LESSON PLAN ON NATURAL SCIENCE

WEEK 4

Name of Teacher: Mr. Mac-Donald Arinze

Class: Year 7 & 8

Average age of learners: 13years

Gender: Mixed

Topic: Diversity of Plants

Duration: 40mins

Date: Week ending 2nd February, 2024.

CONTENT: Kingdom Plantae (plants)

RATIONALE: The knowledge acquired will enable the learners to understand the various classification groups of kingdom Plantae and also give examples of organisms found in each classification group/phylum, class e.t.c of the Plant kingdom.

PERFORMANCE OBJECTIVES: By the end of the lesson, given charts and pictures of organisms in each phylum of the Plant kingdom, the learners should be able to:

1. **Cognitive Domain (Minds-on):**
2. State correctly the three broad phyla of kingdom Plantae
3. Mention correctly at least two examples each of plants belonging to phylum Thallophyta and Bryophyta
4. Mention correctly the classification of phylum Tracheophyta
5. State correctly at least three characteristics Dicots and Monocots.
6. **Affective Domain (Hearts-on):**
7. Show willingness in the lesson by mentioning names of most plants which have peculiar features as monocots or dicots
8. Appreciate the lesson by answering the teacher’s questions with keen interest.
9. **Psychomotor domain (Hands-on)**
10. Draw correctly the schematic chart showing the various classification of plant.
11. Group plants seen around the school into dicot and monocot based on their features
12. **Interpersonal domain:** (Learners’ ability to interact with others and share knowledge):
13. Discuss elaborately in groups and share knowledge and experiences acquired.

**ENTRY/ENTERING BEHAVIOUR:** Learners are familiar with their environment and can mention some plants found in the school environment.

**INSTRUCTIONAL MATERIALS:** Laptop/desktop, projector, videos, printed images, charts, marker, whiteboard and coloured cardboard paper.

**INSTRUCTIONAL PROCEDURE:** Check table below.

**TABLE: INSTRUCTIONAL PROCEDURE**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Duration** | **Content Development** | **Teaching Strategies** | **Instructional Strategies** | **Specific Instructional Materials in Use** | **Teacher’s Performance Activities** | **Students’ Performance Activity** | **Learning Point** |
| 5 mins | Asking Provocative questions | Set Induction | Brainstorming | Marker, Whiteboard | The teacher divides the learners into groups of three members each to brainstorm and identify some of the plants in the picture chart and mention their habitat | Learners carry out the task that the teacher has given them after brainstorming. | Learners have made an attempt to group the organisms based on their shared characteristics or features. |
| 14mins | Classification of plants | Use of examples and illustrations, planned repetition, stimulus variation, questioning and reinforcement. | Mind-mapping | Pictures of organisms in each phylum of plant | The teacher uses a slide to show an infographic of the examples of plants found in each phylum of kingdom Plantae. | The learners identify the distinct characteristics of each group/phylum of kingdom Plantae | The learners have learnt the classification of plants, and examples of organisms found in each phylum |
| 8mins | CLassification of Tracheophytes (vascular plants) | Use of examples and illustrations, planned repetition, stimulus variation | Mind-mapping | Pictures of organisms in Gymnosperms and Angiosperms | The teacher uses a slide to show an infographic of the examples of plants found in Class. | The learners identify the distinct characteristics of each Class. | The learners have learnt the characteristics Gynosperms, and Angiosperms and the examples of organisms found in each Class. |
| 8mins | Order Monocotyledon and Dicotyledon | Use of examples and illustrations | Mind-mapping, brainstorming | Pictures of organisms in each Order of Angiosperms. | The teacher uses a slide to show an infographic of the examples of plants found in each Order of Angiosperms. He also mentions the characteristics of each Order. | The learners identify the distinct characteristics of each Order of Angioserms. | The learners have learnt the characteristics of each Order of Angiosperms, and examples of organisms found in each Order. |

**EVALUATION:** The teacher evaluates the lesson using the following questions

1. State the three broad phyla of kingdom Plantae
2. Mention two examples each of plants belonging to phylum Thallophyta and Bryophyta
3. Mention the classification of phylum Tracheophyta
4. State three characteristics Dicots and Monocots.

**CLOSURE:** The teacher summarizes the lesson by guiding the learners in going through the main points of the lesson, discussing the characteristics of all classification groups of plants. The teacher gives the learners some time to reflect on what they have learnt, ask questions and as well take corrections.

**ASSIGNMENT (HOMEWORK):** the teacher tells the students to mention three differences and similarities between

1. Identify two differences between Monocots and Dicots

**Actions to carry forward:** the students having learnt the characteristics of both monocots and dicots, they can now tell Plants that are monocots and dicots by observing their features.

**Diversity of plant**s

**Classification of plant kingdom**

This is the group of plants. Plants are grouped into three phylum/Division.

* Division Thallophyta (Algae)
* Division Bryophyta (moss plant and liverwort)
* Division Tracheophyta (Vascular plants)

**Division Thallophyta (Algae)**: they are seedless plants, and exists either as filament or in colonies. Spirpgyra is an example of a filamentous algae while Volvox is an example of a colony algae.

Characteristics of algae

1. They are found in aquatic environment or moist places.
2. They are autotrophic in mode of nutrition
3. They reproduce both sexually and asexually.

e.g Volvox and spirogyra

**Division Bryophyta(**Moss plant and Liverwort): they are also seedless plants which produces spores. A spore is an asexual reproduction structure in primitive plants which germinate on a favourable environment to a full plant.

Characteristics of moss and liverwort

1. They are both aquatic and terrestrial.
2. They are seedless plants and only produces asexual spores
3. They reproduces sexually and asexually

e.g Moss and liverwort

**Division Tracheophyta** (vascular plants): Vascular plants has vessels through which water and food circulate in plants. There are two sub-division;

* Fern: they are vascular seedless plants. The produce spores.
* Seed plants: they are vascular seed producing plants. They are referred to as higher plants. Seed plants are grouped into two classes:
* Class Gymnosperm: (Gym= naked, Sperm= seed) These are plants that produce naked seeds. Their seeds are in cones or cycads. E.g Conifers
* Class Angiosperm: (flowering plants) these are plants that produce flowers which develop into seeds, and the seeds are capable of growing into a new plant.

There are two groups/order of Angiosperms

1. Monocotyledon
2. Dicotyledon

**Monocots**

Characteristics

1. They possess one seed leaf
2. They possess fibrous root system
3. The leaves have parallel venation
4. Their stem is herbaceous
5. Their floral parts exists in 3’s or multiples of 3’s (6,9,12… etc)

e.g maize, rice , grass etc

Dicots

Characteristics

1. They possess two seed leaf
2. They possess tap root system
3. Their leaves have net venation
4. They have woody stem
5. Their floral parts exists in four or five

e.g hibiscus mango, orange

**SCHEMATIC DIAGRAM SHOWING THE CLASSIFICATION OF PLANTS.**