

**PENANG SANGAM HIGH SCHOOL**  
**P.O.BOX 44, RAKIRAKI**  
**LESSON NOTES**

**School: Penang Sangam High School**  
**Subject: Agricultural Science**  
**Year/Level: 11**


**Week 9**

<b>Strand</b>	Strand as 11.3 Agronomy
<b>Sub Strand</b>	Sub-strand 11.3.1 Soils
<b>Content Learning Outcome</b>	Demonstrate the assessment methods used in determining the physical properties of the soil.

**SOIL DEPTH**

**LESSON 1: WHAT DETERMINES SOIL DEPTH?** [Textbook Reference: Pg 76-78]

**LESSON OUTCOME:** *At the end of this lesson the student will discuss the factors which determine the depth of soil.*

 Pedogenesis the science and study of the processes that lead to the formation of soil.

<b>Notes</b> <ul style="list-style-type: none"><li>✓ Soil depth is the distance from the surface of a soil profile to a barrier level which stops the downward growth of plant roots.</li><li>✓ Soil depth is influenced by topography, ground cover and the formation of a hard pan.</li><li>✓ It can be measured by exposing and measuring the horizons of the soil profile.</li></ul>	<b>The depth of soil in an area is influenced by:</b> <ul style="list-style-type: none"><li>• Age of soil</li><li>• Erosion</li><li>• Topography</li><li>• Formation of hard pan during ploughing</li></ul>
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**Student Activity**

1. What is pedogenesis.

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2. What is soil depth?

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3. How is the soil depth influenced?

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## LESSON 2: IMPORTANCE OF SOIL DEPTH [Textbook Reference: Pg 79]

**LESSON OUTCOME:** *At the end of this lesson the student will discuss the categories and importance of soil depth*

### Notes

- ✓ Plants rely on the soil in which they grow for water, minerals, mechanical support and oxygen.
- ✓ Farmers will study the depth of soil on the farm to decide which crops to grow as crops will produce well in soils of certain depth.
- ✓ Soil depth is determined by digging a hole in the soil to expose the soil profile and then measuring the depth of the individual horizons up to the barrier layer.

The five categories of soil depth are compared below where the texture, structure and drainage of the soil are the same.

Depth of soil	Very shallow	Shallow	Moderately deep	Deep	Very deep
Distance from surface to a layer which retards root development	less than 0.25 m	0.25 to 0.5 m	0.5 to 1 m	1 to 1.5 m	1.5 m or more
Nutrient availability	low	high	higher	higher	highest
Water availability	low	high	higher	higher	highest
Mechanical support	low	high	higher	higher	highest
Effect on plant roots	Restricts root growth	less restrictive	less restrictive	less restrictive	least restrictive
Suitable for	very shallow rooted plants like Carpet grass and ornamentals like ferns.	shallow rooted plants like vegetables and spices	field crop like maize, sugarcane, dalo and palms.	all crops including vegetables, field crops and shorter tree crops	all crops including tree crops like mahogany.

### Student Activity

1. State the importance of studying soil depth.  
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2. Differentiate between soil fertility and soil productivity.  
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3. Explain how farmers determine soil depth of their farm.  
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