SMART AGRICULTURE

ELECTIVE

MAURITIUS INSTITUTE OF EDUCATION under the aegis of

MINISTRY OF EDUCATION AND HUMAN RESOURCE

ACKNOWLEDGEMENT

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INTRODUCTION TO HYDROPONICS

Lesson 19:
Introduction to Hydroponics

Duration:
35 minutes

Grade:
7

Introduction to Hydroponics

Lesson Aim

This lesson aims to introduce students to hydroponics and how it allows plants to grow without soil, using water and nutrients.

Lesson Overview

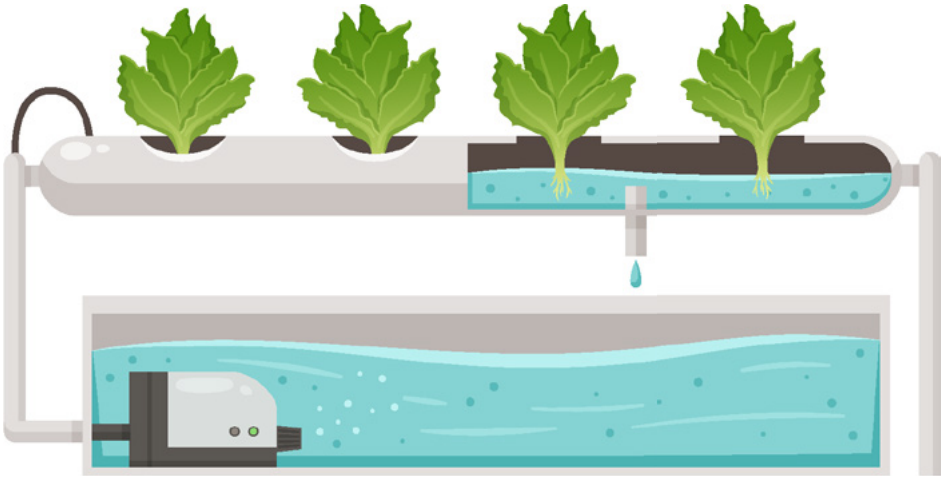


Figure 1: Hydroponics

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

The lesson begins with a short video to spark curiosity and introduce the concept visually. Learners will then talk briefly about what they saw and learn about why hydroponics is useful and how it works. Through discussion, drawing, and matching, learners engage with the topic in a way that suits their pace and level.

Learning Objectives

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

1. Define hydroponics with simple words.
2. Recognise the importance of hydroponics.
3. Discuss how plants obtain nutrients in a hydroponic system.

Introduction to Hydroponics

Lesson Procedure

Time	Activity	Details
0–10 minute	**Video Introduction https://youtu.be/LV2jlkOwYI8**	Show a short video (6.03 minutes) which explains what hydroponics is, through the use of simple animation. After the video, ask guided questions like: – What did you see? – Were the plants in soil? – What helped the plants grow?
10–15 minutes	**Class Talk**	As a class, define hydroponics together. Use a chart or board to write a simple definition: “Growing plants in water instead of soil.” Show a few photos or real items to support the explanation.
15–25 minutes	**Importance of Hydroponics & How Plants Get Nutrients**	Talk with learners about the importance of hydroponics . Explain that in some places, the soil is poor and the space is limited, and, thus, hydroponics helps grow food in water. Use simple pictures or real examples to show how plants can still grow well. Explain that plants still get nutrients from water with added minerals, even without soil. Use simple terms like ‘plant food in the water’ to help learners understand the concept.

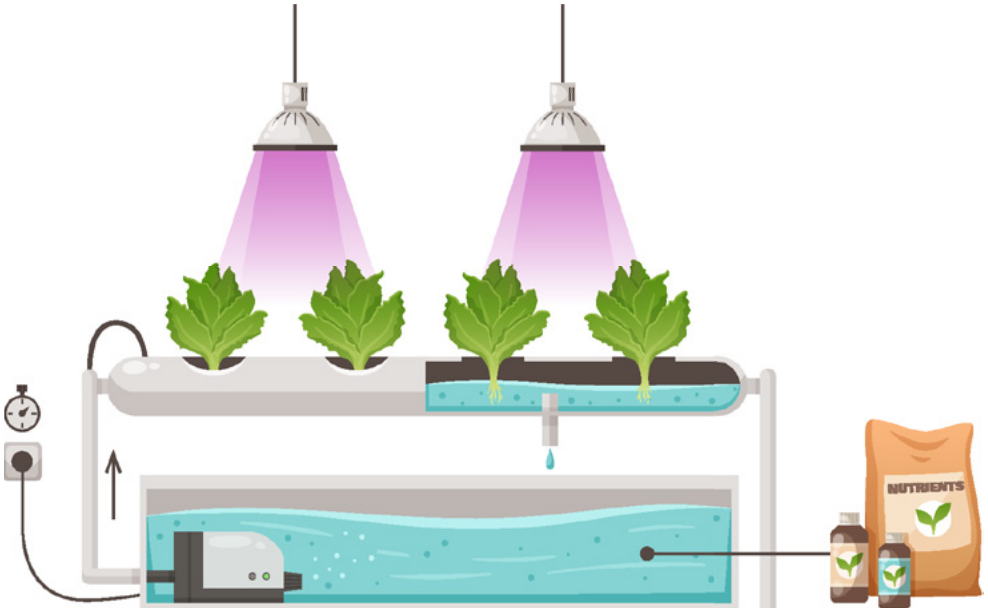
Introduction to Hydroponics

Lesson Procedure

Time	Activity	Details
25–30 minutes	**Journal Drawing & Sentence**	Learners draw the image of what they saw from the demo and complete this sentence: “Plants can grow in _____.” (Help with spelling or writing as needed.)
30–35 minutes	**Recap and Share**	Briefly go over what was learned. Ask questions like: – What is hydroponics? – What do plants need to grow? Let a few learners share their drawings. Praise all efforts. Collect journals at the end.

Introduction to Hydroponics

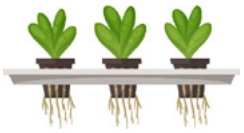
Learning Activity



What is Hydroponics?

Hydroponics is a way of growing plants without soil.

Importance of Hydroponics



Plants can grow in places where soil is not available.

How do plants get their nutrients

Nutrients are mixed into the water for the plants to use.

What plants need?

For plants to grow, they need:

- Water
- Nutrients
- Light

Introduction to Hydroponics

Learning Activity

Importance of Hydroponics

Grows plants without soil
Plants can be grown in a hydroponic system without using soil.

Saves Water
Hydroponic systems use water more efficiently

Plants grow faster
Plants grow faster because they get direct nutrients from the water. This means more food is produced in less time.

Saves Water
No weeding, less pests and muddy mess.
Hence, it is easier to manage and more hygienic.

Teacher's Responsibilities

#1 Video: Plays the video andpauses to ask questions.

#2 Talk : Guides discussion and gives examples.

#3 Hydroponics importance & Nutrients : Explains simply, uses examples and pictures.

#4 Journal : Helps with writing and encourages drawing.

#5 Recap : Asks closing questions and gives feedback.

Students' Responsibilities

#1 Video : Watch and answer simply.

#2 Talk : Listen, repeat words and ask questions.

#3 Hydroponics importance & Nutrients : Listen and ask questions.

#4 Journal : Draw and complete one sentence.

#5 Recap : Share ideas and review learning.

Learning Activity

My Personal Learning Journal: Hydroponics

Name: _____

Date: _____

1. I draw what I learned today

Learning Activity

My Personal Learning Journal: Hydroponics

2. Complete the sentence:
Plants can grow in _____.

3. What was your favourite part?
- ☐ The video
- ☐ Learning how plants get food
- ☐ Drawing
- ☐ Talking about plants

Introduction to Hydroponics

Teacher's Observation Sheets

Use this sheet to track learner participation and understanding.

Student Name	Watched Video	Answered Questions	Joined Discussion	Matched Correctly	Completed Journal	Notes

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