

SUBJECT: AGRICULTURAL SCIENCE

CLASS: SS1

WEEK: 8

TOPIC: ROCK FORMATION AND TYPES

ROCK: A rock is any material of the earth. It may be a combination of different minerals elements such as silica(silica contain silicon oxygen).

TYPES OF ROCK

Rocks can be classified into three major groups based on how they are formed and their appearance. These include;

1. Igneous rock
2. Sedimentary rock
3. Metamorphic

MODE OF FORMATION OF IGNEOUS ROCK;

They are formed as a result of cooling and solidification of molten magma erupted from the earth crust. Magma occurs from high temperature and pressure underneath the earth and forces itself towards the earth surface through the cracks. As the magma approaches the earth surface, it cools as a result of the lower temperature of earth surface and solidifies to form igneous rocks.

TYPES OF IGNEOUS ROCK

1. Plutonic (or intrusive) igneous rock: These are formed when molten magma solidifies slowly before it gets to the surface of the earth to form large crystals. Prolonged erosion makes the rock to be exposed later to the surface. Examples include granite, gabbro, and diorite.
2. Volcanic (extrusive) igneous rock: these are formed when the moiten magma cools and solidifies rapidly when it gets to the surface to form crystals. Examples incudes basalt, pumice.

CHARACTERISTICS OF IGNEOUS ROCKS

1. They have a glassy appearance.
2. They contain crystals i.e. they are crystalline.
3. They do not occur in layers.
4. They do not contain fossils.
5. They are hard and impervious.
6. They are resistant to erosion.

MODE OF FORMATION OF SEDIMENTARY ROCKS: They are formed deposits of organic materials and weathering rocks which accumulates and consolidaye over time. They are cemented together after a

long time to form sedimentary rocks. The sediments are deposited by natural agents such as water, wind and ice and settle down in layers one on top of another

There are three types of sedimentary rocks based on the process of formation.

1. Mechanically formed from sediments of other rocks that are accumulated and cemented over a long period. Examples include sandstones, shale, breccia, and conglomerate.
2. Organically formed sedimentary rocks: These are rocks formed from the remains of living organisms. When the rocks are formed from the remains of animals like coral or shellfish, they are called calcareous rocks e.g. limestone and chalk. When the rocks are formed from vegetable matter such as swamp and forest are called carbonaceous rock e.g. coal, peat, and lignite.
3. Chemically formed sedimentary rocks: These are rocks from precipitated or rocks formed from rock solution. Examples include gypsum, potash, and dolomite.

CHARACTERISTICS OF SEDIMENTARY ROCKS

1. They occur in layers or strata.
2. They are not in crystals i.e. they are not crystalline.
3. They contain fossils of plants and animals.
4. They may be coarse, fine soft or hard.

MODE OF FORMATION OF METAMORPHIC ROCKS

These rocks result from igneous or sedimentary rocks due to the effect of pressure and heat. The composition and texture of unstable parent rock materials are changed under pressure and heat examples, marble, quartzite, gneiss, schist, graphite and slate.

1. Slate is formed from clay (sedimentary)
2. Marble is formed from limestone
3. Quartzite is formed from sandstone
4. Gneiss is formed from granite
5. Schist is formed from shale
6. Graphite is formed from coal

EXAMPLES OF METAMORPHIC ROCKS

1. Some may occur in layer or strata.
2. They are not in the form of crystals
3. The rock may be hard or soft
4. They exist in different colors and textures.
5. They may contain fossils.

ASSIGNMENT

1. Describe the mode of formation of metamorphic rocks.
2. Outline four characteristics of igneous rocks.