

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


**School: Penang Sangam High School**  
**Subject: Agricultural Science**  
**Year/Level: 9**

**Week 13**

<b>Strand</b>	<b>AS 9.3 AGRONOMY</b>
<b>Sub Strand</b>	<b>AS 9.3.1 SOILS</b>
<b>Content Learning Outcome</b>	<b>Recognise and evaluate soil by identifying and relating the four components of soil to soil use, husbandry practices and soil enhancement.</b>

**LESSON ONE: SOIL**

*Lesson outcome: At the end of this lesson the student will describe soil.*

 Weathering- is the breakdown of rocks to form soil.

**NOTES**

- ✓ The surface of the earth, which is the crust, is covered in a soft layer of material called soil.
- ✓ Soil is the medium of plant growth and development. It also supports all life on planet earth.
- ✓ There are many types of soil in the world but the two main types are sand and clay.
- ✓ When sand and clay are combined in equal proportions, loam is formed.
- ✓ However, if individual sand grains are coated in clay, then silt is formed.

**Student Activity**

1. Define the term soil.

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2. Explain why soil is important.

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3. How is loam soil formed?

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4. Why is soil studied in Agricultural Science?

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## LESSON TWO: ROCKS

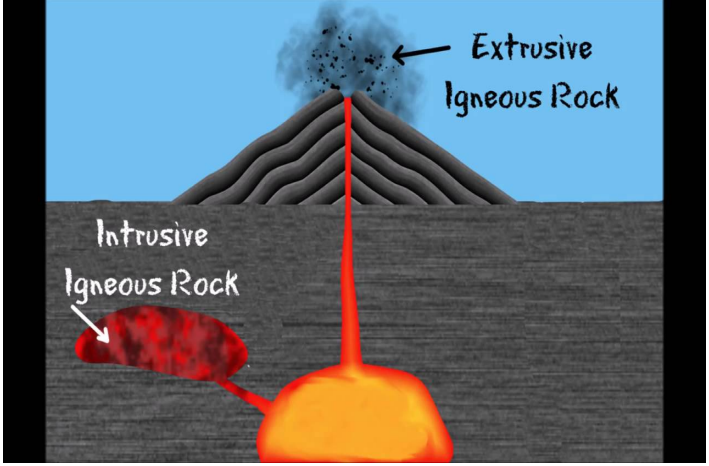
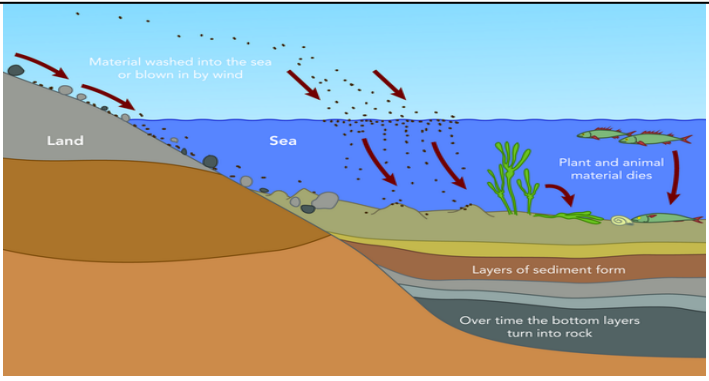
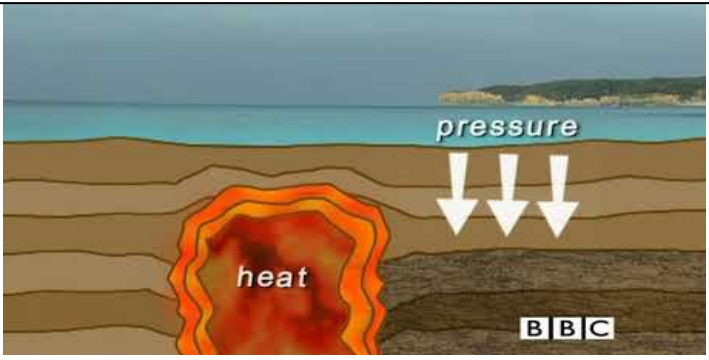
*Lesson outcome: At the end of this lesson the student will: i) identify the 3 main types of rocks ii) explain how each type of rock is formed.*

### NOTES

Rocks result when tiny grains of different minerals react and are compressed together.

Rocks are a valuable which are continuously being made and weathered.

**There are three types of rocks.**

<p><b>1. Igneous rocks</b> – forms when magma cools down after the volcanic eruption.</p> <p><b>Two types of igneous rocks.</b></p> <ul style="list-style-type: none"><li>a) <b>Extrusive rocks</b> – forms when magma cools down on the surface after volcanic eruption.</li><li>b) <b>Intrusive rocks</b> – forms when lava cools down inside the surface after volcanic eruption.</li></ul>	 <p>The diagram shows a volcano with a red magma chamber at the base. A red line representing a magma conduit leads to the surface, where a volcano is shown erupting with smoke. An arrow points to the surface eruption, labeled 'Extrusive Igneous Rock'. Another arrow points to a red, irregular shape underground, labeled 'Intrusive Igneous Rock'.</p>
<p><b>2. Sedimentary rocks</b> – form when eroded particles of rock, wash down to the sea and settle out in layers.</p>	 <p>The diagram shows a cross-section from land to sea. On land, 'Material washed into the sea or blown in by wind' is shown as small particles. In the sea, 'Plant and animal material dies' and is shown as green plants and fish. Below the surface, 'Layers of sediment form' are shown as horizontal layers. At the bottom, a text box says 'Over time the bottom layers turn into rock'.</p>
<p><b>3. Metamorphic rocks</b> – are formed due to high heat and pressure. Therefore it is formed when chemical changes occur in igneous and sedimentary rocks.</p>	 <p>The diagram shows a cross-section of the earth's crust. A large, glowing orange-red area at the bottom is labeled 'heat'. Three white arrows point downwards from the surface towards the heat, labeled 'pressure'. The BBC logo is in the bottom right corner.</p>

### Student Activity

1. How are rocks formed?

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2. Differentiate between intrusive rocks and extrusive rocks.

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3. Which rock is formed due to volcanic eruption?

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4. Differentiate between sedimentary rocks and metamorphic rocks.

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5. Which rock is formed due to high heat and pressure?

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