Developed with Kristin Ulrich

Addition and subtraction of fractions

Volume 10 | Gr. 5
Time: 20-30 mins.

Content

Adding and subtracting fractions with unlike denominators using fraction tiles and other models.

Objectives

Students will...
- Prove that two particular fractions with unlike denominators add up to a given fraction
- Prove that two particular fractions with unlike denominators have a given difference
- Create pictorial models that represent a variety of addition and subtraction problems with fractions

Materials

- Fraction Tiles (**TB20193**), Fraction Tiles with Tray (**TB15811**), Complete Set of Fraction Tiles without Trays (**TB21927**) or Complete Set of Fraction Tiles with Trays (**TB21928**)
- Worksheets (attached with lesson plan download)

Learning Standards

- Represent and solve addition and subtraction of fractions with unequal denominators referring to the same whole using objects and pictorial models and properties of operations.

Introduction

- This lesson is meant as a centers activity that can be utilized to reinforce previous lessons where students practiced adding and subtracting fractions with unlike denominators. Students can work on these activity cards individually or in small groups. Each card is numbered. The first nine cards are addition problems. The last nine cards are subtraction problems. The problems at the end of each given set are labeled as challenge cards.

Bonus bingo game

- Hand out a blank bingo card to each student. Each card has a list of fractions. Students are to place the listed fractions in the squares on their bingo card in a random order. When this is done, read each problem aloud. Students should cross out the answer to each problem that was read. When a student has five in a row, they shout BINGO! This activity should take about 15-20 minutes.
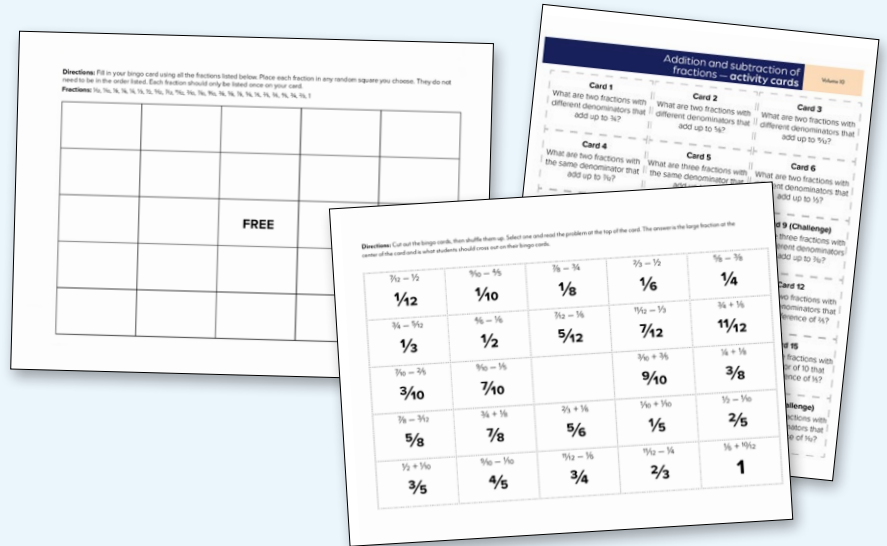
Intervention

- Exclude the challenge cards for the pack provided to students.
- Rather than having students work independently on the activity, have them work in small groups.

Extension

- Have students create cards of their own for peers to solve.

Card 1

What are two fractions with different denominators that add up to $\frac{3}{4}$?

Card 2

What are two fractions with different denominators that add up to $\frac{5}{8}$?

Card 3

What are two fractions with different denominators that add up to $\frac{11}{12}$?

Card 4

What are two fractions with the same denominator that add up to $\frac{7}{12}$?

Card 5

What are three fractions with the same denominator that add up to $\frac{1}{2}$?

Card 6

What are two fractions with different denominators that add up to $\frac{1}{3}$?

Card 7 (Challenge)

What are three fractions with different denominators that add up to $\frac{7}{8}$?

Card 8 (Challenge)

What are three fractions with two different denominators that add up to $\frac{9}{10}$?

Card 9 (Challenge)

What are three fractions with three different denominators that add up to $\frac{7}{12}$?

Card 10

What are two fractions with different denominators that have a difference of $\frac{1}{4}$?

Card 11

What are two fractions with different denominators that have a difference of $\frac{1}{6}$?

Card 12

What are two fractions with different denominators that have a difference of $\frac{2}{5}$?

Card 13

What are three fractions with the same denominator that have a difference of $\frac{3}{8}$?

Card 14

What are three fractions with a denominator of 12 that have a difference of $\frac{1}{3}$?

Card 15

What are three fractions with a denominator of 10 that have a difference of $\frac{1}{5}$?

Card 16 (Challenge)

What are three fractions with different denominators that have a difference of $\frac{1}{3}$?

Card 17 (Challenge)

What are three fractions with different denominators that have a difference of $\frac{1}{2}$?

Card 18 (Challenge)

What are three fractions with different denominators that have a difference of $\frac{1}{12}$?

Addition and Subtraction of Fractions Activity Card Answer Key

Note: Answers may vary. These are sample responses.

Card 1	$\frac{4}{6} + \frac{1}{12}$
Card 2	$\frac{3}{8} + \frac{1}{4}$
Card 3	$\frac{3}{4} + \frac{1}{6}$
Card 4	$\frac{1}{3} + \frac{1}{4}$
Card 5	$\frac{1}{4} + \frac{1}{6} + \frac{1}{12}$
Card 6	$\frac{1}{4} + \frac{1}{12}$
Card 7 (Challenge)	$\frac{1}{2} + \frac{1}{4} + \frac{1}{8}$
Card 8 (Challenge)	$\frac{1}{2} + \frac{1}{5} + \frac{2}{10}$
Card 9 (Challenge)	$\frac{1}{3} + \frac{1}{6} + \frac{1}{12}$
Card 10	$\frac{7}{12} - \frac{1}{3}$
Card 11	$\frac{1}{2} - \frac{1}{3}$
Card 12	$\frac{9}{10} - \frac{1}{2}$
Card 13	$\frac{7}{8} - \frac{1}{8} - \frac{3}{8}$
Card 14	$\frac{11}{12} - \frac{5}{12} - \frac{2}{12}$
Card 15	$\frac{7}{10} - \frac{2}{10} - \frac{3}{10}$
Card 16 (Challenge)	$\frac{11}{12} - \frac{2}{6} - \frac{1}{4}$
Card 17 (Challenge)	$\frac{11}{12} - \frac{1}{4} - \frac{1}{6}$
Card 18 (Challenge)	$\frac{3}{4} - \frac{1}{3} - \frac{2}{6}$

Directions: Cut out the bingo cards, then shuffle them up. Select one and read the problem at the top of the card. The answer is the large fraction at the center of the card and is what students should cross out on their bingo cards.

Problem	Answer
7/12 − 1/2	**1/12**
9/10 − 4/5	**1/10**
7/8 − 3/4	**1/8**
2/3 − 1/2	**1/6**
5/8 − 3/8	**1/4**
3/4 − 5/12	**1/3**
4/6 − 1/6	**1/2**
7/12 − 1/6	**5/12**
11/12 − 1/3	**7/12**
3/4 + 1/6	**11/12**
7/10 − 2/5	**3/10**
9/10 − 1/5	**7/10**
3/10 + 3/5	**9/10**
1/4 + 1/8	**3/8**
7/8 − 3/12	**5/8**
3/4 + 1/8	**7/8**
2/3 + 1/6	**5/6**
1/10 + 1/10	**1/5**
1/2 − 1/10	**2/5**
1/2 + 1/10	**3/5**
9/10 − 1/10	**4/5**
11/12 − 1/6	**3/4**
11/12 − 1/4	**2/3**
1/6 + 10/12	**1**

Name: _____   Date: _____

Directions: Use the fraction tiles provided to create the problem listed on each card. Draw a picture of what your fraction tiles look like in your answer.

Card 1

Equation:

Pictorial Model:

Card 2

Equation:

Pictorial Model:

Card 3

Equation:

Pictorial Model:

Card 4

Equation:

Pictorial Model:

Card 5

Equation:

Pictorial Model:

Card 6

Equation:

Pictorial Model:

Card 7

Equation:

Pictorial Model:

Card 8

Equation:

Pictorial Model:

Card 9

Equation:

Pictorial Model:

Directions: Use the fraction tiles provided to create the problem listed on each card. Draw a picture of what your fraction tiles look like in your answer.

Card 10

Equation:

Pictorial Model:

Card 11

Equation:

Pictorial Model:

Card 12

Equation:

Pictorial Model:

Card 13

Equation:

Pictorial Model:

Card 14

Equation:

Pictorial Model:

Card 15

Equation:

Pictorial Model:

Card 16

Equation:

Pictorial Model:

Card 17

Equation:

Pictorial Model:

Card 18

Equation:

Pictorial Model:

		FREE		

Directions: Fill in your bingo card using all the fractions listed below. Place each fraction in any random square you choose. They do not need to be in the order listed. Each fraction should only be listed once on your card.

Fractions: ½, ⅒, ⅛, ⅙, ¼, ⅓, ½, 5/12, 7/12, 11/12, 3/10, 7/10, 9/10, 3/8, 5/8, 7/8, 5/6, ⅕, ⅖, ⅗, ⅘, ¾, ⅔, 1