Introduction to Mathematical Thinking and Problem Solving

Welcome to Mathematical Thinking and Problem Solving!

This workbook is designed to introduce you to the exciting world of mathematical thinking and problem solving. You will learn how to approach problems in a logical and methodical way, and develop your critical thinking and analytical skills.

What is Mathematical Thinking?

Mathematical thinking is the process of using mathematical concepts and principles to solve problems and make decisions. It involves critical thinking, analysis, and creativity, as well as the ability to apply mathematical concepts to real-world scenarios.

Why is Mathematical Thinking Important?

Mathematical thinking is essential for success in various aspects of life, including academics, career, and personal development. It helps you to make informed decisions, solve complex problems, and think critically.

Activity 1: Pattern Recognition

Look at the following pattern: 2, 5, 8, 11, 14, ...

What comes next in the pattern?

Activity 2: Math Scavenger Hunt

Find examples of mathematical concepts in your everyday life, such as shapes, patterns, and measurements. Draw a picture or write a short description of what you found.

Activity 3: Problem-Solving Puzzle

Solve the following puzzle:

A bat and a ball together cost $1.10. The bat costs $1.00 more than the ball. How much does the ball cost?

Mathematical Thinking and Problem Solving in Real-World Scenarios

Mathematical thinking and problem solving are essential in real-world scenarios, such as science, technology, engineering, and mathematics (STEM) careers, and everyday life.

Activity 4: Real-World Application

Read the following scenario:

A bakery sells 250 loaves of bread per day. If each loaf costs $2, how much money does the bakery make in a day?

Conclusion

Congratulations on completing this introduction to mathematical thinking and problem solving! You have learned how to approach problems in a logical and methodical way, and developed your critical thinking and analytical skills.

Remember, mathematical thinking and problem solving are essential skills that will help you succeed in various aspects of life.

Assessment

Answer the following questions to assess your understanding of mathematical thinking and problem solving:

1. What is mathematical thinking?
2. Why is mathematical thinking important?
3. How do you approach a mathematical problem?

Extension Activity

Create a math-themed game or puzzle that demonstrates your understanding of mathematical thinking and problem solving.

Glossary

Algorithm: a step-by-step procedure for solving a mathematical problem

Variable: a symbol or letter used to represent an unknown value or quantity

Pattern: a repeating sequence of numbers, shapes, or objects that follow a predictable rule or structure