# Solving Linear Equations and Inequalities: An Interactive Math Adventure

## Introduction and Warm-Up (10 minutes)

*Welcome to the exciting world of linear equations and inequalities! This interactive math adventure is designed to introduce 7th-grade students to the fundamentals of solving linear equations and inequalities through engaging games and challenges.*

1. What is a linear equation?

2. Solve for x: x + 2 = 7

3. What is a linear inequality?

## Linear Equation Scavenger Hunt (15 minutes)

*Find and solve the following linear equations:*

1. Solve for x: 2x + 5 = 11

2. Solve for x: x - 3 = 2

3. Solve for x: 4x = 20

## Inequality Match (15 minutes)

*Match the following inequalities with their solutions:*

1. Match the inequality $x + 2 < 7$ with its solution

2. Match the inequality $3x \geq 12$ with its solution

3. Match the inequality $2x - 1 \leq 5$ with its solution

## Math Story Problems (20 minutes)

*Solve the following story problems:*

1. Tom has $15 to spend on video games. Each game costs $5. How many games can Tom buy?

2. A bakery sells 250 loaves of bread per day. They sell a combination of whole wheat and white bread. If they sell 30 more whole wheat loaves than white bread loaves, how many of each type of bread do they sell?

## Graphing Linear Equations (20 minutes)

*Graph the following linear equations on a coordinate plane:*

1. Graph the equation y = 2x + 3

2. Graph the equation x + y = 4

## Assessment (20 minutes)

*To assess your understanding of linear equations and inequalities, complete the following quiz:*

1. Solve for x in the equation 2x + 5 = 11
2. Solve the inequality 3x - 2 > 7
3. Graph the equation y = 2x + 3 on a coordinate plane

## Extension Activities (20 minutes)

*For additional practice and challenge, try the following extension activities:*

1. Create your own linear equation puzzle

2. Research and present on a real-world application of linear equations and inequalities

3. Design and create a math escape room focused on linear equations and inequalities

## Glossary (10 minutes)

*Define the following terms:*

1. Linear equation

2. Linear inequality

3. Variable

## Review (20 minutes)

*Review the steps to solve a linear equation and inequality:*

1. Review the steps to solve a linear equation
2. Review the steps to solve a linear inequality
3. Review the concept of graphing linear equations

## Conclusion (10 minutes)

*What did you learn about linear equations and inequalities?*

1. What did you learn about linear equations and inequalities?
2. How can you apply linear equations and inequalities in real-life situations?
3. What are some challenges you faced while learning about linear equations and inequalities?