

PITTSGROVE TOWNSHIP SCHOOL DISTRICT



Course Name: 7th Grade Accelerated Math	Grade Level(s):7
Department: Math	Credits:
BOE Adoption Date: October 17, 2019	Revision Date(s): June 18, 2020

Course Description

In Grade 7, instructional time should focus on four critical areas: (1) developing understanding of and applying proportional relationships; (2) developing understanding of operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume; and (4) drawing inferences about populations based on samples.

1. Students extend their understanding of ratios and develop understanding of proportionality to solve single- and multi-step problems. Students use their understanding of ratios and proportionality to solve a wide variety of percent problems, including those involving discounts, interest, taxes, tips, and percent increase or decrease. Students solve problems about scale drawings by relating corresponding lengths between the objects or by using the fact that relationships of lengths within an object are preserved in similar objects. Students graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope. They distinguish proportional relationships from other relationships.

2. Students develop a unified understanding of number, recognizing fractions, decimals (that have a finite or a repeating decimal representation), and percents as different representations of rational numbers. Students extend addition, subtraction, multiplication, and division to all rational

numbers, maintaining the properties of operations and the relationships between addition and subtraction, and multiplication and division. By applying these properties, and by viewing negative numbers in terms of everyday contexts (e.g., amounts owed or temperatures below zero), students explain and interpret the rules for adding, subtracting, multiplying, and dividing with negative numbers. They use the arithmetic of rational numbers as they formulate expressions and equations in one variable and use these equations to solve problems.

3. Students continue their work with area from Grade 6, solving problems involving the area and circumference of a circle and surface area of three-dimensional objects. In preparation for work on congruence and similarity in Grade 8 they reason about relationships among two-dimensional figures using scale drawings and informal geometric constructions, and they gain familiarity with the relationships between angles formed by intersecting lines. Students work with three-dimensional figures, relating them to two-dimensional figures by examining cross-sections. They solve real-world and mathematical problems involving area, surface area, and volume of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes and right prisms.

4. Students build on their previous work with single data distributions to compare two data distributions and address questions about differences between populations. They begin informal work with random sampling to generate data sets and learn about the importance of representative samples for drawing inferences.

Mathematical Practices:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Mission Statement

The Pittsgrove Township School District believes in growing all learners to thrive. The district offers an intellectually rigorous, dynamic curriculum aligned to state and national standards coupled with research-based practices in classrooms. The Pittsgrove Township School District strives to highlight critical thinking, problem-solving, intercultural literacy, digital literacy, collaboration, innovation, and a growth mindset as part of the instructional core of learning. The district provides high quality resources to provide young people the knowledge they need to approach the future as leaders and learners.

Curriculum & Instruction Goals

1. To ensure students are college and career ready upon graduation
2. To vertically and horizontally align curriculum PreK-12 to ensure successful transition of students at each grade level
3. To identify individual student strengths and weaknesses utilizing various assessment measures (formative, summative, alternative, etc.) so as to differentiate instruction while meeting the rigor of the applicable content standards
4. To improve student achievement as assessed through multiple measures including, but not limited to, state testing, local assessments, and ongoing progress monitoring

How to Read this Document

This curricular document contains both a *pacing guide* and *curriculum units* . The pacing guide serves to communicate an estimated timeframe as to *when* critical knowledge and skills will be taught throughout the year. The pacing, however, may differ slightly depending upon the unique needs of each learner. The *curriculum units* contain more detailed information as to the content, goals, objectives, instructional strategies, resources, and assessments.

NJ Administrative Code and Statutes Key
<p>^=Amistad Law O=Diversity & Inclusion Law <>=Holocaust + =LGBT and Disabilities Law *=AAPI (Asian American and Pacific Islanders) \$=Financial Literacy Use this key to understand where the NJ mandates are being implemented in the K-12 curriculum units.</p>

Pacing Guide

Course Title: Accelerated Math 7

Prerequisite(s):

Unit Title	Duration/ Month(s)	Related Standards	Learning Goals	Critical Knowledge and Skills
Unit 1: Number System	8 weeks September / October	Power Standards 7.NS.A 8.NS.A 8.EE.A Supporting Standards 7.NS.A.1 7.NS.A.2 7.NS.A.3 8.NS.A.1 8.NS.A.2 8.EE.A.1 8.EE.A.2 8.EE.A.3 8.EE.A.4	<ul style="list-style-type: none"> ● The students will be able to solve mathematical and real-world problems involving addition, subtraction, multiplication, and division of both integers and signed rational numbers. ● Students will be able to find the squares and square roots of both rational and irrational numbers. 	<ul style="list-style-type: none"> ● Add and subtract rational numbers ● Represent addition and subtraction on a horizontal and vertical number line. ● Review addition and subtraction of fractions and decimals ● Review multiplication and division of fractions and decimals. ● Add and subtract (positive and negative) rational numbers, showing that the distance between two points on a number line is the absolute value of their difference and representing subtraction using an additive inverse. ● Interpret sums of rational numbers in real-world situations. ● Describe real-world situations in which (positive and negative) rational numbers are combined,

				<p>emphasizing rational numbers that combine to make 0.</p> <ul style="list-style-type: none">● multiply and divide rational numbers using the properties of operations● apply the convention of order of operations to add, subtract, multiply and divide rational numbers.● Solve real world problems involving the four operations with rational numbers.● Convert a rational number to a decimal using long division and explain why the decimal is either a terminating or repeating decimal.● Know that there are numbers that are not rational, and approximate them by rational numbers.● 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.
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				<ul style="list-style-type: none">● Use rational approximations of Irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1● Understand that square roots can be rational or irrational.● Use square root and cube root symbols● Evaluate the square roots of perfect squares and cube roots of perfect cubes● Apply the rules for radicals to variable expressions.● Properties of integer exponents can be used to generate equivalent numerical expressions.● Use scientific notation to estimate large or small quantities● Use scientific notation to express large or small numbers using powers of 10
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				<ul style="list-style-type: none"> ● Calculate and convert numbers expressed in scientific notation/decimal form
Unit 2: Expressions	4 weeks November	Power Standards 7.EE.A 7.EE.B Supporting Standards 7.EE.A.1 7.EE.A.2 7.EE.B.3 7.EE.B.4	<ul style="list-style-type: none"> ● Apply the properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. ● Rewrite algebraic expressions in equivalent forms to highlight how the quantities in it are related. 	<ul style="list-style-type: none"> ● Add and subtract linear expressions having rational coefficients, applying properties of operations. ● Combine like terms using properties of operations ● Factor and expand linear expressions having rational coefficients, using properties of operations. ● Write expressions in equivalent forms to shed light on the problem and interpret the relationship between the quantities in the context of the problem ● Use variables ● Write an expression in different forms ● Understand how rewriting an expression in different forms can show how the quantities in a problem are related

Unit 3: Equations	4 weeks/ December	Power Standards 7.EE.A 7.EE.B Supporting Standards 7.EE.A.1 7.EE.A.2 7.EE.B.3 7.EE.B.4	<ul style="list-style-type: none"> • Students will be able to write and solve multi- step equations in real- world situations. 	<ul style="list-style-type: none"> • Identify inverse operations • Construct simple equations • Solve simple equations in context • Reason about quantities • Compare solutions • compare an arithmetic solution to a word problem to the algebraic solution of the word problem, identifying the sequence of operations in each solution. • write an equation of the form $px + q = r$ or $p(x + q) = r$ in order to solve a word problem. • fluently solve equations of the form $px + q = r$ and $p(x + q) = r$. • Solve equations with variables on both sides
Unit 4: Inequalities	2 weeks January	Power Standards 7.EE.A Supporting Standards 7.EE.A.4b	<ul style="list-style-type: none"> • Students will be able to solve and graph word problems leading to inequalities. 	<ul style="list-style-type: none"> • Construct simple inequalities • Solve simple inequalities • Compare solutions • Graph inequalities • Interpret inequalities • Use variables to represent quantities in a real-world or mathematical problem, and

				<p>construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <ul style="list-style-type: none"> ● 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.
<p>Unit 5: Percents, Ratios & Proportional Relationships</p>	<p>6 weeks January- February</p>	<p>Power Standards 7.RP.A</p> <p>Supporting Standards 7.RP.A.1 7.RP.A.2 7.RP.A.3 8.1.8.A.4</p>	<ul style="list-style-type: none"> ● Solve multi-step ratio and percent problems using proportional relationships (<i>simple interest, Compound interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error</i>) ● Graph and interpret the unit rate and constant of proportional relationships, and compare and contrast proportional relationships in real world contexts 	<ul style="list-style-type: none"> ● Recognize percent as a ratio indicating the quantity per one hundred. ● Write and solve multi-step ratio and percent problems including simple interest, <i>Compound interest</i>, tax, mark-ups and markdowns, gratuities, and commissions, fees, percent increase and decrease, percent error. ● USE the percent proportion to solve real world problems. ● Use tables and graphs to determine if two quantities are in a proportional relationship. ● Identify the constant of proportionality (unit rate) in

			<ul style="list-style-type: none"> ● Use ratio and proportion to solve problems involving scale drawings of geometric figures 	<p>tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <ul style="list-style-type: none"> ● Write equations representing proportional relationships. ● Interpret the origin and $(1, r)$ on the graph of a proportional relationship in context. ● interpret a point on the graph of a proportional relationship in context. ● Use proportions to solve multistep ratio problems. ● Determine if a proportional relationship exists between two quantities e.g. by testing for equivalent ratios in a table or graph on the coordinate plane and observing whether the graph is a straight line through the origin. ● Identify the constant of proportionality (unit rate) from tables, graphs, equations, diagrams, and verbal descriptions. ● Write equations to model proportional relationships in real world problems. ● Use the graph of a proportional relationship to interpret the
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				<p>meaning of any point (x, y) on the graph in terms of the situation - including the points $(0, 0)$ and $(1, r)$, recognizing that r is the unit rate.</p> <ul style="list-style-type: none"> ● Spreadsheets - Graph and calculate data within a spreadsheet and present a summary of the results ● Use ratios and proportions to create scale drawings. ● Reproduce a scale drawing at a different scale. ● Computing actual lengths and areas from a scale drawing. ● Solve problems involving scale drawings using proportions.
Unit 6: Geometry	6 weeks March - April	<p>Power Standards 7.G.A 7.G.B 8.G.B</p> <p>Supporting Standards 7.G.A.1 7.G.A.2 7.G.A.3 7.G.B.4 7.G.B.5</p>	<ul style="list-style-type: none"> ● Use facts about angles to write and solve simple equations for an unknown angle in a figure and use angles to construct geometric shapes. ● Understand and be able to find the circumference and area of circles and the area of composite figures. ● Solve real-world and mathematical problems involving the surface area and 	<ul style="list-style-type: none"> ● Describe all of the 2-dimensional figures that result when a 3-dimensional figures are sliced from multiple angles. ● Write and solve simple equations for an unknown angle in a figure and use angles to construct geometric shapes. ● Find the circumference and area of circles and the area of composite figures.

		<p>7.G.B.6 8.G.B.6 8.G.B.7 8.G.B.8 8.G.C.9 8.1.8.A.4</p>	<p>volume of prisms and pyramids.</p> <ul style="list-style-type: none"> Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. 	<ul style="list-style-type: none"> Calculate the volume of cubes, right prisms, pyramids, cones, cylinders, and spheres Calculate the surface area of cubes, right prisms, pyramids, cones, cylinders, and spheres. Solve problems involving volume and surface area using formulas. Know the formulas for the volumes of cubes, prisms, pyramids, cones, cylinders, and spheres and use them to solve real-world and mathematical problems. Explain a proof of the Pythagorean Theorem and its converse. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
<p>Unit 7: Probability</p>	<p>3 weeks <i>May</i></p>	<p>Power Standards 7.SP.A 7.SP.B 7.SP.C</p>	<ul style="list-style-type: none"> Interpret and express the likelihood of a chance event as a number between 0 and 1 Find probabilities of compound events using methods such as 	<ul style="list-style-type: none"> Evaluate the probability of a chance event as a number between 0 and 1 Find probabilities of simple events

		<p>Supporting Standards</p> <p>7.SP.A.1 7.SP.A.2 7.SP.B.3 7.SP.B.4 7.SP.C.5 7.SP.C.5 7.SP.C.6 7.SP.C.7 7.SP.C.8</p>	<p>organized lists, tables and tree diagrams, and identify the outcomes in the sample space which compose the event.</p> <ul style="list-style-type: none"> • Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid 	<ul style="list-style-type: none"> • Find probability of compound events using organized lists, tables, tree diagrams and simulation • Draw conclusions about the likelihood of events given their probability. • Collect data on chance processes, noting the long-run relative frequency. • Predict the approximate relative frequency given the theoretical probability. • Design and use a simulation to generate frequencies for compound events. • Analyze data from a sample to draw inferences about the population. • Generate multiple random samples of the same size. • Analyze the variation in multiple random samples of the same size. • Use random sampling to produce a representative sample. • Develop inferences about a population using data from a random sample and assess the variation in estimates after generating multiple samples of the same size
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<p>Unit 8: Financial Literacy</p>	<p>June</p>	<p>Power Standards 7.RP.A</p> <p>21st Century Life & Careers: 9.1.8.A.1 9.1.8.A.2 9.1.8.A.3 9.1.8.A.6 9.1.8.A.7</p>	<ul style="list-style-type: none"> ● Students will use information related to employment and personal finance to develop a budget for their “family” and link the mathematical data to equations of a line. ● Construct a simple personal savings and spending plan based on various sources of income. 	<ul style="list-style-type: none"> ● Explain the meaning and purposes of taxes and tax deductions and why fees for various benefits (e.g., medical benefits) are taken out of pay ● Determine net pay after calculating taxes deducted. ● Analyze the spending of different individuals and determine whether or not they have the available funds necessary to purchase an item they would like. ● Relate how the demand for certain skills determines an individual’s earning power ● Explain how income affects spending decisions. ● calculate monthly payments of different loans. ● Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income
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Unit 1: Number Sense

Instructional Unit Map

Course Title: 7th Grade Accelerated Math

Unit Title	Number System		Start Date:	September
			Length of Unit:	8 Weeks
<p>Content Standards <i>What do we want them to know, understand, & do?</i></p>	<p>Power Standards 7.NS.A - Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</p> <p>8.NS.A - Know that there are numbers that are not rational, and approximate them by rational numbers.</p> <p>8.EE.A - Work with radicals and integer exponents</p> <p>Supporting Standards 7.NS.A.1 - Apply and extend previous understandings of addition and subtraction</p>	<p>Learning Goals</p>	<ul style="list-style-type: none"> • The students will be able to solve mathematical and real-world problems involving addition, subtraction, multiplication, and division of both integers and signed rational numbers. • Students will be able to differentiate between rational and irrational numbers and be able to compare and estimate the size of irrational numbers and locate them on a number line. 	

	<p>to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.</p> <p>7.NS.A.2 - Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p>7.NS.A.3 - Solve real-world and mathematical problems involving the four operations with rational numbers</p> <p>8.NS.A.1 - Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational</p>		
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	<p>numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number</p> <p>8.NS.A.2 - Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.</p> <p>8.EE.A.1 - Know and apply the properties of</p>		
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	<p>integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$</p> <p>8.EE.A.2 - Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.</p> <p>8.EE.A.3 - Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the</p>		
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	<p>population of the United States as 3×10^8 and the population of the world as 7×10^9, and determine that the world population is more than 20 times larger.</p> <p>8.EE.A.4 - Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.</p>		
<p>Essential Questions</p>	<ul style="list-style-type: none"> • How do operations affect numbers? 		

	<ul style="list-style-type: none"> • How do we solve real world application problems? • What is the order in which operations must be performed? • How are rational numbers used and applied in real-life and mathematical situations? • What strategies are most useful in helping me develop algorithms for adding, subtracting, multiplying, and dividing positive and negative rational numbers? • What is the difference between rational and irrational numbers? • How do radicals and squares help solve real world problems? 		
Assessments <i>How will we know they have gained the knowledge & skills?</i>	Formative		
	Summative		Alternative
	<ul style="list-style-type: none"> • Warm ups/Tickets out the door • Whiteboards/Communicators • Choral and individual responses to questioning verbally and on the smartboard • Thumbs up/down, and other interactive answering strategies. • Graded Homework • Quizizz 	<ul style="list-style-type: none"> • Quizzes and End of Chapter Tests • Extended Constructed Response Questions • Projects 	<ul style="list-style-type: none"> • Unit 1 Menu Project • Group presentation “How I use rational numbers in everyday life”
Unit Pre-Assessment(s) <i>What do they already know?</i>	<ul style="list-style-type: none"> • Pre-assessment using iXL diagnostics • Fall NWEA Map testing results (<i>analyzed by standard, not overall score</i>) • Teacher-generated warm up questions 		
Instructional Strategies/Student Activities	<ul style="list-style-type: none"> • Direct Instruction • Guided Practice • Cooperative learning (group work) • Modeling 		

	<ul style="list-style-type: none"> ● Learning Centers ● Note-taking sheet ● Whiteboards/communicators ● Ixl/khan academy activities ● Turn and talk/Think-pair-share ● Student Choice Menu project ● Graphing to the Edge (RAFT Lab from NJCTL) ● Error Analysis Problems 			
Instructional/Assessment Scaffolds <i>(Modifications /Accommodations) – planned for prior to instruction</i>	English Language Learners Special Education Learners Struggling Learners Advanced Learners			
	<ul style="list-style-type: none"> ● Word Wall ● Oral Directions (repeat if necessary) ● Preferred Seating ● Calculator ● Pictures/Graphics ● Manipulatives ● “Classroom Buddy” ● Key terms highlighted ● Immediate feedback ● Google Classroom (notes, reviews, and links) ● Provide extra time 	<ul style="list-style-type: none"> ● Class Agenda ● Word Wall ● Oral Directions (repeat if necessary) ● Preferred Seating ● Calculator ● Pictures/Graphics ● Manipulatives ● Key terms highlighted ● Provide extra time as needed ● Provide examples/show work ● Allow students to make corrections 	<ul style="list-style-type: none"> ● Chunk long-term assignments ● Provide extra time as needed ● Class agenda/planner ● Manipulatives ● Pictures/Graphics ● Provide examples/show work ● Google Classroom (notes, reviews, and links) ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<ul style="list-style-type: none"> ● Tiered assignments ● Flexible grouping ● Independent Study ● Peer teaching ● Challenge problems and puzzles ● Error Analysis Problems

	<p>as needed</p> <ul style="list-style-type: none"> ● Allow students to make corrections to tests for partial credit and/or Test retakes 	to tests for partial credit and/or Test retakes		
Differentiated Instructional Methods: <i>(Multiple means for students to access content and multiple modes for student to express understanding)</i>	Access (Resources and/or Process)		Expression (Products and/or Performance)	
	<ul style="list-style-type: none"> ● Interactive Notebook/note-taking sheet ● Online Google Resource Folder/Google Classroom ● Standard-aligned Learning Stations ● Weekly Conference ● Assign specific/targeted iXL lessons based on progress 		<ul style="list-style-type: none"> ● Menu Project ● Small group presentation ● Choice of learning stations 	
Vocabulary <i>Highlight key vocabulary (both Tier II and Tier III words)</i>	<p>Tier II: absolute value, inverse, decimal, difference, integer, opposites, product, quotient, sum, negative, positive, fraction, rational number, irrational number, terminating decimal, repeating decimal, withdraw, credit, debit, overdraft, deposit, profit, loss, least common denominator (LCD), greatest common factor (GCF), scientific notation, standard form, real number, natural number, whole number</p> <p>Tier III: Associative Property (of Multiplication & Addition), Commutative Property (of Multiplication & Addition), Distributive Property, Multiplicative Inverse, Perfect square, Square root, Exponent, Power, Base, Cube root,</p>			
Integration of Technology SAMR	<p>Quiz via Google Form (S/A)</p> <p>Differentiated iXL lessons assigned based on student strengths/weaknesses (A/M)</p> <p>Khan Academy (S/A/M)</p> <p>Small group Google Slides presentation on the use of fractions in everyday life (R)</p> <p>Kahoot! Review before test (A/R)</p> <p>Flocabulary Video: Multiplying & Dividing Integers (A)</p>			

	Flocabulary Video: Rational & Irrational Numbers (A)					
Interdisciplinary Connections NJ Student Learning Standards	<p>ELA: NJ SLS.R1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text NJ SLS.W.1: Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.</p> <p>Technology: NJ SLS 8.1.8.A.5 Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. NJ SLS 8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities.</p> <p>21st Century Life and Careers: NJ SLS 9.1.8.A.1 Explain the meaning and purposes of taxes and tax deductions and why fees for various benefits (e.g., medical benefits) are taken out of pay. NJ SLS 9.1.8.B.1 Distinguish among cash, check, credit card, and debit card. NJ SLS 9.1.8.D.1 Determine how saving contributes to financial well-being. CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p>					
21st Century Themes/Skills P21 Framework	<table border="1"> <thead> <tr> <th data-bbox="562 1019 1220 1089">Themes</th> <th data-bbox="1220 1019 1927 1089">Skills</th> </tr> </thead> <tbody> <tr> <td data-bbox="562 1089 1220 1349"> Financial, Economic, Business, & Entrepreneurial Literacy Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of </td> <td data-bbox="1220 1089 1927 1349"> Critical Thinking and Problem Solving Life and Career Skills Technologies Literacy: Communication & Collaboration </td> </tr> </tbody> </table>		Themes	Skills	Financial, Economic, Business, & Entrepreneurial Literacy Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of	Critical Thinking and Problem Solving Life and Career Skills Technologies Literacy: Communication & Collaboration
Themes	Skills					
Financial, Economic, Business, & Entrepreneurial Literacy Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of	Critical Thinking and Problem Solving Life and Career Skills Technologies Literacy: Communication & Collaboration					

	mind required to contribute more fully to their own career success.	
Resources/Materials	<p>Resources: NJCTL: https://njctl.org/courses/math/7th-grade/numbers-and-operations-7th-grade/ iXL Khan Academy Teacher-generated worksheets/Google Form Google Classroom Pear Deck Illustrative Math: Drill Rig Flocabulary Video: Multiplying & Dividing Integers Flocabulary Video: Rational & Irrational Numbers</p> <p>Materials: Students' interactive notebooks Chromebooks Manipulatives</p>	

Unit 2 - Expressions

Instructional Unit Map			
Course Title: 7th Grade Accelerated Math			
Unit Title	2 - Expressions	Start Date:	November
		Length of Unit:	4 Weeks

<p>Content Standards <i>What do we want them to know, understand, & do?</i></p>	<p>Power Standards 7.EE.A - Use properties of operations to generate equivalent expressions.</p> <p>7.EE.B - Solve real-life and mathematical problems using numerical and algebraic expressions and equations.</p> <p>Supporting Standards 7.EE.A.1 - Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p>7.EE.A.2 - 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. For example, $a + 0.05a = 1.05a$ means that “increase by 5%” is</p>	<p>Learning Goals</p>	<ul style="list-style-type: none"> ● Apply the properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. ● Rewrite algebraic expressions in equivalent forms to highlight how the quantities in it are related.
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	<p>the same as “multiply by 1.05.”</p> <p>7.EE.B.3 - 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.</p> <p>7.EE.B.4 - Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by</p>		
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	reasoning about the quantities.		
Essential Questions	<ul style="list-style-type: none"> • When and how are expressions and equations applied to real world situations? • How can the order of operations be applied to evaluating expressions, and solving from one-step to multi-step equations? 		
Assessments <i>How will we know they have gained the knowledge & skills?</i>	Formative Summative Alternative		
	<ul style="list-style-type: none"> • Warm ups/Tickets out the door • Choral and individual responses to questioning verbally and on the smartboard • Thumbs up/down, and other interactive answering strategies. • Graded Homework • Quizizz 	<ul style="list-style-type: none"> • Quizzes and End of Chapter Tests • Extended Constructed Response Questions • Projects 	<ul style="list-style-type: none"> • Unit 2 Menu Project • Group presentation “How I use expressions in everyday life”
Unit Pre-Assessment(s) <i>What do they already know?</i>	<ul style="list-style-type: none"> • Pre-assessment using iXL diagnostics • Fall NWEA Map testing results (<i>analyzed by standard, not overall score</i>) • Teacher-generated warm up questions 		
Instructional Strategies/Student Activities	<ul style="list-style-type: none"> • Direct Instruction • Guided Practice • Cooperative learning (group work) • Modeling • Learning Centers • Note-taking sheet • White boards/communicators • Partner Work 		

	<ul style="list-style-type: none"> ● Math Games ● Task Cards ● Ixl/khan academy activities ● Turn and talk/Think-pair-share ● Student Choice Menu project 			
Instructional/Assessment Scaffolds (<i>Modifications /Accommodations</i>) – <i>planned for prior to instruction</i>	English Language Learners Special Education Learners Struggling Learners Advanced Learners			
	<ul style="list-style-type: none"> ● Word Wall ● Oral Directions (repeat if necessary) ● Preferred Seating ● Calculator ● Pictures/Graphics ● Manipulatives ● “Classroom Buddy” ● Key terms highlighted ● Immediate feedback ● Google Classroom (notes, reviews, and links) ● Provide extra time as needed ● Allow students to make corrections to tests for partial credit and/or Test 	<ul style="list-style-type: none"> ● Class Agenda ● Word Wall ● Oral Directions (repeat if necessary) ● Preferred Seating ● Calculator ● Pictures/Graphics ● Manipulatives ● Key terms highlighted ● Provide extra time as needed ● Provide 	<ul style="list-style-type: none"> ● Chunk long-term assignments ● Provide extra time as needed ● Class agenda/planner ● Manipulatives ● Pictures/Graphics ● Provide examples/show work ● Google Classroom (notes, reviews, and links) ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<ul style="list-style-type: none"> ● Tiered assignments ● Flexible grouping ● Independent Study ● Peer teaching ● Challenge problems and puzzles

	retakes	<p>examples/show work</p> <ul style="list-style-type: none"> • Allow students to make corrections to tests for partial credit and/or Test retakes 		
Differentiated Instructional Methods: <i>(Multiple means for students to access content and multiple modes for student to express understanding)</i>	Access (Resources and/or Process)		Expression (Products and/or Performance)	
	<ul style="list-style-type: none"> • Interactive Notebook/note-taking sheet • Online Google Resource Folder/Google Classroom • Standard-aligned Learning Stations • Weekly Conference • Assign specific/targeted iXL lessons based on progress 		<ul style="list-style-type: none"> • Menu Project • Small group presentation • Choice of learning stations 	
Vocabulary <i>Highlight key vocabulary (both Tier II and Tier III words)</i>	<p>Tier II: expression, variable, term, like terms, simplest form,</p> <p>Tier III: coefficient, constant, evaluate, expand, negative, order of operations, factor, distribute, Distributive Property</p>			
Integration of Technology SAMR	<p>Quiz via Google Form (S and A)</p> <p>Differentiated iXL lessons assigned based on student strengths/weaknesses (A/M)</p> <p>Khan Academy (S/A/M)</p> <p>Small group Google Slides presentation on the use of expressions in everyday life (R)</p>			

	<p>Kahoot! Review before test (A/R)</p> <p>Flocabulary Video: https://www.flocabulary.com/unit/expressions/ (A)</p>					
<p>Interdisciplinary Connections NJ Student Learning Standards</p>	<p>ELA: NJ SLS.R1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text NJ SLS.W.1: Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.</p> <p>Technology: NJ SLS 8.1.8.A.5 Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. NJ SLS 8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities.</p> <p>21st Century Life and Careers: CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p>					
<p>21st Century Themes/Skills P21 Framework</p>	<table border="1"> <thead> <tr> <th data-bbox="562 935 1220 1008">Themes</th> <th data-bbox="1220 935 1927 1008">Skills</th> </tr> </thead> <tbody> <tr> <td data-bbox="562 1008 1220 1347"> <p>Financial, Economic, Business, & Entrepreneurial Literacy Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.</p> </td> <td data-bbox="1220 1008 1927 1347"> <p>Life and Career Skills</p> <p>Critical Thinking and Problem Solving</p> <p>Technologies Literacy: Communication & Collaboration</p> </td> </tr> </tbody> </table>		Themes	Skills	<p>Financial, Economic, Business, & Entrepreneurial Literacy Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.</p>	<p>Life and Career Skills</p> <p>Critical Thinking and Problem Solving</p> <p>Technologies Literacy: Communication & Collaboration</p>
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Resources/Materials	<p>Resources: NJCTL: https://njctl.org/courses/math/7th-grade/expressions-7th-grade/ iXL Khan Academy Teacher-generated worksheets/Google Form Google Classroom Illustrative Math: Writing Expressions, Ticket to Ride Flocabulary: https://www.flocabulary.com/unit/expressions/</p> <p>Materials: Students' interactive notebooks Chromebooks Manipulatives</p>
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Unit 3 - Equations

Instructional Unit Map							
Course Title: 7th Grade Accelerated Math							
Unit Title	3 - Equations		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: black; color: white;">Start Date:</td> <td>December</td> </tr> <tr> <td style="background-color: black; color: white;">Length of Unit:</td> <td>4 weeks</td> </tr> </table>	Start Date:	December	Length of Unit:	4 weeks
Start Date:	December						
Length of Unit:	4 weeks						
Content Standards <i>What do we want them to know, understand, & do?</i>	Power Standards 7.EE.A - Use properties of operations to generate equivalent expressions.	Learning Goals	<ul style="list-style-type: none"> Students will be able to write and solve multi- step equations in real-world situations. 				

	<p>7.EE.B - Solve real-life and mathematical problems using numerical and algebraic expressions and equations.</p> <p>Supporting Standards</p> <p>7.EE.A.1 - Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p>7.EE.A.2 - 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. For example, $a + 0.05a = 1.05a$ means that “increase by 5%” is the same as “multiply by 1.05.”</p>		
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	<p>7.EE.B.3 - 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.</p> <p>7.EE.B.4 - 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.</p>		
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Essential Questions	<ul style="list-style-type: none"> • What are different properties of equations and how can they help solve them? • What happens when two sides of an equation are not equal? 									
Assessments <i>How will we know they have gained the knowledge & skills?</i>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%; text-align: center;">Formative</th> <th style="width: 25%; text-align: center;">Summative</th> <th style="width: 25%; text-align: center;">Alternative</th> </tr> </thead> <tbody> <tr> <td data-bbox="562 354 982 748"> <ul style="list-style-type: none"> • Warm ups/Tickets out the door • Choral and individual responses to questioning verbally and on the smartboard • Thumbs up/down, and other interactive answering strategies. • Graded Homework • Quizizz </td> <td data-bbox="982 354 1514 748"> <ul style="list-style-type: none"> • Quizzes and End of Chapter Tests • Extended Constructed Response Questions • Projects </td> <td data-bbox="1514 354 1929 748"> <ul style="list-style-type: none"> • Unit 3 Menu Project • Group presentation “How I use equations in everyday life” </td> </tr> </tbody> </table>				Formative	Summative	Alternative	<ul style="list-style-type: none"> • Warm ups/Tickets out the door • Choral and individual responses to questioning verbally and on the smartboard • Thumbs up/down, and other interactive answering strategies. • Graded Homework • Quizizz 	<ul style="list-style-type: none"> • Quizzes and End of Chapter Tests • Extended Constructed Response Questions • Projects 	<ul style="list-style-type: none"> • Unit 3 Menu Project • Group presentation “How I use equations in everyday life”
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Unit Pre-Assessment(s) <i>What do they already know?</i>	<ul style="list-style-type: none"> • Pre-assessment using iXL diagnostics • Fall NWEA Map testing results (<i>analyzed by standard, not overall score</i>) • Teacher-generated warm up questions 									
Instructional Strategies/Student Activities	<ul style="list-style-type: none"> • Direct Instruction • Guided Practice • Cooperative learning (group work) • Modeling • Learning Centers • Note-taking sheet • Ixl/khan academy activities • Turn and talk/Think-pair-share • Student Choice Menu project 									
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English Language Learners	Special Education Learners	Struggling Learners	Advanced Learners							

<p><i>/Accommodations) – planned for prior to instruction</i></p>	<ul style="list-style-type: none"> ● Word Wall ● Oral Directions (repeat if necessary) ● Preferred Seating ● Calculator ● Pictures/Graphics ● Manipulatives ● “Classroom Buddy” ● Key terms highlighted ● Immediate feedback ● Google Classroom (notes, reviews, and links) ● Provide extra time as needed ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<ul style="list-style-type: none"> ● Class Agenda ● Word Wall ● Oral Directions (repeat if necessary) ● Preferred Seating ● Calculator ● Pictures/Graps ● Manipulatives ● Key terms highlighted ● Provide extra time as needed ● Provide examples/show work ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<ul style="list-style-type: none"> ● Chunk long-term assignments ● Provide extra time as needed ● Class agenda/planner ● Manipulatives ● Pictures/Graphics ● Provide examples/show work ● Google Classroom (notes, reviews, and links) ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<ul style="list-style-type: none"> ● Tiered assignments ● Flexible grouping ● Independent Study ● Peer teaching ● Challenge problems and puzzles
<p>Differentiated Instructional</p>	<p>Access (Resources and/or Process)</p>		<p>Expression (Products and/or Performance)</p>	

<p>Methods: (Multiple means for students to access content and multiple modes for student to express understanding)</p>	<ul style="list-style-type: none"> ● Interactive Notebook/note-taking sheet ● Online Google Resource Folder/Google Classroom ● Standard-aligned Learning Stations ● Weekly Conference ● Assign specific/targeted iXL lessons based on progress 	<ul style="list-style-type: none"> ● Menu Project ● Small group presentation ● Choice of learning stations
<p>Vocabulary Highlight key vocabulary (both Tier II and Tier III words)</p>	<p>Tier II: expression, equation, variable, term, like terms, simplest form, substitute,</p> <p>Tier III: coefficient, constant, evaluate, expand, negative, order of operations, inverse operations, factor, distribute, Distributive Property, equivalent equations</p>	
<p>Integration of Technology SAMR</p>	<p>Quiz via Google Form (S/A)</p> <p>Differentiated iXL lessons assigned based on student strengths/weaknesses (A/M)</p> <p>Khan Academy (S/A/M)</p> <p>Small group Google Slides presentation on the use of equations in everyday life (R)</p> <p>Kahoot! Review before test (A/R)</p> <p>Flocabulary Video: https://www.flocabulary.com/unit/equations/ (A)</p> <p>Two Step Equation Game: http://www.crctlessons.com/two-step-equations-game.html (A)</p>	
<p>Interdisciplinary Connections NJ Student Learning Standards</p>	<p>ELA:</p> <p>NJ SLS.R1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text</p> <p>NJ SLS.W.1: Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.</p> <p>Technology:</p> <p>NJ SLS 8.1.8.A.5 Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems.</p> <p>NJ SLS 8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities.</p>	

	<p>21st Century Life and Careers: CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p>	
<p>21st Century Themes/Skills P21 Framework</p>	Themes	Skills
	<p>Financial, Economic, Business, & Entrepreneurial Literacy Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.</p>	<p>Creativity & Innovation Critical Thinking and Problem Solving Technologies Literacy Communication & Collaboration</p>
<p>Resources/Materials</p>	<p>Resources: NJCTL: https://njctl.org/courses/math/7th-grade/equations-inequalities-7th-grade/ iXL Khan Academy Teacher-generated worksheets/Google Form Google Classroom Illustrative Math: Drill Rig Flocabulary: https://www.flocabulary.com/unit/equations/</p> <p>Materials: Students' interactive notebooks Chromebooks Manipulatives</p>	

Unit 4 - Inequalities

Instructional Unit Map				
Course Title: 7th Grade Accelerated Math				
Unit Title	4 - Inequalities		Start Date:	January
			Length of Unit:	2 weeks
Content Standards <i>What do we want them to know, understand, & do?</i>	Power Standards 7.EE.A - Use properties of operations to generate equivalent expressions. 7.EE.B.4 -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. Supporting Standards	Learning Goals	<ul style="list-style-type: none"> Students will be able to solve and graph word problems leading to inequalities. 	

	<p>7.EE.A.4b - 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. For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.</p>									
<p>Essential Questions</p>	<ul style="list-style-type: none"> • When and how are inequalities applied to real world situations? • What are some possible real-life situations to which there may be more than one solution? • How do I determine the difference between equations and inequalities? • How can you use a number line to represent solutions of an inequality? • How do I solve and graph inequalities? 									
<p>Assessments <i>How will we know they have gained the knowledge & skills?</i></p>	<table border="1"> <thead> <tr> <th data-bbox="562 1045 982 1130">Formative</th> <th data-bbox="982 1045 1509 1130">Summative</th> <th data-bbox="1509 1045 1927 1130">Alternative</th> </tr> </thead> <tbody> <tr> <td data-bbox="562 1130 982 1357"> <ul style="list-style-type: none"> • Warm ups/Tickets out the door • Choral and individual responses to questioning verbally and on the smartboard </td> <td data-bbox="982 1130 1509 1357"> <ul style="list-style-type: none"> • Quizzes and End of Chapter Tests • Extended Constructed Response Questions • Projects </td> <td data-bbox="1509 1130 1927 1357"> <ul style="list-style-type: none"> • Unit 4 Menu Project </td> </tr> </tbody> </table>				Formative	Summative	Alternative	<ul style="list-style-type: none"> • Warm ups/Tickets out the door • Choral and individual responses to questioning verbally and on the smartboard 	<ul style="list-style-type: none"> • Quizzes and End of Chapter Tests • Extended Constructed Response Questions • Projects 	<ul style="list-style-type: none"> • Unit 4 Menu Project
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Unit Pre-Assessment(s) <i>What do they already know?</i>	<ul style="list-style-type: none"> • Pre-assessment using iXL diagnostics • Fall NWEA Map testing results (<i>analyzed by standard, not overall score</i>) • Teacher-generated warm up questions 			
Instructional Strategies/Student Activities	<ul style="list-style-type: none"> • Direct Instruction • Guided Practice • Cooperative learning (group work) • Modeling • Learning Centers • Note-taking sheet • Ixl/khan academy activities • Turn and talk/Think-pair-share • Student Choice Menu project 			
Instructional/Assessment Scaffolds (<i>Modifications /Accommodations</i>) – <i>planned for prior to instruction</i>	English Language Learners	Special Education Learners	Struggling Learners	Advanced Learners
	<ul style="list-style-type: none"> • Word Wall • Oral Directions (repeat if necessary) • Preferred Seating • Calculator • Pictures/Graphics • Manipulatives • “Classroom Buddy” • Key terms highlighted 	<ul style="list-style-type: none"> • Class Agenda • Word Wall • Oral Directions (repeat if necessary) • Preferred Seating • Calculator 	<ul style="list-style-type: none"> • Chunk long-term assignments • Provide extra time as needed • Class agenda/planner • Manipulatives • Pictures/Graphics • Provide examples/show work • Google Classroom 	<ul style="list-style-type: none"> • Tiered assignments • Flexible grouping • Independent Study • Peer teaching • Challenge problems and puzzles

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Differentiated Instructional Methods: <i>(Multiple means for students to access content and multiple modes for student to express understanding)</i>	Access (Resources and/or Process)		Expression (Products and/or Performance)	
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	on progress	
Vocabulary <i>Highlight key vocabulary (both Tier II and Tier III words)</i>	<p>Tier II: solution, greater than, less than, greater than or equal to, less than or equal to, At least At most, Inequalities</p> <p>Tier III: inequality, solution set, graph of an inequality, inverse operations, $<$, $>$</p>	
Integration of Technology SAMR	<p>Quiz via Google Form (S/A)</p> <p>Differentiated iXL lessons assigned based on student strengths/weaknesses (A/M)</p> <p>Khan Academy (S/A/M)</p> <p>Small group Google Slides presentation on the use of expressions in everyday life (R)</p> <p>Kahoot! Review before test (A/R)</p> <p>Flocabulary Video: https://www.flocabulary.com/unit/inequalities/ (A)</p> <p>Desmos: Inequalities on the Number Line (M)</p>	
Interdisciplinary Connections NJ Student Learning Standards	<p>ELA:</p> <p>NJ SLS.R1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text</p> <p>NJ SLS.W.1: Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.</p> <p>Technology:</p> <p>NJ SLS 8.1.8.A.5 Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems.</p> <p>NJ SLS 8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities.</p> <p>21st Century Life and Careers:</p> <p>CRP2. Apply appropriate academic and technical skills.</p> <p>CRP4. Communicate clearly and effectively and with reason.</p> <p>CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p>	

21 st Century Themes/Skills P21 Framework	Themes		Skills
	Financial, Economic, Business, & Entrepreneurial Literacy: Students engage in real world problem solving with inequalities to determine how much of something can be purchased based on money in both personal and business settings	Life and Career Skills Technologies Literacy - Communication & Collaboration	
Resources/Materials	Resources: NJCTL: https://njctl.org/courses/math/7th-grade/equations-inequalities-7th-grade iXL Khan Academy Teacher-generated worksheets/Google Form Google Classroom Illustrative Math: Fishing Adventures 1 Flocabulary: https://www.flocabulary.com/unit/inequalities/ Desmos: Inequalities on the Number Line Materials: Students' interactive notebooks Chromebooks Manipulatives		

Unit 5 - Percents, Ratios & Proportional Relationship

Instructional Unit Map			
Course Title: 7th Grade Accelerated Math			
Unit Title	5 - Percents, Ratios & Proportional Relationships	Start Date:	February

		Length of Unit:	6 weeks
<p>Content Standards <i>What do we want them to know, understand, & do?</i></p>	<p>Power Standards 7.RP.A - Analyze proportional relationships and use them to solve real-world and mathematical problems.</p> <p>Supporting Standards 7.RP.A.1 - Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\frac{1/2}{1/4}$ miles per hour, equivalently 2 miles per hour.</p> <p>7.RP.A.2 - Recognize and represent proportional relationships between quantities.</p>	<p>Learning Goals</p>	<ul style="list-style-type: none"> ● Solve multi-step ratio and percent problems using proportional relationships (<i>simple interest, Compound interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error</i>) ● Graph and interpret the unit rate and constant of proportional relationships, and compare and contrast proportional relationships in real world contexts ● Use ratio and proportion to solve problems involving scale drawings of geometric figures ● Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. ● Spreadsheets - Graph and calculate data within a spreadsheet and present a summary of the results

	<p>7.RP.A.3 - Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</p> <p>8.1.8.A.4 - 8.1.8.A.4 Graph and calculate data within a spreadsheet and present a summary of the results</p>											
Essential Questions	<ul style="list-style-type: none"> • How do rates, ratios, percentages and proportional relationships apply to our world? • What are the different ways percent problems are represented? 											
Assessments <i>How will we know they have gained the knowledge & skills?</i>	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th data-bbox="562 976 982 1062">Formative</th> <th data-bbox="982 976 1509 1062">Summative</th> <th colspan="2" data-bbox="1509 976 1927 1062">Alternative</th> </tr> </thead> <tbody> <tr> <td data-bbox="562 1062 982 1318"> <ul style="list-style-type: none"> • Warm ups/Tickets out the door • Choral and individual responses to questioning verbally and on the smartboard </td> <td data-bbox="982 1062 1509 1318"> <ul style="list-style-type: none"> • Quizzes and End of Chapter Tests • Extended Constructed Response Questions • Projects </td> <td colspan="2" data-bbox="1509 1062 1927 1318"> <ul style="list-style-type: none"> • Unit 5 Menu Project • Text Messaging Plans Restaurant Project • Dueling Discounts </td> </tr> </tbody> </table>				Formative	Summative	Alternative		<ul style="list-style-type: none"> • Warm ups/Tickets out the door • Choral and individual responses to questioning verbally and on the smartboard 	<ul style="list-style-type: none"> • Quizzes and End of Chapter Tests • Extended Constructed Response Questions • Projects 	<ul style="list-style-type: none"> • Unit 5 Menu Project • Text Messaging Plans Restaurant Project • Dueling Discounts 	
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	<ul style="list-style-type: none"> ● Thumbs up/down, and other interactive answering strategies. ● Graded Homework ● Quizizz 			
Unit Pre-Assessment(s) <i>What do they already know?</i>	<ul style="list-style-type: none"> ● Pre-assessment using iXL diagnostics ● Fall NWEA Map testing results (<i>analyzed by standard, not overall score</i>) ● Teacher-generated warm up questions ● Ratio/Proportion Pre-test 			
Instructional Strategies/Student Activities	<ul style="list-style-type: none"> ● Direct Instruction ● Guided Practice ● Cooperative learning (group work) ● Modeling ● Learning Centers ● Note-taking sheet ● Ixl/khan academy activities ● Turn and talk/Think-pair-share ● Student Choice Menu project 			
Instructional/Assessment Scaffolds (<i>Modifications /Accommodations</i>) – <i>planned for prior to instruction</i>	English Language Learners	Special Education Learners	Struggling Learners	Advanced Learners
	<ul style="list-style-type: none"> ● Word Wall ● Oral Directions (repeat if necessary) ● Preferred Seating ● Calculator ● Pictures/Graphics ● Manipulatives 	<ul style="list-style-type: none"> ● Class Agenda ● Word Wall ● Oral Directions (repeat if necessary) 	<ul style="list-style-type: none"> ● Chunk long-term assignments ● Provide extra time as needed ● Class agenda/planner ● Manipulatives ● Pictures/Graphics 	<ul style="list-style-type: none"> ● Tiered assignments ● Flexible grouping ● Independent Study ● Peer teaching

	<ul style="list-style-type: none"> ● “Classroom Buddy” ● Key terms highlighted ● Immediate feedback ● Google Classroom (notes, reviews, and links) ● Provide extra time as needed ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<ul style="list-style-type: none"> ● Preferred Seating ● Calculator ● Pictures/Graphics ● Manipulatives ● Key terms highlighted ● Provide extra time as needed ● Provide examples/s how work ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<ul style="list-style-type: none"> ● Provide examples/show work ● Google Classroom (notes, reviews, and links) ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<ul style="list-style-type: none"> ● Challenge problems and puzzles
Differentiated Instructional Methods: <i>(Multiple means for students to access content and multiple modes for student to express</i>	Access (Resources and/or Process)		Expression (Products and/or Performance)	

<p><i>understanding)</i></p>	<ul style="list-style-type: none"> ● Interactive Notebook/note-taking sheet ● Online Google Resource Folder/Google Classroom ● Standard-aligned Learning Stations ● Weekly Conference ● Assign specific/targeted iXL lessons based on progress 	<ul style="list-style-type: none"> ● Menu Project ● Small group presentation ● Choice of learning stations
<p>Vocabulary <i>Highlight key vocabulary (both Tier II and Tier III words)</i></p>	<p>Tier II: greatest common factor, proportion, proportional relationship, equivalent fractions, properties of equality, origin, steepness, interest</p> <p>Tier III: ratio, rate, unit rate, complex fraction, Cross Product, rate of change, constant of proportionality, slope, scale, scale drawing, scale factor, scale model, Direct proportion, compound interest</p>	
<p>Integration of Technology SAMR</p>	<p>Quiz via Google Form (S and A)</p> <p>differentiated iXL lessons assigned based on student strengths/weaknesses (A/M)</p> <p>Khan Academy (S/A/M)</p> <p>Small group Google Slides presentation on the use of expressions in everyday life (R)</p> <p>Kahoot! Review before test (A/R)</p> <p>Flocabulary Video: https://www.flocabulary.com/unit/equations/ (A)</p> <p>Rate Video: https://mathsnacks.com/ratey.html (A)</p> <p>Two Step Equation Game: http://www.crctlessons.com/two-step-equations-game.html (A)</p> <p>Restaurant Project (A)</p> <p>Dueling Discounts (S)</p>	
<p>Interdisciplinary Connections NJ Student Learning Standards</p>	<p>ELA:</p> <p>NJ SLS.R1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text</p> <p>NJ SLS.W.1: Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.</p>	

	<p>Technology: NJ SLS 8.1.8.A.5 Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. NJ SLS 8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities.</p> <p>21st Century Life and Careers: NJ SLS 9.1.8.E.1 Explain what it means to be a responsible consumer and the factors to consider when making consumer decisions. NJ SLS 9.1.8.E.6 Compare the value of goods or services from different sellers when purchasing large quantities and small quantities. CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p>					
<p>21st Century Themes/Skills P21 Framework</p>	<table border="1"> <thead> <tr> <th data-bbox="562 776 1220 849">Themes</th> <th data-bbox="1220 776 1925 849">Skills</th> </tr> </thead> <tbody> <tr> <td data-bbox="562 849 1220 1190"> <p>Financial, Economic, Business, & Entrepreneurial Literacy Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.</p> </td> <td data-bbox="1220 849 1925 1190"> <p>Creativity & Innovation Critical Thinking and Problem Solving Technologies Literacy Communication & Collaboration</p> </td> </tr> </tbody> </table>		Themes	Skills	<p>Financial, Economic, Business, & Entrepreneurial Literacy Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.</p>	<p>Creativity & Innovation Critical Thinking and Problem Solving Technologies Literacy Communication & Collaboration</p>
Themes	Skills					
<p>Financial, Economic, Business, & Entrepreneurial Literacy Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.</p>	<p>Creativity & Innovation Critical Thinking and Problem Solving Technologies Literacy Communication & Collaboration</p>					
<p>Resources/Materials</p>	<p>Resources: NJCTL: https://njctl.org/courses/math/7th-grade/ratios-proportions/ and https://njctl.org/courses/math/7th-grade/percents/ iXL</p>					

	<p>Khan Academy Teacher-generated worksheets/Google Forms Google Classroom Illustrative Math: Floor Plan, Map Distance, Rescaling Washington Park Math Snacks Video: https://mathsnacks.com/ratey.html Restaurant Project Dueling Discounts</p> <p>Materials: Students' interactive notebooks Chromebooks Manipulatives</p>
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Unit 6 - Geometry

Instructional Unit Map							
Course Title: 7th Grade Accelerated Math							
Unit Title	6 - Geometry		<table border="1" style="width: 100%;"> <tr> <td style="background-color: black; color: white;">Start Date:</td> <td>Mid - March</td> </tr> <tr> <td style="background-color: black; color: white;">Length of Unit:</td> <td>6 weeks</td> </tr> </table>	Start Date:	Mid - March	Length of Unit:	6 weeks
Start Date:	Mid - March						
Length of Unit:	6 weeks						
Content Standards <i>What do we want them to know, understand, & do?</i>	Power Standards 7.G.A - Draw, construct, and describe geometrical figures and describe the relationships between them.	Learning Goals	<ul style="list-style-type: none"> Use facts about angles to write and solve simple equations for an unknown angle in a figure and use angles to construct geometric shapes. Understand and be able to find the circumference and area of circles and the area of composite figures. Solve real-world and mathematical problems involving area, surface area and volume of two- and three-dimensional objects 				

	<p>7.G.B - Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.</p> <p>8.G.B - Understand and apply the Pythagorean Theorem.</p> <p>8.G.C.- Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.</p> <p>Supporting Standards</p> <p>7.G.A.1 - 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.</p> <p>7.G.A.2 - Draw (with technology, with ruler and</p>		<ul style="list-style-type: none"> ● Calculate the volume and surface area of cubes, right prisms, pyramids, cones, cylinders, and spheres; and know the formulas for the volumes of cubes, prisms, pyramids, cones, cylinders, and spheres and use them to solve real-world and mathematical problems. ● Solve problems involving volume and surface area using formulas.
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	<p>protractor, as well as freehand) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p> <p>7.G.A.3 - Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.</p> <p>7.G.B.4 - Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the</p>		
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	<p>circumference and area of a circle.</p> <p>7.G.B.5 - Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.</p> <p>7.G.B.6 - Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.</p> <p>8.G.B.6 - Explain a proof of the Pythagorean Theorem and its converse.</p> <p>8.G.B.7- Apply the Pythagorean Theorem to determine unknown side</p>		
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	<p>lengths in right triangles in real-world and mathematical problems in two and three dimensions.</p> <p>8.G.B.8 - Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.</p> <p>8.G.C.9 - Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.</p>			
<p>Essential Questions</p>	<ul style="list-style-type: none"> ● Can we determine if three side lengths would create a triangle? ● What is the difference between area and perimeter? ● How does our understanding of geometry help us to describe real-world objects? ● How do you solve problems using formulas? ● How can you use models of one and two-dimensional figures to show congruent and/or figures? 			
<p>Assessments <i>How will we know they have</i></p>	<p>Formative</p>	<p>Summative</p>	<p>Alternative</p>	

<p><i>gained the knowledge & skills?</i></p>	<ul style="list-style-type: none"> ● Warm ups/Tickets out the door ● Choral and individual responses to questioning verbally and on the smartboard ● Thumbs up/down, and other interactive answering strategies. ● Graded Homework 	<ul style="list-style-type: none"> ● Quizzes and End of Chapter Tests ● Extended Constructed Response Questions ● Projects 	<ul style="list-style-type: none"> ● Unit 6 Menu Project ● “How I use measurement in everyday life”
<p>Unit Pre-Assessment(s) <i>What do they already know?</i></p>	<ul style="list-style-type: none"> ● Pre-assessment using iXL diagnostics ● Fall NWEA Map testing results (<i>analyzed by standard, not overall score</i>) ● Teacher-generated warm up questions 		
<p>Instructional Strategies/Student Activities</p>	<ul style="list-style-type: none"> ● Direct Instruction ● Guided Practice ● Cooperative learning (group work) ● Modeling ● Learning Centers ● Note-taking sheet ● Ixl/khan academy activities ● Turn and talk/Think-pair-share ● Student Choice Menu project ● Gizmo: <u>Surface and Lateral Areas of Prisms and Cylinders</u> ● Gizmo: <u>Prisms and Cylinders</u> 		
<p>Instructional/Assessment Scaffolds (<i>Modifications /Accommodations</i>) – <i>planned for prior to instruction</i></p>	<p>English Language Learners Special Education Learners Struggling Learners Advanced Learners</p>		

	<ul style="list-style-type: none"> ● Word Wall ● Oral Directions (repeat if necessary) ● Preferred Seating ● Calculator ● Pictures/Graphics ● Manipulatives ● “Classroom Buddy” ● Key terms highlighted ● Immediate feedback ● Google Classroom (notes, reviews, and links) ● Provide extra time as needed ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<ul style="list-style-type: none"> ● Class Agenda ● Word Wall ● Oral Directions (repeat if necessary) ● Preferred Seating ● Calculator ● Pictures/Graphics ● Manipulatives ● Key terms highlighted ● Provide extra time as needed ● Provide examples/show work ● Allow students to make corrections to tests for partial credit 	<ul style="list-style-type: none"> ● Chunk long-term assignments ● Provide extra time as needed ● Class agenda/planner ● Manipulatives ● Pictures/Graphics ● Provide examples/show work ● Google Classroom (notes, reviews, and links) ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<ul style="list-style-type: none"> ● Tiered assignments ● Flexible grouping ● Independent Study ● Peer teaching ● Challenge problems and puzzles
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		and/or Test retakes		
Differentiated Instructional Methods: <i>(Multiple means for students to access content and multiple modes for student to express understanding)</i>	Access (Resources and/or Process)		Expression (Products and/or Performance)	
	<ul style="list-style-type: none"> ● Interactive Notebook/note-taking sheet ● Online Google Resource Folder/Google Classroom ● Formula sheet – Geometric Figures ● Standard-aligned Learning Stations ● Weekly Conference ● Assign specific/targeted iXL lessons based on progress 		<ul style="list-style-type: none"> ● Menu Project ● Small group presentation ● Choice of learning stations 	
Vocabulary <i>Highlight key vocabulary (both Tier II and Tier III words)</i>	<p>Tier II: circle, polygon, triangle, angle, edges, vertices, faces, height, cubic units, cube, solid, intersection, pyramid, cones, cylinder, sphere,</p> <p>Tier III: Area, Right Angle, Obtuse Angle, Degrees, Acute Angle, Angle Measure, Line Segment, adjacent angles, vertical angles, congruent angles, complementary angles, supplementary angles, congruent sides, center, radius, diameter, circumference, pi, semicircle, composite figure, lateral surface area, prism, rectangular prism, triangular prism, surface area, base, faces, plane, regular pyramid, slant height, cylinder, volume, cross section</p>			
Integration of Technology SAMR	<p>Quiz via Google Form (S and A)</p> <p>Differentiated iXL lessons assigned based on student strengths/weaknesses (A/M)</p> <p>Khan Academy (S/A/M)</p> <p>Kahoot! Review before test (A/R)</p> <p>Classify Triangles Game (S)</p> <p>Angles Jeopardy Review (S)</p> <p>Flocabulary: angle relationships(A)</p> <p>Flocabulary: Prisms: Area and Volume(A)</p> <p>Gizmo: Surface and Lateral Areas of Prisms and Cylinders (M)</p>			

	Gizmo: Prisms and Cylinders (M) Gizmo: Distance Formula (M) Gizmo: Pyramids and Cones (M)	
Interdisciplinary Connections NJ Student Learning Standards	EELA: NJ SLS.R1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text NJ SLS.W.1: Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence. Art: NJ SLS 1.3.8.D.1 Incorporate various art elements and the principles of balance, harmony, unity, emphasis, proportion, and rhythm/movement in the creation of two- and three dimensional artworks, using a broad array of art media and art mediums to enhance the expression of creative ideas (e.g., perspective, implied space, illusionary depth, value, and pattern). Technology: NJ SLS 8.1.8.A.5 Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. NJ SLS 8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities.	
21st Century Themes/Skills P21 Framework	Themes Skills	
	Financial, Economic, Business, & Entrepreneurial Literacy	Creativity & Innovation Critical Thinking and Problem Solving Communication & Collaboration
Resources/Materials	Resources: NJCTL: https://njctl.org/courses/math/7th-grade/2d-geometry/ and https://njctl.org/courses/math/7th-grade/geometry/	

	<p>iXL Khan Academy Teacher-generated worksheets/Google Form Google Classroom Illustrative Math: Circumference of a Circle, Floor Plan Flocabulary: Angle relationships Flocabulary: Prisms: Area and Volume</p> <p>Materials: Students' interactive notebooks Chromebooks Manipulatives</p>
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Unit 7 - Probability and Statistics

Instructional Unit Map			
Course Title: 7th Grade Accelerated Math			
Unit Title	7 - Probability and Statistics		Start Date: May
			Length of Unit: 3 weeks
Content Standards <i>What do we want them to know, understand, & do?</i>	Power Standards 7.SP.A -Use random sampling to draw	Learning Goals	<ul style="list-style-type: none"> Interpret and express the likelihood of a chance event as a number between 0 and 1 Find probabilities of compound events using methods such as organized lists, tables and tree diagrams, and identify the outcomes in the sample space which

	<p>inferences about a population.</p> <p>7.SP.B - Draw informal comparative inferences about two populations.</p> <p>7.SP.C - Investigate chance processes and develop, use, and evaluate probability models.</p> <p>Supporting Standards</p> <p>7.SP.A.1 - Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.</p>		<p>compose the event.</p> <ul style="list-style-type: none"> • Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid
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	<p>7.SP.A.2 - Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.</p> <p>7.SP.B.3 - Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by</p>		
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	<p>expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.</p> <p>7.SP.B.4 - Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.</p>		
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	<p>7.SP.C.5 - Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.</p> <p>7.SP.C.6 - Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. For example, when rolling a number</p>		
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	<p>cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.</p> <p>7.SP.C.7 - 7. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.</p> <p>7.SP.C.8 - Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.</p>		
Essential Questions	<ul style="list-style-type: none"> • What are the ways to organize, measure, and display data? • How does probability relate to real world application problems? • How do permutation and combinations fit into word problems? • How are different events classified and what can I use to solve them? 		
Assessments <i>How will we know they have gained the knowledge &</i>	Formative	Summative	Alternative

<i>skills?</i>	<ul style="list-style-type: none"> • Warm ups/Tickets out the door • Choral and individual responses to questioning verbally and on the smartboard • Thumbs up/down, and other interactive answering strategies. • Graded Homework 	<ul style="list-style-type: none"> • Quizzes and End of Chapter Tests • Extended Constructed Response Questions • Projects 	<ul style="list-style-type: none"> • Unit 7 Menu Project • Probability Desmos/Gizmo 	
Unit Pre-Assessment(s) <i>What do they already know?</i>	<ul style="list-style-type: none"> • Pre-assessment using iXL diagnostics • Fall NWEA Map testing results (<i>analyzed by standard, not overall score</i>) • Teacher-generated warm up questions 			
Instructional Strategies/Student Activities	<ul style="list-style-type: none"> • Direct Instruction • Guided Practice • Cooperative learning (group work) • Modeling • Learning Centers • Note-taking sheet • Turn and talk/Think-pair-share • Student Choice Menu project • Desmos: Chance Experiments 			
Instructional/Assessment Scaffolds (<i>Modifications /Accommodations</i>) – <i>planned for prior to instruction</i>	English Language Learners Special Education Learners Struggling Learners Advanced Learners			
	<ul style="list-style-type: none"> • Word Wall • Oral Directions (repeat if necessary) 	<ul style="list-style-type: none"> • Class Agenda • Word Wall 	<ul style="list-style-type: none"> • Chunk long-term assignments • Provide extra time as 	<ul style="list-style-type: none"> • Tiered assignments • Flexible

	<ul style="list-style-type: none"> ● Preferred Seating ● Calculator ● Pictures/Graphics ● Manipulatives ● “Classroom Buddy” ● Key terms highlighted ● Immediate feedback ● Google Classroom (notes, reviews, and links) ● Provide extra time as needed ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<ul style="list-style-type: none"> ● Oral Directions (repeat if necessary) ● Preferred Seating ● Calculator ● Pictures/Graphics ● Manipulatives ● Key terms highlighted ● Provide extra time as needed ● Provide examples/show work ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<p>needed</p> <ul style="list-style-type: none"> ● Class agenda/planner ● Manipulatives ● Pictures/Graphics ● Provide examples/show work ● Google Classroom (notes, reviews, and links) ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<p>grouping</p> <ul style="list-style-type: none"> ● Independent Study ● Peer teaching ● Challenge problems and puzzles
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Differentiated Instructional Methods: <i>(Multiple means for students to access content and multiple modes for student to express understanding)</i>	Access (Resources and/or Process)	Expression (Products and/or Performance)
Vocabulary <i>Highlight key vocabulary (both Tier II and Tier III words)</i>	<p>Tier II: fraction, decimal, percent, ratio, event, experiment, outcomes, equally likely, more likely, less likely, fair, unfair, possible, statistics, similar, mean, median, mode, range, prediction</p> <p>Tier III: favorable outcome, probability, relative frequency, experimental probability, theoretical probability, sample space, Fundamental Counting Principle, compound event, independent events, dependent events, simulation, unbiased sample, biased sample, interquartile range (IQR), box and whisker plot, quartile, plots,, overlap, random, distribution, skewed distribution</p>	<ul style="list-style-type: none"> ● Menu Project ● Small group presentation ● Choice of learning stations ● Desmos: Chance Experiments
Integration of Technology SAMR	<p>Quiz via Google Form (S and A)</p> <p>Differentiated iXL lessons assigned based on student strengths/weaknesses (A/M)</p> <p>Khan Academy (S/A/M)</p> <p>Small group Google Slides presentation on the use of probability/statistics in everyday life (R)</p> <p>Kahoot! Review before test (A/R)</p> <p>Flocabulary: https://www.flocabulary.com/unit/probability/ (A)</p> <p>Desmos: Chance Experiments (R)</p> <p>Interactive Resources:</p> <ul style="list-style-type: none"> ● Interactive Spinner (M) ● Coin/Dice Simulator (M) ● Virtual Odd Dice (M) <p>Dan Meyer: Three Act Lesson: Starburst Probability Video (M)</p>	

<p>Interdisciplinary Connections NJ Student Learning Standards</p>	<p>ELA: NJ SLS.R1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text NJ SLS.W.1: Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.</p> <p>Technology: NJ SLS 8.1.8.A.5 Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. NJ SLS 8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities.</p> <p>21st Century Life and Careers: CRP2. Apply appropriate academic and technical skills. CRP4. Communicate clearly and effectively and with reason. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.</p>					
<p>21st Century Themes/Skills P21 Framework</p>	<table border="1"> <thead> <tr> <th data-bbox="562 797 1220 873">Themes</th> <th data-bbox="1220 797 1925 873">Skills</th> </tr> </thead> <tbody> <tr> <td data-bbox="562 873 1220 1182"> <p>Financial, Economic, Business, & Entrepreneurial Literacy - Students apply probability and statistics concepts to real-world business situations.</p> </td> <td data-bbox="1220 873 1925 1182"> <p>Critical Thinking and Problem Solving</p> <p>Life and Career Skills</p> <p>Technologies Literacy: Communication & Collaboration</p> <p>Media Literacy</p> </td> </tr> </tbody> </table>		Themes	Skills	<p>Financial, Economic, Business, & Entrepreneurial Literacy - Students apply probability and statistics concepts to real-world business situations.</p>	<p>Critical Thinking and Problem Solving</p> <p>Life and Career Skills</p> <p>Technologies Literacy: Communication & Collaboration</p> <p>Media Literacy</p>
Themes	Skills					
<p>Financial, Economic, Business, & Entrepreneurial Literacy - Students apply probability and statistics concepts to real-world business situations.</p>	<p>Critical Thinking and Problem Solving</p> <p>Life and Career Skills</p> <p>Technologies Literacy: Communication & Collaboration</p> <p>Media Literacy</p>					
<p>Resources/Materials</p>	<p>Resources: NJCTL: https://njctl.org/courses/math/7th-grade/statistics-probability/ iXL Khan Academy</p>					

	<p>Teacher-generated worksheets/Google Form</p> <p>Google Classroom</p> <p>Flocabulary: https://www.flocabulary.com/unit/probability/</p> <p>Desmos: Chance Experiments</p> <p>SKUNK Game</p> <p>Interactive Resources:</p> <ul style="list-style-type: none"> ● Interactive Spinner (M) ● Coin/Dice Simulator (M) ● Virtual Odd Dice (M) <p>Dan Meyer: Three Act Lesson: Starburst Probability Video (M)</p> <p>Materials:</p> <p>Students' interactive notebooks</p> <p>Chromebooks</p> <p>Manipulatives</p>
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Unit 8 - Financial Literacy

Instructional Unit Map			
Course Title: 7th Grade Accelerated Math			
Unit Title	8 - Financial Literacy	Start Date:	June
		Length of Unit:	2 weeks

<p>Content Standards <i>What do we want them to know, understand, & do?</i></p>	<p>Power Standards 7.RP.A - Analyze proportional relationships and use them to solve real-world and mathematical problems.</p> <p>9.1.8: Personal Financial Literacy</p> <p>21st Century Life & Careers: 9.1.8.A.1: Explain the meaning and purposes of taxes and tax deductions and why fees for various benefits (e.g., medical benefits) are taken out of pay</p> <p>9.1.8.A.2 - Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.</p>	<p>Learning Goals</p>	<ul style="list-style-type: none"> ● Students will use information related to employment and personal finance to develop a budget for their “family” and link the mathematical data to equations of a line. ● Explain the meaning and purposes of taxes and tax deductions and why fees for various benefits (e.g., medical benefits) are taken out of pay. ● Construct a simple personal savings and spending plan based on various sources of income.
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	<p>9.1.8.A.3 - Differentiate among ways that workers can improve earning power through the acquisition of new knowledge and skills.</p> <p>9.1.8.A.6 - Explain how income affects spending decisions.</p> <p>9.1.8.A.7 - Explain the purpose of the payroll deduction process, taxable income, and employee benefits.</p> <p>9.1.8.B.1 Distinguish among cash, check, credit card, and debit card.</p> <p>9.1.8.B.7 Construct a budget to save for long-term, short-term, and charitable goals.</p> <p>9.1.8.D.1 Determine how saving contributes to</p>		
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	financial well-being.		
Essential Questions	<ul style="list-style-type: none"> How do I manage money by preparing a personal spending plan and what are ways to decrease spending and increase income? What are ways to save money and what are savings options to save toward goals? 		
Assessments <i>How will we know they have gained the knowledge & skills?</i>	Formative		
	Summative		Alternative
	<ul style="list-style-type: none"> Warm ups/Tickets out the door Choral and individual responses to questioning verbally and on the smartboard Thumbs up/down, and other interactive answering strategies. Graded Homework 	<ul style="list-style-type: none"> Extended Constructed Response Questions 'Game of Life' Project 	<ul style="list-style-type: none"> 'Game of Life' Project
Unit Pre-Assessment(s) <i>What do they already know?</i>	<ul style="list-style-type: none"> Pre-assessment using iXL diagnostics Fall NWEA Map testing results (<i>analyzed by standard, not overall score</i>) Teacher-generated warm up questions 		
Instructional Strategies/Student Activities	<ul style="list-style-type: none"> Direct Instruction Guided Practice Cooperative learning (group work) Modeling Learning Centers Note-taking sheet Turn and talk/Think-pair-share 		

Instructional/Assessment Scaffolds (Modifications /Accommodations) – planned for prior to instruction	English Language Learners	Special Education Learners	Struggling Learners	Advanced Learners
	<ul style="list-style-type: none"> ● Word Wall ● Oral Directions (repeat if necessary) ● Preferred Seating ● Calculator ● Pictures/Graphics ● Manipulatives ● “Classroom Buddy” ● Key terms highlighted ● Immediate feedback ● Google Classroom (notes, reviews, and links) ● Provide extra time as needed ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<ul style="list-style-type: none"> ● Class Agenda ● Word Wall ● Oral Directions (repeat if necessary) ● Preferred Seating ● Calculator ● Pictures/Graphics ● Manipulatives ● Key terms highlighted ● Provide extra time as needed ● Provide examples/show work ● Allow students to make corrections to tests for 	<ul style="list-style-type: none"> ● Chunk long-term assignments ● Provide extra time as needed ● Class agenda/planner ● Manipulatives ● Pictures/Graphics ● Provide examples/show work ● Google Classroom (notes, reviews, and links) ● Allow students to make corrections to tests for partial credit and/or Test retakes 	<ul style="list-style-type: none"> ● Tiered assignments ● Flexible grouping ● Independent Study ● Peer teaching ● Challenge problems and puzzles

		partial credit and/or Test retakes		
Differentiated Instructional Methods: <i>(Multiple means for students to access content and multiple modes for student to express understanding)</i>	Access (Resources and/or Process)		Expression (Products and/or Performance)	
	<ul style="list-style-type: none"> ● Interactive Notebook/note-taking sheet ● Online Google Resource Folder/Google Classroom ● Standard-aligned Learning Stations ● Weekly Conference ● Assign specific/targeted iXL lessons based on progress 		<ul style="list-style-type: none"> ● Small group presentation ● Choice of learning stations 	
Vocabulary <i>Highlight key vocabulary (both Tier II and Tier III words)</i>	Tier II: debt, loan, semi-monthly, fixed expenses, variable expenses, budget, projected expenses, actual expenses Tier III: gross income, net income, deductions, principal, interest			
Integration of Technology SAMR	Differentiated iXL lessons assigned based on student strengths/weaknesses (A/M) Khan Academy (S/A/M) Online Debt Calculator (S)			
Interdisciplinary Connections NJ Student Learning Standards	ELA: NJ SLS.R1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text NJ SLS.RA: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone NJ SLS.W.1: Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence. NJ SLS.W2. Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content. NJ SLS.W9. Draw evidence from literary or informational texts to support analysis, reflection, and research			

	<p>Technology: NJ SLS 8.1.8.A.5 Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems. NJ SLS 8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities.</p> <p>21st Century & Careers CRP1. Act as a responsible and contributing citizen and employee. CRP2. Apply appropriate academic and technical skills. CRP3. Attend to personal health and financial well-being. CRP4. Communicate clearly and effectively and with reason. CRP8. Utilize critical thinking to make sense of problems and persevere in solving them. CRP11. Use technology to enhance productivity.</p>					
21st Century Themes/Skills P21 Framework	<table border="1"> <thead> <tr> <th data-bbox="562 683 1220 760">Themes</th> <th data-bbox="1220 683 1927 760">Skills</th> </tr> </thead> <tbody> <tr> <td data-bbox="562 760 1220 1117"> <p>Financial, Economic, Business, & Entrepreneurial Literacy Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.</p> </td> <td data-bbox="1220 760 1927 1117"> <p>Life and Career Skills - Initiative and Self--Direction</p> <p>Learning and Innovation Skills - Critical Thinking and Problem Solving; Communication and Collaboration</p> <p>Information, Media, and Technology Skills- Information Communication Technology Literacy</p> </td> </tr> </tbody> </table>		Themes	Skills	<p>Financial, Economic, Business, & Entrepreneurial Literacy Establish an understanding that career-ready individuals take regular action to contribute to their personal financial wellbeing, understanding that personal financial security provides the peace of mind required to contribute more fully to their own career success.</p>	<p>Life and Career Skills - Initiative and Self--Direction</p> <p>Learning and Innovation Skills - Critical Thinking and Problem Solving; Communication and Collaboration</p> <p>Information, Media, and Technology Skills- Information Communication Technology Literacy</p>
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Resources/Materials	<p>Resources: Game of Life (21st century project) Personal Financial Literacy For Grades 7 & 8 iXL Khan Academy Teacher-generated worksheets/Google Form</p>					

	<p>Google Classroom</p> <p>Materials: Students' interactive notebooks Chromebooks Manipulatives</p>
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