**EMERALD INTERNATIONAL SCHOOL, MPAPE ABUJA**

**LESSON PLAN AND NOTE FOR WEEK 9 ENDING FRIDAY 10th MARCH, 2023**

**TERM: SECOND TERM**

**WEEK:** **WEEK 9**

**DATE** : **6TH - 10TH MARCH 2023.**

**SUBJECT: BIOLOGY**

**CLASS : SS 1**

**TOPIC: FUNCTIONING ECOSYSTEM**

**SUB - TOPIC: 1**. **definition of auto-trophy and heterotrophy .**

1. **Examples of producers and consumers.**
2. **Definition of terms used in trophic level.**

**PERIOD : 7th**

**TIME : 12: 30 - 1:00**

**DURATION : 40 minutes**

**AVERAGE AGE : 14 years**

**SEX: mixed**

**LEARNING OBJECTIVES:** by the end of the lesson,the students should be able to;

1. Define autotroph and heterotrophs .
2. Give examples of producers and consumers.
3. Define some terms used in the study of trophic level.

**RATIONALE:** the student should understand the examples of producers and consumers.

**PREVIOUS KNOWLEDGE:** The students have been taught instrument used in measuring ecological factors.

**INSTRUCTIONAL MATERIALS:** chart showing examples of producers and consumers.

**Reference Material:** Essential Biology foe Senior Secondary School by M.C. Michael.

**LESSON DEVELOPMENT**

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| **STEPS** | **TEACHER’S ACTIVITIES** | **PUPILS ACTIVITIES** | **LEARNING POINT** |
| **INTRODUCTION** | The teacher introduces the lesson by reviewing the previous lesson. | The students pay attention. | To arouse the students interest. |
| **PRESENTATION**  **STEP 1** | The teacher defines autotrophs and heterotrophs. | The students pay attention. | To keep them focus. |
| **STEP 2** | The teacher asks the students to give examples of producers and consumers. | The students gives examples of consumers and producers. | To encourage critical thinking. |
| **STEP 3** | The teacher explains some terms used in the study of trophic level. | The students pay attention. | To keep them focus. |
| **BOARD SUMMARY** | **FUNCTIONONG ECOSYSTEM**  **AUTOTROPHS -** They are organisms green plants and some bacteria which can use sunlight or chemicals to manufacture their food from inorganic substances during the photosynthesis or chemosynthesis.  **HETEROTROPHS -** They are organisms mainly animals which cannot manufacture their own food but depend directly or indirectly on plants for their food hence they are called consumers.  **PRODUCERS -** They are green plants or autotrophs which traps the energy of sunlight or solar energy and convert it to chemical energy in order to form organic compounds. Examples in terrestrial habitats are grasses, trees and shrubs while aquatic habitat are phytoplankton, water hyacinths and sea weeds.  **CONSUMERS -** They are organisms which derives its nutrient, energy and food from eating plants directly or indirectly. All consumers are heterotrophs and they lack chlorophyll examples cows, sheep etc and they are called **herbivorous or primary consumers.** Or they are animals examples cats. Hyenas, lion etc that eat animals and derives energy indirectly from the producers, they are called carnivores or secondary consumers.  **DECOMPOSERS -** They are fungi or bacteria which live saprophytically or feed on dead remains of plants animals and organism leading to breaking down of organic matter to produce soluble nutrients which are absorbed by plants. Examples are insects such as termite and larvae of house fly  **TROPHIC LEVEL**  it is also called feeding level and it is defined as the feeding level or each stage in a food chain or food web.  **FOOD CHAIN -** It is defined as a feeding relationship involving the transfer of energy through food from producers to consumers . examples of terrestrial food chain.  Guinea grass - grass hopper - toad - snake.  Examples of food chain in aquatic habitat.  Diatoms - mosquito larvae - tilapia fish - wales.  **FOOD WEB -** This defined as a complex feeding relationship among organisms in the same environment with two or more inter related food chains. Food web contains two or more food chain examples  **PYRAMID OF NUMBER -** This is the number of individual organisms at each trophic level which decreases progressively from the first to the last trophic level in a food chain. Example grasses - grasshopper - lizard - hawks.  **PYRAMID OF ENERGY -** This is defined as the amount of energy present in the living organisms at the different trophic levels of a food chain. Energy decreases from the base of the pyramid to the apex. | The students ask questions for further clarification. | To create room for slow learners. |
| **Evaluation** | The teacher evaluates the students with the following questions;   1. Define the following terms ; 2. Autotrophs 3. Hetrotrophs 4. Producers 5. Consumers 6. Decomposers. 7. Give 2 examples each of producers and consumers. 8. Define the following with an example each; 9. Food chain 10. Food web pyramid of numbers 11. Pyramid of energy. | The students attempt the questions. | To ascertain their level of understanding. |
| **Conclusion** | The teacher concludes by coping the note on the board. She checks and marks the note. | The students copy the note on the board. | For future use. |
| **Assignment** | Write at least 3 differences of food chain and food web. | The students did and submit their assignment for marking and correction. | To encourage the students to study at home. |

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**21/3/2023**

**Principal Head Instructor**