**MATHEMATICS LESSON PLAN**

**GRADE 7**

**TERM 1: January – March**

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

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| 1. **TOPIC: WHOLE NUMBERS: Calculation techniques (Lesson 5)** |

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| 1. **CONCEPTS & SKILLS TO BE ACHIEVED:**   **By the end of the lesson, learners should be able to do:**   * Estimation * Addition, subtraction and multiplication in columns * Long division * Rounding off and compensating * Using a calculator |

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| 1. **RESOURCES:** | Ssol-Inzalo Book, DBE workbook 1, Textbooks |
| 1. **PRIOR KNOWLEDGE:** | * Addition and subtraction of whole number to at least 6 – digits * Multiplication of at least whole number 4 – digit by 2 – digit number * Division of at least whole 4 – digit by 2 – digit numbers * Perform calculation using all operations on whole 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. | |

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| 1. **INTRODUCTION** (Suggested time: 10 Minutes)   Revise the concepts using Mental maths type questions to include:   * estimation * rounding off and compensating * multiplication tables up to   Example: |

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| 1. **LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 20 minutes) | |
| **Teaching activities** | **Learning activities**  (Learners are expected to: |
| Group learners into small groups. Give them activities like the ones below to work out.  **Activity 1**  Calculations:  **Estimation, rounding off and rounding off and compensating**:  The teacher instructs learners to try to give answers the answers without doing any calculations with the given numbers.  1. (a) Is more than 3 000 or less than 4 000?  (b) Is more than 5 000o r less than 6 000?  (c) Is more than 30 000 or less than 40 000?  NB: Calculators may be used when Learners check the solutions and when calculating big and unwieldy calculations  The teacher leads the discussion ensuring maximum participation and guiding learners. The teacher wraps up the activity by informing the learners that what they did when they gave the answers to the above is called estimation. To estimate is to try to get close to an answer without actually doing the required calculations with the given numbers | Learners first think about the answers individually and then discuss their answers in pairs. They justify their answers. |
| The whole class engages in the discussion. |
| **Activity 2**   1. Ask learners to use calculators to find the exact answers for the   calculations in activity 1a – c | Learners use calculators to find the exact answers to activity 1. |
| 2. Let them calculate the **error** in their approximation of each of the  answers in question 1.  Explain to learners that the difference between an estimate and the  actual answer is called the **error**. Calculating with “easy” numbers that  are close to the given numbers is a good way to obtain approximate  answers, for example:  To approximate 764 + 829 one may calculate 800 + 800 to get the  approximate answer1 600, with an error of 7. | Learners calculate the difference between the estimated answer and the calculated answer. |
| 3. Copy and complete the following table   |  |  |  |  | | --- | --- | --- | --- | |  |  | Estimate (without a calculator | Check using a calculator | | 4.1 |  |  |  | | 4.2 |  |  |  | | 4.3 |  |  |  | | 4.4 |  |  |  | | 4.5 |  |  |  |   **Basic Operations:**  Activity 3  **Let learners do context free calculations and solve problems in contexts**  Explain that numbers can be added or subtracted by thinking of their **parts** as we say the numbers in words. For example, we say 5 878 as *five thousand eight hundred and seventy-eight*.  This can be written in expanded notation as 5 000 + 800 + 70 + 8.  Similarly, we can think of 47 549 as 40 000 + 7 000 + 500 + 40 + 9.  47 549 + 5 878 can be calculated by working with the various kinds of parts separately. To make this easy, the numbers can be written below each other so that the units are below the units, the tens below the tens and so on.   1. Let learners use the column method to calculate the following: 2. 2 356 + 67 554 + 34 555 3. 56 185 – 23 498 4. 161 x 25 5. Let learners use the long division method to solve the following first as individuals and then ask for feedback. Give them a chance to explain their thinking and give support if necessary: 6. Graham bought 64 goats, all at the same price. He paid R5 440 in total. What was the price for each goat?   Calculations are done on the board and learners compare their answers. Errors and misconceptions get cleared up as far as possible | Learners do calculations and mark along with the teacher in order to check their methods  Learners work on the given problems as individuals and share their solutions with the whole group. |

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| 1. **CLASSWORK** (Suggested time: 15 minutes |
| 1. Calculate the following **without the use of a calculator** |

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| 1. **CONSOLIDATION/CONCLUSION & HOMEWORK (Suggested time: 5 minutes)** |
| 1. Emphasis that:  * calculators may be used when learners check the solutions and when calculating big and awkward calculations  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, workbooks and/or textbooks for learners’ homework. The selected activities should address different cognitive levels.  **Recommended Homework**:    b) |