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Fraction Times Fraction Worksheet Questions and Answers PDF

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Part 1: Building a Foundation

What is the result of multiplying the fractions $\frac{2}{3}$ and $\frac{3}{4}$?

Hint: Remember to multiply the numerators and denominators.

○ $\frac{5}{7}$
○ $\frac{6}{12}$
○ **$\frac{1}{2}$ ✓**
○ $\frac{1}{3}$

❘ The correct answer is $\frac{1}{2}$.

Which of the following are types of fractions? (Select all that apply)

Hint: Think about the different ways fractions can be categorized.

☐ **Proper Fractions ✓**
☐ Decimal Fractions
☐ **Improper Fractions ✓**
☐ **Mixed Numbers ✓**

❘ Proper fractions, improper fractions, and mixed numbers are all types of fractions.

Explain in your own words how to multiply two fractions together. Include an example in your explanation.

Hint: Consider the steps involved in the multiplication process.

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> **To multiply two fractions, multiply the numerators together and the denominators together. For example, $\frac{2}{3} \times \frac{3}{4} = \frac{6}{12}$.**

List the steps to convert a mixed number into an improper fraction.

Hint: Think about how to express the whole number and the fraction together.

1. Step 1

> Multiply the whole number by the denominator.

2. Step 2

> Add the numerator to the result from Step 1.

3. Step 3

> Place the result over the original denominator.

> To convert a mixed number to an improper fraction, multiply the whole number by the denominator, add the numerator, and place that over the original denominator.

What is the first step in multiplying mixed numbers?

Hint: Consider how you would handle mixed numbers before multiplication.

○ Add the fractions

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◯ **Convert them to improper fractions** ✔
◯ Simplify the fractions
◯ Multiply the numerators

| The first step is to convert them to improper fractions.

Part 2: Application and Analysis

If a recipe requires $\frac{3}{4}$ cup of sugar and you want to make half the recipe, how much sugar do you need?

Hint: Think about how to find half of a fraction.

◯ **$\frac{3}{8}$** ✔
◯ $\frac{1}{2}$
◯ $\frac{1}{4}$
◯ $\frac{3}{2}$

| You need $\frac{3}{8}$ cup of sugar.

You have $\frac{2}{3}$ of a pizza and you eat $\frac{1}{2}$ of what you have. Which of the following represent the amount of pizza you ate? (Select all that apply)

Hint: Calculate $\frac{1}{2}$ of $\frac{2}{3}$.

☐ **$\frac{1}{3}$** ✔
☐ **$\frac{1}{6}$** ✔
☐ **$\frac{2}{6}$** ✔
☐ $\frac{1}{2}$

| You ate $\frac{1}{3}$ and $\frac{2}{6}$ of the pizza.

A garden is $\frac{3}{5}$ of an acre in size. If you plant flowers in $\frac{2}{3}$ of the garden, how much of the acre is used for flowers? Show your calculations.

Hint: Multiply the fraction of the garden by the total size.

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> **You would use $\frac{2}{3} \times \frac{3}{5} = \frac{2}{5}$ of an acre for flowers.**

Which of the following best describes the relationship between the numerators and denominators when multiplying fractions?

Hint: Consider how the multiplication process works.

◯ Numerators are added, and denominators are multiplied.
◯ Numerators and denominators are both added.
◯ Numerators are multiplied, and denominators are added.
◯ **Numerators and denominators are both multiplied. ✓**

> Numerators are multiplied, and denominators are both multiplied.

When simplifying the product of $\frac{6}{8}$ and $\frac{4}{9}$, which of the following steps are necessary? (Select all that apply)

Hint: Think about the process of simplifying fractions.

☐ **Cross-cancel common factors ✓**
☐ **Multiply numerators and denominators ✓**
☐ Convert to mixed numbers
☐ **Simplify the resulting fraction ✓**

> You should cross-cancel common factors, multiply numerators and denominators, and simplify the resulting fraction.

Part 3: Evaluation and Creation

Which of the following is the most efficient method to simplify the product of $\frac{8}{12}$ and $\frac{3}{4}$?

Hint: Consider the order of operations for simplification.

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○ Multiply directly and simplify the result
○ **Simplify before multiplying ✓**
○ Convert to decimals and multiply
○ Use estimation to find an approximate answer

> The most efficient method is to simplify before multiplying.

Evaluate the following scenarios and select those where multiplying fractions is necessary. (Select all that apply)

Hint: Think about situations involving area or parts of a whole.

☐ Dividing a pizza into equal parts
☐ **Calculating the area of a rectangle with fractional dimensions ✓**
☐ Adding fractions with different denominators
☐ **Determining the amount of fabric needed for a quilt ✓**

> Calculating the area of a rectangle with fractional dimensions and determining the amount of fabric needed for a quilt require multiplying fractions.

Create a real-world problem involving the multiplication of fractions and provide a detailed solution.

Hint: Think about everyday situations where fractions are used.

> **An example could be calculating the amount of paint needed for a wall that is $\frac{2}{3}$ of a room's total area.**

Propose two different methods to verify the result of multiplying $\frac{5}{7}$ by $\frac{2}{3}$ and explain each method briefly.

Hint: Consider both numerical and visual methods.

1. Method 1

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Multiply directly: $\frac{5}{7} \times \frac{2}{3} = \frac{10}{21}$.

2. Method 2

Use an area model to visualize the multiplication.

One method is to multiply directly and simplify, while another is to use a visual model like area models.

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