Introduction to Fractions and Decimals in Real-World Problems

Student Name: _____

Class: _____

Due Date: _____

Introduction and Overview

Welcome to this homework assignment on fractions and decimals in real-world problems! This assignment is designed for students aged 11-13 years and aims to apply fraction operations to solve practical problems.

The learning objectives of this assignment are to:

- Apply fraction operations, including adding, subtracting, multiplying, and dividing fractions and decimals, to find solutions to practical problems.

Section 1: Fraction Operations

Solve the following problems involving fraction operations:

1. Tom has 1/4 of a pizza left from last night. His friend, Alex, gives him 1/4 of a pizza. What fraction of a pizza does Tom have now?

2. A bookshelf is 3/4 full of books. If 1/4 of the books are removed, what fraction of the bookshelf is now empty?

3. A recipe for making cookies requires 3/4 cup of sugar. If you want to make half the recipe, how much sugar will you need?

Section 2: Decimals

Apply decimal operations to solve these problems:

1. A water bottle can hold 2.5 liters of water. If 1.8 liters of water are already in the bottle, how much more water can be added?

2. A toy car track is 4.2 meters long. If it is extended by 1.5 meters, what is the new length of the track?

3. A pencil is 0.25 meters long. If it is divided into 5 parts, how long is each part?

Section 3: Mixed Problems

Solve these mixed problems involving both fractions and decimals:

1. A bakery sells 2 3/4 kilograms of bread per day. If they sell bread for 3.5 days, how many kilograms of bread do they sell in total?

2. A car travels 2.5 kilometers in 1/2 hour. How many kilometers will it travel in 2 hours?

Extension Activities

For students who complete the main activities quickly or wish for an additional challenge:

1. Research and create a list of 5 real-world scenarios where fractions and decimals are used (e.g., cooking, construction, science experiments). Explain how fractions and decimals are applied in each scenario.

2. Design a board game or card game that involves solving fraction and decimal problems to progress through the game. Play the game with a family member or friend and discuss the strategies used.

Success Criteria

To successfully complete this assignment, ensure you:

- Attempt all problems in the main activities.
- Show clear working for each problem.
- Check your answers for accuracy.
- Complete the reflection at the end of the assignment.
- For extension activities, ensure your project or game clearly demonstrates an understanding of applying fractions and decimals to real-world problems.

Reflection

Take a few minutes to reflect on your learning. What did you find challenging? How did you overcome these challenges? What did you learn about fractions and decimals?

Parent/Guardian Notes

Support: Encourage your child to read each question carefully and to show all their working.

Resources: Ensure your child has access to a pencil, paper, and a calculator (if necessary).

Time Management: Guide your child to manage their time effectively, aiming to spend 25-35 minutes on the assignment.

Feedback: Review your child's work, provide feedback on their understanding, and discuss any challenges they faced.

Extension: Encourage your child to undertake the extension activities if they complete the main tasks quickly or seek an additional challenge.

Answers

1. Tom has 1/4 + 1/4 = 2/4 = 1/2 of a pizza.
2. The bookshelf is 3/4 - 1/4 = 2/4 = 1/2 empty.
3. You will need 3/4 x 1/2 = 3/8 cup of sugar.
4. 2.5 - 1.8 = 0.7 liters of water can be added.
5. The new length of the track is 4.2 + 1.5 = 5.7 meters.
6. Each part is 0.25 / 5 = 0.05 meters long.
7. The bakery sells 2 3/4 x 3.5 = 9 5/8 kilograms of bread.
8. The car travels 2.5 x 4 = 10 kilometers in 2 hours.