7th Grade Math POR
Sayreville Middle School

Date Curriculum Approved: April 2025
Written/Updated by Michelle Merrick

Unit 1 Decimal Review

Content Area: **Mathematics**
Course(s):
Time Period: **1st Marking Period**
Length: **12-17 days**
Status: **Published**

Summary of the Unit

In this unit, students will focus on reviewing decimal place value and computation with decimals involving all four basic operations. Students will review place value of decimals up to the ten thousandths place as well as use addition, subtraction, multiplication, and division to evaluate problems involving decimal numbers. Students will apply knowledge of decimal numbers to real word situations.

Enduring Understandings

The ability to compute decimal numbers are basic skills upon which more advanced mathematics is based upon. It also exists throughout the real world and it is the understanding of these concepts that allows people to perform a multitude of tasks both in the classroom and in life. Students will apply different rules and methods to evaluate all operations with decimal numbers, including use of number lines, place value charts, and modeling.

Essential Questions

Why is it important to understand place value?

How does understanding place value help with computation of decimals?

How are the steps to add/subtract different from multiplication and division of decimals?

Summative Assessment and/or Summative Criteria

Students will take tests and quizzes to review concepts learned in Unit 1

Students will demonstrate mastery through various assessment criteria included in the unit.

Students will utilize web based programs to demonstrate master in Unit 1.

Students will demonstrate mastery on the end of unit performance task. (Unit tests, Projects, Presentations)

Resources

New Jersey Student Learning Standards-Grades 7 and 8

New Jersey Department of Education Model Curriculum-Grades 7 and 8

Online mathematics assessment software such as OnCourse, LinkIt, GoFormative IXL, Moby Max, etc.

Khan Academy, Big Ideas Textbook
https://bigbrainz.com/login (Imagine Math Facts)

https://www.imaginelearning.com/programs/math-facts

www.internet4classrooms.com

http://nlvm.usu.edu/en/nav/index.html

www.illustrativemathematics.org/

http://www.katm.org/flipbooks/7%20FlipBook%20Final%20CCSS%202014.pdf

https://www.georgiastandards.org/Common-Core/Pages/Math-6-8.aspx

https://learnzillion.com/

http://www.insidemathematics.org/

https://www.engageny.org/

Unit Plan

Topic/Selection Timeframe	General Objectives	Instructional Activities	Benchmarks/Assessments	Standards
Decimal Place Value (1-2 Days)	Identify all place values to ten thousandths Read numbers containing whole number and decimal components	Use of place value chart to establish place value of decimals from whole number to decimals in ten thousandths place	Daily Do Now Guided Classwork Homework/Exit Ticket checks Online activity: Kahoot, Quizizz	Math.5.NBT.A.1 Math.5.NBT.A. 3 MATH.5.NBT.A.3.b MATH.5.NBT.A.4 MATH.K-12.1
Addition and Subtraction of Decimals (4-5 Days)	Add and subtract decimals Accurately	Focus on method of lining decimals up and accurate	Daily Do Now Guided Classwork	MATH.5.NBT.B.6

	choose the correct operation in a real world example	computation using modeling Emphasis on correct regrouping and borrowing in "0" situations	Homework/Exit Ticket checks Online Activity: IXL/ Moby Max Partner Activity/ Use of centers/ Error Analysis (Word Problem)	
Review of Place Value, Addition and Subtraction of Decimals (1-2 Days)	Review of place value, addition, and subtraction	Emphasize points during initial modeling Provide opportunity to review multiple skills prior to assessment	Review Quiz	Math.5.NBT.A.1 Math.5.NBT.A. 3 MATH.5.NBT.A.3.b MATH.5.NBT.A.4 MATH.5.NBT.B.6 MATH.K-12.1 MATH.K-12.4 MATH.K-12.6
Multiplication of Decimals (2-3 Days)	Multiply Decimals Accurate decimal placement Accurately choose the correct operation in a real world example	Focus on correct "right" sided alignment regardless of decimal placement Emphasis on counting place values to obtain correct decimal placement in answer	Daily Do Now Guided Classwork Homework/Exit Ticket checks Online Activity: IXL/ Moby Max Partner Activity/ Use of centers/ Error Analysis (Word Problem)	MATH.5.NBT.B.5 MATH.K-12.4 MATH.K-12.6
Division of Decimals (2-3 Days)	Divide Decimals Following correct long division steps and placement of numbers in problem Division of a	Model long division steps and accurate placement of numbers within a problem Emphasize correct	Daily Do Now Guided Classwork Homework/Exit Ticket checks Online Activity: IXL/ Moby Max Partner Activity/ Use of	MATH.6.NS.B.2 MATH.K-12.1 MATH.K-12.4 MATH.K-12.6

	decimal divisor Accurately choose the correct operation in a real world example	decimal placement and procedures for a decimal in the divisor	centers/ Error Analysis (Word Problem)	
Review and Assess Decimal skills (2 Days)	Review of place value, addition, subtraction, multiplication, and division of decimals	Emphasize points during initial modeling Provide opportunity to review/practice all computation skills together prior to assessment	Review Unit test Project/Presentation involving financial literacy	Math.5.NBT.A.1 Math.5.NBT.A. 3 MATH.5.NBT.A.3.b MATH.5.NBT.A.4 MATH.5.NBT.B.6 MATH.K-12.1 MATH.K-12.4 MATH.K-12.6 MATH.5.NBT.B.5 MATH.6.NS.B.2 MATH.K-12.4 MATH.K-12.6

MATH.5.NBT.A.1 [Standard] - Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.

MATH.5.NBT.A.3 [Standard] - Read, write, and compare decimals to thousandths.

MATH.5.NBT.A.3.b Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

MATH.5.NBT.A.4 [Standard] - Use place value understanding to round decimals to any place.

MATH.6.NS.B.2 [Standard] - With accuracy and efficiency, divide multi-digit numbers using the standard algorithm.

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

MATH.5.NBT.B.5 [*Standard*] - With accuracy and efficiency, multiply multi-digit whole numbers using the standard algorithm.

MATH.5.NBT.B.7 [*Standard*] - Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

MATH.K-12.4 [Standard] - Model with mathematics

MATH.K-12.6 [Standard] - Attend to precision

Suggested Modifications for IEP/504 Eligible, ML, At Risk and Gifted Students

Students will be allowed to submit assignments using additional time per IEP modifications.

Students will be encouraged to use different size and type of font in order to avoid print confusion.

Students will be given modified assignments (length or rigor) as per IEP modifications.

Anchor charts to model strategies and use of formulas

Reference sheets that list formulas, step-by-step procedures and model strategies

Conceptual word wall that contains definitions, translation, pictures and/or examples

Graphic organizers (examples include: Venn diagram, 4 square graphic organizer for math word problems, K-W-L etc.)

Translation dictionary

Teacher modeling

Four-function calculator to assist with computations

Students can utilize math journals to write notes, copy solution steps, and translate terms and key vocabulary

Highlight and label the solution steps for multi-step problems in different colors

Utilize technological programs which provide verbal and visual instruction in native and/or second language

Use interactive technology to improve multiplication fact fluency and accuracy

Use a story context or visual to model math operations with signed rational numbers

Use concrete models (counting chips), drawings (horizontal and vertical number lines), and interactive technology to explain the reasoning used to complete mathematical operations with signed integers

Multiplication charts to assist with multiplication and division automaticity

LEP students will be allowed to use an internet translator or language glossary in order to translate vocabulary and assignments properly.

LEP students may be allowed to work with another student who is fluent in their native language.

Utilize thermometer manipulatives.

Create actual number line utilizing resources.

Peer coaching with students in different groups.

Translated math glossary should be provided.

Math journal for students to note questions and concerns should be used.

Use of word/picture wall.

Pictures/illustrations Provide graphic organizers.

Develop graphic representations of number lines and show multiple examples.

Website: Teachers First Adapt a Strategy. Adjusting Lessons for ESL/ELL students
http://www.teachersfirst.com/content/esl/adapts trat.cfm

*Gifted Students can have an accelerated pacing schedule, more open-ended response questions, project-based learning related to their interests, or inquiry-based learning.

Suggested Technological Innovations/Use

Instructional technology should be used to present and assess lessons such as; PowerPoint, Smart Notebook, Glencoe presentation software, NLVM, etc

Teachers are encouraged to use electronic assessments to determine mastery of concepts taught.

The use of Kahoot, Quizizz, Moby Max, IXL, Big Ideas or other types of interactive software is encouraged.

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem- solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

9.2 21st Century Life and Career Skills: Personal Financial Literacy: All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy.

9.4.5.CT.3 Describe how digital tools and technology may be used to solve problems.

9.4.5.CT.4 Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global

9.4.8.TL.3 Select appropriate tools to organize and present information digitally.

Unit 2 Fractions

Content Area: **Mathematics**
Course(s):
Time Period: **1st Marking Period**
Length: **22-35 days**
Status: **Published**

Summary of the Unit

In this unit, students will focus on understanding the value of a fraction and the importance of expressing fractions in equivalent forms. Students will be able to add, subtract, multiply and divide fractions and mixed numbers in order to evaluate problems in real word situations.

Enduring Understandings

Students will use different rules and methods to evaluate all operations with fractions and mixed numbers, including the use of a number line, fraction tiles and modeling.

Essential Questions

- Why do we need to be knowledgeable about all forms of numbers?
- Why are the order of operations and other properties of mathematics important?

Summative Assessment and/or Summative Criteria

Students will take tests and quizzes to review concepts learned in Unit 2

Students will demonstrate mastery through various assessment criteria included in the unit.

Students will utilize web based programs to demonstrate master in Unit 2.

Students will demonstrate mastery on the end of unit performance task.

Unit 2 Cumulative Project

Resources

New Jersey Student Learning Standards-Grades 7 and 8

New Jersey Department of Education Model Curriculum-Grades 7 and 8

Online mathematics assessment software such as OnCourse, LinkIt, GoFormative IXL, Moby Max, etc.

Khan Academy, Big Ideas Textbook
https://bigbrainz.com/login (Imagine Math Facts)

https://www.imaginelearning.com/programs/math-facts

www.internet4classrooms.com

http://nlvm.usu.edu/en/nav/index.html

www.illustrativemathematics.org/

http://www.katm.org/flipbooks/7%20FlipBook%20Final%20CCSS%202014.pdf

https://www.georgiastandards.org/Common-Core/Pages/Math-6-8.aspx

https://learnzillion.com/

http://www.insidemathematics.org/

https://www.engageny.org/

Unit Plan

Topic/Selection **Timeframe**	**General Objectives**	**Instructional Activities**	**Benchmarks/** **Assessments**	**Standards**
Simplifying Fractions (1-2 days)	Express fractions in simplest form including equivalent proper fractions and improper fractions	Use fraction tiles to visualize simplification and equivalent fractions	Daily Do Now Guided Classwork Homework Exit Ticket checks	MATH.7.NS.A.2.d MATH.8.NS.A.1 MATH.K-12.6
Terminating and Repeating Decimals (2-3 Days)	Convert fractions into terminating and repeating decimals Students will express factions in equivalent forms.	Match fractions and decimals to their equivalent forms Complete chart on fraction and decimal conversions	Daily Do Now Guided Classwork Homework	MATH.7.NS.A.2.d MATH.8.NS.A.1 MATH.K-12.6

			Exit Ticket checks Online activity: Kahoot, Quizizz Activity: Fraction to Decimal Sort Cut & Paste	
Comparing and Ordering Rational Numbers (2-3 days)	Students will compare fractions and decimals.	Convert all rational numbers to the same form to compare. Use number line to locate position of numbers.	Daily Do Now Guided Classwork Homework Exit Ticket checks Online Activity: IXL/ Moby Max Partner Activity/ Use of centers	MATH.7.NS.A.2 MATH.7.NS.A.2.d MATH.7.EE.B.3 MATH.K-12.2
Adding and Subtracting Fractions (3-5 days)	Students will add and subtract fractions with like and unlike denominators.	Review how to find the least common denominator Use techniques such as the number line to represent the rules of addition and subtraction	Daily homework check Problem Solving task Student created word problems 5-step method for problem solving	MATH.7.NS.A.1 MATH.7.NS.A.1.d MATH.7.NS.A.3 MATH.7.NS.B.3 MATH.7.EE.B.3

			Activity: Task Cards with a partner	
Adding and Subtracting Mixed Numbers (2-4 days)	Students will add and subtract mixed numbers.	Review how to add and subtract fractions. Demonstrate two methods to subtracting mixed numbers 1)Borrowing from whole number 2)Using Improper Fractions	Daily homework check Problem Solving task Student created word problems 5-step method for problem solving Online Activity: IXL/Moby Max Quizizz Activity: White Board Review Questions	MATH.7.NS.A.1 MATH.7.NS.A.1.d MATH.7.NS.A.3 MATH.7.NS.B.3 MATH.7.EE.B.3
Review of Conversion, Comparing/ Ordering, Adding and Subtracting Fractions and Mixed Numbers (1-2 days)	Review of skills presented to date	Provide opportunity to review multiple skills prior to assessment	Review Quiz on Skills Use centers and small-group to review content	MATH.7.NS.A.2.d MATH.7.NS.A.1 MATH.7.NS.A.1.d MATH.7.NS.A.2 MATH.8.NS.A.1 MATH.7.NS.B.3 MATH.7.EE.B.3 MATH.7.NS.A.3
Multiplying Rational Numbers (3-4 days)	Students will multiply fractions and mixed numbers	Discuss two ways to multiply fractions: 1)Multiply numerators and denominators and then simplify 2)Discuss cross	Daily homework check Problem solving task	MATH.7.NS.A.2 MATH.7.NS.A.2 MATH.7.NS.A.2.c MATH.7.NS.B.3

		cancelling opposite numerators and denominators first, then multiply	Activity: Multiplying Fractions Chain Link	MATH.7.EE.B.3
Dividing Rational Numbers (3-4 days)	Students will divide fractions and mixed numbers.	Define multiplicative inverses as reciprocals Find quotients by multiplying by the reciprocal Use of rule "Keep, Change, Flip" to help students remember Solve real-world word problems requiring division of rational numbers.	Daily homework check Online Activity: IXL/Moby Max Quizizz/Kahoot	MATH.7.NS.A.2 MATH.7.NS.A.2.c MATH.7.NS.A.3 MATH.7.NS.B.3 MATH.7.EE.B.3 MATH.8.NS.A MATH.K-12.6
Review of Multiplying and Dividing Fractions and Mixed Numbers (1-2 days)	Review skills of last two lessons	Provide opportunity to review multiplying and dividing skills prior to assessment	Review Quiz on Skills	MATH.7.NS.A.2 MATH.7.NS.A.2.c MATH.7.NS.A.3 MATH.7.NS.B.3 MATH.7.EE.B.3 MATH.8.NS.A MATH.K-12.1 MATH.K-12.4 MATH.K-12.5 MATH.K-12.6
Review of all fraction skills (2-3 days)	Review of converting fractions to decimals, comparing and ordering fractions, adding, subtracting, multiplying and dividing fractions and mixed numbers.	Provide opportunity to review/practice all computation skills together prior to assessment	Review Online Activity: Jeopardy Unit Test	MATH.7.NS.A.2.d MATH.8.NS.A.1 MATH.7.NS.A.2 MATH.7.NS.A.2.d MATH.7.EE.B.3 MATH.7.NS.A.2.a MATH.7.NS.A.1.d

				MATH.7.NS.A.3 MATH.7.NS.A.2 MATH.7.NS.A.2.c MATH.K-12.1 MATH.K-12.4 MATH.K-12.5 MATH.K-12.6
Cumulative Review of Chapter Project (2-3 days)	Review of converting fractions to decimals, comparing and ordering fractions, adding, subtracting, multiplying and dividing fractions and mixed numbers.	Students can choose to either complete a Color by Number Operations or FACEing Math	Color by Number Operations with Fractions or a FACEing Math started in class and finished at home	MATH.7.NS.A.2.d MATH.7.NS.A.1 MATH.7.NS.A.2 MATH.7.EE.B.3 MATH.7.NS.A.1 MATH.7.NS.A.1.d MATH.7.NS.A.3 MATH.7.NS.A.2 MATH.7.NS.A.2.c MATH.7.NS.B.3 MATH.K-12.1 MATH.K-12.2 MATH.K-12.4 MATH.K-12.5 MATH.K-12.6

MATH.7.EE.B.3 [Standard] - Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. * Climate Change Example: Students may solve multi-step real-life problems posed with positive and negative rational numbers in any form related to the relationship between altitude and the temperature above sea level.

MATH.7.NS.A [Cluster Heading] - Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers

MATH.7.NS.A.1 [Standard] - Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

MATH.7.NS.A.1.d Apply properties of operations as strategies to add and subtract rational numbers.

MATH.7.NS.A.2 [Standard] - Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide 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.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 [Standard] - Solve real-world and mathematical problems involving the four operations with rational numbers.

MATH.7.NS.B.3 Solve real-world and mathematical problems involving the four operations with rational numbers. *Climate Change Example: Students may solve real-world problems involving the four operations with rational numbers related to the relationship between altitude and the temperature above sea level.

MATH.8.NS.A.1 [*Standard*] - Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually and convert a decimal expansion which repeats eventually into a rational number.

MATH.K-12.1 [Standard] - Make sense of problems and persevere in solving them

MATH.K-12.2 [Standard] - Reason abstractly and quantitatively

MATH.K-12.4 [Standard] - Model with mathematics

MATH.K-12.5 [Standard] - Use appropriate tools strategically

MATH.K-12.6 [Standard] - Attend to precision

Suggested Modifications for IEP/504 Eligible, ML, At Risk and Gifted Students

Students will be allowed to submit assignments using additional time per IEP modifications.

Students will be encouraged to use different size and type of font in order to avoid print confusion.

Students will be given modified assignments (length or rigor) as per IEP modifications.

Anchor charts to model strategies and use of formulas

Reference sheets that list formulas, step-by-step procedures and model strategies

Conceptual word wall that contains definitions, translation, pictures and/or examples

Graphic organizers (examples include: Venn diagram, 4 square graphic organizer for math word problems, K-W-L etc.)

Translation dictionary

Teacher modeling

Four-function calculator to assist with computations

Students can utilize math journals to write notes, copy solution steps, and translate terms and key vocabulary

Highlight and label the solution steps for multi-step problems in different colors

Utilize technological programs which provide verbal and visual instruction in native and/or second language

Use interactive technology to improve multiplication fact fluency and accuracy

Use a story context or visual to model math operations with signed rational numbers

Use concrete models (counting chips), drawings (horizontal and vertical number lines), and interactive technology to explain the reasoning used to complete mathematical operations with signed integers

Multiplication charts to assist with multiplication and division automaticity

LEP students will be allowed to use an internet translator or language glossary in order to translate vocabulary and assignments properly.

LEP students may be allowed to work with another student who is fluent in their native language.

Utilize thermometer manipulatives.

Create actual number line utilizing resources.

Peer coaching with students in different groups.

Translated math glossary should be provided.

Math journal for students to note questions and concerns should be used.

Use of word/picture wall.

Pictures/illustrations Provide graphic organizers.

Develop graphic representations of number lines and show multiple examples.

Website: Teachers First Adapt a Strategy. Adjusting Lessons for ESL/ELL students
http://www.teachersfirst.com/content/esl/adapts trat.cfm

*Gifted Students can have an accelerated pacing schedule, more open-ended response questions, project-based learning related to their interests, or inquiry-based learning.

Suggested Technological Innovations/Use

Instructional technology should be used to present and assess lessons such as; PowerPoint, Smart Notebook, Glencoe presentation software, NLVM, etc

Teachers are encouraged to use electronic assessments to determine mastery of concepts taught.

The use of Kahoot, Quizizz, Moby Max, IXL, Big Ideas or other types of interactive software is encouraged.

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem- solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

9.2 21st Century Life and Career Skills: Personal Financial Literacy: All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy.

9.4.5.CT.3 Describe how digital tools and technology may be used to solve problems.

9.4.5.CT.4 Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global

9.4.8.TL.3 Select appropriate tools to organize and present information digitally.

Unit 3 Integers

Content Area: **Mathematics**
Course(s):
Time Period: **2nd Marking Period**
Length: **23-31 days**
Status: **Published**

Summary of the Unit

In this unit, students will use addition, subtraction, multiplication, and division to evaluate problems involving integers. Students will also simplify expressions using order of operations.

Enduring Understandings

Different rules and methods can be used to evaluate all operations with positive and negative numbers. including use of a number line and modeling.

Essential Questions

Why do we need to be knowledgeable about all forms of numbers?

Why are the order of operations and other properties of mathematics important?

Why do we use variables and how are they implemented in real-world tasks?

Summative Assessment and/or Summative Criteria

Students will take a test to review concepts learned in Unit 3.

Students will demonstrate mastery through various assessment criteria included in the unit.

Students will demonstrate mastery on the end of unit performance task (Unit tests, Projects, Presentations).

Resources

New Jersey Student Learning Standards-Grades 7 and 8

New Jersey Department of Education Model Curriculum-Grades 7 and 8

Online mathematics assessment software such as OnCourse, LinkIt, GoFormative IXL, Moby Max, etc.

Khan Academy, Big Ideas Textbook
https://bigbrainz.com/login (Imagine Math Facts)

https://www.imaginelearning.com/programs/math-facts

www.internet4classrooms.com

http://nlvm.usu.edu/en/nav/index.html

www.illustrativemathematics.org/

http://www.katm.org/flipbooks/7%20FlipBook%20Final%20CCSS%202014.pdf

https://www.georgiastandards.org/Common-Core/Pages/Math-6-8.aspx

https://learnzillion.com/

http://www.insidemathematics.org/

https://www.engageny.org/

Unit Plan

Topic/Selection **Timeframe**	**General Objectives**	**Instructional Activities**	**Benchmarks/Assessments**	**Standards**
Integers and Absolute Value (3-4 days)	Students will compare and order integers. Find absolute value of integers/ expressions	Define negative/ positive integers and locate on a number line Use inequality symbols to compare integers Define absolute value and use visual representation (number line)	Daily Do Now/ Homework check Interactive Notes Guided Practice Exit ticket	MATH.7.NS.A.1 MATH.7.NS.A.1.a MATH.K-12.4 MATH.K-12.5
Comparing and Ordering Integers (1-2 days)	Students will compare and order a group of integers	Use number line to locate position of numbers	Daily Do Now/Homework check Guided Practice	MATH.7.NS.A.2 MATH.7.EE.B.3 MATH.K-12.4 MATH.K-12.5

			Exit ticket	
Review and Assess (Integers, absolute value, comparing and ordering integers) (2 days)	Students will demonstrate mastery of integers, absolute value comparing and ordering.	Review using various teacher created/chosen activities or tasks.	Review Quiz on Basic Integer Concepts (Integers, Absolute Value, Comparing and Ordering)	MATH.7.NS.A.1 MATH.7.NS.A.1.a MATH.7.NS.A.2 MATH.7.EE.B.3 MATH.K-12.4 MATH.K-12.5
Adding and Subtracting Integers (7-9 days)	Students will add and subtract integers using models and mental math.	Discuss the rules of adding and subtracting positive and negative numbers (using number lines, counters, and rules) Define subtraction as adding the opposite Use number lines and counters to represent the rules of addition and subtraction	Daily Do Now/Homework check Guided Practice (Interactive notes with number lines and counters) Exit ticket 5 Step method for Problem Solving/ Error Analysis	MATH.7.NS.A.1 MATH.7.NS.A.1.d MATH.7.NS.A.3 MATH.7.NS.B.3 MATH.7.EE.B.3 MATH.K-12.3
Review and Assess (Addition and Subtraction) (2- 3 days)	Students will demonstrate mastery of addition and subtraction of integers.	Review using various teacher created/chosen activities or tasks. Including Problem Solving/Error Analysis	Review Quiz on Addition and Subtraction of Integers	MATH.7.NS.A.1 MATH.7.NS.A.1.d MATH.7.NS.A.3 MATH.7.NS.B.3 MATH.7.EE.B.3 MATH.K-12.3 MATH.K-12.4

				MATH.K-12.5
Multiplication and Division of Integers (5-7 days)	Students will multiply and divide integers using mental math.	Use visual strategies to represent rules of signed numbers (ex. tic tac toe board) Use hands on manipulatives to create practice problems (ex. spinners, dice, cards)	Daily Do Now/Homework Guided Practice Exit ticket 5 Step method for Problem Solving/ Error Analysis	MATH.7.NS.A.2 MATH.7.NS.A.2.c MATH.7.NS.A.3 MATH.7.NS.B.3 MATH.7.EE.B.3
Review and Assess (Multiplication and Division) (2-3 days)	Students will demonstrate mastery of multiplication and division of integers.	Review using various teacher created/chosen activities or tasks. Including Problem Solving/Error Analysis	Review Quiz on Multiplication and Division of Integers	MATH.7.NS.A.2 MATH.7.NS.A.2.c MATH.7.NS.A.3 MATH.7.NS.B.3 MATH.7.EE.B.3 MATH.K-12.3 MATH.K-12.4 MATH.K-12.5
Review and Assess Unit (2-3 days)	Students will demonstrate mastery of topics covered in Integers Unit	Chapter review using various teacher created/chosen activities or tasks.	Review Unit Test Project involving integers (ex. timeline, tracking calories, budgeting money)	MATH.7.NS.A.1 MATH.7.NS.A.1.a MATH.7.NS.A.1.d MATH.7.NS.A.2 MATH.7.NS.A.2.c MATH.7.NS.A.3 MATH.7.NS.B.3 MATH.7.EE.B.3 MATH.K-12.3 MATH.K-12.4

				MATH.K-12.5

MATH.7.NS.A.3 [Standard] - Solve real-world and mathematical problems involving the four operations with rational numbers.

MATH.7.NS.A.1 [Standard] - Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

MATH.7.NS.A.1.a Describe situations in which opposite quantities combine to make 0.

MATH.7.NS.A.1.d Apply properties of operations as strategies to add and subtract rational numbers.

MATH.7.NS.A.2 [Standard] - Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide 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.B.3 Solve real-world and mathematical problems involving the four operations with rational numbers. *Climate Change Example: Students may solve real-world problems involving the four operations with rational numbers related to the relationship between altitude and the temperature above sea level.

MATH.7.EE.B.3 [Standard] - Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. * Climate Change Example: Students may solve multi-step real-life problems posed with positive and negative rational numbers in any form related to the relationship between altitude and the temperature above sea level.

MATH.7.NS.A.2.c Apply properties of operations as strategies to multiply and divide rational numbers.

MATH.K-12.3 [*Standard*] - Construct viable arguments and critique the reasoning of others

MATH.K-12.4 [Standard] - Model with mathematics

MATH.K-12.5 [Standard] - Use appropriate tools strategically

Suggested Modifications for IEP/504 Eligible, ML, At Risk and Gifted Students

Students will be allowed to submit assignments using additional time per IEP modifications.

Students will be encouraged to use different size and type of font in order to avoid print confusion.

Students will be given modified assignments (length or rigor) as per IEP modifications.

Anchor charts to model strategies and use of formulas

Reference sheets that list formulas, step-by-step procedures and model strategies

Conceptual word wall that contains definitions, translation, pictures and/or examples

Graphic organizers (examples include: Venn diagram, 4 square graphic organizer for math word problems, K-W-L etc.)

Translation dictionary

Teacher modeling

Four-function calculator to assist with computations

Students can utilize math journals to write notes, copy solution steps, and translate terms and key vocabulary

Highlight and label the solution steps for multi-step problems in different colors

Utilize technological programs which provide verbal and visual instruction in native and/or second language

Use interactive technology to improve multiplication fact fluency and accuracy

Use a story context or visual to model math operations with signed rational numbers

Use concrete models (counting chips), drawings (horizontal and vertical number lines), and interactive technology to explain the reasoning used to complete mathematical operations with signed integers

Multiplication charts to assist with multiplication and division automaticity

LEP students will be allowed to use an internet translator or language glossary in order to translate vocabulary and assignments properly.

LEP students may be allowed to work with another student who is fluent in their native language.

Utilize thermometer manipulatives.

Create actual number line utilizing resources.

Peer coaching with students in different groups.

Translated math glossary should be provided.

Math journal for students to note questions and concerns should be used.

Use of word/picture wall.

Pictures/illustrations Provide graphic organizers.

Develop graphic representations of number lines and show multiple examples.

Website: Teachers First Adapt a Strategy. Adjusting Lessons for ESL/ELL students
http://www.teachersfirst.com/content/esl/adapts trat.cfm

*Gifted Students can have an accelerated pacing schedule, more open-ended response questions, project-based

learning related to their interests, or inquiry-based learning.

Suggested Technological Innovations/Use

Instructional technology should be used to present and assess lessons such as; Smart Notebook, PowerPoint, Google slides, Communicators / individual dry erase boards.

Teachers are encouraged to use electronic assessments to determine mastery of concepts taught.

The use of Kahoot, Quizizz, Moby Max, IXL, Glencoe Test Creation or other types of interactive software is encouraged.

TECH.8.1.8 All students will use digital tools to access, manage, evaluate, and synthesize information

in order to solve problems individually and collaborate and to create and communicate

knowledge.

TECH.8.2.8 All students will develop an understanding of the nature and impact of technology,

engineering, technological design, computational thinking and the designed world as they

relate to the individual, global society, and the environment.

Cross Curricular/21st Century Connections

9.1: All students will demonstrate the creative, critical thinking, collaboration, and problem-solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

9.2: All students will be able to identify the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements.

9.4.5.CT.3 Describe how digital tools and technology may be used to solve problems.

9.4.5.CT.4 Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global

9.4.8.TL.3 Select appropriate tools to organize and present information digitally.

Unit 4 Expressions

Content Area: **Mathematics**
Course(s):
Time Period: **2nd Marking Period**
Length: **12-19 days**
Status: **Published**

Summary of the Unit

In this unit, students will define variables and simplify algebraic expressions by applying the distributive property and combining like terms.

Enduring Understandings

Variables have many different meanings and can be useful in representing unknown values. Real world situations can be modeled by expressions; expressions are powerful tools for exploring, reasoning and modeling situations

Essential Questions

- How can you use symbols to represent mathematical ideas?
- How can we collect and combine rational number like terms?
- How do you know when an algebraic expression is in simplest form?

Summative Assessment and/or Summative Criteria

Students will take a test to review concepts learned in Unit 5.

Students will demonstrate mastery through various assessment criteria included in the unit.

Students will demonstrate mastery on the end of unit performance task.

Unit 5 Cumulative Project

Resources

New Jersey Student Learning Standards-Grades 7 and 8
https://www.imaginelearning.com/programs/math-facts
New Jersey Department of Education Model Curriculum-Grades 7 and 8

Online mathematics assessment software such as OnCourse, LinkIt, GoFormative IXL, Moby Max, etc.

Khan Academy, Big Ideas Textbook

www.internet4classrooms.com

http://nlvm.usu.edu/en/nav/index.html

www.illustrativemathematics.org/

http://www.katm.org/flipbooks/7%20FlipBook%20Final%20CCSS%202014.pdf

https://www.georgiastandards.org/Common-Core/Pages/Math-6-8.aspx

https://learnzillion.com/

http://www.insidemathematics.org/

https://www.engageny.org/

Unit Plan

Topic/Selection Timeframe	General Objectives	Instructional Activities	Benchmarks/Assessments	Standards
Variables and Expressions (2-3 days)	Students will define a variable and use it to represent an unknown value in an expression.	Verbally define variable, evaluate, numerical expression, algebraic expression and verbal expression Translate word phrases to algebraic expressions Use substitution property of equality to evaluate an expression using the order of operations	Daily Homework check Guided practice check Exit ticket Activity: Alge-bride Card Game, Murder Mystery	MATH.7.EE.B.4 MATH.K-12.2
Mathematical Properties (1-2 days)	Students will apply various Math properties in order to simplify algebraic expressions	Discuss and Display examples of… Commutative Property Associative Property Additive Identity Property Multiplicative Identity Property Multiplicative Property of Zero	Guided Notes Class Examples Exit Ticket Online Activity:	MATH.7.EE.A MATH.7.EE.A.1 MATH.7.EE.A.2 MATH.K-12.8

			IXL/Moby Max	
Distributive Property (2-3 days)	Students will apply the Distributive Property to rewrite algebraic expressions.	Review signed integer multiplication rules Define and hold class discussion of the word distribute (ie: the teacher will distribute your homework at the end of class today) Video Clip for visual/real world reference: https://nj.pbslearningmedia.org/resource/7eb77764-58d4-4e3d-bafb-5ac2e15fba30/distributive-property-pbs-math-club/ Matching activity: match problem with its simplified expression	M&M Hands on Activity Daily Homework check Guided practice check Online game: Quizlet Live, Quizizz, Kahoot, etc. Error analysis problem (identify and correct)	MATH.7.EE.A MATH.7.EE.A.1 MATH.7.EE.A.2 MATH.K-12.8
Review of expressions and applying Mathematical Properties (1 - 2 days)	Review of skills presented to date	Provide opportunity to review multiple skills prior to assessment	Review Use centers and small-group to review content White Boards Quiz	MATH.7.EE.A MATH.7.EE.A.1 MATH.7.EE.A.2 MATH.7.EE.B MATH.7.EE.B.4 MATH.K-12.8
Combining Like Terms (3-5 days)	Students will combine like terms to simplify algebraic expressions.	Review signed integer addition and subtraction rules Compare/contrast like vs. unlike terms Use shapes/symbols to identify and "collect" like terms	Daily Homework check Small group instruction/use of centers Activity: “I have, Who Has?” Combine Like Terms	MATH.7.EE.A.1 MATH.7.EE.A.2 MATH.K-12.6

		Mathwarehouse: Combine Like Terms Matching Game Reinforce addition and subtraction of coefficients only Mathgames.com "Add and Subtract Like Terms"	Color By Like Terms Worksheet Exit Ticket	
Review and Assess (2 days)	Students will demonstrate mastery of topics and concepts presented.	Provide opportunity to review/practice all computation skills together prior to assessment	Review Use centers and small-group to review content or whole group activity Unit 4 Test	MATH.7.EE.A MATH.7.EE.A.1 MATH.7.EE.A.2 MATH.7.EE.B MATH.7.EE.B.4 MATH.K-12.2 MATH.K-12.6 MATH.K-12.8
Cumulative Review of Chapter Project (1-2 days)	Review simplifying different expressions by applying Mathematical Properties	Students will cut and paste equivalent numerical and algebraic expressions together to form a puzzle in the shape of a Snowflake, Flower or Shamrock	Combine Like Terms Snowflake/Flower/ Shamrock	MATH.7.EE.A MATH.7.EE.A.1 MATH.7.EE.A.2 MATH.7.EE.B MATH.7.EE.B.4 MATH.K-12.2 MATH.K-12.6 MATH.K-12.8

MATH.7.EE.A [*Cluster Heading*] - Use properties of operations to generate equivalent expressions

MATH.7.EE.A.1 [*Standard*] - Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

MATH.7.EE.A.2 [*Standard*] - Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.

MATH.7.EE.B [*Cluster Heading*] - Solve real-life and mathematical problems using numerical and algebraic expressions and equations

MATH.7.EE.B.4 [*Standard*] - Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

MATH.7.EE.B.4.b Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.

MATH.K-12.2 [*Standard*] - Reason abstractly and quantitatively

MATH.K-12.4 [*Standard*] - Model with mathematics

MATH.K-12.6 [*Standard*] - Attend to precision.

MATH.K-12.8 [*Standard*] - Look for and express regularity in repeated reasoning

Suggested Modifications for IEP/504 Eligible, ML, At Risk and Gifted Students

Students will be allowed to submit assignments using additional time per IEP modifications.

Students will be encouraged to use different size and type of font in order to avoid print confusion.

Students will be given modified assignments (length or rigor) as per IEP modifications.

Anchor charts to model strategies and use of formulas

Reference sheets that list formulas, step-by-step procedures and model strategies

Conceptual word wall that contains definitions, translation, pictures and/or examples

Graphic organizers (examples include: Venn diagram, 4 square graphic organizer for math word problems, K-W-L etc.)

Translation dictionary

Teacher modeling

Four-function calculator to assist with computations

Students can utilize math journals to write notes, copy solution steps, and translate terms and key vocabulary

Highlight and label the solution steps for multi-step problems in different colors

Utilize technological programs which provide verbal and visual instruction in native and/or second language

Use interactive technology to improve multiplication fact fluency and accuracy

Use a story context or visual to model math operations with signed rational numbers

Use concrete models (counting chips), drawings (horizontal and vertical number lines), and interactive technology to explain the reasoning used to complete mathematical operations with signed integers

Multiplication charts to assist with multiplication and division automaticity

LEP students will be allowed to use an internet translator or language glossary in order to translate vocabulary and assignments properly.

LEP students may be allowed to work with another student who is fluent in their native language.

Utilize thermometer manipulatives.

Create actual number line utilizing resources.

Peer coaching with students in different groups.

Translated math glossary should be provided.

Math journal for students to note questions and concerns should be used.

Use of word/picture wall.

Pictures/illustrations Provide graphic organizers.

Develop graphic representations of number lines and show multiple examples.

Website: Teachers First Adapt a Strategy. Adjusting Lessons for ESL/ELL students
http://www.teachersfirst.com/content/esl/adapts trat.cfm

*Gifted Students can have an accelerated pacing schedule, more open-ended response questions, project-based learning related to their interests, or inquiry-based learning.

Suggested Technological Innovations/Use

Instructional technology should be used to present and assess lessons such as; Smart Notebook, PowerPoint, Google slides, Communicators / individual dry erase boards.

Teachers are encouraged to use electronic assessments to determine mastery of concepts taught.

The use of Kahoot, Quizizz, Moby Max, IXL, Glencoe Test Creation or other types of interactive software is encouraged.

TECH.8.1.8 All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

TECH.8.2.8 All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem- solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

9.2 21st Century Life and Career Skills: Personal Financial Literacy: All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy.

9.4.5.CT.3 Describe how digital tools and technology may be used to solve problems.

9.4.5.CT.4 Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global

9.4.8.TL.3 Select appropriate tools to organize and present information digitally.

Unit 5 Equations

Content Area: **Mathematics**
Course(s):
Time Period: **3rd Marking Period**
Length: **28-37 days**
Status: **Published**

Summary of the Unit

In this unit students will solve one-step, two-step, multi-step, and variables on both sides of equations. Along the way, concepts of applying the properties of equality, identifying/combining like terms, and using the distributive property will be highlighted. Students will also model real world situations through the use of equations and solve for the unknown.

Enduring Understandings

Real world situations can be modeled by equations. Algebraic and numeric procedures are interconnected and build on one another. Integration of various mathematical procedures builds a stronger foundation of finding solutions.

Essential Questions

- In what situation would it be necessary to solve an equation for a given variable?
- Why is it essential to use opposite operations to solve an equation?
- How can you check the reasonableness of your solution?

Summative Assessment and/or Summative Criteria

Students will take a test to review concepts learned in Unit 6.

Students will demonstrate mastery through various assessment criteria included in the unit.

Students will demonstrate mastery on the end of unit performance task.

Unit 5 Cumulative Project

Resources

New Jersey Student Learning Standards-Grades 7 and 8

New Jersey Department of Education Model Curriculum-Grades 7 and 8

Online mathematics assessment software such as OnCourse, LinkIt, GoFormative IXL, Moby Max, etc.

Khan Academy, Big Ideas Textbook
https://bigbrainz.com/login (Imagine Math Facts)

https://www.imaginelearning.com/programs/math-facts

www.internet4classrooms.com

http://nlvm.usu.edu/en/nav/index.html

www.illustrativemathematics.org/

http://www.katm.org/flipbooks/7%20FlipBook%20Final%20CCSS%202014.pdf

https://www.georgiastandards.org/Common-Core/Pages/Math-6-8.aspx

https://learnzillion.com/

http://www.insidemathematics.org/

https://www.engageny.org/

Unit Plan

Topic/Selection **Timeframe**	**General Objectives**	**Instructional Activities**	**Benchmarks/Assessments**	**Standards**
Solve Addition and Subtraction One-Step Equations (3 – 4 days)	Students will solve one-step equations involving addition and subtraction.	Discuss Expression versus Equation Discuss properties of equality. Use inverse operations to isolate a variable. Emphasize the importance of performing the same operation on both sides of the equation so it remains balanced.	Daily Homework Check Class Examples Addition/Subtraction Scavenger Hunt Worksheet	MATH.7.NS.A.3 MATH.7.EE.A MATH.8.EE.C.7 MATH.8.EE.C.7.a MATH.K-12.1 MATH.K-12.2 MATH.K-12.3 MATH.K-12.4 MATH.K-12.5

				MATH.K-12.6
Solve Multiplication and Division One-Step Equations (3 – 4 days)	Students will solve one-step equations involving multiplication and division.	Discuss properties of equality. Use inverse operations to isolate a variable. Emphasize the importance of performing the same operation on both sides of the equation so it remains balanced.	Daily Homework Check Class Examples Multiplication/Division Cut and Paste Solution Worksheet Quizizz	MATH.7.NS.A.3 MATH.7.EE.B MATH.7.EE.B.4 MATH.8.EE.C.7 MATH.K-12.1 MATH.K-12.2 MATH.K-12.3 MATH.K-12.4 MATH.K-12.5 MATH.K-12.6
Solve One-Step Equations (All Operations) (2 days)	Students will solve one-step equations involving all four operations.	Discuss properties of equality. Use inverse operations to isolate a variable. Emphasize the importance of performing the same operation on both sides of the equation so it remains balanced.	Daily Homework Check Exit Ticket Monster Activity Worksheet Murder Mystery Activity	MATH.7.NS.A.3 MATH.7.EE.B MATH.7.EE.B.4 MATH.8.EE.C.7 MATH.8.EE.C.7.a
Review of basic One – Step equations (1 – 2 days)	Review of skills presented to date	Provide opportunity to review multiple skills prior to assessment	Review Use centers and small-group to review content white Boards Quiz	MATH.7.NS.A.3 MATH.7.EE.B MATH.7.EE.B.4 MATH.8.EE.C.7 MATH.8.EE.C.7.a MATH.K-12.1 MATH.K-12.2 MATH.K-12.3 MATH.K-12.4 MATH.K-12.5

				MATH.K-12.6
Solve One-Step Equations with Rational Numbers (2 – 3 days)	Students will solve one-step equations with rational numbers.	Define properties of equality. Use inverse operations to isolate a variable. Use rational numbers for operations within equations. Identify key words to write and solve equations from word problems. Emphasize units of measurements when solving real-world problems.	Daily Homework Check Guided Practice check Exit Ticket Students create word problems for a given equations using whiteboards	MATH.7.NS.A.3 MATH.7.EE.B MATH.7.EE.B.4 MATH.8.EE.C.7 MATH.8.EE.C.7.a MATH.K-12.1 MATH.K-12.2 MATH.K-12.3 MATH.K-12.4 MATH.K-12.5 MATH.K-12.6
Solve Two-Step Equations (3 – 4 days)	Students will solve two-step equations.	Review the properties of equalities. Justify the order of operations to be used when isolating the variable.	Daily Homework Check Class Examples Two-Step Equation Scavenger Hunt Exit Ticket	MATH.7.NS.A.3 MATH.7.EE.B MATH.7.EE.B.4 MATH.8.EE.C.7 MATH.8.EE.C.7.a
Solve Two-Step Equations with Rational Number Coefficients (6 – 7 days)	Students will solve two-step equations with rational number coefficients.	Review the properties of equalities. Justify the order of operations to be used when isolating the variable. Use rational numbers for operations within equations. Identify key words to write and solve equations from word problems.	Daily Homework Check Partner Work using White Boards Trashket-ball in Teams Exit ticket	MATH.7.NS.A.3 MATH.7.EE.B MATH.7.EE.B.4 MATH.8.EE.C.7 MATH.8.EE.C.7.a MATH.K-12.1 MATH.K-12.2 MATH.K-12.3 MATH.K-12.4

		Emphasize units of measurements when solving real-world problems. Suggested Activity: Use manipulatives to demonstrate for students who are struggling.		MATH.K-12.5 MATH.K-12.6
Review of Two – Step equations (1 – 2 days)	Review of skills presented to date	Provide opportunity to review multiple skills prior to assessment	Review Use centers and small-group to review content or whole group activity (whiteboards) Quiz	MATH.7.NS.A.3 MATH.7.EE.A MATH.7.EE.B.4.a MATH.7.EE.B MATH.7.EE.B.4 MATH.8.EE.C.7 MATH.8.EE.C.7.a MATH.K-12.1 MATH.K-12.2 MATH.K-12.3 MATH.K-12.4 MATH.K-12.5 MATH.K-12.6
Solve Multi-Step Equations (4 – 5 days)	Students will solve multi-step equations using concepts of combining like terms and the distributive property.	Review the concepts of combining like terms and the distributive properties. Discuss the order of operations to be used to isolate the variable. (ie. Distributive Property is multiplication and must be done before combining like terms) Use rational numbers for operations within equations. Identify key words to	Daily Homework Check Warm-Up assessment of pre-requisite skills Exit Ticket Continue to review and assess properties of equality and rational numbers Centers	MATH.7.NS.A.3 MATH.7.EE.A MATH.8.EE.C.7 MATH.8.EE.C.7.a MATH.8.EE.C.7.b MATH.K-12.1 MATH.K-12.2 MATH.K-12.3 MATH.K-12.4 MATH.K-12.5 MATH.K-12.6

		write and solve equations from word problems. Emphasize units of measurements when solving real-world problems. Suggested Activity: "Pass the Problem" Each student in a row solves one step of the equation and then passes it to the next student.		
Review and Assess (2 days)	Students will demonstrate mastery of topics and concepts presented.	Provide opportunity to review/practice all computation skills together prior to assessment	Review Use centers and small-group to review content Unit Test	MATH.7.NS.A.3 MATH.7.EE.A MATH.7.EE.B.4.a MATH.7.EE.B MATH.7.EE.B.4 MATH.8.EE.C.7 MATH.8.EE.C.7.a MATH.8.EE.C.7.b MATH.K-12.1 MATH.K-12.2 MATH.K-12.3 MATH.K-12.4 MATH.K-12.5 MATH.K-12.6
Cumulative Review of Chapter Project (1-2 days)	Review solving one and two- step equations with rational numbers	Students will solve various one and two-step equations containing different kinds of rational numbers. Depending on the solution they find, they will draw and color a specific face.	FACEing Math Activity	MATH.7.NS.A.3 MATH.7.EE.A MATH.7.EE.B.4.a MATH.7.EE.B MATH.7.EE.B.4 MATH.8.EE.C.7 MATH.8.EE.C.7.a

				MATH.8.EE.C.7.b MATH.K-12.1 MATH.K-12.2 MATH.K-12.3 MATH.K-12.4 MATH.K-12.5 MATH.K-12.6

MATH.7.NS.A.3 [*Standard*] - Solve real-world and mathematical problems involving the four operations with rational numbers.

MATH.7.EE.A [*Cluster Heading*] - Use properties of operations to generate equivalent expressions

MATH.7.EE.A.1 [*Standard*] - Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

MATH.7.EE.B [*Cluster Heading*] - Solve real-life and mathematical problems using numerical and algebraic expressions and equations

MATH.7.EE.B.4.a Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms with accuracy and efficiency. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.

MATH.8.EE.C.7 [*Standard*] - Solve linear equations in one variable.

MATH.8.EE.C.7.a Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).

MATH.8.EE.C.7.b Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

MATH.K-12.1 [*Standard*] - Make sense of problems and persevere in solving them

MATH.K-12.2 [*Standard*] - Reason abstractly and quantitatively

MATH.K-12.3 [*Standard*] - Construct viable arguments and critique the reasoning of others

MATH.K-12.4 [*Standard*] - Model with mathematics

MATH.K-12.5 [*Standard*] - Use appropriate tools strategically

MATH.K-12.6 [*Standard*] - Attend to precision.

Suggested Modifications for IEP/504 Eligible, ML, At Risk and Gifted Students

Students will be allowed to submit assignments using additional time per IEP modifications.

Students will be encouraged to use different size and type of font in order to avoid print confusion.

Students will be given modified assignments (length or rigor) as per IEP modifications.

Anchor charts to model strategies and use of formulas

Reference sheets that list formulas, step-by-step procedures and model strategies

Conceptual word wall that contains definitions, translation, pictures and/or examples

Graphic organizers (examples include: Venn diagram, 4 square graphic organizer for math word problems, K-W-L etc.)

Translation dictionary

Teacher modeling

Four-function calculator to assist with computations

Students can utilize math journals to write notes, copy solution steps, and translate terms and key vocabulary

Highlight and label the solution steps for multi-step problems in different colors

Utilize technological programs which provide verbal and visual instruction in native and/or second language

Use interactive technology to improve multiplication fact fluency and accuracy

Use a story context or visual to model math operations with signed rational numbers

Use concrete models (counting chips), drawings (horizontal and vertical number lines), and interactive technology to explain the reasoning used to complete mathematical operations with signed integers

Multiplication charts to assist with multiplication and division automaticity

LEP students will be allowed to use an internet translator or language glossary in order to translate vocabulary and assignments properly.

LEP students may be allowed to work with another student who is fluent in their native language.

Utilize thermometer manipulatives.

Create actual number line utilizing resources.

Peer coaching with students in different groups.

Translated math glossary should be provided.

Math journal for students to note questions and concerns should be used.

Use of word/picture wall.

Pictures/illustrations Provide graphic organizers.

Develop graphic representations of number lines and show multiple examples.

Website: Teachers First Adapt a Strategy. Adjusting Lessons for ESL/ELL students
http://www.teachersfirst.com/content/esl/adapts trat.cfm

*Gifted Students can have an accelerated pacing schedule, more open-ended response questions, project-based learning related to their interests, or inquiry-based learning.

Suggested Technological Innovations/Use

Instructional technology should be used to present and assess lessons such as; Smart Notebook, PowerPoint, Google slides, Communicators / individual dry erase boards.

Teachers are encouraged to use electronic assessments to determine mastery of concepts taught.

The use of Kahoot, Quizizz, Moby Max, IXL, Glencoe Test Creation or other types of interactive software is encouraged.

TECH.8.1.8 All students will use digital tools to access, manage, evaluate, and synthesize information

in order to solve problems individually and collaborate and to create and communicate

knowledge.

TECH.8.2.8 All students will develop an understanding of the nature and impact of technology,

engineering, technological design, computational thinking and the designed world as they

relate to the individual, global society, and the environment.

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem- solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

9.2 21st Century Life and Career Skills: Personal Financial Literacy: All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy.

9.4.5.CT.3 Describe how digital tools and technology may be used to solve problems.

9.4.5.CT.4 Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global

9.4.8.TL.3 Select appropriate tools to organize and present information digitally.

Unit 6 Ratios and Proportions

Content Area: **Mathematics**
Course(s):
Time Period: **4th Marking Period**
Length: **19-23 days**
Status: **Published**

Summary of the Unit

In this unit, students will focus on analyzing proportional relationships and using them to solve real-world and mathematical problems.

Enduring Understandings

Proportionality can be compared to using fractions, decimals, and percent. Modeling values on a graph on identify if an expression is linear and has a constant. Proportions can be used to solve percent problems involving sales tax, tip, and more.

Essential Questions

- How can a student show that two items are proportional?
- How can a student identify a proportional relationship?
- How can you represent proportional relationship?

Summative Assessment and/or Summative Criteria

Students will take a test to review concepts learned in Unit 7.

Students will demonstrate mastery through various assessment criteria included in the unit.

Students will demonstrate mastery on the end of unit performance task.

Unit 6 Cumulative Project

Resources

New Jersey Student Learning Standards-Grades 7 and 8

New Jersey Department of Education Model Curriculum-Grades 7 and 8

Online mathematics assessment software such as OnCourse, LinkIt, GoFormative IXL, Moby Max, etc.

Khan Academy, Big Ideas Textbook

https://bigbrainz.com/login (Imagine Math Facts)

https://www.imaginelearning.com/programs/math-facts

www.internet4classrooms.com

http://nlvm.usu.edu/en/nav/index.html

www.illustrativemathematics.org/

http://www.katm.org/flipbooks/7%20FlipBook%20Final%20CCSS%202014.pdf

https://www.georgiastandards.org/Common-Core/Pages/Math-6-8.aspx

https://learnzillion.com/

http://www.insidemathematics.org/

https://www.engageny.org/

Unit Plan

Topic/Selection **Timeframe**	**General Objectives**	**Instructional Activities**	**Benchmarks/Assessments**	**Standards**
Ratios (2 days)	Students will identify and create simple ratios and equivalent ratios	**Vocabulary**: ratio Discuss different ways to write a ratio Discuss different examples on how ratios might be seen in the real world situation Relate ratios to ideas within classroom	Daily DN/HW check Guided practice problems Exit ticket PBS kids- Bad Date video Brainpop	MATH.7.RP.A MATH.7.RP.A.1 MATH.K-12.1 MATH.K-12.4
Unit Rate (2-3 days)	Students will calculate unit rates	Vocabulary: rate and unit rate Possible video to introduce topic: http://www.101qs.com/10-printjob Discuss better buy by linking it to real world	Daily DN/HW check Guided practice problems Exit ticket Better buy activity	MATH.7.RP.A MATH.7.RP.A.1 MATH.K-12.5

		situations		
Ratios and Unit Rates Review and Quiz (2 days)	Students will demonstrate mastery of identifying, writing ratios and calculating unit rates	Review Activity- Scavenger Hunt Centers IXL topic/Moby Max	Study guide Teacher created review Ratios and Unit Rate Quiz	MATH.7.RP.A MATH.7.RP.A.1 MATH.7.RP.A.3 MATH.K-12.1 MATH.K-12.4 MATH.K-12.5
Proportional and Nonproportional Relationships (2 days)	Students will identify proportional and nonproportional relationships	Vocabulary: proportional, nonproportional, constant of proportionality	Daily DN/HW check Guided practice problems Problem solving worksheet/activity Scavenger hunt	MATH.7.RP.A.2 MATH.7.RP.A.2.a MATH.7.RP.A.2.b MATH.7.RP.A.3
Solving Proportions (3 days)	Students will use proportions to solve problems	Vocabulary: proportions and cross products Review solving one step equations using some rational numbers Discuss cross products to determine if proportions are proportional Have students solve word problems where they need to label units and solve using cross products	Daily DN/HW check Guided Practice Problems Problem Solving/Error Analysis activity Scavenger hunt/Task cards activity IXL/Moby Max Math Antics/Khan Academy videos	MATH.7.RP.A.2 MATH.7.RP.A.2.a MATH.7.RP.A.2.b MATH.7.RP.A.3 MATH.K-12.7

Review and Quiz on Proportional relationships and solving Proportions (2 days)	Students will demonstrate mastery of identifying and solving proportions	Review Activity: Scavenger Hunt Centers IXL topic/Moby Max	Study guide Teacher created review Proportions Quiz	MATH.7.RP.A.2 MATH.7.RP.A.2.a MATH.7.RP.A.2.b MATH.7.RP.A.3 MATH.K-12.1 MATH.K-12.4 MATH.K-12.5 MATH.K-12.7
Scale Drawings and Models (2 days)	Students will calculate the scale of different models using proportions	Vocabulary: scale drawings and scale factor Discuss real life examples of scale vs actual size	Daily DN/HW check Guided Practice Problems Problem Solving Activity Scavenger hunt/Task cards activity IXL/Moby Max	MATH.7.G.A. MATH.7.G.A.1 MATH.7.RP.A.3 MATH.K-12.1 MATH.K-12.4 MATH.K-12.5
Similar Figures (2-3 days)	Students will find missing measures of similar figures	Vocabulary: similar figures, congruent, corresponding angles/sides Real world problems that demonstrate similar figures Require students to identify corresponding parts by color coding figures	Daily DN/HW check Guided Practice Problems Problem solving worksheet Math Antics video IXL topics Task Cards	MATH.7.RP.A.2 MATH.7.RP.A.2.a MATH.7.RP.A.2.b MATH.7.RP.A.3 MATH.K-12.7

Review and Assess Chapter (2-3 days)	Students will demonstrate understanding of topics covered in Unit 7	Review activity (teacher created) Centers/Stations	Review Unit Test	MATH.7.RP.A MATH.7.RP.A.1 MATH.7.RP.A.2 MATH.7.RP.A.2.a MATH.7.RP.A.2.b MATH.7.RP.A.3 MATH.K-12.1 MATH.K-12.4 MATH.K-12.5 MATH.K-12.7

MATH.7.G.A.1 [*Standard*] – Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

MATH.7.RP.A [*Cluster Heading*] – Analyze proportional relationships and use them to solve real-world and mathematical problems

MATH.7.RP.A.1 [*Standard*] – Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.

MATH.7.RP.A.2 [*Standard*] – Recognize and represent proportional relationships between quantities.

MATH.7.RP.A.2.a Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.

MATH.7.RP.A.2.b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

MATH.7.RP.A.2.c Represent proportional relationships by equations.

MATH.7.RP.A.2.d Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.

MATH.7.RP.A.3 [*Standard*] – Use proportional relationships to solve multistep ratio and percent problems.

MATH.K-12.1 [Standard] – Make sense of problems and persevere in solving them

MATH.K-12.4 [Standard] – Model with mathematics

MATH.K-12.5 [Standard] – Use appropriate tools strategically

Suggested Modifications for IEP/504 Eligible, ML, At Risk and Gifted Students

Students will be allowed to submit assignments using additional time per IEP modifications.

Students will be encouraged to use different size and type of font in order to avoid print confusion.

Students will be given modified assignments (length or rigor) as per IEP modifications.

Anchor charts to model strategies and use of formulas

Reference sheets that list formulas, step-by-step procedures and model strategies

Conceptual word wall that contains definitions, translation, pictures and/or examples

Graphic organizers (examples include: Venn diagram, 4 square graphic organizer for math word problems, K-W-L etc.)

Translation dictionary

Teacher modeling

Four-function calculator to assist with computations

Students can utilize math journals to write notes, copy solution steps, and translate terms and key vocabulary

Highlight and label the solution steps for multi-step problems in different colors

Utilize technological programs which provide verbal and visual instruction in native and/or second language

Use interactive technology to improve multiplication fact fluency and accuracy

Use a story context or visual to model math operations with signed rational numbers

Use concrete models (counting chips), drawings (horizontal and vertical number lines), and interactive technology to explain the reasoning used to complete mathematical operations with signed integers

Multiplication charts to assist with multiplication and division automaticity

LEP students will be allowed to use an internet translator or language glossary in order to translate vocabulary and assignments properly.

LEP students may be allowed to work with another student who is fluent in their native language.

Utilize thermometer manipulatives.

Create actual number line utilizing resources.

Peer coaching with students in different groups.

Translated math glossary should be provided.

Math journal for students to note questions and concerns should be used.

Use of word/picture wall.

Pictures/illustrations Provide graphic organizers.

Develop graphic representations of number lines and show multiple examples.

Website: Teachers First Adapt a Strategy. Adjusting Lessons for ESL/ELL students
http://www.teachersfirst.com/content/esl/adapts trat.cfm

*Gifted Students can have an accelerated pacing schedule, more open-ended response questions, project-based learning related to their interests, or inquiry-based learning.

Suggested Technological Innovations/Use

Instructional technology should be used to present and assess lessons such as; Smart Notebook, PowerPoint, Google slides, Communicators / individual dry erase boards.

Teachers are encouraged to use electronic assessments to determine mastery of concepts taught.

The use of Kahoot, Quizizz, Moby Max, IXL, Glencoe Test Creation or other types of interactive software is encouraged.

TECH.8.1.8 All students will use digital tools to access, manage, evaluate, and synthesize information

in order to solve problems individually and collaborate and to create and communicate

knowledge.

TECH.8.2.8 All students will develop an understanding of the nature and impact of technology,

engineering, technological design, computational thinking and the designed world as they

relate to the individual, global society, and the environment.

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem- solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

9.2 21st Century Life and Career Skills: Personal Financial Literacy: All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy.

9.4.5.CT.3 Describe how digital tools and technology may be used to solve problems.

9.4.5.CT.4 Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global

9.4.8.TL.3 Select appropriate tools to organize and present information digitally

Unit 7 Percent

Content Area: **Mathematics**
Course(s):
Time Period: **4thMarking Period**
Length: **16-22 days**
Status: **Published**

Summary of the Unit

In this unit, students will learn how to calculate percentages using both the percent proportion and percent equation. They will be able to calculate the change in values as a percentage. In addition, they will solve real-world applications of percent, including discounts, tax, tip, and simple interest.

Enduring Understandings

Students will apply their understanding of percent and percent change to situations that will occur in their daily life. Teachers should use examples and activities that relate to students' lives and can be applied to outside the school environment. Students will solve problems using the application of the percent proportion and percent equation in problem solving.

Essential Questions

- How can you use the percent proportion and equation to calculate percent of numbers?
- How can you calculate a percent increase or decrease given a real-world example?
- How does the topic of percent proportion/equation apply to real life situations including discount, tax, tip and interest?

Summative Assessment and/or Summative Criteria

Students will take a test to review concepts learned in Unit 8.

Students will demonstrate mastery through various assessment criteria included in the unit.

Students will demonstrate mastery on the end of unit performance task.

Unit 7 Cumulative Project

Resources

New Jersey Student Learning Standards-Grades 7 and 8

New Jersey Department of Education Model Curriculum-Grades 7 and 8

Online mathematics assessment software such as OnCourse, LinkIt, GoFormative IXL, Moby Max, etc.

Khan Academy, Big Ideas Textbook
https://bigbrainz.com/login (Imagine Math Facts)

https://www.imaginelearning.com/programs/math-facts

www.internet4classrooms.com

http://nlvm.usu.edu/en/nav/index.html

www.illustrativemathematics.org/

http://www.katm.org/flipbooks/7%20FlipBook%20Final%20CCSS%202014.pdf

https://www.georgiastandards.org/Common-Core/Pages/Math-6-8.aspx

https://learnzillion.com/

http://www.insidemathematics.org/

https://www.engageny.org/

Unit Plan

Topic/Selection **Timeframe**	**General Objectives**	**Instructional Activities**	**Benchmarks/Assessments**	**Standards**
Percent Proportion (2-3 days)	Students will use the percent proportion to solve computational and real world problems	Vocabulary: percent Discuss what students may already know about percent in real world situations Use visual representations and graphs (circle, bar, 100 block) to demonstrate what percent is to students Use the percent proportion to identify variables/key words	Daily DN/HW check Guided/Independent practice Exit ticket Scavenger Hunt/ Task cards Centers IXL topic/Moby Max	MATH.7.RP.A.2c MATH.7.RP.A.3 MATH.7.EE.A.2 MATH.7.EE.B.3 MATH.7.NS.A.3 MATH.K-12.1

		that they may know Use the percent proportion to answer questions that look for varied responses (ex. What number is 75% of 20?, 35 is what percent of 80?, 15 is 25% percent of what number?)		
Percent and Estimation (1 day)	Student will estimate percent by using mental math strategies.	Show common fraction percent equivalencies on a number line (ex. 50% = 0.5) Model finding percent showing 10% calculations Determine reasonably close estimations by finding percentages that are easier to calculate that what you were given (ex. using 35% as an estimate for 32% of 20)	Daily DN/ HW check Guided/Independent practice Exit ticket Small group task IXL topic/Moby Max Problem Solving activity	MATH.7.RP.A.2c MATH.7.RP.A.3 MATH.7.EE.A.2 MATH.7.EE.B.3 MATH.7.NS.A.3 MATH.K-12.1 MATH.K-12.7
Percent Equation (2-3 days)	Students will use the percent equation to solve computational and real world problems	Define the percent equation Identify the meaning of each variable in the equation Ask students to relate variables to real world situations Compare and contrast the percent proportion and the percent equation Use the percent equation to solve	Daily DN/HW check Guided/Independent practice Exit ticket Scavenger Hunt/ Task cards Centers IXL topic/Moby Max Problem Solving activity	MATH.7.EE.A.2 MATH.7.NS.A.3 MATH.7.EE.B.3

		problems like: Find 45% of 120?, 110 is what percent of 235? 68 is 20% of what number?		
Review and Quiz (2 days)	Students will demonstrate knowledge of percent proportion, percent equation and estimation	Teacher created Review activity and quiz	Review Stations/ group work IXL/Moby Max Study guide Quiz	MATH.7.RP.A.2c MATH.7.RP.A.3 MATH.7.EE.A.2 MATH.7.EE.B.3 MATH.7.NS.A.3 MATH.K-12.1 MATH.K-12.7
Percent of Change (1-2 days)	Students will calculate percent of increase or decrease by using the percent of change formula	Discuss how prices have changed over time and relate to real world situations students might understand Use visual models or have students color visual models to represent the percent change Apply formula to examples in real world students can understand	Daily DN/HW check Guided/Independent practice Exit ticket Scavenger Hunt/ Task cards Small group task IXL topic/Moby Max	MATH.7.RP.A.3 MATH.7.EE.B.3 MATH.7.EE.A.2 MATH.7.NS.A.3

			Problem Solving activity Project (McDonald's project)	
Sales Tax, Tip, Mark Up (2-3 days)	Students will solve real world problems involving sales tax, tip and mark up.	Use financial literacy questions to demonstrate situations where a percentage would have to be added to a total cost Discuss ordering from a menu and calculate the sales tax and tip that would be appropriate	Daily DN/HW check Guided/Independent practice Exit ticket Problem solving activity	MATH.7.RP.A.3 3 MATH.7.NS.A.3 MATH.7.EE.A.2 MATH.7.EE.B.3 MATH.K-12.1 MATH.K-12.2
Discount (2 days)	Students will solve real world problems involving discounts.	Use financial literacy questions to demonstrate a percentage that would need to be subtracted from a total cost,	Daily DN and HW check Guided/Independent practice Exit ticket Problem solving activity(task cards, scavenger hunt etc)	MATH.7.RP.A.3 MATH.7.NS.A.3 MATH.7.EE.A.2 MATH.7.EE.B.3 MATH.K-12.1 MATH.K-12.2
Simple Interest (1-2 days)	Students will solve simple interest problems by following a formula	Vocabulary: simple interest Identify the variables and the meaning in the formula	Daily DN/HW check Guided/Independent practice	MATH.7.RP.A.3 MATH.7.NS.A.3 MATH.7.EE.B.3

		Discuss the conversion of time if in months to a decimal	Exit ticket Problem solving activity	
Review and Quiz (2 days)	Students will demonstrate mastery of sales tax, tip, discount and simple interest.	Teacher created review with problem solving components	Small group review (stations, scavenger hunt, task cards etc) Quiz	MATH.7.RP.A.2c MATH.7.RP.A.3 MATH.7.EE.A.2 MATH.7.EE.B.3 MATH.7.NS.A.3 MATH.K-12.1 MATH.K-12.2
Review and Assess (1-2 days)	Students will demonstrate knowledge of topics presented in Percent unit	Varied review of topics in percent unit including basic computation and problem solving components	Error Analysis Stations/small group reviews Unit Test	MATH.7.RP.A.2c MATH.7.RP.A.3 MATH.7.EE.A.2 MATH.7.EE.B.3 MATH.7.NS.A.3 MATH.K-12.1 MATH.K-12.2 MATH.K-12.7

MATH.7.EE.A.2 [*Standard*] - Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.

MATH.7.EE.B.3 [*Standard*] - Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

MATH.7.NS.A.3 [*Standard*] - Solve real-world and mathematical problems involving the four operations with rational numbers.

MATH.7.RP.A.2 [*Standard*] - Recognize and represent proportional relationships between quantities.

MATH.7.RP.A.2.c Represent proportional relationships by equations.

MATH.7.RP.A.3 [*Standard*] – Use proportional relationships to solve multistep ratio and percent problems.

MATH.K-12.1 [Standard] – Make sense of problems and persevere in solving them

MATH.K-12.2 [*Standard*] - Reason abstractly and quantitatively

MATH.K-12.7 [*Standard*] - Look for and make use of structure

Suggested Modifications for Special Education, ELL and Gifted Students

Students will be allowed to submit assignments using additional time per IEP modifications.

Students will be encouraged to use different size and type of font in order to avoid print confusion.

Students will be given modified assignments (length or rigor) as per IEP modifications.

Anchor charts to model strategies and use of formulas

Reference sheets that list formulas, step-by-step procedures and model strategies

Conceptual word wall that contains definitions, translation, pictures and/or examples

Graphic organizers (examples include: Venn diagram, 4 square graphic organizer for math word problems, K-W-L etc.)

Translation dictionary

Teacher modeling

Four-function calculator to assist with computations

Students can utilize math journals to write notes, copy solution steps, and translate terms and key vocabulary

Highlight and label the solution steps for multi-step problems in different colors

Utilize technological programs which provide verbal and visual instruction in native and/or second language

Use interactive technology to improve multiplication fact fluency and accuracy

Use a story context or visual to model math operations with signed rational numbers

Use concrete models (counting chips), drawings (horizontal and vertical number lines), and interactive technology to explain the reasoning used to complete mathematical operations with signed integers

Multiplication charts to assist with multiplication and division automaticity

LEP students will be allowed to use an internet translator or language glossary in order to translate vocabulary and assignments properly.

LEP students may be allowed to work with another student who is fluent in their native language.

Utilize thermometer manipulatives.

Create actual number line utilizing resources.

Peer coaching with students in different groups.

Translated math glossary should be provided.

Math journal for students to note questions and concerns should be used.

Use of word/picture wall.

Pictures/illustrations Provide graphic organizers.

Develop graphic representations of number lines and show multiple examples.

Website: Teachers First Adapt a Strategy. Adjusting Lessons for ESL/ELL students
http://www.teachersfirst.com/content/esl/adapts trat.cfm

*Gifted Students can have an accelerated pacing schedule, more open-ended response questions, project-based learning related to their interests, or inquiry-based learning.

Suggested Technological Innovations/Use

Instructional technology should be used to present and assess lessons such as; Smart Notebook, PowerPoint, Google slides, Communicators / individual dry erase boards.

Teachers are encouraged to use electronic assessments to determine mastery of concepts taught.

The use of Kahoot, Quizizz, Moby Max, IXL, Glencoe Test Creation or other types of interactive software is encouraged.

TECH.8.1.8 All students will use digital tools to access, manage, evaluate, and synthesize information

in order to solve problems individually and collaborate and to create and communicate

knowledge.

TECH.8.2.8 All students will develop an understanding of the nature and impact of technology,

engineering, technological design, computational thinking and the designed world as they

relate to the individual, global society, and the environment.

Cross Curricular/21st Century Connections

9.1 21st Century Life and Career Skills: All students will demonstrate the creative, critical thinking, collaboration, and problem- solving skills needed to function successfully as both global citizens and workers in diverse ethnic and organizational cultures.

9.2 21st Century Life and Career Skills: Personal Financial Literacy: All students will develop skills and strategies that promote personal and financial responsibility related to financial planning, savings, investment, and charitable giving in the global economy.

9.4.5.CT.3 Describe how digital tools and technology may be used to solve problems.

9.4.5.CT.4 Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global

9.4.8.TL.3 Select appropriate tools to organize and present information digitally.