**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: INTEGERS : Calculations with integers(lesson 1)** |
| 1. **CONCEPTS & SKILLS TO BE ACHIEVED:**   **By the end of the lesson learners should know and be able to perform calculations involving all four operations with integers.** |

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| 1. **RESOURCES:** | Textbooks, DBE Workbook 1, Sasol-Inzalo Boo1 |
| 1. **PRIOR KNOWLEDGE:** | * basic calculations with integers done in Grade 8 * order of operations * properties of 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. | |
| 1. **INTRODUCTION** (Suggested time: 10 Minutes) | |
| Remind learners how to calculate integers using the following examples:  because  Adding a negative number is the same as subtracting the additive inverse of that number.  because  Subtracting a negative number is the same as adding the additive inverse of that number  because  The product of a positive number and a negative number is a negative number.  Numbers such as −7 and −500, the additive inverses of whole numbers 7 and 500, are included with all whole numbers and are called integers. When a larger number is subtracted from a smaller number, the answer may be a negative number: 5 − 12 = −7, and this number is called negative 7 | |

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| 1. **LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 20 minutes) | |
| **Teaching activities** | **Learning activities (Learners are expected to:)** |
| ADDITION AND SUBTRACTION OF NEGATIVE NUMBERS  Group learners in pairs. Give them activities like the one below to work out and find the answer.  Examples:  (–5) + (–3) and (–20) – (–7)  Discussion:  This is done in the same way as the addition and subtraction of positive numbers.  (–5) + (–3) = –8 and –20 – (–7) = –13. Ask learners probing question like  “Is there another way that the example above can be written”?  Read the statement same way as the addition and subtraction of whole numbers.  This is same as 5 + 3 = 8 and 20 – 7 =13, or R5 + R3 = R8,  and R20 – R7 = R13  Give learners the following sums to practicesame way as the additionand subtraction of whole number and ask them to write them in another way and then add them  Activity:   1. (–15) + (–20 2. (–4) + (–5)   CALCULATION WITH INTEGERS.  Give the activity like the one below. Ask learners to do calculation**.** Dividelearners into groups**.**  Activity:   1. b)  c)     Ask learners to present their answer and engage in a whole class discussion allowing them to demonstrate how they got the answers. Explain the position negative numbers on the number line and reminding them about the position of integer on the number system.  PROPERTIES OF INTEGERS  Explain the properties of integers on p 29 Sasol Inzalo Book 1. Give the activity to support the properties of integers.  Activity: In each case, state what number will make the equation true? Also state which of the properties of integers in the table on p 29 Sasol-Inzalo Book 1, is demonstrated by the equation.         SUBTRACTION WITH INTEGERS  Ask learners to do the following activity:   1. b)c)   **MULTIPLICATION WITH INTEGERS**  Explain that “multiplication is the repeated addition”with the following example to enhance learner understanding.  Example:    Write the following activity on the board and ask learners to work it out in their working book.  Actiivity:        DIVISION WITH INTEGER.  Do the following problems with learners:  a) (−35) ÷( 5)  b) (−60) ÷ (–3)  Explain and demonstrate the following statements.   * The quotient of a positive number and a negative number is a negative number. * The quotient of two negative numbers is a positive number   Example:  dividand  quotient    Divisor  Give the following sums and ask learners to work out to find the quotient.  Sasol Inzalo p 36 no. 1 (b) and 1 (d), no. 2 d and 2 (f)  MIXED CALCULATION WITH INTEGERS  Do the following activity with the learners leading them with questions to clear up misunderstanding  Example | * work out the activity in pairs and give feedback      * write the answers in their exercise book * work out the answers in group and give feedback. * work out the first two (a) and (b) to make sense and understanding. * work out the sum and share their solutions with the whole class. * write the example in their notes book. * actively engaged in the discussion * listen and write all the facts in their notes book to use for assisting them to work out class/ home work. * actively engaged in the discussion |

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| 1. **CLASSWORK** (Suggested time: 15 minutes) |
| **Sasol-Inzalo book 1 p 36 no. 1(a )– (d) and no. 2(a) – (c)** |
| 1. **CONSOLIDATION/CONCLUSION & HOMEWORK** (Suggested time: 5 minutes) |
| 1. **Emphasise that**:  * When a number is added to its additive inverse, the result is 0.   For example,   * Adding a negative number has the same effect as subtracting its additive inverse.   For example, 3 + (–10) can be calculated by doing 3 – 10, and the answer is –7.   * Subtracting a negative number has the same effect as adding its additive inverse. For example, 3 – (–10) can be calculated this way . * The product of a positive and a negative number is a negative number. For example, (–15) × 6 = –90.  1. Homework:     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.  **Sasol-Inzalo Book 1 p 36 (division with integers no. 2(e) to (h) and**  **( mixed calculations) no. 2 (a) to (e)** |