**MATHEMATICS LESSON PLAN**

**GRADE 7**

**TERM 4: October – December**

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

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| 1. **TOPIC: INTEGERS:** PROPERTIES OF INTEGERS **(Lesson 8)** |

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| 1. **CONCEPTS & SKILLS TO BE ACHIEVED:**   **By the end of the lesson, learners should be able to :**   * recognise and use commutative and associative properties of addition and multiplication for integers |

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| 1. **RESOURCES:** | DBE workbook 2, Sasol-Inzalo book 2, Textbooks |
| 1. **PRIOR KNOWLEDGE:** | * addition and subtraction of integers * properties of whole 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. | |

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| 1. **INTRODUCTION** (Suggested time: 10 Minutes)   Revise the following with learners.  **Activity 1**  Calculate each of the following:  (a) R25 000 + R30 000 + R13 000 + R6 000 = 74 000  (b) R13 000 + R6 000 + R30 000 + R25 000 = 74 000  (c) R30 000 + R25 000 + R6 000 + R13 000 = 74 000  **Activity 2**  Which of the following calculations will produce the same answer? Mark those that will produce the same answers with a ✓ and those that won’t with a ✗.  (a) 20 × 250 and 250 × 20 ✓ (b) 5 000 ÷ 100 and 100 ÷ 5 000 ✗  (c) 730 + 270 and 270 + 730 ✓ (d) 730 − 270 and 270 − 730 ✗  **Note:** 25 + 75 and 75 + 25 have the same answer. The same is true for any other two numbers. Learners should also be able to figure out that multiplication is commutative. |

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| 1. **LESSON PRESENTATION/DEVELOPMENT** (Suggested time: 20 minutes) | |
| **Teaching activities** | **Learning activities**  (Learners are expected to:) |
| Divide learners into groups  Example:   1. Lesedi spends 3 one rand coins on sweets. His aunt gives him 8 one rand coins to spend. Will the order of these events change Lesedi’s total number of rand coins?   **Solution**  If Lesedi buys sweets and then gets given R8  (3) (8) 5  If Lesedi gets given R8 and the buy sweets  (8) (3) 5  The order of the two events makes no difference in Lesedi’s total number of rands.    From the above it is clear that (3) (8) = (8) (3)  **Note:** looking at the example above, you can use subtraction to check your addition. If (8) (3) 5 then 5 (3) 8 and 5 8 3. When you swap integers, always move the or sign with the number. The sign is part of the integer. We say: addition is **commutative** because the numbers can be swopped around but the answer remains the same.   1. Prove that (12 7) 2 12 (7 2)   Solution:  LHS (12 7) 2 RHS 12 (7 2)  19 2 12 9  21 21  LHS RHS  c) Prove [(5) 4] (3) (5) [4 (3)]  Solution:  LHS [(5) 4] (3) RHS (5) [4 (3)]  (1) (3) (5) 1  4 4  LHS RHS  **Note**: number (b) and (c) above show that integers can be grouped in different ways when you add or subtract them. Changing the grouping does not affect the answer. When three or more integers are added, the order in which you perform the calculations makes no difference. This is called the **associative property of addition**. We also say: **addition is associative**.  **Activity 1**  Calculate the following:  (a) 9 5 4 (b) 5 9 4  (c) (7) 3 10 (d) 3 (7) 10  (e) 15 (12) 27 (f) (12) 15 27  (g) (40) (23) 17 (h) (23) (40) 17  **Activity 2**  Use the associative property and prove the following:   1. [(4) 5] 2 (4) (5 2) 2. [5 (2)] (7) 5 [(2) (7) 3. [(8) (4)] 7 (8) [(4) 7]  |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | * Work in groups to complete the number sentences. * Give feedback to the whole class guided by the teacher. |

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| 1. **CLASSWORK** (Suggested time: 15 minutes)   1.Use the associative property to calculate the following:  (a)  (b)  (c)  2. Show that the commutative property holds for the addition of integers:  (a) a b b a if a 4;b 1  (b) a b b a if a 2;b 7 |

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| 1. **CONSOLIDATION/CONCLUSION & HOMEWORK (Suggested time: 5 minutes)** |
| 1. Emphasise that:  * addition is commutative * addition is associative * adding a positive number to a negative number has the same effect as adding the additive inverse of the positive number. * adding a positive number to a negative number has the same effect as subtracting the additive inverse of the positive number.  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.   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**:  DBE workbook page 103 no c) to f) and page 104 no h) to j) |