**MATHEMATICS LESSON PLAN**

**GRADE 8**

**TERM 1: January – March**

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

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| 1. **TOPIC: EXPONENTS:** Calculations using numbers in exponential form **(Lesson 8)** |
| 1. **CONCEPTS & SKILLS TO BE ACHIEVED:**   **By the end of the lesson learners should know and be able** **to** calculate the squares, cubes , square roots and cube roots of rational numbers |

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| 1. **RESOURCES:** | Textbooks, DBE Workbook 1, Sasol-Inzalo Book 1 |
| 1. **PRIOR KNOWLEDGE** | * squares, square roots, cubes, cube roots * rational numbers |
| 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)  * Do mental Maths on squares, square roots, cubes and cube roots * For Activity 2, revise identification and definition of rational numbers * For Activity 3, revise multiplication and division of rational numbers   **Activity 1**  Simplify the following:   |  |  | | --- | --- | |  | d. | | b. 72 | e. | | c. 53 | f. (0,5)2 |   **Activity 2**  State whether each number below is rational or not, if not justify your answer  ;    **Activity 3**  Simplify: | |

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| 1. **LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 20 minutes) | |
| **Teaching activities** | **Learning activities**  **Learners are expected to:** |
| * an investigative approach is recommended. * give activities on calculating squares and square roots, cubes and cube roots of rational numbers * engage learners as this is an interactive lesson.   **Examples of calculating squares of rational numbers**      Let the learners compare No. 3 with No. 4  **Examples of calculating square roots of rational numbers**      **Note**: = [converting decimal fraction to a common fraction]  But  Guide learners towards the conclusion that the square root of the quotient is equivalent to quotient of squareroots.  That is,  **More Examples**  The same approach is used in developing calculations on cubes and cube roots of rational numbers      **Note**:      **Note**: = =   1. (0,5)3 = 0,5 0,5 0,5= 0,125   Compare (0,5)3 with  **Note** = 0,5  Compare with  **N.B:** Also guide learners towards the conclusion that the cube root of the quotient is equivalent to quotient of cube roots.  That is, . | * do examples as individuals or in pairs * compare answers and solutions * make conjectures * discuss their conjecture * summarise observations. |
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| 1. **CLASSWORK** (Suggested time: 15 minutes) |
| |  |  |  | | --- | --- | --- | | Evaluate: | | | | 3. (0,9)2 | 1. (0,6)3 |  | |
| 1. **CONSOLIDATION/ CONCLUSION & HOMEWORK**(Suggested time: 5 minutes) |
| 1. **Emphasise that:**     * where and are positive integers    * where and are integers    * Misconceptions with squares, square roots, cubes, cube roots of rational numbers 2. 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**   * Sasol-Inzalo Book 1: Page 71 - 72 No. 2 & 3 ; page 73, No. 1 & 2 * DBE Workbook 1: Page 54 - 55 |