**MATHEMATICS LESSON PLAN**

**GRADE 8**

**TERM 1: January – March**

|  |  |
| --- | --- |
| PROVINCE: |  |
| DISTRICT: |  |
| SCHOOL: |  |
| TEACHER’S NAME: |  |
| DATE: |  |
| DURATION: | 1 Hour |

|  |
| --- |
| 1. **TOPIC: EXPONENTS:** Calculations using numbers in exponential form **(Lesson 7)** |
| 1. **CONCEPTS & SKILLS TO BE ACHIEVED:**   **By the end of the lesson learners should know and be able to :**   * recognise and use the appropriate laws of operations using numbers involving exponents and square and cube roots * perform calculations involving all four operations with numbers that involve squares, cubes, square roots and cube roots of integers |

|  |  |
| --- | --- |
| 1. **RESOURCES:** | Textbooks, DBE Workbook 1, Sasol-Inzalo Book 1 |
| 1. **PRIOR KNOWLEDGE** | * order of operations * squares and square roots of integers * cubes and cube roots of integers |
| 1. **REVIEW AND CORRECTION OF HOMEWORK** (suggested time: 10 minutes)   Homework provides an opportunity for teachers to track learners’ progress in the mastery of mathematics concepts and to identify the problematic areas which require immediate attention. Therefore it is recommended that you place more focus on addressing errors from learner responses that may later become misconceptions. | |
| 1. **INTRODUCTION** (Suggested time: 10 Minutes)  * Allow learners to quickly work out solutions to the Activity below. * Thereafter facilitate the discussion of solutions.   **Activity**   1. Simplify the following: 2. Calculate: 3. Determine: | |

|  |  |
| --- | --- |
| 1. **LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 20 minutes) | |
| **Teaching activities** | **Learning activities**  **Learners are expected to:** |
| * Lead learners to development of the concepts through the use of simple example as suggested in the activities below   **Activity 1**   * 1. Simplify:  1. 1. Which operations are first carried out in the above calculations?    2. What conclusions could be drawn from this observation?   **Note:**  We have to determine squares, cubes, square roots or cube roots before we can perform any basic operation  **Activity 2**   * 1. Simplify:   2. Use answers from 2.1 to answer the questions below  1. Is ? 2. Is ? 3. Is ? 4. Is ?    1. What conjectures could be drawn from the above observations?   **Note:**The following conjectures can be made from Activity 2:  Learners may be told that the above is also true for cube roots. They may investigate this as homework using calculators.  **Activity 3**  Calculate:  **NB:**Draw learner attention to the fact that once squares, cubes, square roots or cube roots have been converted to numbers, the order of operation applies. | * do each activity either as individuals or small groups * participate in discussions * make conjectures * write summary of conlusions drawn during the activities |
| 1. **CLASSWORK** (Suggested time: 15 minutes) | |
| Simplify the following:   1. 32 2. ()2(798)0 3. 52 4. )22 5. 0 | |

|  |
| --- |
| 1. **CONSOLIDATION/ CONCLUSION & HOMEWORK** (Suggested time: 5 minutes) |
| 1. **Emphasise:**  * the difference and relationships between squares, square root, cubes and cube roots * manipulations of squares, square root, cubes and cube roots in the context of order of operations * misconceptions as they arise  1. The primary purpose of Homework is to give each learner an opportunity to demonstrate mastery of mathematics skills taught in class. Therefore Homework should be purposeful and the principle of ‘Less is more’ is recommended, i.e. give learners few high quality activities that address variety of skills than many activities that do not enhance learners’ conceptual understanding.   Carefully select appropriate activities from the Sasol-Inzalo Books, DBE workbooks and/or textbooks for learners’ homework. The selected activities should address different cognitive levels.  **Homework**   * Simplify:    * Sasol-Inzalo Book 1: Page 70-71, No.1- 6 * DBE Workbook 1: Page 52- 53 |