

Unit 2: Fractions & Decimals

Content Area: **Math**
Course(s):
Time Period: **October**
Length: **4-5 Weeks**
Status: **Published**

Unit Overview

In this unit, students will learn about the following topics:

- Adding and subtracting fractions and mixed numbers
- Multiplying fractions and mixed numbers
- Dividing fractions and mixed numbers
- Adding and subtracting decimals
- Multiplying decimals
- Dividing whole numbers and decimals

Enduring Understandings

SWBAT:

- Use a least common denominator to add and subtract fractions and mixed numbers
- Find products involving fractions and mixed numbers
- Compute quotients of fractions and solve problems involving division by fractions
- Compute quotients with mixed numbers and solve problems involving division with mixed numbers
- Add and subtract decimals and solve problems involving addition and subtraction of decimals
- Multiply decimals and solve problems involving multiplication of decimals
- Divide whole numbers and solve problems involving division of whole numbers
- Carry out the long division algorithm for whole numbers and decimals
- Divide decimals and solve problems involving division of decimals

Essential Questions

- How can we:

- Utilize a least common denominator to add and subtract fractions and mixed numbers?
- Draw a model to explain fraction addition and subtraction?
- Write a mixed number as an improper fraction?
- Write an improper fraction as a mixed number?

- How can we:

- Find products involving fractions and mixed numbers?
- Draw a model to explain fraction multiplication?
- Interpret products involving fractions and mixed numbers to solve real-world problems?

- How can we:

- Draw a model to explain division of fractions?
- Draw a model to explain division of mixed numbers?
- Compute quotients of fractions with fractions?
- Compute quotients of fractions with mixed numbers?
- Compute quotients of mixed numbers with mixed numbers?
- Utilize the Keep, Change, Flip method of dividing fractions?
- Understand how to utilize a reciprocal when dividing fractions?

- How can we:

- Use place value to explain addition and subtraction of decimals?
- Find sums and differences of decimals using the standard algorithm?
- Evaluate expressions involving sums and differences of decimals?

- How can we:

- Draw a model to explain multiplication of decimals?
- Multiply decimals by whole numbers?
- Multiply decimals by decimals?
- Evaluate expressions involving products of decimals and/or whole numbers?
- Utilize powers of ten to determine decimal placement?

- How can we:

- divide whole numbers and solve problems involving division of whole numbers?
- divide decimals and solve problems involving division of decimals?
- Use long division to divide whole numbers?
- Use long division to divide decimals?
- Interpret quotients of whole numbers and decimals in real-world problems?

Instructional Strategies & Learning Activities

- Guided Practice
- Do Now
- Extra Practice & Puzzle Time (Resources)
- Scavenger Hunts
- Coloring Activities
- Task Cards (Around the World)
- Maze Activities
- Quizizz Online Assignments
- Kahoot! Online Games
- GimKit Online Games

Integration of 21st Century Themes and Skills

PFL.9.1.2. FI.1	Differentiate the various forms of money and how they are used (e.g., coins, bills, checks, debit and credit cards).
PFL.9.1.2.FP.2	Differentiate between financial wants and needs.
PFL.9.1.2.PB.1	Determine various ways to save and places in the local community that help people save and accumulate money over time.
PFL.9.1.2.PB.2	Explain why an individual would choose to save money.
PFL.9.1.2.RM.1	Describe how valuable items might be damaged or lost and ways to protect them.
WRK.9.2.8.CAP.3	Explain how career choices, educational choices, skills, economic conditions, and personal behavior affect income.
WRK.9.2.8.CAP.6	Compare the costs of post-secondary education with the potential increase in income from a career of choice.
WRK.9.2.8.CAP.15	Present how the demand for certain skills, the job market, and credentials can determine an individual's earning power.
WRK.9.2.8.CAP.19	Relate academic achievement, as represented by high school diplomas, college degrees, and industry credentials, to employability and to potential level.
TECH.9.4.8.CI.3	Examine challenges that may exist in the adoption of new ideas (e.g., 2.1.8.SSH, 6.1.8.CivicsPD.2).
TECH.9.4.8.CT.1	Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).
TECH.9.4.8.CT.2	Develop multiple solutions to a problem and evaluate short- and long-term effects to

	determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1).
TECH.9.4.8.CT.3	Compare past problem-solving solutions to local, national, or global issues and analyze the factors that led to a positive or negative outcome.
TECH.9.4.8.TL.2	Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).
TECH.9.4.8.TL.3	Select appropriate tools to organize and present information digitally.
TECH.9.4.8.TL.5	Compare the process and effectiveness of synchronous collaboration and asynchronous collaboration.
TECH.9.4.8.IML.3	Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping (e.g., 6.SP.B.4, 7.SP.B.8b).
TECH.9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.
TECH.9.4.8.IML.7	Use information from a variety of sources, contexts, disciplines, and cultures for a specific purpose (e.g., 1.2.8.C2a, 1.4.8.CR2a, 2.1.8.CHSS/IV.8.AI.1, W.5.8, 6.1.8.GeoSV.3.a, 6.1.8.CivicsDP.4.b, 7.1.NH. IPRET.8).
TECH.9.4.8.IML.8	Apply deliberate and thoughtful search strategies to access high-quality information on climate change (e.g., 1.1.8.C1b).
	An essential aspect of problem solving is being able to self-reflect on why possible solutions for solving problems were or were not successful.
	Gathering and evaluating knowledge and information from a variety of sources, including global perspectives, fosters creativity and innovative thinking.

Technology and Design Integration

CS.6-8.8.1.8.AP.1	Design and illustrate algorithms that solve complex problems using flowcharts and/or pseudocode.
CS.6-8.8.1.8.AP.2	Create clearly named variables that represent different data types and perform operations on their values.
TECH.8.1.8.A.1	Demonstrate knowledge of a real world problem using digital tools.
TECH.8.1.8.A.3	Use and/or develop a simulation that provides an environment to solve a real world problem or theory.
TECH.8.1.8.B.CS1	Apply existing knowledge to generate new ideas, products, or processes.
TECH.8.1.8.D.4	Assess the credibility and accuracy of digital content.
TECH.8.1.8.E.CS1	Plan strategies to guide inquiry.
TECH.8.2.8.B.2	Identify the desired and undesired consequences from the use of a product or system.

Interdisciplinary Connections

ELA.L.SS.6.1.F	Recognize spelling conventions.
ELA.L.KL.6.2.A	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases.
ELA.L.KL.6.2.B	Gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

ELA.L.VL.6.3.A	Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.
ELA.L.VL.6.3.E	Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).
ELA.L.VI.6.4.B	Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words.
ELA.W.IW.6.2.D	Use precise language and domain-specific vocabulary to inform about or explain the topic.

Differentiation

Differentiation

- Understand that gifted students, just like all students, come to school to learn and be challenged.
- Pre-assess your students. Find out their areas of strength as well as those areas you may need to address before students move on.
- Consider grouping gifted students together for at least part of the school day.
- Plan for differentiation. Consider pre-assessments, extension activities, and compacting the curriculum.
- Use phrases like "You've shown you don't need more practice" or "You need more practice" instead of words like "qualify" or "eligible" when referring to extension work.
- Encourage high-ability students to take on challenges. Because they're often used to getting good grades, gifted students may be risk averse.
- **Definitions of Differentiation Components:**
 - Content – the specific information that is to be taught in the lesson/unit/course of instruction.
 - Process – how the student will acquire the content information.
 - Product – how the student will demonstrate understanding of the content.
 - Learning Environment – the environment where learning is taking place including physical location and/or student grouping

Differentiation occurring in this unit:

- - Challenges will be presented to students as the need arises.

Struggling students will get additional personalized instruction, and modifications as needed.

Modifications & Accommodations

Refer to QSAC EXCEL SMALL SPED ACCOMMODATIONS spreadsheet in this discipline.

Modifications and Accommodations used in this unit:

Challenges will be presented to students as the need arises.

Struggling students will get additional personalized instruction, and modifications as needed.

IEP and 504 accommodations will be utilized.

Benchmark Assessments

Benchmark Assessments are given periodically (e.g., at the end of every quarter or as frequently as once per month) throughout a school year to establish baseline achievement data and measure progress toward a standard or set of academic standards and goals.

Schoolwide Benchmark assessments:

Aimsweb benchmarks 3X a year

Linkit Benchmarks 3X a year

Additional Benchmarks used in this unit:

End of semester testing

Formative Assessments

Assessment allows both instructor and student to monitor progress towards achieving learning objectives, and can be approached in a variety of ways. **Formative assessment** refers to tools that identify misconceptions, struggles, and learning gaps along the way and assess how to close those gaps. It includes effective tools for helping to shape learning, and can even bolster students' abilities to take ownership of their learning when they understand that the goal is to improve learning, not apply final marks (Trumbull and Lash, 2013). It can include students assessing themselves, peers, or even the instructor, through writing, quizzes, conversation, and more. In short, formative assessment occurs throughout a class or course, and seeks to improve student achievement of learning objectives through approaches that can support specific student needs (Theal and Franklin, 2010, p. 151).

Formative Assessments used in this unit:

- Kahoot! Games
- Quizizz Games
- Homework
- Q & A
- Scavenger Hunts
- Coloring Activities

- Task Cards
- Partner Activities

Summative Assessments

Summative assessments evaluate student learning, knowledge, proficiency, or success at the conclusion of an instructional period, like a unit, course, or program. Summative assessments are almost always formally graded and often heavily weighted (though they do not need to be). Summative assessment can be used to great effect in conjunction and alignment with formative assessment, and instructors can consider a variety of ways to combine these approaches.











Summative assessments for this unit:

- Chapter Tests
- Quizzes

Instructional Materials

1. Big Ideas Math: Modeling Real Life 6th Grade Book
2. Quizizz
3. Kahoot
4. Scavenger Hunts
5. Task Cards
6. Coloring Activities

Standards

-   Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.
-    0xMA.6.NS.A.1
-   0xMA.6.NS.B.2 Fluently divide multi-digit numbers using the standard algorithm.
-   0xMA.6.NS.B.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
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- MA.6.NS.A.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.

MA.6.NS.B.2

Fluently divide multi-digit numbers using the standard algorithm.

MA.6.NS.B.3

Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.