tie string and hang their bottle farms on a board or wall.
5. Let them write their names or decorate their bottle farms.

Keep it slow and supportive. Work in small groups or one-to-one if needed.

5. Time to Reflect

Journaling Activity

Learners can draw or write:

- What they did
- What they saw
- Something they liked

Use sentence starters:

- "I saw..."
- "I planted..."
- "I liked..."

Meanwhile, the teacher observes, and records notes about each learner's participation and understanding.



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Learning Activity

Learner Personal Learning Journal

Name: _____

Date: _____

1. Today I learned about: _____
2. I used these things to make my farm: _____
3. My favourite part was: _____
4. I draw my smart farm with smart tools:



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Teacher Observation sheet

Student Name	Joined the Discussion	Understood Concept	Finished DIY Farm	Completed Journal	Notes
	☐ Actively ☐ No ☐ Occasionally	☐ Yes ☐ No ☐ Partially	☐ Yes ☐ No	☐ Yes ☐ No	
	☐ Actively ☐ No ☐ Occasionally	☐ Yes ☐ No ☐ Partially	☐ Yes ☐ No	☐ Yes ☐ No	
	☐ Actively ☐ No ☐ Occasionally	☐ Yes ☐ No ☐ Partially	☐ Yes ☐ No	☐ Yes ☐ No	
	☐ Actively ☐ No ☐ Occasionally	☐ Actively ☐ No ☐ Occasionally	☐ Actively ☐ No	☐ Actively ☐ No	
	☐ Actively ☐ No ☐ Occasionally	☐ Yes ☐ No ☐ Partially	☐ Yes ☐ No	☐ Yes ☐ No	

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