**MATHEMATICS LESSON PLAN**

**GRADE 7**

**TERM 2: April – June**

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

|  |
| --- |
| 1. **TOPIC: SURFACE AREA AND VOLUME OF 3D OBJECTS:** Calculations and solving problems **(Lesson 6)** |

|  |
| --- |
| 1. **CONCEPTS & SKILLS TO BE ACHIEVED:**   **By the end of the lesson learners should know and be able to** solve problems involving surface area, volume and capacity |

|  |  |
| --- | --- |
| 1. **RESOURCES:** | Sasol-Inzalo Book 1, DBE workbook 1, textbook. |
| 1. **PRIOR KNOWLEDGE:** | * Volume and capacity of a cube and rectangular prisms done in the previous lessons. * 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)   Revise the following formulae for calculating the surface area and volume of the 3D objects on the  table below:  (Ask learners to name each 3D object and give its formulae)   |  |  |  | | --- | --- | --- | | NAME OF 3D OBJECT | SURFACE AREA / VLOLUME | FORMULAE | | **CUBE**  s  s  s | Surface area |  | | Volume |  | | **RECTANGULAR PRISM**  *h*    *b* | Surface area |  | | Volume |  |   **NOTE:**   * The surface area of any 3D object is the sum of the areas of all its faces. * The volume of any 3D object is given by area of the base heght. | |

|  |  |
| --- | --- |
| 1. **LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 20 minutes) | |
| **Teaching activities** | **Learning activities**  (Learners are expected to: ) |
| Present the following examples in activity 1 to learners:  **Activity 1:** Worked examples  Example 1:   1. The volume of a prism is . What is the height of the prism if its length is and its breadth is ? 2. Calculate the volume of a prism with a surface base of and a height of .   Solutions:                    Example 2   1. Calculate the capacity of a rectangular prism with the following inside measurements: length , breadth and height 2. A water tank has a square base with internal edge lengths of What is the height of the tank when the maximum capacity of the tank is ?   Solutions:            Solve by inspection by asking: 224 multiplied by what will be 11 250 | respond to questions posed by the teacher  engage with responses of their peers |
| Activity 2  The volume of a cube is .   1. Determine the length of each side face. 2. Determine the surface area of the cube.   Solutions:   1. Side length of one face 2. Surface area of the cube | do activity 2 in groups and then share their solutions with the whole group |

|  |
| --- |
| 1. **CLASSWORK** (Suggested time: 15 minutes)   Sasol-Inzalo Book 1: page 239 no. 2 (a) and (d), 4 (b) and 5 |

|  |
| --- |
| 1. **CONSOLIDATION/CONCLUSION & HOMEWORK (Suggested time: 5 minutes)** |
| 1. **Emphasise that**:  * the volume of prism area of the base height * the surface area of the prism the sum of the area of all its faces * the volume of a cube or * the volume of a rectangular prism * the amount of space inside the prism is called its capacity * the amount of space occupied by a prism is called its volume  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 Book 1, DBE workbook 1 and/or textbooks for learners’ homework. The selected activities should address different cognitive levels.  Sasol-Inzalo Book 1: page 245 no. 4, page 247 no. 3 and page 248 no. 5  DBE workbook 1: page 138 no. 1 and 139 no. 2 and 3 |