**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: EXPONENTS:** Comparing and representing numbers in exponential form **(Lesson 1)** |
| 1. **CONCEPTS & SKILLS TO BE ACHIEVED:**   **By the end of the lesson learners should know and be able to:**   * compare and represent integers in exponential form * compare and represent numbers in scientific notation * extend scientific notation to include negative exponents |

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| 1. **RESOURCES:** | Textbooks, DBE Workbook 1, Sasol-Inzalo Book 1 |
| 1. **PRIOR KNOWLEDGE:** | * exponential form * multiplication and division of rational numbers by powers 10. * scientific notation limited to positive exponents |
| 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. | |
| **6. INTRODUCTION** (Suggested time: 10 Minutes) | |
| **Baseline Assessment:** Revise with learners their knowledge of writing numbers in exponential form  using the following:   1. Write the following in exponential form:   **NB:** For example, This number is read as ‘2 to the power 4’, where 2 is called the base and 4 is called the exponent. The exponent indicates the number of factors that are multiplied. The factors multiplied are represented by the base. Emphasize that: and. Therefore   1. Simplify the following: 2. Write the following numbers in scientific notation 3. 3 347 4. 334 700 | |

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| **7.LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 20 minutes) | |
| **Teaching activities** | **Learning activities**  **(Learners are expected to:)** |
| * Divide learners into groups and present activities based on scientific notation * Clarify the concepts by providing appropriate examples like the ones that follow:   Examples of how to convert a number to scientific notation  Example 1:          Example 2:         * Any number can be written in scientific notation, for example   and  **Note:**   * Scientific notation is a way of writing very small and very large numbers as a product of a rational number and a power of 10 * A number in scientific notation is written as the product of two numbers, in the form where is a decimal number between 1 and and is an integer.   **ACTIVITY:**  Arrange learners in small groups and let them write the following numbers in scientific notation. Facilitate the discussions after each question has been attempted.   1. 178 2. 372 000 000 3. 0,000 000 78   **SOLUTION TO THE ACTIVITY**   1. 372 000 000 = 2. 0,000 000 78 =   **NB**: Ensure that learners can also write numbers presented in scientific notation as ordinary numbers. Example: | * discuss in their groups how to write numbers on the given activity in scientific notation or as an ordinary number * share their solutions with the whole class. * write homework and classwork |

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| **8. CLASSWORK** (Suggested time: 15 minutes) |
| * Sasol-Inzalo Book1 page 83, No.1 (a) – (d) & 2 (a) – (d) * GR. 9DBE Workbook 1: page 55, No. 3 (a) – (c) |
| **9. CONSOLIDATION/CONCLUSION & HOMEWORK** (Suggested time: 5 minutes) |
| 1. A number written in scientific notation is written as the product of two numbers, in the form where is a decimal number between 1 and 10 and is an integer. 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 Book 1, DBE workbook 1 and/or textbooks for learners’ homework. The selected activities should address different cognitive levels.  **Homework**   * GR. 9 DBE Workbook 1: page 55, No. 3 and 4 * Sasol-Inzalo Book1: page 83, No. 1 (e) – (f) and 4 |