

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

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

Week 10



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

SOIL TEMPERATURE

LESSON 1: WHAT INFLUENCES SOIL TEMPERATURE [Textbook Reference: Pg 80]

LESSON OUTCOME: At the end of this lesson the student will discuss the factors which influence soil temperature

NOTES

-  Thermal energy - the energy that is generated and measured by heat.
-  Soil respiration - the production of carbon dioxide when soil organisms respire.


Temperature is one of the most important factors which influence the growth, development and yield of agricultural commodities including both crops and livestock.

Soil gets heat from the following sources:

- 1. Solar radiation**
- 2. Microbial decomposition of organic matter**
- 3. Respiration by soil organisms including plants**
- 4. Internal sources**

LESSON 2: IMPORTANCE OF SOIL TEMPERATURE [Textbook Reference: Pg 81]

LESSON OUTCOME: At the end of this lesson the student will discuss the importance of soil temperature.

-  **Cardinal temperature points** - the maximum, optimum and minimum temperature points at which an organism can survive and grow.

Soil scientists study soil temperature because it plays an important role in each of the following:

1. Determines which crops can survive in an area.
2. Soil temperature directly affects plant growth.
3. Germination.
4. Availability of plant nutrients.

SOIL TEXTURE

LESSON1: WHAT IS SOIL TEXTURE? [Textbook Reference: Pgs 82 - 83]

LESSON OUTCOME: At the end of this lesson the student will distinguish between the three soil separates and define the term soil texture.

NOTES

- ✚ **Soil separate** - Size divisions of mineral particles (sand, silt, and clay) that comprise the fine earth, each particle being less than 2 mm in diameter.
 - ✚ **Quartz** - the second most abundant mineral in the Earth's continental crust with the chemical formula of SiO_2
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- ✓ The mineral matter of soil is comprised of particles of various sizes.
 - ✓ The relative proportion of soil separates in a mass of soil is termed soil texture.
 - ✓ The finer particles which are called soil separates vary in size [Sand, silt and clay]. **Refer pages 82-83.**
 - ✓ As rocks weather to form soil the size of mineral matter decrease from rocks to stones to gravel to fine soil.
 - ✓ The fine soil is comprised of soil separates which include sand, silt and clay.
 - ✓ The proportion of soil separates in a soil mass is termed soil texture.

Student Activity

1. What is soil texture?

2. Differentiate between the three soil separates.

a) _____

b) _____

c) _____

3. In relation to soil texture, state what happens when rocks weather to form soil.
