4 Math Unit 10: Addition and Subtraction Mixed Numbers

Content Area: **Mathematics**
Course(s):
Time Period: **Marking Period 3**
Length: **10 days**
Status: **Published**

Unit Overview

Addition and Subtraction of Mixed Numbers

In this unit, students are introduced to mixed numbers as numbers that have a whole-number part and a fraction part. They use this understanding to decompose a mixed number into a sum of whole numbers and /or fractions in different ways. They extend the idea that a fraction can be written as the sum of unit fractions to the idea that a mixed number can be written as the sum of fractions.

Students extend their work with adding and subtracting fractions with like denominators to adding and subtracting mixed numbers with like denominators. They use representations to make sense of different addition and subtraction strategies. These strategies include decomposing one or both mixed numbers and writing the mixed numbers as fractions greater than 1 to add or subtract.

Students extend their understanding of fractions learned in previous grades. This understanding includes:

- **Fractions:** Students gained an understanding of fractions that are formed when a whole is partitioned into equal parts.
- **Representing Fractions:** Students represented fractions using number lines and models.
- **Equivalent Fractions:** Students expressed whole numbers as fractions.

What Students Are Learning

- Students understand mixed numbers as having a whole number part and a fraction part. They decompose a mixed number into a sum of whole numbers and/or fractions with the same denominator in more than one way.
- Students add and subtract mixed numbers with like denominators using representations and various strategies.
- Students solve word problems involving addition and subtraction of mixed numbers with like denominators.

- Decompose It
- Find the Missing Values
- Find a Pattern, Make a Pattern
- Notice & Wonder
- Numberless Word Problem

Standards

MATH.4.NF.B.3	Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.
MATH.4.NF.B.3.a	Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
MATH.4.NF.B.3.b	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.
MATH.4.NF.B.3.c	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.
MATH.4.NF.B.3.d	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.

Materials

Core Materials:

Reveal Math

10.1 Understand Decomposing Mixed Numbers

10.2 Represent Adding Mixed Numbers

10.3 Add Mixed Numbers

10.4 Represent Subtracting Mixed Numbers

10.5 Subtract Mixed Numbers

10.6 Solve Problems Involving Mixed Numbers

Supplemental Materials:

- ST Math
- Happy Numbers
- 3 Act Lessons
- Building Fact Fluency Kit
- Brainingcamp Manipulatives
- Nearpod Lessons
- Brainpop Resources
- Online Resources

Technology

CS.3-5.8.1.5.DA.1	Collect, organize, and display data in order to highlight relationships or support a claim.
CS.3-5.8.1.5.DA.3	Organize and present collected data visually to communicate insights gained from different views of the data.
CS.3-5.8.1.5.DA.4	Organize and present climate change data visually to highlight relationships or support a claim.
CS.3-5.8.2.5.ED.2	Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.

CS.3-5.8.2.5.ED.3	Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.
CS.3-5.DA	Data & Analysis Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data. Data can be organized, displayed, and presented to highlight relationships.

Assessment

Formative Assessment

- Unit Readiness Diagnostics
- Lesson Checks
- Exit Tickets
- Teacher Observation

Summative Assessment

- Unit Assessment Performance Task
- Benchmark Tests
- Alternative Assessments: Performance Tasks & Projects

Accommodations & Modifications

Special Education

Differentiated Instruction			
Accommodate Based on Students Individual Needs: Strategies			
Time/General • Extra time for assigned tasks • Adjust length of assignment • Timeline with due dates for reports and projects • Communication system between home and school • Provide lecture notes/outline	**Processing** • Extra response time • Have students verbalize steps • Repeat, clarify, or reword directions • Mini-breaks between tasks • Provide a warning for transitions • Reading partners	**Comprehension** • Precise step-by-step directions • Short manageable tasks • Brief and concrete directions • Provide immediate feedback	**Recall** • Teacher-made checklist • Use visual graphic organizers • Reference resources to promote independence • Visual and verbal

		• Small group instruction • Emphasize multi-sensory learning	reminders • Graphic organizers
Assistive Technology • Computer/whiteboard • Tape recorder • Spell-checker • Audio-taped books	**Tests/Quizzes/Grading** • Extended time • Study guides • Focused/chunked tests • Read directions aloud	**Behavior/Attention** • Consistent daily structured routine • Simple and clear classroom rules • Frequent feedback	**Organization** • Individual daily planner • Display a written agenda • Note-taking assistance • Color code materials

504

- In class/pull out support with special ed teacher Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks Graphic organizers
- Vocabulary support Mnemonic devices
- Songs/videos to reinforce concepts Limit number of questions
- Scribe Manipulatives Calculators Reteach pages Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System Another look homework video
- Practice buddy

ELL

- Translation device/dictionary
- In class/pull out support with ESL teacher
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Math Diagnosis & Intervention System

At-risk of Failure

- Additional time during intervention time
- Questions read aloud
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Manipulatives
- Calculators
- Reteach pages
- Leveled homework
- Lesson intervention activities
- Math Diagnosis & Intervention System
- Another look homework video
- Practice buddy

Gifted & Talented

- Independent projects
- Enrichment pages
- Online games
- Leveled Homework
- Extension Activities
- Today's Challenge

Interdisciplinary Connections

ELA.RI.CI.4.2	Summarize an informational text and interpret the author's purpose or main idea citing key details from the text.
SCI.4.ETS1.B	Developing Possible Solutions Testing a solution involves investigating how well it performs under a range of likely conditions.

Career Readiness, Life Literacies & Key Skills

PFL.9.1.5.FI	Financial Institutions People can choose to save money in many places such as home in a piggy bank, bank, or credit union.
PFL.9.1.5.FI.1	Identify various types of financial institutions and the services they offer including banks, credit unions, and credit card companies.
WRK.9.2.5.CAP.3	Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
WRK.9.2.5.CAP.4	Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these

	requirements.
TECH.9.4.5.CT	Critical Thinking and Problem-solving
TECH.9.4.5.CT.1	Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
TECH.9.4.5.CT.3	Describe how digital tools and technology may be used to solve problems.
TECH.9.4.5.CT.4	Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3). The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.

Career Ready Practices

STEM CAREER: Veterinarian Student talks about the work of veterinarians. Student subtracts mixed numbers to see how much weight a dog has gained.

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP12. Work productively in teams while using cultural global competence.