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| **Learning Planner** | | | | | | | | |
| **Subject** | *General science* | **Week** | | *10* | **Duration** | *180 min* | **Form** | *SHS 1* |
| **Strand** | 2 PROCESSES FOR LIVING | **Sub-Strand** | | ESSENTIALS FOR SURVIVAL | | | | |
| **Content Standard** | Demonstrate knowledge and understanding of the principles of reproduction and their application in addressing sexually related societal problems | | | | | | | |
| **Learning Outcome(s)** | Illustrate the principles of reproduction. | | | | | | | |
| **Learning**  **Indicator(s)** | Explain reproduction in plants and humans. | | | | | | | |
| **Essential Question(s)** | How do plant and animals reproduce?  Why is it necessary for plants and animals to reproduce?  What materials will be needed to demonstrate reproduction in plants and animals for learners? | | | | | | | |
| **Pedagogical Strategies** | * Collaborative learning * Demonstration/ activity-based learning approach * Talk-for-learning approaches * Project-based Learning * Nature walk * Research method | | | | | | | |
| **Teaching & Learning Resources** | * Videos of flower and pollination * Pictures flower and pollination * Flowers, fruits and seeds * Vegetative parts of plants such as corm, rhizome, suckers, stem cuttings and bulbs. * Videos showing propagation in plants, projectors and other ICT resources | | | | | | | |
| **Key Notes on Differentiation** | | | | | | | | |
| 1. Learning Task:    * + - Analyse the differences between the types of reproduction in plants        - Describe the stages of sexual reproduction in flowering plants        - Describe vegetative propagation practices such as layering, grafting, cutting, etc. using hands-on experiment, etc. 2. Pedagogical Exemplars:  * Research and Collaborative Method   Put learners in groups to research and discuss the meaning of reproduction and types of reproduction in plants  Encourage reflection and sharing of findings with the class for a discussion on different reproductive strategies in plants. Facilitate research activities, discussions, and presentations within mixed-ability groups   * Nature Walk and Observations   Lead students on a nature walk to observe various plant species and identify reproductive parts  In groups, students can write down their observations and discuss their findings with the class, focusing on the diversity of plant reproductive structures. Provide guidance during the nature walk and encourage meaningful observations   * Research method   Put learners in mixed-ability groups to search for information on sexual reproduction in plants, including pollination and its role in plant reproduction.  Learners cross-share findings through presentations and facilitate group discussions to reflect on key themes and encourage critical thinking about pollination and sexual reproduction in plants. Encourage critical thinking, reflection, and peer interaction during group discussions  Utilize a research-based learning approach where learners research and present on asexual reproduction in plants using vegetative parts like corms, rhizomes, suckers, stem cuttings, and bulbs   * Activity-based Learning Approach   Engage students in hands-on activities related to asexual reproduction to reinforce learning through active participation. Support hands-on activities and promote engagement through experiential learning, etc.   1. Key Assessments (DoK)  * Level 1: Explain the importance of reproduction * Level 2: Describe the process of fertilization in flowering plants   Level 3: write a report on a hand-on activity of at least two artificial propagation methods from the lesson, etc | | | | | | | | |
| **Keywords** | Fusion, nodes, bud, spore, fragmentation, gametes, asexual, etc. | | | | | | | |
| **Lesson 1**  **Reproduction in plant** | | | | | | | | |
| **Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual** | | | | | | | | |
| ***Teacher Activity*** | | | ***Learner Activity*** | | | | | |
| **Starter *Activity (10 minutes)***  ***Teacher ask learners to name the parts of a plants***  ***Learners named the parts of a plant*** | | | | | | | | |
| ***Introductory Activity (15minutes)***  *I Put learners into mixed ability and mixed gender group.*  *II Distribute sample of flower to each mixed group*  ***Activity 1 (40 minutes)***  *Show video showing the parts of a flower to learners in their mixed groups*  ***Activity 2 (40 minutes)***  *Ask learners to identify the parts of the flower in their mixed groups.*  ***Activity 3 (30 minutes)***  *Ask learners to search the internet for the definition of Polination.*  ***Ask learners to search the internet and note down the types of fertilization***  *Ask learners to discuss sexual reproduction and asexual reproduction in their mixed group.* | | | ***Introductory Activity (15minutes)***  *I Learners seated in their mixed groups.*  *II learners have sample flower*  ***Activity 1***  *Watch video of the parts of a flower*  ***Activity 2 (40 minutes)***  *Learners identify the parts of a flower*  **Activity 3**  ***II Learners search the internet for the definition of pollination.***  ***Learners watch video of fertilization process in plants***  Learners discuss sexual reproduction and asexual reproduction in their mixed groups.  Learners discuss sexual and asexual reproduction in their mixed groups. | | | | | |
| **Assessment DoK aligned to the Curriculum and Subject Teacher Manual** | | | | | | | | |
| Level 2: Explain the importance of reproduction. | | | | | | | | |
| **Lesson Closure**  ***In completing this part, refer to the Essential Questions to check that learning has taken place.*** | | | | | | | | |
| ***Activity (15 minutes)***  *Using Pass-that-question, ask learners to write any question on the lesson.*  *Ssummarize the lesson highlighting the salient points* | | | | | | | | |
| **Reflection & Remarks** | | | | | | | | |
| *Reflection*  *Remarks* | | | | | | | | |
| **Lesson 2**  **Reproduction in plants** | | | | | | | | |
| **Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual** | | | | | | | | |
| ***Teacher Activity*** | | | ***Learner Activity*** | | | | | |
| **Starter *Activity (10 minutes)***    ***Teacher: ask learners to name five parts of a flower***  ***Learners: learners named five parts of a flower*** | | | | | | | | |
| ***Introductory activity (5 minutes)***  *I..Put learners in their mixed gender and mixed ability groups.*  ***Activity 1 (25 minutes)***  *I. Ask learners to search the internet and find out the definition of Polination in their mixed ability groups.*  ***Activity 2 (25 minutes)***  *II Ask learners to search the internet and find out the definition of fertilization in their mixed group and ability groups.*  *III.. Ask learners to present their findings of the definition of Polination and Fertilization in their mixed ability groups.*  *II..Show videos of the process of fertilization in plants to learners in their mixed gender and mixed ability groups.*  ***Activity 3 (25 minutes)***  *Guide learners to brainstorm on the types propagation.*  *Guide learners to discuss the advantages of the natural and vegetative of propagation* | | | ***Introductory activity***  *I..Learners seated in their mixed groups*  ***Activity 1***  *I..Learners search the internet and note down the definition of Polination.*  ***Activity 2***  *II Search the internet and note down the definition of fertilization.*  ***III..Present their findings on the definition of pollination and fertilization.***  ***IV..Watch video of the process of fertilization in plants.***  ***Activity 3 (25 minutes)***  *Learners brainstorm the types of propagation*  *Discuss the advantages of natural and Artificial propagation* | | | | | |
| **Assessment DoK aligned to the Curriculum and Subject Teacher Manual** | | | | | | | | |
| * Level 2: Describe the process of fertilization in flowering plants | | | | | | | | |
| **Lesson Closure**  ***In completing this part, refer to the Essential Questions to check that learning has taken place.*** | | | | | | | | |
| ***Activity (15 minutes)***  *Using Pass-that-question, ask learners to write any question on the lesson.*  *Ssummarize the lesson highlighting the salient points.* | | | | | | | | |
| **Reflection & Remarks** | | | | | | | | |
| *Reflection*  *Remarks* | | | | | | | | |