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| Lesson Plan no : |
| Date : |  | Subject : | Science |
| 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.   
  
LO-1: Students will be able to define algebra and identify its basic components, such as variables, constants, and operations.  
LO-2: Students will be able to translate word problems into algebraic expressions and equations.  
LO-3: Students will be able to solve simple algebraic equations using basic operations such as addition, subtraction, multiplication, and division.

**Curricular Goals and Curricular competencies**  
CG-1: Students will understand the fundamental principles of algebra and how they relate to scientific concepts.  
CG-2: Students will be able to apply algebraic equations to solve real-world scientific problems.  
  
CC-1: Students will be able to identify variables and constants in scientific equations.  
CC-2: Students will be able to manipulate algebraic equations to solve for unknown variables.  
CC-3: Students will be able to interpret the results of algebraic calculations in the context of scientific investigations.

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| Learning Objective | Curricular competencies | FACTUAL KNOWLEDGE | CONCEPTUAL KNOWLEDGE | PROCEDURAL KNOWLEDGE |
| LO-1 | CC-1 | Algebra uses variables to represent unknown quantities. Equations express relationships between variables. Solving equations involves isolating the unknown variable. | Variables represent unknown quantities. Equations express relationships between variables. Solving for unknowns involves isolating variables. | Identify variables and constants in an equation. Solve for an unknown variable using inverse operations. Apply algebraic properties to simplify expressions. |

**Essential question**  
Q-1: How can algebraic equations be used to represent and solve real-world problems in science?  
Q-2: What are the fundamental principles of manipulating algebraic expressions and equations?  
Q-3: How can graphing and visualization be used to understand and solve algebraic relationships in scientific contexts?

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| **Teaching Points** | **Learning Outcomes** | **Sequential Learning Activities** | **Formative Assessment** | **Expected Queries** |
| TP-1: Variables represent unknown quantities in scientific equations. TP-2: Equations are used to express relationships between variables in scientific principles. TP-3: Solving for unknown variables in equations allows us to predict and analyze scientific phenomena. | LO1, LO2 | Activity-1: Introduce the concept of variables in algebra through real-world examples from science, such as representing the distance traveled by a moving object using a variable like 'd'. Activity-2: Introduce simple algebraic expressions using variables representing physical quantities, like 'v' for velocity and 't' for time, and then apply these expressions to calculate distance using the formula 'd = vt'. Activity-3: Solve for unknowns in algebraic equations representing scientific concepts like the relationship between force, mass, and acceleration using the equation 'F = ma' and then conduct a simple experiment to demonstrate the application of this equation. | [formative assessment no 1] Simplify the following expression: 2x + 3y - 5x + 7y [formative assessment no 2] Solve for the unknown variable: 3x - 5 = 16 [formative assessment no 3] Write an algebraic expression for the following phrase: "five times the sum of a number and three" | Q-1: Simplify 2x + 3x - 5 Q-2: Solve for x: 2x + 5 = 11 Q-3: What is the slope of the line y = 2x + 4? |
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**summarization And Home work :**   
Algebra is a branch of mathematics that deals with symbols and the rules for manipulating them.   
  
Q-1: Solve the equation: 2x + 5 = 11  
Q-2: Simplify the expression: 3(x - 2) + 4x  
Q-3: Write an algebraic expression for the phrase "five less than twice a number."

**Signature of Teacher**