

Unit 7 - Chapter 7: Add and Subtract Fractions

Content Area: **Mathematics**
Course(s): **Math 4**
Time Period: **January**
Length: **3 weeks**
Status: **Published**

Unit Summary

In this unit, students will add and subtract parts of a whole. Fraction models are a useful visual tool for understanding operations with fractions. The models show students that when we add and subtract like denominators, they are adding and subtracting equal-size parts of a whole. Take-away models are useful for situations that ask "how much is left". Comparison models are useful for questions that ask "how much more".

Standards

MA.4.NF.B.3	Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.
MA.4.NF.B.3a	Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
MA.4.NF.B.3b	Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model.
MA.4.NF.B.3c	Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
MA.4.NF.B.3d	Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
TECH.8.1.5	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Student Learning Objectives

Students will learn to:

- understand that to add or subtract fractions they must refer to parts of the same whole.
- decompose a fraction by writing it as a sum of fractions with the same denominators.
- use models to represent and find sums involving fractions.
- use models to represent and find differences involving fractions.
- solve word problems involving addition and subtraction with fractions.
- write fractions greater than 1 as mixed numbers and write mixed numbers as fractions greater than 1.
- add and subtract mixed numbers.
- rename mixed numbers to subtract.
- use the properties of addition to add fractions.
- use the strategy *act it out* to solve multistep fraction problems.

Essential Questions

- When can you add or subtract parts of a whole?
- How can you write a fraction as a sum of fractions with the same denominators?
- How can you add fractions with like denominators using models?
- How can you subtract fractions with like denominators using models?
- How can you add and subtract fractions with like denominators?
- How can you rename mixed numbers as improper fractions and rename improper fractions as mixed numbers?
- How can you add and subtract mixed numbers with like denominators?
- How can you rename a mixed number to help you subtract?
- How can you add fractions with like denominators using the properties of addition?
- How can you use the strategy *act it out* to solve multistep problems with fractions?

Enduring Understanding

Students understand that:

- we can add fractions with like denominators.
- using models to add and subtract is helpful.
- we can rename mixed numbers as fractions greater than one and vice versa.

Application

Students will be able to independently use their learning to:

- understand that to add or subtract fractions they must refer to parts of the same whole.
- decompose a fraction by writing it as a sum of fractions with the same denominators.
- use models to represent and find sums involving fractions.
- use models to represent and find differences involving fractions.
- solve word problems involving addition and subtraction with fractions.
- write fractions greater than 1 as mixed numbers and write mixed numbers as improper fractions.
- add and subtract mixed numbers.
- rename mixed numbers to subtract.
- use the properties of addition to add fractions.
- use the strategy *act it out* to solve multi-step fraction problems.

Skills

Students will be skilled at:

- understanding that to add or subtract fractions they must refer to parts of the same whole.
- using models to represent and find sums involving fractions.

- using models to represent and find differences involving fractions.
- solving word problems involving addition and subtraction with fractions.
- writing fractions greater than 1 as mixed numbers and write mixed numbers as fractions greater than 1.
- adding and subtracting mixed numbers.
- renaming mixed numbers to subtract.
- using the properties of addition to add fractions.
- using the strategy *act it out* to solve multistep fraction problems.