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

- Daily 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

	Gathering and evaluating knowledge and information from a variety of sources, including global perspectives, fosters creativity and innovative thinking.
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).
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).
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).
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).
	An essential aspect of problem solving is being able to self-reflect on why possible solutions for solving problems were or were not successful.
9.1.2.FP.2	Differentiate between financial wants and needs.
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.
9.1.2.PB.2	Explain why an individual would choose to save money.
9.1.2.RM.1	Describe how valuable items might be damaged or lost and ways to protect them.
9.2.8.CAP.15	Present how the demand for certain skills, the job market, and credentials can determine an individual's earning power.
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.
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.
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).
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).
9.4.8.TL.3	Select appropriate tools to organize and present information digitally.
CRP.K-12.CRP1.1	Career-ready individuals understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.
CRP.K-12.CRP2.1	Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.

Technology and Design Integration

8.1.8.AP.1	Design and illustrate algorithms that solve complex problems using flowcharts and/or pseudocode.
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

L.SS.6.1.F	Recognize spelling conventions.
L.KL.6.2.A	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases.
L.KL.6.2.B	Gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
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.
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).
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.
W.IW.6.2.D	Use precise language and domain-specific vocabulary to inform about or explain the topic.

Differentiation

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:

- High-achieving students will assist low-achieving students in mixed ability groupings for games and activities.

- High-achieving students can complete sudoku puzzles and logic puzzles as extension activities.
- Limit number/difficulty of problems for low-achieving students to demonstrate mastery.
- Narrow down problem choice to core concepts for low-achieving students.
- Leveled group-based activities, determined by formative assessment.

Modifications and Accomodations

- High-achieving students will assist low-achieving students in mixed ability groupings for games and activities.

- High-achieving students can complete sudoku puzzles and logic puzzles as extension activities.
- Limit number/difficulty of problems for low-achieving students to demonstrate mastery.
- Narrow down problem choice to core concepts for low-achieving students.
- Leveled group-based activities, determined by formative assessment.

Formative Assessment

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 for this unit:

- Chapter Test
- Quizzes

Benchmark Assessments

Schoolwide Benchmark assessments:

- Linkit Benchmarks (Form A in September, Form B in January, Form C in June): Linked to NJSLA standards

Additional Benchmarks used in this unit:

- IXL Diagnostic + continued practice during IXL periods

Instructional Materials

1. Big Ideas Math: Math & You 6th Grade Textbook
2. Quizizz
3. Kahoot!
4. Scavenger Hunts
5. Task Cards
6. Coloring Activities

7. GimKit

Standards

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.
6.NS.B.2	With accuracy and efficiency, divide multi-digit numbers using the standard algorithm.
6.NS.B.3	With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.