Applying Fractions and Decimals to Real-World Problems in Measurement and Finance

Introduction

Welcome to this worksheet on applying fractions and decimals to real-world problems in measurement and finance. This worksheet is designed for students aged 11-14, following the UK Primary School Curriculum.

The activities and questions are tailored to cater to mixed ability differentiation, including foundation, core, and extension levels. Please read each question carefully and complete the tasks to the best of your ability.

Section 1: Conversion between Fractions and Decimals

Convert the following fractions to decimals:

1. 1/2 =
2. 3/4 =
3. 2/3 =

Convert the following decimals to fractions:

1. 0.25 =
2. 0.5 =
3. 0.75 =

Extension Questions

Convert the following mixed numbers to decimals:

1. 2 3/4 =

2. 1 1/2 =

Convert the following improper fractions to decimals:

1. 5/2 =

2. 7/3 =

Section 2: Real-World Applications

Solve the following problems:

1. A recipe requires 1/4 cup of sugar. If you want to make half the recipe, how much sugar will you need?

2. A bookshelf is 1 1/2 meters long. If it is divided into 5 equal parts, how long is each part?

3. A person has £10 to spend on groceries. If they buy 2 items that cost £2.50 each, how much money do they have left?

Core Questions

Solve the following problems:

1. A car travels 250 miles in 5 hours. If it travels at a constant speed, how many miles will it travel in 2 hours?

2. A person invests £100 at an interest rate of 5% per annum. How much will they have after 2 years?

3. A company sells 250 units of a product at £20 each. If they offer a 10% discount, how much will they make in total?

Section 3: Measurement Problems

Solve the following problems:

1. Calculate the area of a room that is 3 meters long and 2 meters wide.

2. Calculate the volume of a container that is 1 meter long, 0.5 meters wide, and 0.2 meters high.

3. Calculate the perimeter of a rectangle that is 2 meters long and 1 meter wide.

Extension Questions

Solve the following problems:

1. Calculate the area of a complex shape that is made up of multiple triangles and rectangles.

2. Calculate the volume of a sphere that is 1 meter in diameter.

3. Calculate the surface area of a cone that is 2 meters long and 0.5 meters in diameter.

Section 4: Financial Problems

Solve the following problems:

1. Calculate the cost of a product that is on sale for 10% off the original price of £20.
2. Calculate the interest on a savings account that earns 2% per annum.
3. Calculate the total cost of a purchase that includes a 20% VAT.

Core Questions

Solve the following problems:

1. Calculate the cost of a product that is on sale for 15% off the original price of £50.
2. Calculate the interest on a loan that earns 5% per annum.
3. Calculate the total cost of a purchase that includes a 10% discount and a 20% VAT.

Conclusion

We hope you have enjoyed this worksheet on applying fractions and decimals to real-world problems in measurement and finance. Remember to practice regularly and apply these concepts to real-world scenarios to become more confident and proficient.

Please complete the following questions to assess your understanding of the concepts:

1. Convert the fraction 2/3 to a decimal.
2. Calculate the area of a room that is 3 meters long and 2 meters wide.
3. Calculate the cost of a product that is on sale for 10% off the original price of £20.

Extension Activity

Create a real-world scenario that applies fractions and decimals to measurement and finance. Write a short story or create a presentation that demonstrates your understanding of the concepts.

[Space for creative work]

Assessment

Please complete the following questions to assess your understanding of the concepts:

1. Convert the fraction 3/4 to a decimal.

2. Calculate the volume of a container that is 1 meter long, 0.5 meters wide, and 0.2 meters high.

3. Calculate the total cost of a purchase that includes a 20% VAT.

Teacher Notes and Guidance

This worksheet is designed to be completed over several lessons, with each section building on the previous one. Please provide guidance and support as needed, and encourage students to ask questions and seek help when necessary.

Extension activities and challenges can be provided for students who complete the worksheet quickly or demonstrate a high level of understanding. These can include creating real-world scenarios, writing short stories, or creating presentations that demonstrate their understanding of the concepts.