**MATHEMATICS LESSON PLAN**

**GRADE 9**

**TERM 1: January – March**

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

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| 1. **TOPIC: ALGEBRAIC EQUATIONS:** Solve equations using laws of exponents **(Lesson 3)** |

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| 1. **CONCEPTS & SKILLS TO BE ACHIEVED:**   **By the end of the lesson learners should know and be able to** solve equations by using laws of exponents |

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| 1. **RESOURCES:** | DBE Workbook 1, Sasol-Inzalo book 1. |
| 1. **PRIOR KNOWLEDGE:** | * addition, subtraction, multiplication and division of integers * simplifying algebraic expression * multiplication table up to at least 12 × 12 * exponents * solving equations (Lesson 2) |
| 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)   **Laws of exponents**   * The laws of exponents should be introduced through a range of numeric examples first, then variables can be used. * The following laws of exponents should be known and used in solving equations involving exponents. In the table below,and are integers and and are not equal to **0**:  |  |  | | --- | --- | |  |  | | **Examples** | | | a) | a) | | b) | b) | |  |  | | **Examples** | | |  |  | |  |  | | **Examples** | | |  |  | |  |  |  * Make sure learners understand these laws reading from both sides of the equal sign i.e. if the LHS = RHS, then the RHS = LHS | |

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| 1. **LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 20 minutes) | |
| **Teaching activities** | **Learning activities**  (Learners are expected to:) |
| **Activity 1**   1. Complete the following table. (Calculators may not be used)  |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | 2 | 3 | 4 | 5 | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  |  1. Solve for and give a reason   because  because  **Activity 2**  Solve for      write the constant in the same base as the term with exponent  equate the exponents ( only if the bases are the same)                        **Note:** In the examples above, we can equate the exponents because the two numbers are equal only when they are raised to the same power.  Solve for | * complete the table working in pairs * respond to probing questions from the teacher * work individually solving equations involving exponents * use laws of exponents to solve the equations involving exponents * share and discuss their responses in pairs |

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| 1. **CLASSWORK** (Suggested time: 15 minutes)   Sasol-Inzalo book 1 page 153 No. 1(b), page 154 No. 2(c) and (f), page 155 No. 2 (b) and (d) |

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| 1. **CONSOLIDATION/CONCLUSION & HOMEWORK (Suggested time: 5 minutes)** |
| 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 book 1, DBE workbooks and/or textbooks for learners’ homework. The selected activities should address different cognitive levels.  **Homework:** Sasol-Inzalo book 1, page 153 No. 1 (a), (c), (d) and (f). Page 154 No. 2 (c) and (f). |