**EMERALD ROYAL INTERNATIONAL SCHOOL, MPAPE ABUJA**

**LESSON PLAN AND NOTE FOR WEEK 1 ENDING 15TH SEPTEMBER, 2023**

**TERM: FIRST**

**WEEK**: **1**

**DATE** : **11TH - 15TH SEPTEMBER, 2023.**

**SUBJECT:** **BIOLOGY**

**CLASS : SS 1**

**TOPIC :**  **RECOGNISING LIVING THINGS**

**SUB - TOPIC: 1**.**definition of science and biology.**

1. **Characteristics of living things.**
2. **Differences between plants and animals.**

**PERIOD : 7th**

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

**DURATION : 40 minutes**

**AVERAGE AGE : 15 years**

**SEX:** **mixed**

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

1. Define biology
2. State and explain the characteristics of living things.
3. State the difference between plants and animals.

**RATIONALE:** the students should understand characteristics of living things and differences between plants and animals.

**PREVIOUS KNOWLEDGE:** The students can state some characteristics of living things.

**INSTRUCTIONAL MATERIALS:** chart showing characteristics of living things and differences between plants and animals.

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

**LESSON DEVELOPMENT**

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| **STAGES** | **TEACHER’S ACTIVITIES** | **STUDENTS’**  **ACTIVITIES** | **LEARNING POINT** |
| **INTRODUCTION** | The teacher introduces the lesson by writing the scheme of work for the term | The students were attentive. | To arouse the students interest. |
| **PRESENTATION**  **STEP 1** | The teacher defines science and Biology. | The students pay attention. | To keep them focus. |
| **STEP 2** | The teacher asks the students to state the characteristics of living things. | The students state the characteristics of living things. | To encourage critical thinking. |
| **STEP 3** | The teacher explains the differences between plants and animals. | The students were active. | To keep them focus. |
| **BOARD SUMMARY** | **RECOGNISING LIVING THINGS**  **Definition And Branches Of Biology**  The term “biology” is coined from two Greek words – bios meaning life and logos meaning to study. Hence, biology can simply be defined as the study of life. In other words, it is defined as the study of plants and animals.  **Branches Of Biology**  Biology is basically grouped into two main branches. These are: **i. Zoology:**The study of animals. **ii. Botany:**The study of plants. **iii. Ecology**: The study of plants and animals (living things) in relation to their environment. **iv. Morphology:** The study of external features of plants and animals. **v. Anatomy:** This is the study of internal structures of plants and animals. **vi.**[Genetics](https://itsmyschoollibrary.com/2020/04/16/genetics-meaning-history-branches-importance-and-application/" \t "https://itsmyschoollibrary.com/2020/08/08/recognising-living-things-biology-lesson-note/_blank)**:**This is the scientific study of heredity and variation in living things. **vii. Physiology**: This is the study of how plants and animals function.  **Definition And Usefulness Of Science**  Science is defined as the systematic process of making enquiry about the living and non-living things in our environment. **Usefulness Of Science** Science has been put into many good uses for the benefit of man. The usefulness of science finds application in: **i. Medicine:** Science has contributed greatly to the manufacture of vaccine and drugs that are used today to cure various diseases of man. **ii. Manufacturing Industries:** Various raw materials have been combined to manufacture many finished products commonly used by man. **iii. Construction:**Roads, railways, airports etc have been designed and constructed as a result of the knowledge derived from science. **iv. Engineering:** Ship building, skyscrapers, bridges, roads, etc have been designed and constructed due to the knowledge acquired from science. **v. Agriculture:** New breeds of animals and varieties of crops including fertilizers have been developed and these have helped to increase food production. **vi. Technology:** Science has helped in the development of computers that have enhanced the efficiency of mankind in their activities. **vii.Communication:**Televisions, telephone, telex, fax machines, etc have been developed with the aid of science which now makes communication among countries to be possible.  **Processes Or Methods Of Science Or Scientific Approach**  The processes or methods of science involves the sequence of making inquiries about an object or thing under study in science. Students of science have to learn to lake clear, systematic and accurate accounts of their scientific investigations. **Scientific methods of science therefore take the following procedures:** i. Observation ii. Classification iii. Inference iv. Measurement v. Identification vi. Hypothesis vii. Experiment viii. Control or concluded ix. Theory or law.  The starting point of scientific method is **observation** which involves the use of the senses to describe what one has seen or felt about an object. The observation then leads to the **classification**, then to **inference** and later to **measurement** and **identification** of the existing problems. After that, the scientist now forms hypothesis or a tentative answer. The **hypothesis** is now tested by an **experiment**. In reporting an experiment, it is very important to use or follow the patterns laid down by scientists. **These patterns include:** **i. Aim**: This is to state the purpose of the experiment. **ii. Apparatus**: This stands for the materials that will be used in the experiment. **iii. Method:** This is to describe in detail, the procedures that are required or the step-by-step of the experiment. **iv. Observation:** This records what one had seen during and after the experiment has been set up. **v. Conclusion:**This is to draw conclusions on the outcome of the whole experiment has been set up. **Note**: In performing an experiment, a scientist or science student needs to take note of ***control experiment***. In control experiment, the scientist makes sure that during the experiment, the organism or object being observed is not deprived of the particular factor being investigated. The end of the experiment can then be used to show whether the hypothesis is true or false. If the subsequent experiments show that the hypothesis is false, the whole idea or concept of the matter under investigation is then repeated or at worst discarded. But when the hypothesis has been tested and found to be repeatedly correct within the limits of available evidence, the concept becomes a theory. If a theory has been extensively tested and proven to be true, it becomes a law.  **Living And Non-living Things**  Everything on earth can be classified either as living or non-living things. **Living things include** plants and animals that have life, while **Non-living things include** those things that do not have life. **Examples of living things** include man, rabbit, hibiscus, elephant, monkey, grass, mango tree, sheep etc while **Non-living things include**air, stone, water, table, house, book, etc. **Characteristics Of Living Things** Living things are distinguished from non-living things by a number of characteristics which include: **i. Movement or Locomotion:**Movement is defined as the ability of an organism to move its own whole body or part of its body from one place to another. Reasons for movement especially for animals from one place to another including: a. To search for food b. To escape from predators c. To find mates for reproduction. d. To disperse or reduce competition or overcrowding by moving to new location e. To avoid danger Generally, plants can only move parts of their bodies in response to external stimuli. **ii. Nutrition or Feeding:**Nutrition is the process involved in obtaining or manufacturing food and utilizing it for growth and maintenance or carry-out life processes like growth, respiration and reproduction. While all green plants can manufacture their own food through the process of photosynthesis (i.e autotrophs or holophytic nutrition) all animals cannot manufacture their own food; hence the type of nutrition is called heterotrophic or holozoic nutrition. **iii. Excretion:**Excretion is defined as the removal or getting rid of waste products of cell metabolism from the body. The purpose of excretion is to remove waste products of metabolism e.g water carbon dioxide, etc which are poisonous or toxic to the body if allowed to accumulate. The involvement of getting rid of these poisonous metabolic waste products from the body is called excretion. **iv. Irritability or sensitivity:**Irritability is defined as the respond or reactive of organisms towards changes in the environment. Living things exhibit sensitivity in order to enable them survive in their environment. Stimuli include heat, light, pain, water, sound, chemical substance etc which living things respond to. **v. Respiration:** Respiration is defined as the breakdown or burning of food substances by aerobic (using oxygen) or anaerobic (i.e without oxygen) respiration, to release energy needed for all process of life. **vi. Growth:** Growth is defined as an irreversible or permanent increase in size, dry mass or weight of an organism due to the addition of living protoplasmic materials. The purpose of growth is to enable organisms to repair or replace damaged or old tissues in their bodies. The food eaten provides the basis for growth of organisms. This will lead to complexity and maturation. **vii.Reproduction:**Reproduction is defined as the ability of a living organism to give birth to young ones or offspring or individuals of their own kind. The purpose of reproduction is to ensure continuity of life, i.e, it enables life to be passed on from one generation to the next. Reproduction occurs in two forms: a. *****Asexual reproduction:*****This involves only one organism to produce another offspring. b. ***Sexual reproduction***: This involves two organisms coming together for the purpose of reproduction. **viii. Adaptation:**Adaptation is the ability of living organisms to adjust to changes in their various environments in such a manner that they would be comfortable. **ix. Life span/death**: All living things must die because they have a definite and limited period of existence. All living things must pass through these five stages of life namely; Birth – Growth – Maturity – Decline (old age) – Death **x. Competition**: This is the ability of living things to struggle for all the necessities of life in order to survive and be in continuous existence.  In summary, all living things carry out all the above characteristics processes, while non-living things cannot. | 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. Science 3. Biology. 4. State at least 5 characteristics of living things and explain any 3. 5. State at least 5 differences between plants and animals. | 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** | List and explain the 7 branches of Biology. | The students did and submit their assignment for marking and correction. | To encourage the students to study at home. |