**MATHEMATICS LESSON PLAN**

**GRADE 9**

**TERM 1: January – March**

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

|  |
| --- |
| 1. **TOPIC: FUNCTIONS AND RELATIONSHIPS-** EQUIVALENT FORMS (Lesson 3) |
| 1. **CONCEPTS & SKILLS TO BE ACHIEVED:**   **By the end of the lesson, learners should know and be able to :**   * determine, interpret and justify equivalence of different descriptions of the same relationship or rule presented * by formula * by graphs on the Cartesian Plane |

|  |  |  |
| --- | --- | --- |
| 1. **RESOURCES:** | Textbooks, DBE Workbook, Sasol-Inzalo book, Graph paper | |
| |  |  | | --- | --- | | **4.PRIOR KNOWLEDGE:** | * number patterns * operations with:   - integers  - natural numbers  - rational numbers   * substitutions * ordered pairs * Cartesian plane | | | |
| 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)   **Activity 1**   1. Complete the flow diagram below.   \_\_\_\_\_\_  \_\_\_\_\_\_ 5  \_\_\_\_\_\_   1. Complete the table for the function described by .  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  | | | |
| 1. **LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 25 minutes) | | |
| **Teaching activities** | | **Learning activities ( Learners are expected to:)** |
| Group learners into small groups.  **Activity 1**   1. Complete the following flow diagram   Input values  Output values        -2  -1  0  1  2  3  **\_\_\_\_\_**  **\_\_\_\_\_**  **\_\_\_\_\_**  **\_\_\_\_\_**  **\_\_\_\_\_**  **\_\_\_\_\_**  **\_\_\_\_\_**  -3              (b) Write the algebraic formula.  (c) Complete the table below for the given rule.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Input value (x) | -3 | -2 | -1 | 0 | 1 | 2 | 3 | | Output value (y) |  |  |  |  |  |  |  | | Ordered pairs |  |  |  |  |  |  |  |   (d) Draw the graph on a graph paper provided  **Activity 2** | | * engage in group discussions to determine the output values * write the algebraic formula * complete the table and write all the ordered pairs after completing the table * draw the graph * Learners work in pair to work out the activity and present their answers. They write the values on the Cartesian Plane for both horizontal and vertical lines. |
| Consider the following graph:  y-axis   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  | 2 |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  | 1 |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  1. Complete the following table by reading off the coordinates of points on   the graph   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  | -2 | -1 | 0 | 1 | 2 | 3 | |  |  |  |  |  |  |  |  1. Write down an algebraic formula for the graph in the form y...   Ask learners to present their responses and engage in a whole class discussion. Show them how to read the ordered pairs from the graph. | |

|  |  |  |
| --- | --- | --- |
| 1. **CLASSWORK** (Suggested time: 10 minutes) | | |
|  | | |
| Sasol-Inzalo Workbook | DBE Workbook | Textbook |
| Pg 107 No.2, 5 and 7 |  |  |
| 1. **CONSOLIDATION/CONCLUSION & HOMEWORK** (Suggested time: 5 minutes) | | |
| Emphasise that:   * Formula / rule can be written in two ways * Verbal formula : output value = 2 input value * Algebraic formula : output value = * When plotting the graph, the input values are represented by and output values are represented by.   Homework: Choose suitable activities from Sasol-Inzalo workbook(pg 107 No. 1,3,4 and 6) | | |