Solving Linear Equations with Real-World Applications

Introduction (5 minutes)

Welcome to this interactive worksheet on solving linear equations with real-world applications! This worksheet is designed for 14-year-old students who are beginners in mathematics. The purpose of this worksheet is to provide engaging and interactive content that helps students understand the concept of linear equations and their applications in real-world scenarios.

What are Linear Equations? (10 minutes)

A linear equation is an equation in which the highest power of the variable is 1. It can be written in the form of ax + b = c, where a, b, and c are constants, and x is the variable.

Real-World Applications of Linear Equations (15 minutes)

Linear equations have numerous real-world applications, including:

- Calculating the cost of producing goods
- Determining the speed of a moving object
- Predicting population growth
- Solving problems in science and engineering

Activity 1: Solving Linear Equations (20 minutes)

Solve the following linear equations:

1. 2x + 3 = 5
2. x - 2 = 3
3. 4x = 12

Activity 2: Real-World Scenarios (25 minutes)

Read the following real-world scenarios and solve the linear equation:

1. A company produces 250 units of a product per day. If each unit costs $5 to produce, how much does the company spend on production per day?
2. A car travels 250 miles in 5 hours. How many miles does it travel per hour?

Activity 3: Graphing Linear Equations (20 minutes)

Graph the following linear equations on a coordinate plane:

1. y = 2x + 3
2. y = x - 2

Activity 4: Word Problems (25 minutes)

Solve the following word problems using linear equations:

1. A bakery sells 250 loaves of bread per day. If each loaf costs $2, how much money does the bakery make in a day?
2. A group of friends want to share some candy equally. If they have 48 pieces of candy and there are 8 friends, how many pieces of candy will each friend get?

Activity 5: Error Analysis (20 minutes)

Identify the errors in the following linear equations and correct them:

1. 2x + 3 = 5 solved as x = 2
2. x - 2 = 3 solved as x = 1

Conclusion (10 minutes)

Congratulations on completing this interactive worksheet on solving linear equations with real-world applications! We hope you had fun and learned something new. Remember to practice solving linear equations regularly to become more proficient.

Answer Key

Activity 1:

1. x = 1
2. x = 5
3. x = 3

Activity 2:

1. $1250
2. 50 miles per hour

Activity 3:

1. Graph the equation y = 2x + 3 on a coordinate plane
2. Graph the equation y = x - 2 on a coordinate plane

Activity 4:

1. $500
2. 6 pieces of candy per friend

Activity 5:

1. Correct solution: x = 1
2. Correct solution: x = 5