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| **Learning Planner** | | | | | | | | |
| **Subject** | *General science* | **Week** | | *16* | **Duration** | *180 min* | **Form** | *SHS 1* |
| **Strand** | VIGOUR BEHIND LIFE | **Sub-Strand** | | Forces acting on substances and mechanisms | | | | |
| **Content Standard** | Recognize the various forms of forces and their effects on motions | | | | | | | |
| **Learning Outcome(s)** | Apply various forms of forces according to their effects on motions. | | | | | | | |
| **Learning**  **Indicator(s)** | Identify and explain concepts associated with forces | | | | | | | |
| **Essential Question(s)** | *Compare and contrast similarities and differences between acceleration and velocity using Venn diagram.*  *Are there any relationship between velocity, time, and acceleration?*  *What materials will be needed to demonstrate to learners the topic* Forces acting on substances and mechanisms. | | | | | | | |
| **Pedagogical Strategies** | * Collaborative learning * Talk-for-learning approaches * Demonstration * Think-pair share * Enquiry-based approach | | | | | | | |
| **Teaching & Learning Resources** | * Stop clocks/watches. * charts, pictures and models. * Bicycle wheels and pendulum bobs. * PHET Simulations * Pendulum bob * Balls (Volley, foot, basket, etc.), | | | | | | | |
| **Key Notes on Differentiation** | | | | | | | | |
| * Identify the concepts of forces. * Explain concepts associated with forces. * Use hands-on experiment to explain some concepts associated with forces such as frictional force..   + 1. Pedagogical Exemplars * Using the talk-for-learning approach, place learners in mixed-ability/mixed-sex groups to discuss the concepts of distance, displacement, speed, velocity and acceleration with contextual examples * Using the enquiry approach, guide learners to develop task sheets to explore real-life applications of the concepts: speed, displacement, velocity, and acceleration * Using the 3E approach, guide learners to engage, explore and explain concepts such as forces, momentum and pressure * Using differentiated learning and scaffolding, guide learners to explore the applications of the concepts of forces, Momentum and Pressure in real life, etc.  1. Key Assessment (DoK)  * When a carpet is beaten with a stick, dust emerges. Explain * Why is it advised to tie any luggage kept on the roof of a bus with a rope? * Why is the passenger(s) sitting in a moving bus pushed in the forward direction when the bus stops suddenly? | | | | | | | | |
| **Keywords** |  | | | | | | | |
| **Lesson 1**  **Identification and Explanation of Concepts Associated with Forces** | | | | | | | | |
| **Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual** | | | | | | | | |
| ***Teacher Activity*** | | | ***Learner Activity*** | | | | | |
| **Starter *Activity (10 minutes)***  ***Ask learners to sing the rhym; My head my shoulders….*** | | | | | | | | |
| ***Introductory Activity (15minutes)***  *Put learners in mixed-ability and mixed-gender groups.*  ***Activity 1 (40 minutes)***  *Ask learners to search the internet and note the following quantities with contextual examples.*  *Distance*  *Speed*  *Velocity*  *Acceleration*  ***Activity 2 (40 minutes)***  *Ask learners to discuss their findings in their groups.*  ***Activity 3 (40 minutes)***  *Guide learners in developing task sheets to explore real-life applications of the concepts of speed, displacement, velocity, and acceleration.* | | | ***Introductory Activity***  *Learners seated in their mixed-ability and mixed-gender groups.*    ***Activity 1***  *Search the internet and note the following quantities with contextual examples.*  ***Activity 2***  *Learners discuss their findings in their groups*  **Activity 3**  *Develop task sheets to explore real-life applications of speed, displacement, velocity, and acceleration.* | | | | | |
| **Assessment DoK aligned to the Curriculum and Subject Teacher Manual** | | | | | | | | |
| Level 1: Differentiate between acceleration and velocity. | | | | | | | | |
| **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.*  *Summarize the lesson highlighting the salient points.* | | | | | | | | |
| **Reflection & Remarks** | | | | | | | | |
| *Reflections*  *Remarks* | | | | | | | | |
| **Lesson 2**  **Identification and Explanation of Concepts Associated with Forces** | | | | | | | | |
| **Main Lesson drawing on Concepts, Skills and Competencies to reinforce as in the Subject Teacher Manual** | | | | | | | | |
| ***Teacher Activity*** | | | ***Learner Activity*** | | | | | |
| **Starter *Activity (10 minutes)***  ***Ask learners to sing the rhym; My head my shoulders….*** | | | | | | | | |
| ***Introductory activity (25 minutes)***  *I.Put learners in mixed-gender and mixed ability groups.*  *Review previous lesson by asking learners to explain the concept of acceleration, velocity, speed.*  ***Activity 1 (40 minutes)***  *I.In their mixed groups show a video of speed, displacement, velocity, and acceleration to learners.*  ***Activity 2 (25 minutes)***  *Guide learners to comprehend how to calculate acceleration of a body in their mixed groups*  ***Activity 3 (25 minutes)***  *I Ask learners to discuss in their mixed groups life application of the concept of displacement, acceleration, velocity and speed.*  *II.Ask learners to present their findings* | | | ***Introductory activity (25 minutes)***  *Learners seated in their mixed-gender and mixed ability groups*  *Learners explain acceleration, velocity and speed.*    ***Activity 1***  *Learners watch the videos and note down the various concepts*  ***Activity 2 (25 minutes)***  *Learners learn how to calculate acceleration of a body in their mixed groups*  ***Activity 3 (25 minutes)***  *Discuss in their mixed groups life application of the concept of displacement, acceleration, velocity and speed.*  *II..Learners present their finding* | | | | | |
| **Assessment DoK aligned to the Curriculum and Subject Teacher Manual** | | | | | | | | |
| Level 3: Explain two applications of force in real-life situations. | | | | | | | | |
| **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.*  *Summarize the lesson highlighting the salient points.* | | | | | | | | |
| **Reflection & Remarks** | | | | | | | | |
| *Reflection*  *Remarks* | | | | | | | | |