**MATHEMATICS LESSON PLAN**

**GRADE 7**

**TERM 3: July – September**

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

|  |
| --- |
| 1. **TOPIC: ALGEBRAIC EQUATIONS**: Number Sentences **(Lesson 4)** |

|  |
| --- |
| 1. **CONCEPTS & SKILLS TO BE ACHIEVED: Number Sentences/Equations**   **By the end of the lesson, learners should know and be able to** identify variables and constants in given formulae or equation |

|  |  |
| --- | --- |
| 1. **RESOURCES:** | DBE workbook 2, Sasol-Inzalo book 2, Textbooks |
| 1. **PRIOR KNOWLEDGE:** | * Writing number sentences to describe problem situations * Analyse and interpret number sentences that describe a given situation * Solving number sentences * Basic operations |
| 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) | |
| Given learners a problem statement and are required to change it to a number sentence.  Twice a number increased by four is equal to 6.  Solution:    The above numerical statement is called the number sentence or an equation. | |

|  |  |
| --- | --- |
| 1. **LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 20 minutes) | |
| **Teaching activities** | **Learning activities**  (Learners are expected to:) |
| Explains the meaning of an equation giving appropriate examples like the one below.  An **equation** is the statement of an equality containing one or more unknowns. These unknowns are called variables. Variables may be represented by letters of alphabets e.g. . In an equation the left hand side (LHS) must always be equal to the right hand side (RHS).  The values of variables which satisfy the number sentence/equation are called solutions.  Let us consider the **equation**  **NOTE:**   * When a variable is multiplied by a number or another variable, you do not need to use or a dot ‘.’   So  Since x is often used as a variable, in algebra the symbol x is rarely used to show multiplication.   * If there is no number shown next to the variable, you know that the coefficient is 1. In . The coefficient of y is 1.   **Example:**  **Answer the following questions**   1. In , 2. Is the above mathematical statement an equation or an expression? 3. Name the variable. 4. What is the coefficient of x? 5. What is the coefficient of y? 6. Which value represents a constant?   **Divides learners into group and give them an application activity.**  **Answer the following questions in the given equations below:**   1. 1. Name the variable(s) of the equation.    2. What is the coefficient of    3. What is the coefficient of ?    4. Which value(s) are constant? 2. 1. Name the constant(s)?    2. Name the variable(s) of the equation.    3. What is the coefficient of ?    4. What is the coefficient of ? 3. 1. Name the constant(s)?    2. Name the variable(s) of the equation.    3. What is the coefficient of? | * actively engage during the lesson presentation * take notes * work in groups * respond to questions and complete the given activity.   . |

|  |
| --- |
| 1. **CLASSWORK** (Suggested time: 15 minutes) |
| **Activity**   1. Identify the variable, the coefficient of the variable and the constant term in each equation.  |  |  |  |  |  | | --- | --- | --- | --- | --- | | Equation | | Variable(s) | Coefficient(s) | Constant(s) | |  |  |  |  |  | | b) |  |  |  |  | | c) |  |  |  |  | | d) |  |  |  |  | | e) |  |  |  |  | | f) |  |  |  |  | | g) |  |  |  |  | | h) |  |  |  |  |  1. The mass of an empty truck is 2 680 kg. The truck is used to transport cement. Each pocket of cement has a mass of 90 kg. The combined mass of the truck and the cement can be calculated by means of the equation: y = 90 × x + 2 680.   Use the terms **variable** or **constant** to describe the meaning of each symbol used in the given equation. Explain your answer.   |  |  |  | | --- | --- | --- | |  | Variable or Constant | Explanation | | (a) y |  |  | | (b) 90 |  |  | | (c) x |  |  | | (d) 2680 |  |  | |
| 1. **CONSOLIDATION/CONCLUSION & HOMEWORK (Suggested time: 5 minutes)** |
| 1. Emphasis that:    * When a variable is multiplied by a number or another variable, you do not need to use or a dot ‘.’ So    * Since x is often used as a variable, in algebra the symbol x is rarely used to show multiplication. 2. 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.  **Recommended Homework**:   |  |  | | --- | --- | | A steel spring is suspended from a stand. Mass pieces of equal mass are hooked onto the bottom end of the spring. The length of the spring is measured with 1 mass piece hooked, 2 mass pieces hooked, 3 mass pieces hooked and so on. The results are shown in the table below. |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Number of mass pieces | 1 | 2 | 3 | 4 | 5 | 7 | 10 | | Length of spring in cm |  |  |  |  |  |  |  |   The formula y = 8x + 40 is used to predict the length of the spring for the various  number of mass pieces hooked.  Use the terms **variable** or **constant** to describe the meaning of each symbol used in the given equation. Explain your answer.   |  |  |  | | --- | --- | --- | |  | Variable or Constant | Explanation | | (a) y |  |  | | (b) 8 |  |  | | (c) x |  |  | | (d) 40 |  |  | |