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| **Learning Planner** | | | | | | | | | |
| **Subject** | *General science* | **Week** | | *3* | **Duration** | *180 min* | **Form** | *SHS 1* | |
| **Strand** | *EXPLORING MATERIALS* | **Sub-Strand** | | SCIENCE AND MATERIALS IN NATURE | | | | | |
| **Content Standard** | Demonstrate knowledge and understanding of the characteristics of science and show how they are applied in everyday life. | | | | | | | | |
| **Learning Outcome(s)** | * Evaluate the characteristics of science | | | | | | | | |
| **Learning**  **Indicator(s)** | * Apply the characteristics of science where appropriate | | | | | | | | |
| **Essential Question(s)** | In what ways can science influence food production and consumption?  How does scientific innovation impact daily routine?  What role does science play in addressing environmental challenges? | | | | | | | | |
| **Pedagogical Strategies** | * *Collaborative learning* * *Demonstration* * *Research method* * *Field trip* | | | | | | | | |
| **Teaching & Learning Resources** | * *Projectors* * *Poster pictures showing scenarios in which the characteristics of science are displayed. (E.g.* [*https://evolution.berkeley.edu/nature-of-science/characteristics-of-science*](https://evolution.berkeley.edu/nature-of-science/characteristics-of-science)*/and* [*https://www.sciencebuddies.org/science-fair-projects/project-ideas/list*](https://www.sciencebuddies.org/science-fair-projects/project-ideas/list) *).* * *Internet source* | | | | | | | | |
| **Key Notes on Differentiation** | | | | | | | | | |
| 1. *Learning Tasks:*  * *Explain how characteristics of science can be applied in everyday life, such as in education* * *Summary report on the field trip to the local industries, etc.*  1. *Pedagogical Exemplars:*  * *Put learners in mixed-ability groups. Using think-pair-share lets learners search for the applications of the characteristics of science (empirical evidence, systematic observation, objectivity, tentativity) in everyday life, such as agricultural science, health, education, and home and reflect on their findings. Learners discuss their findings on the applications of the characteristics of science in everyday life* * *Let learners assess each other's contributions during group activities, presentations, and experiments* * *Organise a visit or field trip to a local industry or school farm where learners can observe the applications of the characteristics of science first-hand. During field trips to local industries or school farms, teachers can monitor students' engagement, note-taking, and interactions with industry professionals to assess their understanding of the applications of the characteristics of science* * *Learners write a summary report about what they learnt from the field trip, etc.*  1. *Key Assessments (DoK):*  * *Level 2: Identify at least three areas where characteristics of science are applied* * *Level 2: Explain how empirical evidence as a characteristic of science is applied in Agriculture* * *Level 2: Explain how the characteristics of science are applied in health and school* * *Level 3: Analyse at least two situations or areas where the characteristics of science can be applied, etc.* | | | | | | | | | |
| **Keywords** | * Influence * Innovation * Production * Consumption * Routine | | | | | | | | |
| **Lesson 1**  **APPLICATION OF THE CHARACTERISTICS OF SCIENCE WHERE APPROPRIATE** | | | | | | | | |
| **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: Go for dustbin and pebbles***  ***Ask students to to throw the peble into the dustbin (for accuracy and precision)*** | | | | | | | | |
| ***Introductory Activity (15minutes) example***  *ii. Guilde learniners to duscuss the keywords in their mixed-groups*  ***Activity 1 (40 minutes)***   1. *Ask learners to present their results*   ***Activity 2 (40 minutes)***   1. *Share the characteristics of science among mixed-ability groups, to search for their appilication and discuss them with the group members* | | | ***Introductory Activity***  *ii. learners discussed keywords in their mixed groups*  ***Activity 1***   1. *Learners in their mixed groups present their results*   ***Activity 2***   1. *Search, discuss and present the characteritice of science, giving real-life application in your mixed ability group.* | | | | | |
| **Assessment DoK aligned to the Curriculum and Subject Teacher Manual**   1. ***Identify at least three areas where characteristics of science are applied*** 2. ***Explain how the characteristics of science are applied*** | | | | | | | | | |
| **Level 3: Strategic reasoning** | | | | | | | | | |
| **Lesson Closure**  ***In completing this part, refer to the Essential Questions to check that learning has taken place.*** | | | | | | | | | |
| ***Activity (15 minutes)***  ***In their group ask students to think pair-share the characteristics of how science can be applied in our daily lives*** | | | | | | | | | |
| **Reflection & Remarks** | | | | | | | | | |
| *There was a challenge with internet connectivity, this took a long time to access the internet for information* | | | | | | | | | |
| **Lesson 2**  **Theme /Focal area**  **Application Of The Characteristics Of Science Where Appropriate** | | | | | | | | |
| **Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual** | | | | | | | | |
| ***Teacher Activity*** | | | ***Learner Activity*** | | | | | |
| **Starter *Activity (5 minutes)***    ***Teacher: Ask learners to clap in unism for ten times***  ***Learners: clap in unism for ten consecutive times*** | | | | | | | | |
| ***Introductory activity (25 minutes)***   1. *Ask learners to write down in their mixed groups the characteritics of science*   ***Activity 1 (25 minutes)***  *Ask learners to search on the internet in their mixed group how the characteristics of science influence crop production.*  ***Activity 2 (25 minutes)***   1. *Ask students to present their findings to the class*   ***Activity 3 (40 minutes)***   1. *Take learners to a school farm to observe two plots of maize plants. One plot contain maize planted in line and the other plot contain maize plants which are not planted in line*   ***Note:***  ***Which plot contain the most number of maize plant?***  ***Which plot of maize plant are growing better?***  ***Activity 4 25minutes***  ***Ask learners to present their observations from their trip to the school farm*** | | | ***Introductory activity***  *Leearners in their mixed groups write down the characteritics of science*    ***Activity 1***  *Search and share how the characteristics of science affect crop production in their mixed groups*  ***Activity 2***   1. ***Learners in their mixed groups present their findings to the class***   ***Activity 3***   1. *Learners observed the two plots of maized plants and noted their observation.*   Activity 4  Leraners presented their observations on the plots of maize from their trip to the school farm to the class | | | | | |
| **Assessment DoK aligned to the Curriculum and Subject Teacher Manual** | | | | | | | | | |
| *Level 2: Explain how the characteristics of science are applied in agriculture.*  *Level 3: From your observation from the school farm, which way of planting will you recommend to a farmer and why?* | | | | | | | | | |
| **Lesson Closure**  ***In completing this part, refer to the Essential Questions to check that learning has taken place.*** | | | | | | | | | |
| *Using the inside –outside circle, learners share what they learned from the lesson with their colleagues. Offering opportunitites for clarification and correction.*  *Using the exit card ask learners to write down activities of science they learn.*  *Assign activities for the next lesson:* | | | | | | | | | |
| **Reflection & Remarks** | | | | | | | | | |
| *The lesson was successful however, the trip to the school fram took a lot of time.* | | | | | | | | | |