(8th) Unit 0: Pre-Requisite Materials

Content Area: **Math**
Course(s): **Math**
Time Period: **September**
Length: **2 weeks**
Status: **Published**

Unit Overview

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

- Integers (positive & negative)

- Absolute Value

- Integer operations

- Converting fractions, decimals, and percentages

- Fraction Operations

Enduring Understandings

SWBAT:

- Identify the sign of an integer (positive or negative)

- Compare integers

- Add, subtract, multiply, and divide integers

- Find the absolute value of a number

- Relate the absolute value of a number to a position on a number line

- Convert fractions, decimals, and percentages

- Add, subtract, multiply, and divide fractions

- Compare fractions

Essential Questions

How can we:

- use context clues and keywords to identify if a positive or negative integer represents a situation?
- compare two integers using inequality symbols (greater than, greater than or equal to, less than, less

than or equal to)?
- order integers from least to greatest and greatest to least?

How can we:

- Add & subtract integers with the same sign?
- Add & subtract integers with different signs?
- Multiply & divide integers with the same sign?
- Multiply & divide integers with different signs?
- get undefined as an answer to our division problem?
- Solve real-world problems involving integer operations?

How can we:

- convert from a fraction to a decimal?
- convert from a fraction to a percentage?
- convert from a decimal to a percentage?
- convert from a decimal to a fraction?
- convert from a percentage to a decimal?
- convert from a percentage to a fraction?
- simplify fractions to their lowest terms?
- convert from improper fraction to mixed number?
- convert from mixed number to improper fraction?

How can we:

- Add & subtract rational numbers with the same sign?
- Add & subtract rational numbers with different signs?
- Multiply & divide rational numbers with the same sign?
- Multiply & divide rational numbers with different signs?
- Solve real-world problems involving rational number operations?

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

PFL.9.1.8.A.6	Explain how income affects spending decisions.
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.K-12.P.5	Utilize critical thinking to make sense of problems and persevere in solving them.
TECH.K-12.P.8	Use technology to enhance productivity increase collaboration and communicate effectively.

Technology & Design Integration

TECH.8.1.8.F	Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
TECH.8.2.8.D.CS1	Apply the design process.

Interdisciplinary Connections

ELA.L.KL.8.2.A	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases.
ELA.L.KL.8.2.B	Gather vocabulary knowledge when selecting a word or phrase important to comprehension or expression.
ELA.L.VL.8.3.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.8.3.B	Analyze the impact of specific word choices on meaning and tone.
ELA.L.VL.8.3.C	Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., precede, recede, secede).
ELA.L.VL.8.3.D	Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.

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.
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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

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

Standards

MATH.7.NS.A.1.a	Describe situations in which opposite quantities combine to make 0.
MATH.7.NS.A.1.b	Understand $p + q$ as the number located a distance $\|q\|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
MATH.7.NS.A.1.c	Understand subtraction of rational numbers as adding the additive inverse, $p – q = p + (–q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
MATH.7.NS.A.1.d	Apply properties of operations as strategies to add and subtract rational numbers.
MATH.7.NS.A.2.a	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
MATH.7.NS.A.2.b	Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $–(p/q) = (–p)/q = p/(–q)$. Interpret quotients of rational numbers by describing real-

	world contexts.
MATH.7.NS.A.2.c	Apply properties of operations as strategies to multiply and divide rational numbers.
MATH.7.NS.A.2.d	Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
MATH.7.NS.A.3	Solve real-world and mathematical problems involving the four operations with rational numbers.