3.3

Soil and its Formation

Layers of soil



1. Litter –mostly decomposed leaves and grass
2. Topsoil –small particles of rocks mixed with decaying plant and animal matter
3. Humus – is black topsoil which contains a rich supply of minerals and other nutrients that plants require to grow
4. Subsoil – a layer that usually contains more stones mixed with small amounts of organic matter
5. Bedrock – marks the end of the soil

Work:

1. Create a diagram to represent the layers of soil in your notes.
2. Where might you easily see the layers of soil in the real world?

Formation of soil

Bedrock forms soil through the process of weathering, can you explain this process?

Water beneath the soil

Two type of water

1. Surface water –above ground
2. Ground water
   1. Water that seeps into the ground through a process called **percolation**. The larger the particles of soil the faster the rate of percolation. When the ground becomes saturated and cannot seep any further down, this is called the **water table**.
   2. As the water seeps through the soil it dissolves nutrients and minerals. This is called **leaching**

Soil and pH

Soil can be acidic, neutral or basic (alkaline)

pH can be determined by:

1. Composition of bed rock that is weathered
2. The chemical composition of the plants that grow in the soil
3. The chemical composition of the rain and snow (acid rain)

Acid deposition (acid rain) occurs when fossil fuels are burnt which causes sulfur dioxide to be released in the atmosphere. Sulfur dioxide reacts with water and causes acid rain / snow to fall to the ground. Acid rain / snow increases the weathering and leaching process which reduces the fertility of soil.

Consequences

Causes coniferous tree needles to turn yellow

Moses will do well in acidic soil

Work:

1. Read section 3.3
2. Answer understanding concepts questions 2, 3, 4, 6