Whole Numbers | Partial Numbers

4,632,143 . 2783

3 Types of Fractions

Proper

part → 3 ← numerator

whole → 4 ← denominator

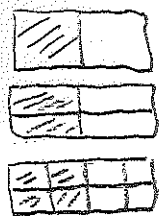
Improper

$\frac{5}{4}$ =

Mixed Number

$1\frac{1}{4}$

Equivalent fractions
name the same amount

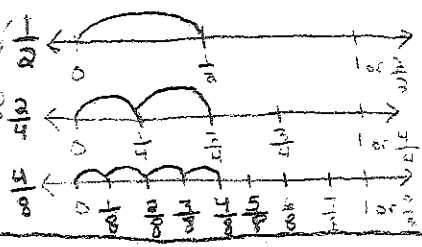


$\frac{1}{2}$

$\frac{2}{4}$

$\frac{4}{8}$

3 ways to name the same amount



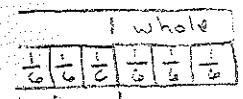
Adding Fractions with the Same Denominator

Proper

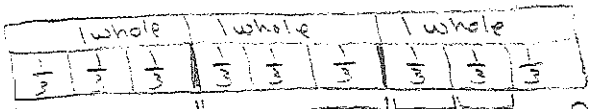
$\frac{1}{6} + \frac{2}{6}$

Mixed

$1\frac{1}{3} + 1\frac{1}{3} =$ ☐ ☐



$\frac{1}{6} + \frac{2}{6} = \frac{3}{6}$



$1 + 1 + \frac{1}{3} + \frac{1}{3} = 2\frac{2}{3}$

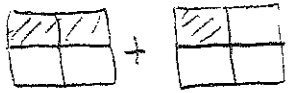
Standards and Mathematical Practices

- We will make sense of adding all three types of fractions with unlike denominators and persevere in solving them.
- We will model solving word problems involving adding fractions by using visual fraction models or equations to represent the problem.

Fractions - using addition

Adding with Related Denominators

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



Think Multiples

2:2,4

2 × ② = 4

$\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$

Adding with Unrelated Denominators

$\frac{1}{2} + \frac{1}{3}$

2: 2, 4, 6

2 × ③ = 6

3: 3, 6

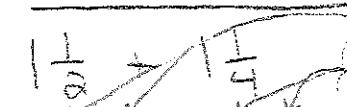
3 × ② = 6

Make the wholes have equal number of parts.

$\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$

Adding Mixed Numbers with Related Denominators

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



All wholes must have equal parts.

$1\frac{2}{4} + 1\frac{1}{4} = 2\frac{3}{4}$

Or

$\frac{6}{4} + \frac{5}{4} = \frac{11}{4}$

Adding Mixed Numbers with Unrelated Denominators

$1\frac{1}{2} + 1\frac{1}{3}$

Least Common Multiple for 2 and 3 is 6.

$1\frac{3}{6} + 1\frac{2}{6} = 2\frac{5}{6}$

Or

$\frac{9}{6} + \frac{8}{6} = \frac{17}{6}$

We know...

Inquiry
Adding Fractions

We want to know...

AIM4S³ ™ 5th

Module
Unit 4 : Adding Fractions

UNIT PLANNING TOOL

CCSSM: 5.NF 1 & 2

① Add/Subtract fractions w/unlike denominators (including mixed numbers) by replacing given fractions w/equivalent fractions in such a way as to produce an equivalent sum or difference

② Solve word problems involving addition/subtraction of fractions referring to the same whole, including cases of ~~unlike denominators~~ e.g. by using visual fraction models or equations to represent the problem

Math Practices being emphasized:

MP 1 and 4

① Make sense of problems & persevere in solving them.

② Model with mathematics.

Essential Questions

How are multiples helpful in adding fractions with unlike denominators?

How can making equivalent fractions and using models help us solve problems?

Pre and Post Assessments

Stepping Stones

- Pre-test
- formative
- summative

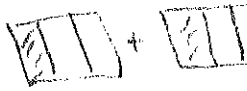
} assessments

Key Concepts

- multiples
- fractions - parts of a whole
- fractions - 3 types
- why denominators must be the same to add fractions
- understanding equivalent fractions

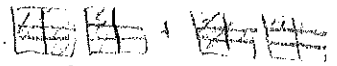
Visual Models of Concepts

$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$



$1\frac{1}{2} + 1\frac{1}{3}$

$\frac{1}{3} + \frac{1}{4}$



$\frac{9}{6} + \frac{2}{6} = \frac{17}{6}$

$1\frac{3}{6} + 1\frac{2}{6} = 2\frac{5}{6}$

$\frac{4}{12} + \frac{3}{12} = \frac{7}{12}$

Algorithms/Diagrams

- develop algorithmic strategies after conceptual knowledge

$1\frac{1}{2} = \frac{3}{2}$ (×2)

$\frac{1}{3} \times \frac{2}{2} = \frac{2}{6}$

$+ \frac{1}{2} \times \frac{3}{3} = \frac{3}{6}$

$\frac{5}{6}$

Connections (Real World Applications)

- cooking
- construction
- money - finance
- business
- engineering
- medical professions

AIM4S³ ™

Language Functions/Structures

Comparing/Contrasting

This fraction is the equivalent of this fraction because...
Mixed numbers and improper fractions are similar because...
Mixed numbers and improper fractions are different because...

Defining

I can add fractions with like denominators because...
To add fractions with unlike denominators I must...

Vocabulary

denominator
numerator
common denominator
unlike denominator
related
unrelated
fraction
proper
improper
mixed number
unit fraction
equivalent
reasonableness
persevere
multiple
Lowest Common Denominator
least common multiple
partial numbers
whole numbers

Focus and Motivation

Activities

I have.. who has

$\frac{1}{2} = \frac{2}{4}$? Prove-it

Literature

"Inchworm and a Half"
by Elinor Pinzor

"Fraction Action"
by Loreen Leedy

Explorations

Fractions - Brainpop.com

Equivalent fractions - studyjams, scholastic.com

Games (online)

Sheppardsoftware.com
- Matching fractions
- Mixed fraction matching
- Equivalent fraction matching
- Fraction Addition

mrnussbaum.com
- Tony's Fraction Pizza Shop

pbskids.org
- Melvin Makes a Match