**MATHEMATICS LESSON PLAN**

**GRADE 7**

**TERM 3: July – September**

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

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| 1. **TOPIC: FUNCTIONS AND RELATIONSHIPS:** Input and output values **(Lesson 1)** |
| 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 and rules for patterns and relationships using flow diagrams**.** |

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| 1. **RESOURCES:** | Textbooks, DBE Workbook 2, Sasol-Inzalo book 2. |
| 1. **PRIOR KNOWLEDGE:** | * functions and relationships * patterns * substitution |
| 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)   Note: The focus of Functions and Relationships in this term is on using **formulae**.    Activity.    Learners in groups must select the correct formula for each of the shapes in the table below:   |  |  |  | | --- | --- | --- | | **2- D SHAPE** | **FORMULA** | | |  | **PERIMETER** | **AREA** | | 1. Square |  |  | | 1. Rectangle |  |  | | 1. Triangle |  |  | |  |  |  |      1. Select and match the correct formula for the shapes on the table above. 2. A square has a side of . Select the formula of calculating the area of a square from the table above and calculate its area. 3. Identify the input and the output values in the above calculation.   Input ? Output ? | |

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| 1. **LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 20 minutes) | |
| **Teaching activities** | **Learning activities**  (Learners are expected to :) |
| Divide learners into small groups to answer the following questions which are based on the introductory activity.  **Activity 1**  Draw the flow diagram and calculate the area of the square when the side is:   1. Doubled 2. Tripled 3. 4 times longer   Solutions   1. Flow diagram   Area of a square (in m2)    NB: Formula to flow diagram.  25  5  100  10  A =  225  15  4000  20  **NB**: - the input, output values or rules for patterns and relationships can be represented, calculated or described using tables. | work in groups to find areas of different lengths of the sides of the square and then draw a flow diagram.  Share their work with the class. |
| Give these activities to learners to work in pairs.  **Activity 2**  Calculate the following   1. For the formula y = 2+4:   If = 1, then y =    If = 2, then y =    If = 3, then y =    If = 12, then y = | In pairs learners substitute with the given values of to the given formula to find the values of. |
| **Activity 3**  A taxi driver charges passengers two amounts. First, there is a fixed amount of . Then, he charges per kilometre. The taxi driver uses the formula = 15 + 2,5 to work out how much to charge his passengers. In this formula, is the kilometres travelled.   1. Draw a flow diagram to show what Nosipho will pay if she travels 2, 5 and 8 respectively. 2. A passenger pays for a trip. How far did he travel?     **N.B:** the values which are substituted in the formula are input values and the answers are the output values. | (Group work)  Find the values of other variables using the example provided by the teacher. |

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| 1. **CLASSWORK** (Suggested time: 15 minutes) |
| DBE Workbook 2, page 19 number 3(a) – (e) |
| 1. **CONSOLIDATION/CONCLUSION & HOMEWORK** (Suggested time: 5 minutes) |
| 1. **Emphasise that:**   the values which are substituted are input values and the answers are the output values.   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.  The teachers discuss common errors and misconceptions picked up during the classwork and highlight the correct procedures. E. g. learners might have made errors and mistakes in the process of substituting values especially the substitution of negative numbers.  **Recommended Homework:** |
| DBE Workbook 2, Pg. 19 No. 3(f) – (h) |