**MATHEMATICS LESSON PLAN**

**GRADE 9**

**TERM 1: JANUARY – MARCH**

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

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| 1. **TOPIC: NUMERIC AND GEOMETRIC PATTERNS: Revision (Lesson 4)** |
| 1. **CONCEPTS & SKILLS TO BE ACHIEVED:**   **By the end of the lesson learners should know and be able to:**   * + investigate and extend numeric and geometric patterns looking for relationships between numbers, including patterns:   - represented in physical or diagram form  - not limited to sequences involving a constant difference or ratio.  - of learner’s own creation  - represented algebraically |

* + describe and justify the general rules for observed relationships between numbers in own words or in algebraic language

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| 1. **RESOURCES:** | Textbooks, DBE Workbook, Sasol-Inzalo book, match sticks. | |
| 1. **PRIOR KNOWLEDGE:** | Basic operations with whole numbers.  Geometric patterns.  Integers. | |
| 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) | | |
| Ask learners to work in pairs. Give them the following pattern: 6; 12; 18; …  Let them extend the pattern by finding the next 3 terms and describe the pattern in their own words. | | |
| 1. **LESSON PRESENTATION/DEVELOPMENT**(Suggested time: 20 minutes) | | |
| **Teaching activities** | | **Learning activities** |
| Do the following activities with learners. Let them do one step at a time and allow for discussions.   1. **Building houses with match sticks** 2. Build a house with five sticks. 3. Continue to build houses as the picture shows, etc. 4. The houses should have one wall in common. 5. Make a table to find out how many match sticks are needed to make more houses. 6. How many match sticks do you need to make 6 houses? 7. Describe with your own words how the pattern grows. 8. Write down the general rule for the pattern. 9. Use the rule to determine how many match sticks are needed to build 99 houses? 10. Drawn below is a regular tile pattern:      1. Colour in figure 6. 2. Complete the following table:  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Figure number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | No. of grey tiles |  |  |  |  |  |  |  |  |  |  1. How many grey tiles does figure 20 have? 2. Write down the rule for the total number of squares per figure. | | * Working in groups, learners build houses with match sticks following the teacher’s instructions. * Learners discuss as they engage in the group activity. * Learners complete the table as they build the houses with matchsticks. |
| * Working in groups, learners extend the geometric pattern. * Learners discuss and come up with a rule to describe the geometric pattern. |

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| 1. **CLASSWORK**(Suggested time: 15 minutes) | | |
| Carefully choose the exercises which show different cognitive levels from Sasol-Inzalo Book 1, DBE workbooks, ANA question papers and any textbook used in your school. The following are some of the questions that can enhance understanding of numeric patterns.   1. Given:   A: 1; 4; 7; 10…  B: 1; 4; 9; 16…  For each of the above sequences:   1. Add 2 more terms to the sequence 2. Write a rule for the sequence. 3. Use the rule determine the 10th term of the sequence | | |
| 1. Find the missing terms, in each of the sequences below:   a) . . .; . . . ; . . . 12; 21; . . . 39; 48; 57  b) . . . ; . . . ;. . . 1024; 2048; 4096; . . .; . . . ; . . .   |  |  | | --- | --- | |  | | |  |  | |  |  | | | |
| Sasol-Inzalo book 1 | DBE Workbook | Textbook |
| Page 87 to 98. |  |  |
| 1. **CONSOLIDATION /CONCLUSION & HOMEWORK** (Suggested time: 5 minutes) | | |
| 1. Ask learners to reflect on the day’s lesson. 2. **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 workbooks and/or textbooks for learners’ homework. The selected activities should address different cognitive levels.  **Homework:** DBE workbook 1 – Page 68 to 71 | | |