Unit 4: Fractions/Decimals/Percentages

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

Unit Overview

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

- Converting between fractions and percentages

- Converting between decimals and percentages

- Comparing fractions, decimals, and percentages

- Ordering fractions, decimals, and percentages from least to greatest

- Solving percent problems

Enduring Understanding

SWBAT:

- Multiply fractions by a constant to get 100 in the denominator in order to convert to a percentage

- Put percentages over 100 and simplify to convert to a reduced fraction

- Move the decimal twice right to convert a decimal to a percentage (simulates multiplying by 100)

- Move the decimal twice left to convert a percentage to a decimal (simulates dividing by 100)

- Convert multiple fractions/decimals/percentages to one form to compare them

- Convert multiple fractions/decimals/percentages to one form to order them

- Solve percent problems by translating to an equation and using logic to solve

Essential Questions

How can we:

- represent fractions using algebra tiles? (or 10x10 grid with shading)
- relate fractions to being parts of a whole, where the whole is always 100?
- get the denominator of a fraction to be 100, so that the numerator represents the percentage?
- put a percent over 100 and simplify to get a reduced fraction?

- use conversions between fractions and percentages to solve real-world problems?

How can we:

- represent decimals using algebra tiles? (or 10x10 grid with shading)
- relate decimals to being parts of a whole, where the whole is always 1?
- use conversions between decimals and percentages to solve real-world problems?

How can we:

- convert between fractions/decimals/percentages to get two numbers of the same form?
- compare two numbers of different forms (fraction/decimal/percentage)?
- order various fractions/decimals/percentages in their original form?
- analyze data by converting between equivalent forms of fractions/decimals/percentages?

How can we:

- model percent problems with equations?
- use logic to solve basic one-step equations?
- utilize keep/change/flip to help in problems solving for the original number?
- utilize multiplication algorithm when solving for the part?
- solve real-world percent problems using basic equations?

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

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).
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.
9.4.8.TL.3	Select appropriate tools to organize and present information digitally.

9.4.8.TL.5	Compare the process and effectiveness of synchronous collaboration and asynchronous collaboration.
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.
PFL.9.1.8.E.6	Compare the value of goods or services from different sellers when purchasing large quantities and small quantities.

Technology & Design Integration

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.

Interdisciplinary Connections

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).
W.AW.6.1.E	Provide a concluding statement or section that follows from the argument presented.

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 & Accommodations

- 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.
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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

Formative Assessments

Formative Assessments used in this unit:

- Kahoot! Games

- Quizizz Games

- Homework

- Q & A

- Scavenger Hunts

- Coloring Activities

- Task Cards

- Partner Activities

- Portions Quilt Activity

Summative Assessments

Summative assessments for this unit:

- Chapter Test
- Quizzes

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
8. Portion Quilt Activity

Standards

6.RP.A.3	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.
6.RP.A.3.c	Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.
6.NS.C.7.a	Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.
6.NS.C.7.b	Write, interpret, and explain statements of order for rational numbers in real-world contexts.