

PUBLIC SCHOOLS OF EDISON TOWNSHIP  
OFFICE OF CURRICULUM AND INSTRUCTION



Math Prime 7

Length of Course:	Term
Elective/Required:	Required
Schools:	Middle Schools
Eligibility:	Grade 7
Credit Value:	5 Credits
Date Approved:	August 17, 2021

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## Introduction

The New Jersey Student Learning Standards (NJSLS) for Mathematics are intended to provide students with a solid foundation in number sense, in particular whole numbers, fractions, and decimals. The focus of instructional time for the course of Math Prime 7 is modeling the use integers in real world applications; discovering the intricacies of proportional relationships and how they apply to percentages; formulating reason about expressions, equations, and inequalities; analyzing two- and three-dimensional figures using distance, angle, similarity, and congruence

This curriculum guide is standards based which reflects the NJSLS for Mathematics, the Mathematical Practices that are expected to be used in teaching mathematics K-12 are as follows and infused throughout the guide:

- ❖ Make sense of problems and persevere in solving them.
- ❖ Use appropriate tools strategically.
- ❖ Reason abstractly and quantitatively.
- ❖ Construct viable arguments and critique the reasoning of others.
- ❖ Model with mathematics.
- ❖ Attend to precision.
- ❖ Look for and make use of structure.
- ❖ Look for and express regularity in repeated reasoning.

The purpose was to further integrate the practice standards as well as incorporate technology in a meaningful way to enhance instruction and learning. Learning mathematics with understanding is essential to enable students to problem solve. Students learn mathematics by problem solving, not just by listening and memorizing. When mathematical facts are connected, taught in a contextual setting, applied to real world applications, and infused in technology knowledge is more likely retained.

The primary resource for this course is ***EdGems Math Course 2 Accelerated***.

## SCOPE &amp; SEQUENCE: Math Prime 7

Marking Period 1	Marking Period 2
<p><b><u>Unit One: Integer Operations</u></b>            Adding Integers            Subtracting Integers            Adding and Subtracting Rational Numbers            Multiply Integers            Dividing Integers            Multiplying and Dividing Rational Numbers            Order of Operations</p> <p><b><u>Unit Two: Proportional Relationships</u></b>            Ratios            Unit Rates            Rates and Ratios with Complex Fractions            Scale Drawings            Proportional Relationships            Problem Solving with Proportions            Displays of Proportional Relationships</p>	<p><b><u>Unit Two: Proportional Relationships (Continued)</u></b>            Calculating Slope from Graphs            The Slope Formula            Graphing Using Slope-Intercept Form            Writing Linear Equations for Graphs</p> <p><b><u>Unit Three: Percents</u></b>            Fractions, Decimals and Percents            Percent of a Number            Percent of Change            Percent Applications</p>
Marking Period 3	Marking Period 4
<p><b><u>Unit Four: Algebraic Expressions</u></b>            Algebraic Expressions            The Distributive Property            Equivalent Expressions</p> <p><b><u>Unit Five: Equations &amp; Inequalities</u></b>            Solving One and Two Step Equations            Solving Multi-Step Equations</p>	<p><b><u>Unit Five: Equations &amp; Inequalities (Continued)</u></b>            Solutions to Linear Equations            Linear Inequalities</p> <p><b><u>Unit Six: Geometry</u></b>            Complementary and Supplementary Angles            Vertical Angles and Adjacent Angles            Areas of Polygons            Circumference and Pi            Area of a Circle            Composite Figures            Three-Dimensional Figures            Surface Area of Prisms and Pyramids            Volume of Prisms and Cylinders</p>

Please note: Instructors will change their pacing and timing as needed to accommodate class periods available.

Unit 1: Integer Operations	
Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> <li>• What is the relationship between an integer and a rational number?</li> <li>• What patterns do you notice when you add, subtract, multiply, and divide integers?</li> <li>• How do I know which mathematical operation to use within problem situations?</li> </ul>	<ul style="list-style-type: none"> <li>• All numbers are organized based on their characteristics and patterns.</li> <li>• Rational numbers can be used to solve real world problems.</li> </ul>

Core Content		Instructional Actions	
<u>Objectives</u>	<u>Alignment to NJSL</u>	<u>Recommended Activities/Strategies</u>	<u>Assessment Check Points</u>
Express the distance between numbers on the number line as the absolute value of their difference.	<b>CCSS 7.NS.1:</b> Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.	Edgems - Lesson 2.1 Hot Air Balloon Desmos Modeling w/Integers Desmos	<p><b>Students will be formatively assessed through:</b></p> <ul style="list-style-type: none"> <li>• Teacher Observations</li> <li>• Do Nows</li> <li>• Exit Slips</li> <li>• Classwork</li> <li>• Extended Learning Activities</li> <li>• Stations</li> <li>• Educational Games</li> </ul> <p><b>Summative assessments include:</b></p> <ul style="list-style-type: none"> <li>• Minor Assessments</li> <li>• Major Assessments</li> <li>• Performance Assessments</li> </ul> <p><b>Resources Specific to Unit 1:</b> Rational Numbers Exit Tickets/Do Nows Integers Weather Tasks Rational Number Operations Performance Task Rational Numbers Check In/Test Prep Number System Choice Board Ideas Temperature Changes Task</p>
<p>Combine opposite quantities to make zero pairs.</p> <p>Add and subtract integers.</p>	<p><b>CCSS 7.NS.1a:</b> Describe situations in which opposite quantities combine to make 0</p> <p><b>CCSS 7.NS.1b:</b> Understand <math>p + q</math> as the number located a distance <math> q </math> from <math>p</math>, in the positive or negative direction depending on whether <math>q</math> is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.</p> <p><b>CCSS 7.NS.1c:</b> Understand subtraction of rational numbers as adding the additive inverse, <math>p - q = p + (-q)</math>. Show that the distance</p>	<p>Edgems - Lesson 2.1 and 2.3 Explore-Integer Chips Activity</p> <p>Adding Integers Desmos Integers Investigation Desmos Adding Integers Escape Room Adding/Subtracting Integers Pixel Art Adding/Subtracting Integers Maze Adding/Subtracting Integers Maze 2 Adding/Subtracting Integers Cut &amp; Paste Add/Subtract Integers Quizlet Two Truths &amp; One Lie</p>	

	between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.		
Interpret sums and differences of rational numbers.	<b>CCSS 7.NS.1d:</b> Apply properties of operations as strategies to add and subtract rational numbers.	Edgems - Lesson 2.2 and 2.4 Add/Subtract Fractions- Number Line Adding/Subtracting Fractions Slides Adding/Subtracting Rational Numbers Solve and Color Add/Subtract Rational Numbers Khan Academy	
Multiply and divide integers.	<b>CCSS 7.NS.2:</b> Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.  <b>CCSS 7.NS.2a:</b> Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.  <b>CCSS 7.NS.2b:</b> Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If $p$ and $q$ are integers, then $-p/q = (-p)/q = p/(-q)$	Edgems - Lesson 3.1 Multiplying Integers Explore Desmos Multiplying & Dividing Integers Slides Multiply/Divide Integers Quizizz Multiply/Divide Integers Speed Dating Integer Operations Card Sort Integer Operations Pokemon Desmos Multiply/Divide Integers Word Problems	
Interpret products and quotients of rational numbers.	<b>CCSS 7.NS.2c:</b> Apply properties of operations as strategies to multiply and divide rational numbers.	Edgems - Lesson 3.2 and 3.3 Multiply/Divide Rational Numbers Multiply/Divide Rational Numbers	

		Maze Multiply/Divide Rational Numbers Maze 2 Rational Numbers Error Analysis Rational Numbers Scavenger Hunt	
Solve real world problems by adding, subtracting, multiplying and dividing rational numbers.	<b>CCSS 7.NS.3:</b> Solve real-world and mathematical problems involving the four operations with rational numbers.	Edgemo - Lesson 3.4 Order of Operations Matching Order of Operations w/Rational #s Order of Operations Quizizz Order of Operations Scavenger Hunt Order of Operations Tasks Order of Operations Coach & Mathlete	

<b>Resources:</b> Essential Materials, Supplemental Materials, Links to Best Practices		<b>Instructional Adjustments:</b> Modifications, Student Difficulties, Possible Misunderstandings	
<b>Supplemental Resources:</b> <a href="#">EdGems Math - Course 2 Accelerated Teacher Gems PD Overview</a> <a href="http://www.socrative.com/">http://www.socrative.com/</a> <a href="http://www.kahoot.it">www.kahoot.it</a> <a href="http://www.shodor.org">www.shodor.org</a> <a href="http://www.insidemathematics.org">www.insidemathematics.org</a> <a href="http://www.xyzsolve.com">www.xyzsolve.com</a> <a href="http://www.ck12.org">www.ck12.org</a> <a href="http://www.mathjong.com">www.mathjong.com</a> <a href="#">Pear Deck</a> <a href="#">Socrative</a> <a href="#">Edpuzzle</a> <a href="#">Quizizz</a> <a href="#">Nearpod</a>	<b>Resources from textbook:</b> <ul style="list-style-type: none"> <li>● Lesson Presentations</li> <li>● Lesson Videos</li> <li>● Explore Activities</li> <li>● Online Practices</li> <li>● Teacher Gems</li> <li>● Student Gems</li> <li>● Exit Cards</li> <li>● Tiered Practices</li> <li>● Performance Tasks</li> <li>● Unit Reviews</li> <li>● Assessments</li> </ul>	<b>Emphasize note taking strategies:</b> <ul style="list-style-type: none"> <li>● Use guided notes when necessary</li> <li>● Revisit and study notebook</li> <li>● Create vocabulary notecards</li> <li>● Use tools/manipulatives/models</li> <li>● Reword application problems</li> <li>● Use handouts/graphic organizers</li> <li>● Review peer work and provide feedback</li> <li>● Complete error analysis process.</li> <li>● Use Google Apps for Education</li> <li>● Create a study guide for intervention</li> <li>● Build a glossary notebook</li> </ul> <b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>● Students may overlook negative numbers</li> <li>● Students may make mistakes with various operations involving integers and rational numbers</li> <li>● Students may not find a common denominator when adding or subtracting fractions.</li> </ul>	

Unit 2: Proportional Relationships	
Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> <li>• What is the rate? What kinds of real world relationships are rates?</li> <li>• What is a ratio? How can a ratio help us understand relationships between quantities?</li> <li>• How can unit rates help to make comparisons and solve problems?</li> <li>• How can you scale objects? Why is this useful?</li> <li>• What is a proportional relationship? How can proportional relationships be used to model real world situations?</li> <li>• What is slope?</li> <li>• How can the slope and the y-intercept be used to graph and write linear equations?</li> </ul>	<ul style="list-style-type: none"> <li>• A rate is the ratio between two different quantities that have units (related quantities). Real-world relationships that are rates include unit price, scale models, recipe measurements, etc.</li> <li>• Reason through unit price, better buy.</li> <li>• An object may need to be dilated using a scale factor in order to prove two figures are similar.</li> <li>• All proportional relationships are linear equations, but not all linear equations are proportional.</li> <li>• That slope is the rate of change between any two points.</li> <li>• Linear equations can be represented by equations and on graphs.</li> </ul>

Core Content		Instructional Actions	
<u>Objectives</u>	<u>Alignment to NJSL</u>	<u>Recommended Activities/Strategies</u>	<u>Assessment Check Points</u>
<p>Write a ratio to describe a relationship between 2 quantities.</p> <p>Compare and contrast ratios.</p> <p>Determine equivalent ratios.</p> <p>Apply knowledge of ratios and rates to solve real world problems.</p>	<p><b>CCSS 7.RP.A.1:</b> Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.</p>	<p>Edgems - Lesson 1.1 Lemonade Problem Chocolate Milk Challenge</p>	<p><b>Students will be formatively assessed through:</b></p> <ul style="list-style-type: none"> <li>• Teacher Observations</li> <li>• Do Nows</li> <li>• Exit Slips</li> <li>• Classwork</li> <li>• Extended Learning Activities</li> <li>• Stations</li> <li>• Educational Games</li> </ul> <p><b>Summative assessments include:</b></p> <ul style="list-style-type: none"> <li>• Minor Assessments</li> <li>• Major Assessments</li> <li>• Performance Assessments</li> </ul>
<p>Identify rate and create a definition for unit rate.</p> <p>Apply concepts of unit rate to problem</p>		<p>Edgems - Lesson 1.2 and 1.3 Click Battle Desmos Unit Rate Intro Desmos Rates &amp; Unit Rates EdPuzzle School Store Desmos Rate of Change Pair Up</p>	



<p>solve.</p> <p>Compute unit rates with ratios made up of fractions.</p>		<p>Fractional Unit Rates Solve &amp; Color</p>	<p><b>Resources Specific to Unit 2:</b>                  Proportional Relationships Exit Tickets/Do Nows                  Ratios Tasks                  Scale Drawings Performance Task                  Drawing to Scale: A Garden                  Proportions &amp; Scale Drawings                  Check In/Test Prep                  Proportional Relationships Tasks                  Recipes Project                  Proportional Relationships PBL                  Proportional Relationships Performance Task                  Ratios &amp; Proportions Choice Board Ideas                  Proportional Relationships Check In/Test Prep                  Interpreting Functions Masterpiece Graphing Check-in</p>
<p>Compute lengths and areas of scaled drawings from actual figures.</p> <p>Compute scale factor when given an actual figure and a scale drawing.</p>	<p><b>CCSS 7.G.1:</b> 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>Edgems - Lesson 1.4                  Shadows Task                  Waterslide Desmos                  Scaled Drawing- Apartment Activity</p>	
<p>Determine if ratios form a proportion and solve for a missing value in a proportion.</p> <p>Solve problems by writing and solving proportions</p>	<p><b>CCSS 7.RP.2a:</b> Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin</p>	<p>Edgems - Lesson 4.1 and 4.2                  Proportions Dice Activity                  Writing &amp; Solving Proportions Practice                  Proportional Thinking Paint by Pixel                  Proportions Scavenger Hunt                  Similar Figures Scavenger Hunt</p>	
<p>Recognize and represent proportional relationships from tables, graphs and equations</p> <p>What is the constant of proportionality? How can you distinguish relationships that are proportional from relationships that are not proportional?</p> <p>Relate the constant of proportionality to unit rate.</p>	<p><b>CCSS 7.RP.2c:</b> Represent proportional relationships by equations.</p> <p><b>CCSS 7.RP.3:</b> Use proportional relationships to solve multi-step ratio and percent problems.</p> <p><b>CCSS 7.RP.2b:</b> Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p><b>CCSS 7.RP.2d:</b> Explain what a point (x, y) on the graph of a proportional</p>	<p>Edgems - Lesson 4.3                  Sugar Sugar Desmos, Workpage                  Proportional Tables &amp; Graphs - Cut &amp; Paste                  Proportional vs. Non Sort                  Constant of Proportionality Intro                  Constant of Proportionality odd one out                  Constant of Proportionality Practice                  Constant of Proportionality He Said, She Said                  Proportional Graphs Practice                  Proportional Relationships Snowman</p>	

	<p>relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.</p>		
<p>Find the slope of a line from a graph</p> <p>Find the slope of a line using the slope formula</p>	<p><b>CCSS 8.EE.5:</b> Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.</p>	<p>Edgemo - Lesson 4.4 and 4.5 Steepness of a Line Activity, Handouts Finding Slope of a Line Desmos Snowman Slope Practice</p>	
<p>Graph linear equations in slope-intercept form.</p> <p>Write linear Equations for a given graph</p>		<p>Edgemo - Lesson 4.6 and 4.7 Graphing Slope-Intercept Form Desmos Slope-Intercept Form Slides Marbleslides</p>	

<p><b>Resources:</b> Essential Materials, Supplemental Materials, Links to Best Practices</p>		<p><b>Instructional Adjustments:</b> Modifications, Student Difficulties, Possible Misunderstandings</p>
<p><b>Supplemental Resources:</b>  <a href="#">EdGems Math - Course 2 Accelerated</a>  <a href="#">Teacher Gems PD Overview</a>  <a href="http://www.socrative.com/">http://www.socrative.com/</a>  <a href="http://www.kahoot.it">www.kahoot.it</a>  <a href="http://www.shodor.org">www.shodor.org</a>  <a href="http://www.insidemathematics.org">www.insidemathematics.org</a>  <a href="http://www.xyzsolve.com">www.xyzsolve.com</a>  <a href="http://www.ck12.org">www.ck12.org</a>  <a href="http://www.mathjong.com">www.mathjong.com</a>  <a href="#">Pear Deck</a>  <a href="#">Socrative</a>  <a href="#">Edpuzzle</a>  <a href="#">Quizizz</a>  <a href="#">Nearpod</a></p>	<p><b>Resources from textbook:</b></p> <ul style="list-style-type: none"> <li>● Lesson Presentations</li> <li>● Lesson Videos</li> <li>● Explore Activities</li> <li>● Online Practices</li> <li>● Teacher Gems</li> <li>● Student Gems</li> <li>● Exit Cards</li> <li>● Tiered Practices</li> <li>● Performance Tasks</li> <li>● Unit Reviews</li> <li>● Assessments</li> </ul>	<p><b>Emphasize note taking strategies:</b></p> <ul style="list-style-type: none"> <li>● Use guided notes when necessary</li> <li>● Revisit and study notebook</li> <li>● Create vocabulary notecards</li> <li>● Use tools/manipulatives/models</li> <li>● Reword application problems</li> <li>● Use handouts/graphic organizers</li> <li>● Review peer work and provide feedback</li> <li>● Complete error analysis process.</li> <li>● Use Google Apps for Education</li> <li>● Create a study guide for intervention</li> <li>● Build a glossary notebook</li> </ul> <p><b>Common Misconceptions:</b></p> <ul style="list-style-type: none"> <li>● Students may forget that proportional relationships must go through the origin (0,0)</li> <li>● Students may confuse a constant rate of change with a horizontal line.</li> <li>● Students may struggle to solve problems with complex fractions.</li> </ul>

### Unit 3: Percents

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> <li>• Do other numbers exist besides rational numbers? Why are they necessary?</li> <li>• How can understanding proportions help solve multi-step problems that involve proportional relationships?</li> </ul>	<ul style="list-style-type: none"> <li>• Fractions can be written as decimals, some of which are non-repeating, non-terminating decimals called irrational numbers.</li> <li>• Knowing when relationships are proportional.</li> </ul>

Core Content		Instructional Actions	
<u>Objectives</u>	<u>Alignment to NJSLS</u>	<u>Recommended Activities/Strategies</u>	<u>Assessment Check Points</u>
Connect the different forms of rational numbers (percents, fractions and decimals).	<b>CCSS 7.NS.2d:</b> Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.	Edgems - Lesson 5.1 Study Jams FDP EdPuzzle	<b>Students will be formatively assessed through:</b> <ul style="list-style-type: none"> <li>• Teacher Observations</li> <li>• Do Nows</li> <li>• Exit Slips</li> <li>• Classwork</li> <li>• Extended Learning Activities</li> <li>• Stations</li> <li>• Educational Games</li> </ul> <b>Summative assessments include:</b> <ul style="list-style-type: none"> <li>• Minor Assessments</li> <li>• Major Assessments</li> <li>• Performance Assessments</li> </ul> <b>Resources Specific to Unit 3:</b> Percents Exit Tickets/Do Nows Best Burger In Town Kohls Shopping Project Percents Diner Project
Apply an understanding of percent as a ratio to 100 to solve for the part, whole or the percent.  Find the solution to multi-step ratio word problems	<b>CCSS 7.RP.3:</b> Use proportional relationships to solve multi-step ratio and percent problems.	Edgems - Lesson 5.2 Percent of a Number Pixel Art Percent of a Number Puzzle	
Solve problems involving percent change  Solve problems involving the percent error when given a real-world scenario		Edgems - Lesson 5.3 Percent of Change Pixel Art Percent of Change Class Demo Percents Practice Slides Percent Error Solve & Color Digital Escape Room	

Use multi-step applications involving tax, discount, interest, gratuity, commission and simple interest		Edgems - Lesson 5.4 Mall Mix up Percent Application Task Cards Percent Unit Review- Find It Fix It	

<p><b>Resources:</b> Essential Materials, Supplemental Materials, Links to Best Practices</p>		<p><b>Instructional Adjustments:</b> Modifications, Student Difficulties, Possible Misunderstandings</p>	
<p><b>Supplemental Resources:</b>  <a href="#">EdGems Math - Course 2 Accelerated</a>  <a href="#">Teacher Gems PD Overview</a>  <a href="http://www.socrative.com/">http://www.socrative.com/</a>  <a href="http://www.kahoot.it">www.kahoot.it</a>  <a href="http://www.shodor.org">www.shodor.org</a>  <a href="http://www.insidemathematics.org">www.insidemathematics.org</a>  <a href="http://www.xyzsolve.com">www.xyzsolve.com</a>  <a href="http://www.ck12.org">www.ck12.org</a>  <a href="http://www.mathjong.com">www.mathjong.com</a>  <a href="#">Pear Deck</a>  <a href="#">Socrative</a>  <a href="#">Edpuzzle</a>  <a href="#">Quizizz</a>  <a href="#">Nearpod</a></p>	<p><b>Resources from textbook:</b></p> <ul style="list-style-type: none"> <li>● Lesson Presentations</li> <li>● Lesson Videos</li> <li>● Explore Activities</li> <li>● Online Practices</li> <li>● Teacher Gems</li> <li>● Student Gems</li> <li>● Exit Cards</li> <li>● Tiered Practices</li> <li>● Performance Tasks</li> <li>● Unit Reviews</li> <li>● Assessments</li> </ul>	<p><b>Emphasize note taking strategies:</b></p> <ul style="list-style-type: none"> <li>● Use guided notes when necessary</li> <li>● Revisit and study notebook</li> <li>● Create vocabulary notecards</li> <li>● Use tools/manipulatives/models</li> <li>● Reword application problems</li> <li>● Use handouts/graphic organizers</li> <li>● Review peer work and provide feedback</li> <li>● Complete error analysis process.</li> <li>● Use Google Apps for Education</li> <li>● Create a study guide for intervention</li> <li>● Build a glossary notebook</li> </ul> <p><b>Common Misconceptions:</b></p> <ul style="list-style-type: none"> <li>● Students may not recognize which part of the problem they are solving for and incorrectly set up the proportion.</li> <li>● Students may struggle to read a problem and to determine which information is the part and/or the whole.</li> <li>● Students may struggle with percent increase and decrease problems by forgetting to do any additional calculations.</li> </ul>	

## Unit 4: Algebraic Expressions

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> <li>What are the various methods that can be used to evaluate numerical and algebraic expressions?</li> <li>How do we apply mathematical properties/operations to simplify algebraic expressions?</li> </ul>	<ul style="list-style-type: none"> <li>Numerical and algebraic expressions can be simplified/evaluated using order of operations and computation of rational numbers.</li> </ul>

Core Content		Instructional Actions	
<u>Objectives</u>	<u>Alignment to NJSL</u>	<u>Recommended Activities/Strategies</u>	<u>Assessment Check Points</u>
Translate and write algebraic expressions.	<b>CCSS 6.EE.2:</b> Write, read and evaluate expressions in which letters stand for numbers.	Edgems - Lesson 6.1 Identifying Parts of an Expression Algebraic Expressions Group Practice Translating Expressions Practice Translating Expressions Quizizz	<b>Students will be formatively assessed through:</b> <ul style="list-style-type: none"> <li>Teacher Observations</li> <li>Do Nows</li> <li>Exit Slips</li> <li>Classwork</li> <li>Extended Learning Activities</li> <li>Stations</li> <li>Educational Games</li> </ul> <b>Summative assessments include:</b> <ul style="list-style-type: none"> <li>Minor Assessments</li> <li>Major Assessments</li> <li>Performance Assessments</li> </ul> <b>Resources Specific to Unit 4:</b> Expressions Exit Tickets/Do Nows Expressions Calendar Project Expressions Choice Board Expressions Choice Board Ideas per Standard Expressions Assessment Example
Evaluate algebraic expressions.		Edgems - Lesson 6.1 Evaluating Expressions Stations Evaluating Expressions Math Lib Evaluating Expressions Jigsaw Puzzle	
Use the Distributive Property to write equivalent expressions.	<b>CCSS 7.EE.1:</b> Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	Edgems - Lesson 6.2 Distributive Property Desmos Understanding Distributive Property Desmos Distributive Property Card Match	
Simplify expressions using the Distributive Property and combining like terms.	<b>CCSS 7.EE.2:</b> 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.	Edgems - Lesson 6.3 Expressions Desmos Bundle CLT Sort CLT Intro Activity CLT MathLib Expressions Activity Equivalent Expressions Practice	

	<p><b>CCSS 7.EE.3:</b> 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>Equivalent Expressions Matho Equivalent Expressions Matho #2 Khan Academy: Equivalent Expressions IXL: Equivalent Expressions Burgers and Fries Desmos</p>	
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<p><b>Resources:</b> Essential Materials, Supplemental Materials, Links to Best Practices</p>		<p><b>Instructional Adjustments:</b> Modifications, Student Difficulties, Possible Misunderstandings</p>	
<p><b>Supplemental Resources:</b>  <a href="#">EdGems Math - Course 2 Accelerated</a>  <a href="#">Teacher Gems PD Overview</a>  <a href="http://www.socrative.com/">http://www.socrative.com/</a>  <a href="http://www.kahoot.it">www.kahoot.it</a>  <a href="http://www.shodor.org">www.shodor.org</a>  <a href="http://www.insidemathematics.org">www.insidemathematics.org</a>  <a href="http://www.xyzsolve.com">www.xyzsolve.com</a>  <a href="http://www.ck12.org">www.ck12.org</a>  <a href="http://www.mathjong.com">www.mathjong.com</a>  <a href="#">Pear Deck</a>  <a href="#">Socrative</a>  <a href="#">Edpuzzle</a>  <a href="#">Quizizz</a>  <a href="#">Nearpod</a></p>	<p><b>Resources from textbook:</b></p> <ul style="list-style-type: none"> <li>● Lesson Presentations</li> <li>● Lesson Videos</li> <li>● Explore Activities</li> <li>● Online Practices</li> <li>● Teacher Gems</li> <li>● Student Gems</li> <li>● Exit Cards</li> <li>● Tiered Practices</li> <li>● Performance Tasks</li> <li>● Unit Reviews</li> <li>● Assessments</li> </ul>	<p><b>Emphasize note taking strategies:</b></p> <ul style="list-style-type: none"> <li>● Use guided notes when necessary</li> <li>● Revisit and study notebook</li> <li>● Create vocabulary notecards</li> <li>● Use tools/manipulatives/models</li> <li>● Reword application problems</li> <li>● Use handouts/graphic organizers</li> <li>● Review peer work and provide feedback</li> <li>● Complete error analysis process.</li> <li>● Use Google Apps for Education</li> <li>● Create a study guide for intervention</li> <li>● Build a glossary notebook</li> </ul> <p><b>Common Misconceptions:</b></p> <ul style="list-style-type: none"> <li>● Students may not recognize which part of the problem they are solving for and incorrectly set up the proportion.</li> <li>● Students may struggle to read a problem and to determine which information is the part and/or the whole.</li> <li>● Students may struggle with percent increase and decrease problems by forgetting to do any additional calculations.</li> </ul>	

## Unit 5: Equations and Inequalities

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> <li>• What is the purpose of an equation?</li> <li>• How do we apply mathematical properties/operations to solve equations?</li> <li>• How does the solution of an inequality differ from that of an equation?</li> </ul>	<ul style="list-style-type: none"> <li>• Numerical and algebraic expressions can be simplified/evaluated using order of operations and computation of rational numbers.</li> <li>• Equations are used to model real life problems.</li> <li>• Inverse operations are used to solve equations.</li> <li>• Inequalities have many solutions shown by plotting on a graph.</li> </ul>

Core Content		Instructional Actions	
<u>Objectives</u>	<u>Alignment to NJSL</u>	<u>Recommended Activities/Strategies</u>	<u>Assessment Check Points</u>
Solve one and two step equations by simplifying and applying inverse operations to solve.	<b>CCSS 7.EE.4a:</b> Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$ , where $p$ , $q$ , and $r$ are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.	Edgems - Lesson 7.1 One Step Equations Desmos Intro One Step Equations Matching Two Step Equations Leveled Practice Two Step Equations Math Lib Two Step Equations He Said She Said Writing Two Step Equations Practice Two Step Equations Activity Two Step Equations with Rationals Equations Problem Solving Quizlet Writing Equations Dominoes Equations Choice Board	<p><b>Students will be formatively assessed through:</b></p> <ul style="list-style-type: none"> <li>• Teacher Observations</li> <li>• Do Nows</li> <li>• Exit Slips</li> <li>• Classwork</li> <li>• Extended Learning Activities</li> <li>• Stations</li> <li>• Educational Games</li> </ul> <p><b>Summative assessments include:</b></p> <ul style="list-style-type: none"> <li>• Minor Assessments</li> <li>• Major Assessments</li> <li>• Performance Assessments</li> </ul>
Model, create and solve multi-step equations equations.	<b>CCSS 8.EE.7b:</b> Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	Edgems - Lesson 7.2 WODB: Equation WarmUp Multi-Step Equations Scavenger Hunt Multi Step Equations Pixel Art Multi-Step Equations Solve & Color	<p><b>Resources Specific to Unit 5:</b> Equations Exit Tickets/Do Nows</p>



<p>Determine if a linear equation in one variable has no solution, one solution or infinitely many solutions.</p>	<p><b>CCSS 8.EE.7a:</b> Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form <math>x = a</math>, <math>a = a</math>, or <math>a = b</math> results (where <math>a</math> and <math>b</math> are different numbers).</p>	<p>Edgemo - Lesson 7.3                  Equations Solution Sort                  IXL: Number of Solutions                  Khan Academy: Number of Solutions                  Smallest Solution</p>	<p>Multi-Step Equations Choice Board 1                  Multi-Step Equations Choice Board 2                  Equations Problem Solving Project Example                  Equations Assessment Example                  Inequalities Exit Tickets/Do Nows                  Equations &amp; Inequalities Check In/Test Prep</p>
<p>Solve multi-step inequalities and graph the solution on a number line.</p>	<p><b>CCSS 7.EE.4b:</b> Solve word problems leading to inequalities of the form <math>px + q &gt; r</math> or <math>px + q &lt; r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.</p>	<p>Edgemo - Lesson 7.7                  Solving &amp; Graphing Inequalities Matching                  Inequalities Puzzle                  Inequalities Solve &amp; Color                  Inequalities Scavenger Hunt                  Inequalities Scavenger Hunt #2                  Inequalities on a Number Line                  IXL: Graphing Two Step Inequalities                  Finding Solutions to Equations and Inequalities                  Inequalities Coach and Mathlete                  Applying Inequalities Activity                  Khan Academy: Two-Step Inequalities                  Word Problems                  Inequalities Stations</p>	

<p><b>Resources:</b> Essential Materials, Supplemental Materials, Links to Best Practices</p>		<p><b>Instructional Adjustments:</b> Modifications, Student Difficulties, Possible Misunderstandings</p>
<p><b>Supplemental Resources:</b>  <a href="#">EdGems Math - Course 2 Accelerated</a>  <a href="#">Teacher Gems PD Overview</a>  <a href="http://www.socrative.com/">http://www.socrative.com/</a>  <a href="http://www.kahoot.it">www.kahoot.it</a>  <a href="http://www.shodor.org">www.shodor.org</a>  <a href="http://www.insidemathematics.org">www.insidemathematics.org</a>  <a href="http://www.xyzsolve.com">www.xyzsolve.com</a>  <a href="http://www.ck12.org">www.ck12.org</a>  <a href="http://www.mathjong.com">www.mathjong.com</a>  <a href="#">Pear Deck</a>  <a href="#">Socrative</a>  <a href="#">Edpuzzle</a>  <a href="#">Quizizz</a>  <a href="#">Nearpod</a></p>	<p><b>Resources from textbook:</b></p> <ul style="list-style-type: none"> <li>● Lesson Presentations</li> <li>● Lesson Videos</li> <li>● Explore Activities</li> <li>● Online Practices</li> <li>● Teacher Gems</li> <li>● Student Gems</li> <li>● Exit Cards</li> <li>● Tiered Practices</li> <li>● Performance Tasks</li> <li>● Unit Reviews</li> <li>● Assessments</li> </ul>	<p><b>Emphasize note taking strategies:</b></p> <ul style="list-style-type: none"> <li>● Use guided notes when necessary</li> <li>● Revisit and study notebook</li> <li>● Create vocabulary notecards</li> <li>● Use tools/manipulatives/models</li> <li>● Reword application problems</li> <li>● Use handouts/graphic organizers</li> <li>● Review peer work and provide feedback</li> <li>● Complete error analysis process.</li> <li>● Use Google Apps for Education</li> <li>● Create a study guide for intervention</li> <li>● Build a glossary notebook</li> </ul> <p><b>Common Misconceptions:</b></p> <ul style="list-style-type: none"> <li>● Students may struggle to isolate the variable and solve equations with rational numbers.</li> <li>● Students may not set up an inequality correctly based on a real-world situation.</li> <li>● Students may not use the correct inequality symbol or may not use the correct point (included or not included) when graphing their solution.</li> </ul>

## Unit 6: Geometry

Essential Questions	Enduring Understandings
<ul style="list-style-type: none"> <li>• How to best describe relationships between the angles formed by intersecting lines? Are some relationships more useful than others in certain situations?</li> <li>• By definition, what is a circle?</li> <li>• How are the formulas for surface area and volume for prisms and cylinders derived?</li> <li>• How can three dimensional objects be measured? Are there some measurements that are more useful in specific situations than others?</li> </ul>	<ul style="list-style-type: none"> <li>• Angle relationships are characterized by their measures. They can occur in pairs such as adjacent, complementary, supplementary and vertical.</li> <li>• A circle is a “set of points” each equidistant from a fixed point - the center - that all lie in the same plane. The radius determines the length of the diameter, circumference, and the area all of which can be used to describe the size of a circle.</li> <li>• The formulas for surface area derive from the sum of the bases of the shape while the formula for volume is the area of the two-dimensional base multiplied by the height of the object..</li> <li>• Three-dimensional figures can be measured by their surface area and volume. Surface area is more useful when you want to know how much of the surface of the figure you can cover. Volume is more useful when you want to know how much space it takes up or how much space is inside it.</li> </ul>

Core Content		Instructional Actions	
<u>Objectives</u>	<u>Alignment to NJSLs</u>	<u>Recommended Activities/Strategies</u>	<u>Assessment Check Points</u>
<p>Classify pairs of angles as supplementary, complementary, adjacent, or vertical.</p> <p>Solve problems involving supplementary, complementary, adjacent or vertical angles.</p>	<p><b>CCSS 7.G.5:</b> 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>Edgemo - Lesson 8.1 and 8.2</p> <p>Angles Task Cards</p> <p>Angles Coloring Page</p> <p>Angles Puzzle</p> <p>Angles Pixel Art</p> <p>Angles Escape Room Level 1</p> <p>Angles Escape Room Level 2</p> <p>Angles IXL</p> <p>Angles Desmos</p> <p>Angles Card Sort</p>	<p><b>Students will be formatively assessed through:</b></p> <ul style="list-style-type: none"> <li>• Teacher Observations</li> <li>• Do Nows</li> <li>• Exit Slips</li> <li>• Classwork</li> <li>• Extended Learning Activities</li> <li>• Stations</li> <li>• Educational Games</li> </ul>



		Volume Task Cards	
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<b>Resources:</b> Essential Materials, Supplemental Materials, Links to Best Practices		<b>Instructional Adjustments:</b> Modifications, Student Difficulties, Possible Misunderstandings	
<b>Supplemental Resources:</b> <a href="#">EdGems Math - Course 2 Accelerated</a> <a href="#">Teacher Gems PD Overview</a> <a href="http://www.socrative.com/">http://www.socrative.com/</a> <a href="http://www.kahoot.it">www.kahoot.it</a> <a href="http://www.shodor.org">www.shodor.org</a> <a href="http://www.insidemathematics.org">www.insidemathematics.org</a> <a href="http://www.xyzsolve.com">www.xyzsolve.com</a> <a href="http://www.ck12.org">www.ck12.org</a> <a href="http://www.mathjong.com">www.mathjong.com</a> <a href="#">Pear Deck</a> <a href="#">Socrative</a> <a href="#">Edpuzzle</a> <a href="#">Quizizz</a> <a href="#">Nearpod</a>	<b>Resources from textbook:</b> <ul style="list-style-type: none"> <li>● Lesson Presentations</li> <li>● Lesson Videos</li> <li>● Explore Activities</li> <li>● Online Practices</li> <li>● Teacher Gems</li> <li>● Student Gems</li> <li>● Exit Cards</li> <li>● Tiered Practices</li> <li>● Performance Tasks</li> <li>● Unit Reviews</li> <li>● Assessments</li> </ul>	<b>Emphasize note taking strategies:</b> <ul style="list-style-type: none"> <li>● Use guided notes when necessary</li> <li>● Revisit and study notebook</li> <li>● Create vocabulary notecards</li> <li>● Use tools/manipulatives/models</li> <li>● Reword application problems</li> <li>● Use handouts/graphic organizers</li> <li>● Review peer work and provide feedback</li> <li>● Complete error analysis process.</li> <li>● Use Google Apps for Education</li> <li>● Create a study guide for intervention</li> <li>● Build a glossary notebook</li> </ul> <b>Common Misconceptions:</b> <ul style="list-style-type: none"> <li>● The difference between area and perimeter and correct units for each.</li> <li>● Drawing a picture to help solve word problems involving area.</li> <li>● The difference between the radius and diameter.</li> <li>● Using nets to visualize and label each face of a three-dimensional shape before calculating the surface area.</li> <li>● The base of a prism must be two congruent parallel polygons, one on the top and one on the bottom.</li> </ul>	