**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: WHOLE NUMBERS:** Properties of whole numbers (Lesson 2) |
| 1. **CONCEPTS & SKILLS TO BE ACHIEVED:** |
| Learners should know and be able to use:   * Calculation techniques done in Lesson 2 * Learners should be able to use a range of strategies to perform and check written and mental calculations with whole numbers including: * estimation * adding, subtracting and multiplying in columns * long division * rounding off and compensating * using a calculator |

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| 1. **RESOURCES:** | Textbooks, DBE Workbook, Sasol-Inzalo books, Calculator | |
| 1. **PRIOR KNOWLEDGE:** | Calculation techniques done in Grade 8 | |
| 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) | | |
| **Revise work done in grade 8:**   * Calculations with all four operations on whole numbers, estimating and using calculators where appropriate * Clarify the concept of estimation and approximation   **Estimation:** means to try to get close to an answer without actually doing the calculations.  **Approximate:** means to try to find out more or less how much it is, without measuring or calculating it precisely.  **Example 1**  A shop owner wants to buy chickens from a farmer. The farmer wants R38 for each chicken. Answer the following questions without doing written calculations.  (a) If the shop owner has R10 000 to buy chickens, do you think he can buy more than 500 chickens?  (b) Can he buy more than 200 chickens?  (c) Can he buy more than 250 chickens?  **Example 2**  In each case, estimate the total cost by rounding off to calculate the approximate cost, without using a calculator. In each case make two estimates. First make a rough estimate by rounding the numbers off to the nearest 100 before calculating. Then make a better estimate by rounding the numbers off to the nearest 10 before calculating.  (a) 83 goats are sold for R243 each.  (b) 121 chairs are sold for R258 each. | | |
| 1. **LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 20 minutes) | | |
| **Teaching activities** | | **Learning activities**  (Learners are expected to:) |
| **Adding in columns (Pg. 9 Sasol Inzalo book)**  Do examples below with learners  (a) Write 8 000 + 1 100 + 130 + 14 as a single number:  (b) Write 3 000 + 700 + 50 + 8 as a single number:  (c) Write 5 486 in expanded notation, as shown in 1(b).  3 758  5 486  9 244 | | Follow the activity and use calculators to check answers. |
| **Subtracting in columns (Pg. 12 Sasol Inzalo book)**  8 432 − 3 957 can be calculated as shown below.  8 432  − 3 957  Step 1 5  Step 2 70  Step 3 400  Step 4 4 000  Step 5 4 475  In step 1, the 7 of 3 957 is subtracted from 12.  To do the subtraction in each column, you need to think of  8 432 as 8 000 + 400 + 30 + 2, in fact you have to think of it as 7 000 + 1 300 + 120 + 12. | | respond to questions below   1. How is the 70 in step 2 obtained? 2. How is the 400 in step 3 obtained? 3. How is the 4 000 in step 4 obtained? 4. How is the 4 475 in step 5 obtained? |
| **Multiplying in columns( Pg. 11 Sasol Inzalo book)**  (a) Write 3 489 in expanded notation:  (b) Write an expression without brackets that is  equivalent to 7 × (3 000 + 400 + 80 + 9):  3 489 Short method  x 7  63 = 9 x 7 **OR**  560 = 80 x 7 3 489  2 800 = 400 x 7 x 7  21 000 = 3000 x 7 24 423  24 423 | | Work out the answers using both methods and each Learner chooses the best method he/she can use. |
| **Long Division ( Pg. 14 Sasol Inzalo)**  Study this method for calculating  236    **OR 11 200**  2 054  1 680  374  336  38    (200 is a rough estimate of the answer for )  (2 054 remains after 11 200 is taken from  (30 is a rough estimate of the answer for )  (374 remains after 1 680 is taken from )  (6 is an estimate of the answer for )  (38 remains)  **Rounding off and compensating**   1. Estimate each of the following by rounding off the numbers to the nearest 100. 2. 812 – 342 3. 2 342 – 1 876   Answer:   1. 800 – 300 = 500 2. 2 300 – 1 900 = 400 3. Find the exact answer for each of the calculations in question 1, by working out the errors caused by rounding and compensating for them. 4. 800 – 300 = 500   500 + 12 = 512  512 – 42 = 470   1. 2 300 – 1 900 = 400   400 + 42 = 442  442 + 24 = 466 | | Follow the method so as to calculate answers on long division.  Follow the method so as to round off and compensate. |

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| 1. **CLASSWORK** (Suggested time: 15 minutes) |
| 1. Liesbeth starts a savings account by making a deposit of R40 000. Over a period of   time she does the following transactions on the savings account:   * a withdrawal of R4 000 * a withdrawal of R2 780 * a deposit of R1 200 * a deposit of R7 550 * a withdrawal of R5 230 * a deposit of R8 990 * a deposit of R1 234   How much money does she have in her savings account now?   1. Use column method to multiply |
| 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 books, workbooks and/or textbooks for learners’ homework. The selected activities should address different cognitive levels.  **Recommended Homework**   1. A municipality has budgeted R85 000 for putting up new street name boards. The   Street name boards cost R72 each. How many new street name boards can be put up  and how much money will be left in the budget?   1. Use column method to multiply |