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| **Learning Planner** | | | | | | | |
| **Subject** | *General science* | **Week** | *2* | **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)** | Design projects using the characteristics of science | | | | | | |
| **Essential Question(s)** |  | | | | | | |
| **Pedagogical Strategies** | * *Collaborative learning* * *Demonstration* * *Project-based learning* | | | | | | |
| **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 sources* | | | | | | |
| **Key Notes on Differentiation** | | | | | | | |
| 1. *Learning task:*  * *Identify three steps involved in designing science projects* * *Describe how to design science-based projects using the characteristics of science. Design a science-based project using characteristics of science* * *Give an example of designing science-based projects where the characteristics of science can be identified, etc.*  1. *Pedagogical Exemplars:*  * *Provide videos, charts, diagrams, and pictures for learners on designing science-based projects using the characteristics of science in nature* * *In mixed-ability groups, learners discuss the step-by-step science characteristics used in videos, charts, diagrams, and pictures to design the project* * *Demonstrate how the characteristics of science (empiricism, systematic observation, objectivity, tentativity) are used in designing a project for the learners* * *In mixed-ability groups, provide hands-on experimentation for learners on characteristics of science. Allow learners to explain the characteristics of science demonstrated in the experiment. For example, an experiment to show the empirical nature of science* * *Learners present their findings from the experiment to the class for peer review or critique* * *Encourage learners to seek feedback from peers and teachers, iterate on their designs, and reflect on the iterative design process to enhance learning outcomes, etc.*  1. *Key Assessments (DOK):*  * *Level 2: Describe the characteristics of science when designing a scientific project* * *Level 3: Identify three characteristics of science and discuss how each can enhance the effectiveness of a scientific project's design* * *Level 4: Why is gathering and analysing data during the design process essential? Provide examples of how empirical evidence can influence design decisions, etc.* | | | | | | | |
| **Keywords** | Design, application, project, characteristics, etc. | | | | | | |

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| **Lesson 1** | |
| **Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual** | |
| ***Teacher Activity*** | ***Learner Activity*** |
| **Starter *Activity (10 minutes)*** | |
| ***Introductory Activity (15minutes)***      ***Activity 1 (40 minutes)***  ***Activity 2 (40 minutes)*** | ***Introductory Activity (15minutes)***      ***Activity 1 (40 minutes)***  ***Activity 2 (40 minutes)*** |
| **Assessment DoK aligned to the Curriculum and Subject Teacher Manual** | |
| **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)*** | |
| **Reflection & Remarks** | |
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| **Lesson 2** | |
| **Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual** | |
| ***Teacher Activity*** | ***Learner Activity*** |
| **Starter *Activity (10 minutes)*** | |
| ***Introductory activity (25 minutes)***      ***Activity 1 (25 minutes)***      ***Activity 2 (25 minutes)***      ***Activity 3 (25 minutes)*** | ***Introductory activity (25 minutes)***    ***Activity 1(30 minutes)***      ***Activity 2 (25 minutes)***  ***Activity 3 (25 minutes)*** |
| **Assessment DoK aligned to the Curriculum and Subject Teacher Manual** | |
| **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)*** | |
| **Reflection & Remarks** | |
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