Mastering Fractions: Understanding the Properties of Adding and Subtracting Fractions

Introduction to Fractions

Welcome to the world of fractions! In this worksheet, we will explore the properties of adding and subtracting fractions. You will learn how to add and subtract fractions with like and unlike denominators, and apply these skills to solve real-world problems.

Understanding Fractions

1. What is a fraction? _____
2. What is the numerator and denominator in a fraction? _____

3. Give an example of a fraction: _____

Activity 1: Matching Fractions

Match the following fractions with their equivalent decimals:

Fraction	Decimal
1/2	0.5
1/4	0.25
3/4	0.75
2/3	0.67

Adding Fractions with Like Denominators

What is the rule for adding fractions with like denominators? _____

1. Add the following fractions: 1/6 + 2/6 = _____

2. Add the following fractions: 2/8 + 1/8 = _____

Activity 2: Fraction Addition

Add the following fractions:

Fraction 1	Fraction 2	Answer
1/4	1/4	
2/6	1/6	
3/8	2/8	

Adding Fractions with Unlike Denominators

What is the least common denominator (LCD) of 4 and 6? _____

1. Add the following fractions: 1/4 + 1/6 = _____

2. Add the following fractions: 2/3 + 1/4 = _____

Activity 3: Finding the LCD

Find the LCD of the following pairs of fractions:

Fraction 1	Fraction 2	LCD
2/4	3/6	
1/3	2/5	
3/8	2/10	

Subtracting Fractions

What is the rule for subtracting fractions with like denominators? _____

1. Subtract the following fractions: 2/6 - 1/6 = _____

2. Subtract the following fractions: 3/8 - 2/8 = _____

Activity 4: Fraction Subtraction

Subtract the following fractions:

Fraction 1	Fraction 2	Answer
2/4	1/4	
3/6	2/6	
4/8	3/8	

Real-World Applications

Solve the following real-world problems:

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

2. A bookshelf has 5 shelves, and each shelf can hold 3/4 of a meter of books. If the bookshelf is currently empty, how many meters of books can be placed on it in total?
   _____

Activity 5: Real-World Problems

Solve the following real-world problems:

Problem	Answer
A pizza has 16 slices, and 1/4 of it has been eaten. How many slices have been eaten?	
A water tank can hold 3/4 of a liter of water. If 1/4 liter of water is already in the tank, how much more water can be added?	

Word Problems

Solve the following word problems:

1. Tom has 1/2 of a bag of potatoes and gives 1/4 of the bag to his friend. What fraction of the bag does Tom have left? _____

2. A group of friends want to share some candy equally. If they have 3/4 of a bag of candy and there are 4 friends, how much candy will each friend get? _____

Activity 6: Word Problem Solving

Solve the following word problems:

Problem	Answer
A recipe calls for 2/3 cup of flour. If you want to make 1/2 of the recipe, how much flour will you need?	
A car travels 3/4 of the distance to a destination in 2 hours. If the car travels at a constant speed, how much time will it take to travel the entire distance?	

Mixed Numbers and Improper Fractions

What is a mixed number? _____

What is an improper fraction? _____

1. Convert the following mixed number to an improper fraction: 2 1/2 = _____

Activity 7: Mixed Numbers and Improper Fractions

Convert the following mixed numbers to improper fractions:

Mixed Number	Improper Fraction
1 1/2	
2 3/4	
3 1/4	

Geometry and Measurement

What is the perimeter of a rectangle with a length of 3/4 meter and a width of 2/3 meter?

_____

What is the area of a triangle with a base of 1/2 meter and a height of 3/4 meter?

_____

Activity 8: Geometry and Measurement

Solve the following geometry and measurement problems:

Problem	Answer
What is the volume of a cube with a side length of 2/3 meter?	
What is the circumference of a circle with a radius of 1/4 meter?	

Review

Review the following concepts:

1. Adding fractions with like denominators
2. Adding fractions with unlike denominators
3. Subtracting fractions with like denominators
4. Subtracting fractions with unlike denominators
5. Real-world applications of fractions

Activity 9: Review

Solve the following review problems:

Problem	Answer
1/4 + 1/4 =	
2/6 - 1/6 =	
3/8 + 2/8 =	
1/2 - 1/4 =	

Assessment

Assess your understanding of the properties of adding and subtracting fractions by completing the following problems:

1. Add the following fractions: 2/3 + 1/4 = _____
2. Subtract the following fractions: 3/4 - 2/4 = _____
3. Solve the following real-world problem: A recipe calls for 1/4 cup of sugar. If you want to make half the recipe, how much sugar will you need? _____