**MATHEMATICS LESSON PLAN**

**GRADE 8**

**TERM 1: January – March**

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

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| 1. **TOPIC: FUNCTIONS & RELATIONSHIPS:** Input and output values (Lesson 2) |
| 1. **CONCEPTS & SKILLS TO BE ACHIEVED:**   **By the end of the lesson, learners should know and be able to:**   * determine the input values, output values or rules for patterns and relationships using tables. |

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| 1. **RESOURCES:** | Textbooks, DBE Workbook, Sasol-Inzalo book | |
| 1. **PRIOR KNOWLEDGE:** | * substitution * number patterns * operations with : * integers * natural numbers * rational 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)   Learners must do the following activity individually on a piece of paper.    **Activity**   1. Choose a number from 1 to 9 2. Add 5 to your number 3. Multiply your answer by 6 4. Divide your answer by 2 5. Subtract 15 from your answer 6. Divide your answer by the number you chose in 1. 7. Share your answers and make conclusion   **Note:** The activity above can be represented in a number sentence as follows where is the number chosen in 1:  Highlight to the learners that the number they chose is the input value – represented by ***x*** above and the answer they got (**3**) is the output value. | | |
| 1. **LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 20 minutes) | | |
| **Teaching activities** | | **Learning activities**  (Learners are expected to:) |
| **Examples**  Divide learners into smaller groups informed by the number that they chose initially to do the following activity. The group must comprise of learners who chose different numbers (input):  **Activity 1**   1. Use your input and output values from the previous activity to draw a flow diagram. 2. Complete the following table for the input that are applicable to your group. | | * draw the flow diagram |
| |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Input () | 1 | 2 |  | 4 |  | 6 | 7 |  | 9 | | Output () |  |  | 3 |  |  |  |  |  | 3 | | | * complete the table |
| **Note:**  The relationship between input and output values can be represented in both the flow diagram and the table (as seen above). The instructions for the game represent the rule.  **Activity 2**   * 1. If the rule for finding in the table below is: , find the values for the given values:  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | () | 0 | 1 | 2 | 5 | 10 | 50 | 100 | | () |  |  |  |  |  |  |  |  * 1. If the rule for finding in the table below is:   , find the values for the given values:   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | () | 0 | 1 | 2 | 5 | 10 | 50 | 100 | | () |  |  |  |  |  |  |  |   **Activity 3**  Describe the relationship between the numbers in the top row and bottom row in the tables below. Write down the rule and then the value of and .  3.1   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | () | 1 | 2 | 3 | 4 |  | 12 |  | | () | 5 | 6 | 7 | 8 |  |  | 34 |   Description: ………………..  Rule is ……………; ……..; ……….  3.2   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | () | -2 | -1 | 0 | 1 | 2 |  | 12 |  | | () | -5 | -4 | -3 | -2 | -1 |  |  | 34 |   Description: ………………..  Rule is ……………; ……..; ………. | | * Complete the table |
| **Activity 4**  Copy and complete the following table:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  |  | | | | | |  | -3 | -2 | -1 | 1 | 6 | |  |  |  |  |  |  | |  |  |  |  |  |  | |  |  |  |  |  |  | |  |  |  |  |  |  | | |  |

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| 1. **CLASSWORK** (Suggested time: 15 minutes) | | |
| 1. Describe the relationship between the numbers in the top row and bottom row in the tables below, write down the rule and then the value of and .  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | () | -3 | -2 |  | 0 | 1 | 2 | | () | -1 | 0 | 1 | 2 | 3 |  |   Description: ………………..  Rule is ……………; ……..; ……….   1. Copy and complete the table.  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  |  | | | | | |  | -3 | -2 | -1 | 1 | 5 | |  |  |  |  |  |  | |  |  |  |  |  |  | |  |  |  |  |  |  | |  |  |  |  |  |  | |  |  |  |  |  |  | | | |
| 1. **CONSOLIDATION/CONCLUSION & HOMEWORK (Suggested time:5 minutes)** 2. **Emphasise that**:  * the multiplication sign ) may be omitted e.g. instead of writing the learners may   write only.   * the input, output values or rules for patterns and relationships can be represented,   calculated or described using tables.   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. The selected activities should address different cognitive levels. | | |
| **Homework:** | | |
| Sasol-Inzalo book | DBE Workbook | Textbook |
| Pg 103 no. 1 a,b,c | Pg 61 no 3(b) |  |