Objective

By the end of this lesson, you will be able to apply algebraic concepts to solve real-life problems related to science and mathematics.

Materials and Prep

- Pencil and paper
- Scientific calculator (optional)
- Access to a computer or smartphone with internet connection
- Basic knowledge of algebraic operations (solving equations, simplifying expressions, etc.)

Activities

1. Activity 1: Science Museum Budget

   Imagine you are planning a visit to a science museum. Research the admission fees, parking costs, and any additional expenses such as food or souvenirs. Create an algebraic expression that represents the total cost of your visit based on the number of people attending with you. Use variables and coefficients to represent different costs. Solve the equation to find the number of people you can afford to bring with a given budget.

2. Activity 2: Science Experiment

   Choose a science experiment that interests you from the museum's website or any reliable source. Identify the variables involved in the experiment, such as time, distance, or quantity of substances. Write an algebraic equation that represents the relationship between these variables. Solve the equation to find the value of one variable when the others are known.

3. Activity 3: Science Museum Exhibit

   Explore the museum's website or any reliable source to find information about a specific exhibit. Identify a mathematical concept or principle related to the exhibit. Create a word problem that involves this concept and write an algebraic equation to solve it. Solve the equation to find the answer to the problem.

Eighth Grade Talking Points

- "Algebra is a branch of mathematics that uses letters and symbols to represent numbers and unknown quantities."
- "In real-life situations, algebra can be used to solve problems and make predictions."
- "Algebraic expressions can be used to represent relationships between different quantities or variables."
- "Equations are statements that show the equality of two expressions. We can solve equations to find the values of the unknown variables."
- "Algebra can help us analyze and understand various scientific and mathematical concepts, such as rates, proportions, and relationships."