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| Lesson Plan no : |
| Date : |  | Subject : | Mathematics |
| Class : | 10 | Chapter : | algebra |
| Time : | 45 | Period : |  |

**Overview and Learning Objective**  
Algebra is a branch of mathematics that deals with symbols and the rules for manipulating those symbols. This lesson will introduce basic algebraic concepts.   
  
LO-1: Students will be able to define variables and understand their use in algebraic expressions.  
LO-2: Students will be able to translate word problems into algebraic equations.  
LO-3: Students will be able to solve basic linear equations using addition, subtraction, multiplication, and division.

**Curricular Goals and Curricular competencies**  
CG-1: Students will understand the fundamental concepts of algebraic expressions, including variables, constants, terms, and coefficients.  
CG-2: Students will be able to apply algebraic principles to solve real-world problems and interpret solutions within context.  
  
CC-1: Students will be able to identify and simplify algebraic expressions, combining like terms and applying the order of operations.  
CC-2: Students will be able to translate verbal descriptions into algebraic expressions and vice versa.  
CC-3: Students will be able to solve linear equations in one variable using inverse operations and demonstrate their understanding through problem-solving scenarios.

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| Learning Objective | Curricular competencies | FACTUAL KNOWLEDGE | CONCEPTUAL KNOWLEDGE | PROCEDURAL KNOWLEDGE |
| LO-1 | CC-1 | Variables represent unknown values. Equations balance expressions. Simplifying expressions combines like terms. | Variables represent unknown values. Equations express relationships between variables. Solving equations isolates variables. | Solve equations by isolating the variable. Combine like terms to simplify expressions. Apply the distributive property to expand expressions. |

**Essential question**  
Q-1: How can we use variables to represent unknown quantities and write expressions and equations to solve problems?  
Q-2: What are the different ways to solve algebraic equations and how can we choose the most appropriate method for a given situation?  
Q-3: How can we use algebra to model real-world relationships and make predictions about future outcomes?

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| **Teaching Points** | **Learning Outcomes** | **Sequential Learning Activities** | **Formative Assessment** | **Expected Queries** |
| TP-1: Variables represent unknown quantities, allowing us to solve for them using equations. TP-2: Equations maintain balance: whatever you do to one side, you must do to the other to keep the equation true. TP-3: Algebra helps us model real-world situations using symbols and solve problems involving unknowns. | LO1, LO2 | Activity-1: Introduce variables and expressions using real-world scenarios like calculating the cost of buying multiple items. Activity-2: Solve simple equations with one variable using manipulatives like balance scales or blocks. Activity-3: Introduce the concept of simplifying algebraic expressions by combining like terms. | [formative assessment no 1] Simplify the expression: 3x + 2y - 5x + 4y [formative assessment no 2] Solve for x: 2x + 5 = 11 [formative assessment no 3] Write an algebraic expression for the following phrase: "Five less than twice a number" | Q-1: Simplify the expression: 2x + 3y - x + 5y Q-2: Solve for x: 4x - 8 = 12 Q-3: Factor the expression: x^2 - 9 |
| TP-1: Variables represent unknown quantities, allowing us to solve for them using equations. TP-2: Equations maintain balance: whatever you do to one side, you must do to the other to keep the equation true. TP-3: Algebra helps us model real-world situations using symbols and solve problems involving unknowns. | LO1, LO2 | Activity-1: Introduce variables and expressions using real-world scenarios like calculating the cost of buying multiple items. Activity-2: Solve simple equations with one variable using manipulatives like balance scales or blocks. Activity-3: Introduce the concept of simplifying algebraic expressions by combining like terms. | [formative assessment no 1] Simplify the expression: 3x + 2y - 5x + 4y [formative assessment no 2] Solve for x: 2x + 5 = 11 [formative assessment no 3] Write an algebraic expression for the following phrase: "Five less than twice a number" | Q-1: Simplify the expression: 2x + 3y - x + 5y Q-2: Solve for x: 4x - 8 = 12 Q-3: Factor the expression: x^2 - 9 |

**summarization And Home work :**   
Algebra is a branch of mathematics that deals with symbols and the rules for manipulating those symbols. It is used to solve equations, represent relationships, and model real-world situations.  
  
Q-1: Solve the equation 2x + 5 = 11 for x.  
Q-2: Simplify the expression 3(x + 2) - 4x.  
Q-3: Write an algebraic expression for the following phrase: "The sum of twice a number and 7."

**Signature of Teacher**