

lesson sixteen - student resource sheet

Lesson Objective: Find the least common denominator for a pair of fractions, and rewrite both fractions with that denominator.

Vocabulary Box

multiple – The product of a whole number and another whole number; a number that can be divided by another number with no remainder. Examples: 3, 6, 9, 12, 15, 18, 21, and 24 are some multiples of 3. Multiples of 4 include: 4, 8, 12, 16, 20, 24, 28, and 32.

least common multiple (LCM) – The least number, other than zero, that is a multiple of two or more numbers. Examples: 12 is the least common multiple of 3 and 4. The least common multiple of 3 and 5 is 15.

least common denominator (LCD) – The smallest common multiple of the denominators of two or more fractions. Examples: 18 is the LCD of $\frac{1}{6}$ and $\frac{1}{9}$. The LCD of $\frac{1}{3}$ and $\frac{1}{4}$ is 12.



Guided Practice

Directions: Complete the following practice problems. Your teacher will review the answers. Make sure you show all your work.

- I. Work with a partner to find the least common denominator of each pair of fractions.

1. $\frac{1}{2}$ and $\frac{1}{3}$

First 10 multiples of 2: _____

First 10 multiples of 3: _____

Least common multiple (LCM): _____

Least common denominator (LCD): _____

2. $\frac{5}{6}$ and $\frac{3}{8}$

First 10 multiples of 6: _____

First 10 multiples of 8: _____

Least common multiple (LCM): _____

Least common denominator (LCD): _____

3. $\frac{7}{9}$ and $\frac{7}{12}$

First 10 multiples of 9: _____

First 10 multiples of 12: _____

Least common multiple (LCM): _____

Least common denominator (LCD): _____

II. Work with a partner to complete each pair of equivalent fractions.

1. $\frac{1}{4} = \frac{\quad}{12}$

2. $\frac{2}{3} = \frac{\quad}{6}$

III. Follow the steps to find the least common denominator of each pair of fractions. Then, rewrite the fraction pairs, using the least common denominators. Please work independently and show your work.

1. $\frac{1}{3}$ and $\frac{1}{8}$

2. $\frac{2}{5}$ and $\frac{3}{10}$

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3. $\frac{3}{7}$ and $\frac{2}{3}$



Summary/Closure

A. Vocabulary Words

Directions: Use one of the terms in the Vocabulary Box to complete each sentence.

1. The _____ of 4 and 6 is 12.
2. The first five _____ of 4 are 4, 8, 12, 16, and 20.
3. The _____ of $\frac{1}{4}$ and $\frac{1}{6}$ is 12.
4. $\frac{1}{4}$ and $\frac{1}{6}$ are not _____ fractions, because they do not name the same part of a whole.

B. Summarize What We Learned Today

Write an example of a pair of equivalent fractions. Use words and pictures to explain why they are equivalent. Then, write an example of a pair of fractions that are not equivalent and that have different denominators. Explain how to find the least common denominator of those two fractions, and rewrite them using the least common denominator. You will use these explanations as a personal reminder.

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Lesson Objective: Find the least common denominator for a pair of fractions, and rewrite both fractions with that denominator.

Vocabulary Box

multiple – The product of a whole number and another whole number; a number that can be divided by another number with no remainder. Examples: 3, 6, 9, 12, 15, 18, 21, and 24 are some multiples of 3. Multiples of 4 include: 4, 8, 12, 16, 20, 24, 28, and 32.

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least common denominator (LCD) – The smallest common multiple of the denominators of two or more fractions. Examples: 18 is the LCD of $\frac{1}{6}$ and $\frac{1}{9}$. The LCD of $\frac{1}{3}$ and $\frac{1}{4}$ is 12.



Independent Practice

Directions: Complete the following practice problems on your own. Your teacher will review the answers. Make sure you show all your work.

I. Find the least common denominator of each pair of fractions.

1. $\frac{1}{2}$ and $\frac{1}{7}$

2. $\frac{5}{8}$ and $\frac{9}{12}$

3. $\frac{2}{3}$ and $\frac{7}{10}$

4. $\frac{1}{6}$ and $\frac{4}{9}$

II. Use multiplication to complete each pair of equivalent fractions.

1. $\frac{1}{2} = \frac{\quad}{16}$

2. $\frac{3}{4} = \frac{\quad}{12}$

3. $\frac{7}{8} = \frac{\quad}{32}$

4. $\frac{3}{5} = \frac{\quad}{15}$

III. Find the least common denominator of each pair of fractions. Then rewrite both fractions so that each fraction has that denominator.

1. $\frac{1}{4}$ and $\frac{1}{10}$

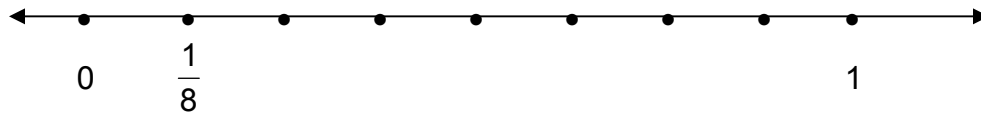
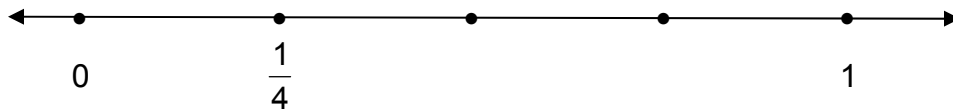
2. $\frac{3}{5}$ and $\frac{1}{6}$

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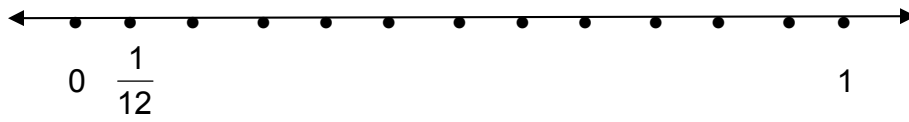
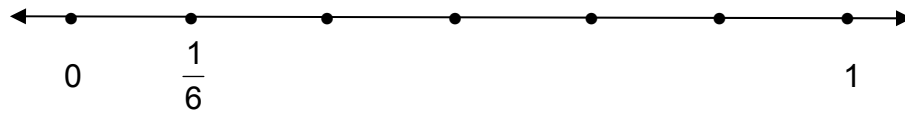
Directions: Complete the labels on each pair of number lines. All the fraction labels on each number line should have the same denominator. Then, use the pair of number lines to identify pairs of equivalent fractions.

1.



Equivalent fraction pairs:

2.



Equivalent fraction pairs:

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Problem Solving

Directions: Use problem-solving strategies to complete the word problems. Make sure you show all your work.

Some students are making a pie for the school bake sale. The recipe for the pie crust says to mix $\frac{3}{4}$ cup of flour, $\frac{2}{3}$ cup of sugar, and $\frac{1}{2}$ cup of butter. The students have only the measuring spoon shown below.



1/12 cup

How can they use the measuring spoon to measure the right amount of flour? Fill in the blanks with the correct answers.

1. The measuring spoon holds _____ cup.
2. The students need to use that spoon to measure _____ cup of flour.
3. Use equivalent fractions to find $\frac{3}{4} = \frac{\quad}{12}$.
4. To measure $\frac{3}{4}$ cup of flour, they need to fill the measuring spoon _____ times.
5. How many times do the students need to fill the measuring spoon to measure the sugar? Use the same steps that you used for flour.
6. How many times do the students need to fill the measuring spoon to measure the butter? Use the same steps that you used for flour.



Directions: Use what you know about multiples to answer the questions.

1. What are the first 10 multiples of 4 and 7?

Multiples of 4:

Multiples of 7:

2. What is the least common denominator of $\frac{1}{4}$ and $\frac{5}{7}$?

3. $\frac{1}{4} = \frac{\quad}{28}$

4. $\frac{5}{7} = \frac{\quad}{28}$

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Lesson Objective: Add and subtract fractions and mixed numbers having unlike denominators, and write answers in simplest form.

Vocabulary Box

proper fraction – A fraction with a numerator that is less than the denominator. Examples:

$$\frac{1}{2}, \frac{3}{4}, \frac{4}{7}, \text{ and } \frac{9}{12}.$$

improper fraction – A fraction with a numerator that is greater than or equal to the denominator. Examples: $\frac{3}{2}$, $\frac{8}{4}$, $\frac{7}{7}$, and $\frac{20}{12}$.

mixed number — A number that contains a whole number part and a fraction part.

Example: $2\frac{3}{4}$ is a mixed number. 2 is the whole number part and $\frac{3}{4}$ is the fraction part.

simplest form – For any fraction, the form in which 1 is the only common factor of the numerator and denominator. Example: $\frac{23}{24}$ or $\frac{5}{6}$ or $\frac{1}{2}$.



Guided Practice

Directions: Complete the following practice problems. Your teacher will review the answers. Make sure you show all your work.

- I. Use a ruler to draw line segments to model each problem. Then solve each problem. You may work with a partner.

1. $\frac{1}{4} + \frac{1}{2}$

2. $\frac{5}{8} - \frac{1}{4}$

3. $2\frac{1}{2} + 1\frac{5}{8}$

4. $3\frac{1}{4} - 1\frac{1}{2}$

II. Use equivalent fractions to solve each problem. Remember to find the least common denominator first, and write your answers in simplest form. You may work with a partner.

1. $\frac{1}{3} + \frac{5}{6}$

2. $3\frac{1}{2} - 1\frac{1}{5}$

III. Use equivalent fractions to solve each problem. Remember to write your answers in simplest form. Please work independently.

1. $4\frac{1}{12} - 2\frac{3}{4}$

2. $1\frac{7}{9} + 2\frac{1}{4}$

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Summary/Closure

A. Vocabulary Words

Directions: Circle the correct answer(s) for each question.

1. Which of the following are improper fractions?

A. $\frac{4}{3}$

B. $\frac{3}{3}$

C. $\frac{2}{3}$

2. Which of the following are mixed numbers?

A. $\frac{1}{4}$

B. 4

C. $5\frac{3}{4}$

3. Which of the following are in simplest form?

A. $\frac{2}{6}$

B. $3\frac{5}{6}$

C. $1\frac{3}{6}$

4. Which of the following are proper fractions?

A. $\frac{8}{8}$

B. $\frac{4}{8}$

C. $\frac{5}{8}$

B. Summarize What We Learned Today

Write and solve two sample problems. Your first problem should involve adding fractions with unlike denominators. Your second problem should involve subtracting mixed numbers with unlike denominators. Use words, numbers, or pictures to explain how you solved each problem and wrote the answer in simplest form. You will use these explanations as a personal reminder.

