

Summit Public Schools
Summit, New Jersey
Grade Level: 7/ Content Area: Math 7

Overview:

The Math 7 course will prepare the student for the Pre-Algebra 8 course. Students will build on their knowledge of the number system using algebraic properties and number sense to compare, order, and compute with rational numbers. Order of operations will be extended to simplify expressions with exponents. They will solve one- and two-step equations with rational numbers. Students will write, solve and graph one- and two-step inequalities. Ratios, proportions, and percents will be represented using tables, graphs and equations in real-world contexts. Students will extend their work in two-dimensional geometry by learning properties of lines, rays, segments, special angle pairs, and polygons. Students will find the area of triangles, quadrilaterals, and compound shapes. Three-dimensional geometry will include identifying various solids and their properties, classifying solids, and finding surface area and volume. The statistics and probability units will include comparative analysis of similar data sets, theoretical and experimental probability, random sampling, tree diagrams showing possible outcomes, and graphs. Throughout the course, technology, interdisciplinary activities, media literacy and global perspectives will be integrated.

Major topics include:

- Ratio and Proportional Relationships - Analyze proportional relationships and use them to solve real-world and mathematical problems. Use proportional relationships to solve percent equations and problems involving scale drawings/similar figures
- The Number System - Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.
- Expressions and Equations - Use properties of operations to generate equivalent expressions, solve real-life and mathematical problems using numerical and algebraic expressions and equations, understand the connections between proportional relationships, lines, and linear equations, and analyze and solve linear equations.
- Geometry - Draw, construct and describe geometrical figures and describe the relationships between them. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.
- Probability and Statistics- Calculate theoretical and experimental probabilities and use the counting principle to determine the number of outcomes of a particular event. Use random sampling to draw inferences about a population. Draw informal comparative inferences about two populations.

Scope & Sequence for Math 7

- ❖ Skills Inventory Assessment - Week 2 (approx. 2 days)

- ❖ Q1, Q2, Q3 - approximately 1 week after the close of each marking period (approx. 3 days for each - review & assessment)
- ❖ Placement Test - Approx end of March

Section	Unit 1: Integers	Days
Chapter 1	Orientation	1
1.1	Basic Graphing, Ordering Rational Numbers, Absolute Value	2
1.2	Add Integers	2
1.3	Subtract Integers	2
	Review/Quiz	3
1.4	Multiply Integers	1
1.5	Divide Integers	1
	Review/Test	3
	Total Number of Days:	16
	Unit 2: Rational Numbers	
2.1	Convert FDP	2
2.1	Order Rational Numbers	1
2.2	Add Rational Numbers	2
2.3	Subtract Rational Numbers	2
	Review/Quiz	2
2.4	Multiply Rational Numbers	2
2.4	Divide Rational Numbers	2
	Review/Test	3
	Total Number of Days:	16
	Unit 3: Expressions and Equations	
	Evaluation Expressions	2
3.1	Algebraic Expressions	1
3.2	Adding and Subtracting Expressions	3

3.2E	Factoring Expressions	2
	Review/Quiz	2
3.3	Adding and Subtracting Equations	2
3.4	Multiplying and Dividing Equations	2
	Review/Quiz	2
3.5	Two Step Equations	2
	Review/Test	3
	Total Number of Days:	21
	Unit 4: Inequalities	
4.1	Writing and Graphing Inequalities	2
4.2	One Step Inequalities (Adding and Subtracting)	2
4.3	One Step Inequalities (Multiplying and Dividing)	2
	Review/Quiz	2
4.4	Two Step Inequalities	2
	Review/Test	2
	Total Number of Days:	12
	Unit 5: Ratios and Proportions	
5.1	Ratios and Rates/Ratio Tables	2
	Review & Quiz	2
5.2	Proportions	2
5.2E	Graphing Proportional Relationships	2
5.3	Writing Proportions	2
5.4	Solving Proportions & word problems	2
5.5 & 5.6	Constant of Proportionality (COP)	3
	Review & Quiz	2
7.4	Similar Figures and Scale Drawings	2

	Review/Test	3
	Total Number of Days:	22
	Unit 6: Percents	
6.1	Percents and Decimals	2
6.2	Comparing Fractions, Decimals and Percents	2
6.3	Percent Proportions	2
6.4	Percent Equation	2
	Review/Quiz	2
6.5	Percent Change	2
6.6	Discount and Markups	2
6.7	Simple Interest	2
	Review/Test	2
	Total Number of Days:	18
	Unit 7: Angles and Triangles	
7.1	Adjacent and Vertical Angles	1
7.2	Complementary and Supplementary Angles	1
	Angles Practice	1
7.3	Triangles	2
7.3E	Angles of Triangles	1
	Review/Quiz	2
7.4	Quadrilaterals	2
	Review/Test	2
	Total Number of Days:	12
	Unit 8: Circles	
8.1	Circles and Circumference	1
8.2	Perimeter of Composite Figures	1

	Review/Quiz	2
8.3	Area of Circles	2
	Area Formulas	1
8.4	Area of Composite Figures	2
	Review/Test	2
	Total Number of Days:	11
	Unit 9: Surface Area and Volume	
9.1	Surface Area of Prisms	2
9.2	Surface Area of Pyramids	2
9.2	Surface Area of Cylinders	1
	Review/Quiz	2
9.4	Volume of Prisms	2
9.5	Volume of Pyramids	1
9.5E	Cross Sections	1
	Review/Test	3
	Total Number of Days:	14
	Unit 10: Probability and Statistics	
10.1	Intro to Probability, Outcomes and Events	2
10.2	Probability	2
10.3	Experimental and Theoretical Probability	2
10.4	Compound Probability	2
10.5	Independent and Dependent Events	2
	Review/Quiz	2
10.6	Samples and Populations	2
10.7	Comparing Populations	2
	Review/Test	2

	Total Number of Days: 18
--	--------------------------

Unit 1: Integers	
Big Ideas: <i>Course Objectives/ Content Statement(s)</i> <ul style="list-style-type: none"> Understand the placement of integers on a number line. Finding the sums and differences of integers. Finding the products and quotients of integers. Understand absolute values and ordering of rational numbers. Solve problems using order of operations. 	
Essential Questions <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i>	Enduring Understandings <i>What will students understand about the big ideas?</i>
<ul style="list-style-type: none"> How can you use integers to represent the velocity and the speed of an object? Is the sum of two integers positive, negative, or zero? How can you tell? How are adding integers and subtracting integers related? Is the product of two integers positive, negative, or zero? How can you tell? Is the quotient of two integers positive, negative, or zero? How can you tell? 	Students will understand that: <ul style="list-style-type: none"> Multiplying by zero, in any form, produces a product of 0. Multiplying by one, in any form, does not change the value of the quantity. They can represent addition and subtraction on a horizontal or vertical number line diagram. Subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. They can apply and extend previous understandings of multiplication and division and of fractions to multiply and divide integers. A number and its opposite have a sum of 0 (are additive inverses).
Areas of Focus: Proficiencies (New Jersey Student Learning Standards)	Lessons
Students will: 7.NS.A.1a Describe situations in which opposite quantities combine to make 0. 7.NS.A.1b Understand $p + q$ as the number located a distance $ q $ from p , in the positive or negative direction depending on whether q is positive or negative. Show that	Lessons (Chapter 1 Big Ideas Red CC): <ul style="list-style-type: none"> 1.1 Integers and Absolute Value (2 days) 1.2 Adding Integers (2 days) 1.3 Subtracting Integers (2 days) Review and Quiz (3 days) 1.4 Multiplying Integers (1 day) 1.5 Dividing Integers (1 day)

a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.

7.NS.A.1c Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.

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

7.NS.A.2b Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.

7.NS.A.3: Solve real-world and mathematical problems involving the four operations with rational numbers

Career-Ready Practices

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.

CRP5: Consider the environmental, social and economic impacts of decisions.

CRP6: Demonstrate creativity and innovation.

CRP7: Employ valid and reliable research strategies.

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

CRP9: Model integrity, ethical leadership and effective management.

CRP10: Plan education and career paths aligned to personal goals.

CRP11: Use technology to enhance productivity.

CRP12: Work productively in teams while using cultural global competence.

- Review and Test (3 days)

Differentiation	Assessments
<p>Interdisciplinary Connections</p> <ul style="list-style-type: none">STEM activities (“Melting Matters”) referenced in Big Ideas textbook. Questions discussed with students:<ul style="list-style-type: none">When does the state of a substance change from solid to liquid or from liquid to solid? The states of different substances change at different temperatures.How do their melting points compare to that of ice?How can you use absolute values to solve problems about melting points?Students will graph the given melting points on a number line. Students will then compare the melting points and find their absolute values. They will also subtract integers to solve a real-life problem. <p>Technology Integration</p> <ul style="list-style-type: none">Quizziz and EdPuzzle	<p>Formative Assessments:</p> <ul style="list-style-type: none">Quizziz assignments, EdPuzzles, lesson-based homework assignments, Do-Nows <p>Summative Assessments, Projects, and Celebrations:</p> <ul style="list-style-type: none">Quiz - Absolute Value, Adding and Subtracting IntegersTest - Add, Subtract, Multiply and Divide Integers

Supports for English Language Learners		
Sensory Supports	Graphic Supports	Interactive Supports
Real-life objects	Charts	In pairs or partners
Manipulatives	Graphic Organizers	In triands or small groups
Pictures	Tables	In a whole group
Illustrations, diagrams & drawings	Graphs	Using cooperative group
Magazines & Newspapers	Timelines	Structures
Physical activities	Number lines	Internet / Software support
Videos & Film		In the home language

Broadcasts		With mentors																		
Models & Figures																				
<table border="1"> <thead> <tr> <th colspan="3">Intervention Strategies</th></tr> <tr> <th>Accommodations</th><th>Interventions</th><th>Modifications</th></tr> </thead> <tbody> <tr> <td>Allow for verbal responses</td><td>Multi-sensory techniques</td><td>Modified tasks/expectations</td></tr> <tr> <td>Repeat/confirm directions</td><td>Increase task structure (e.g. directions, checks for understanding, feedback)</td><td>Differentiated materials</td></tr> <tr> <td>Permit response provided via computer or electronic device</td><td>Increase opportunities to engage in active academic responding</td><td>Individualized assessment tools based on student need</td></tr> <tr> <td>Audio Books</td><td>Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping</td><td>Modified assessment grading</td></tr> </tbody> </table>			Intervention Strategies			Accommodations	Interventions	Modifications	Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations	Repeat/confirm directions	Increase task structure (e.g. directions, checks for understanding, feedback)	Differentiated materials	Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need	Audio Books	Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping	Modified assessment grading
Intervention Strategies																				
Accommodations	Interventions	Modifications																		
Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations																		
Repeat/confirm directions	Increase task structure (e.g. directions, checks for understanding, feedback)	Differentiated materials																		
Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need																		
Audio Books	Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping	Modified assessment grading																		

Unit 2: Rational Numbers	
<p>Big Ideas: <i>Course Objectives/ Content Statement(s)</i></p> <ul style="list-style-type: none"> ● Add, subtract, multiply, and divide rational numbers. ● Apply properties of operations as strategies to perform operations with rational numbers. ● Convert a rational number to a fraction, percent, and decimal using long division. 	
Essential Questions <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i>	Enduring Understandings <i>What will students understand about the big ideas?</i>
<ul style="list-style-type: none"> ● How can you use a number line to order rational numbers? ● How can you use what you know about adding 	<p>Students will understand that:</p>

<p>integers to add rational numbers?</p> <ul style="list-style-type: none"> • How can you use what you know about subtracting integers to subtract rational numbers? • Why is the product of two negative rational numbers positive? 	<ul style="list-style-type: none"> • Integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. • Long division can be used to convert a rational number to a decimal; know that the decimal form of a rational number terminates in 0s or eventually repeats. • Multiplication and division is extended from fractions to rational numbers by following the same ideas as multiplying integers such as two negatives multiply to a positive product.
Areas of Focus: Proficiencies (New Jersey Student Learning Standards)	Lessons
<p>Students will:</p> <p>7.NS.A.2a 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.</p> <p>7.NS.A.2b Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.</p> <p>7.NS.A.2c Apply properties of operations as strategies to multiply and divide rational numbers.</p> <p>7.NS.A.2d Convert a rational number to decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.</p> <p>7.NS.A.3: Solve real-world and mathematical problems involving the four operations with rational numbers</p> <p>Career-Ready Practices CRP1: Act as a responsible and contributing citizen and employee.</p>	<p>Lessons (Chapter 2 Big Ideas Red CC):</p> <ul style="list-style-type: none"> • 2.1 Rational Numbers (3 days) • 2.2 Adding Rational Numbers (2 days) • 2.3 Subtracting Rational Numbers (2 days) • Review and Quiz (2 days) • 2.4 Multiplying and Dividing Rational Numbers (4 days) • Review and Test (3 days)

<p>CRP2: Apply appropriate academic and technical skills.</p> <p>CRP3: Attend to personal health and financial well-being.</p> <p>CRP4: Communicate clearly and effectively and with reason.</p> <p>CRP5: Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6: Demonstrate creativity and innovation.</p> <p>CRP7: Employ valid and reliable research strategies.</p> <p>CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP9: Model integrity, ethical leadership and effective management.</p> <p>CRP10: Plan education and career paths aligned to personal goals.</p> <p>CRP11: Use technology to enhance productivity.</p> <p>CRP12: Work productively in teams while using cultural global competence.</p>	
Differentiation	Assessments
<p>Interdisciplinary Connections</p> <ul style="list-style-type: none"> Students solve word problems involving money when adding, subtracting, and dividing decimals and integers to model real-life situations. STEM activities (“Precisely Perfect”) referenced in Big Ideas textbook. Questions discussed with students: <ul style="list-style-type: none"> What level of accuracy is needed for a telescope? How does this level change depending on what you are viewing? Different telescopes have different levels of accuracy. Looking at the surface of the Moon does not require the same accuracy as looking at Jupiter or planets outside our solar system. Students are given the accuracies for several telescopes. They order the accuracies from least to greatest and divide to find how many times more accurate one telescope is than another. <p>Technology Integration</p> <ul style="list-style-type: none"> Quizziz and EdPuzzle 	<p>Formative Assessments:</p> <ul style="list-style-type: none"> Quizziz assignments, EdPuzzles, lesson-based homework assignments, Do-Nows <p>Summative Assessments, Projects, and Celebrations:</p> <ul style="list-style-type: none"> Quiz - Converting FDP and Adding/Subtracting Rational Numbers Test - Add, Subtract, Multiply and Divide Rationals

Supports for English Language Learners		
Sensory Supports	Graphic Supports	Interactive Supports
Real-life objects	Charts	In pairs or partners
Manipulatives	Graphic Organizers	In triands or small groups
Pictures	Tables	In a whole group
Illustrations, diagrams & drawings	Graphs	Using cooperative group
Magazines & Newspapers	Timelines	Structures
Physical activities	Number lines	Internet / Software support
Videos & Film		In the home language
Broadcasts		With mentors
Models & Figures		
Intervention Strategies		
Accommodations	Interventions	Modifications
Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations
Repeat/confirm directions	Increase task structure (e.g. directions, checks for understanding, feedback	Differentiated materials
Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need
Audio Books	Utilize pre-reading strategies and	Modified assessment grading

	activities previews, anticipatory guides, and semantic mapping	
--	---	--

Unit 3: Expressions and Equations

Big Ideas: *Course Objectives/ Content Statement(s)*

- Identify parts of an algebraic expression.
- Write and simplify algebraic expressions.
- Add, subtract, factor, and expand linear expressions with rational coefficients.
- Apply the Distributive Property to generate equivalent expressions.
- Write, graph, and solve one-step equations (includes negative numbers).
- Solve two-step equations.
- Compare algebraic solutions to arithmetic solutions.

Essential Questions

What provocative questions will foster inquiry, understanding, and transfer of learning?

- How can you simplify an algebraic expression using like terms?
- How can you use multiplication or division to solve equations?
- What properties do I have to follow to simplify expressions?
- How does writing expressions interpret real-life problems?
- What rules do I have to follow to solve two-step equations?
- In what scenarios can algebra be utilized to solve problems in your life?
- How do I write and solve algebraic equations that represent real-world problems ?

Enduring Understandings

What will students understand about the big ideas?

Students will understand that:

- An expression has parts such as variables, coefficients, and constants.
- Like terms can be grouped together to add and subtract expressions.
- Expressions can be expanded using the Distributive Property before combining like terms.
- In order to solve a two-step equation, they must use the rules of PEMDAS in reverse order.
- They can check their algebraic equation solutions by substituting their solution into the equation.

Areas of Focus: Proficiencies (New Jersey Student Learning Standards)

Students will:

Lessons

Lessons (Chapter 3 Big Ideas Red CC):

<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.</p> <p>7.EE.B. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.</p> <p>7.EE.4A. 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.</p> <p>Career-Ready Practices</p> <p>CRP1: Act as a responsible and contributing citizen and employee.</p> <p>CRP2: Apply appropriate academic and technical skills.</p> <p>CRP3: Attend to personal health and financial well-being.</p> <p>CRP4: Communicate clearly and effectively and with reason.</p> <p>CRP5: Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6: Demonstrate creativity and innovation.</p> <p>CRP7: Employ valid and reliable research strategies.</p> <p>CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP9: Model integrity, ethical leadership and effective management.</p> <p>CRP10: Plan education and career paths aligned to personal goals.</p> <p>CRP11: Use technology to enhance productivity.</p> <p>CRP12: Work productively in teams while using cultural global competence.</p>	<ul style="list-style-type: none"> ● Evaluating Expressions (3 days) ● 3.1 Algebraic Expressions (1 day) ● 3.2 Adding and Subtracting Linear Expressions (3 days) ● 3.2E Factoring Expressions (2 days) ● Review and Quiz (2 days) ● 3.3 Solving Equations Using Addition or Subtraction (3 days) ● 3.4 Solving Equations Using Multiplication or Division (3 days) ● 3.5 Solving Two-Step Equations (2 days) ● Review, Quiz (Expressions) and Test (3 days)
Differentiation	Assessments
<p>Interdisciplinary Connections</p> <ul style="list-style-type: none"> ● STEM activities (“Planning the Climb”) referenced in Big Ideas textbook. Questions discussed with students: 	<p>Formative Assessments:</p> <ul style="list-style-type: none"> ● Quizziz assignments, EdPuzzles, lesson-based homework assignments, Do-Nows

- How can you plan a climbing expedition by writing and solving equations?
- Students are given information about rock climbing. They will use data to write equations and then solve the equations to plan a series of rock climbing expeditions.

Technology Integration

- EdPuzzles and Quizziz

Supports for English Language Learners

Sensory Supports	Graphic Supports	Interactive Supports
Real-life objects	Charts	In pairs or partners
Manipulatives	Graphic Organizers	In triads or small groups
Pictures	Tables	In a whole group
Illustrations, diagrams & drawings	Graphs	Using cooperative group
Magazines & Newspapers	Timelines	Structures
Physical activities	Number lines	Internet / Software support
Videos & Film		In the home language
Broadcasts		With mentors
Models & Figures		

Intervention Strategies

Accommodations	Interventions	Modifications
Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations
Repeat/confirm	Increase task	Differentiated

Summative Assessments, Projects, and Celebrations:

- Quiz - Expressions
- Quiz - Equations
- Test - Expressions and Equations

directions	structure (e.g. directions, checks for understanding, feedback	materials	
Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need	
Audio Books	Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping	Modified assessment grading	

Unit 4: Inequalities	
Big Ideas: <i>Course Objectives/ Content Statement(s)</i> <ul style="list-style-type: none"> Graph and interpret inequality solutions on a number line. Solve one-step inequalities involving integers and rational numbers. Solve two-step inequalities. 	
Essential Questions <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i>	Enduring Understandings <i>What will students understand about the big ideas?</i>
<ul style="list-style-type: none"> How can you use a number line to represent solutions of an inequality? How can you use addition or subtraction to solve an inequality? How can you use multiplication or division to solve an inequality? In what scenarios can algebra be utilized to solve problems in your life? How do I write and solve algebraic equations that represent real-world problems ? 	Students will understand that: <ul style="list-style-type: none"> They can write word sentences as inequalities. “Less/greater than” and “less/greater than or equal to” solutions are represented differently on a number line. They can utilize properties of expressions and equations to solve inequalities. Inequalities can be used to model real-life situations.
Areas of Focus: Proficiencies (New Jersey Student Learning Standards)	Lessons

<p>Students will:</p> <p>7.EE.4.B. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.</p> <p>Career-Ready Practices</p> <p>CRP1: Act as a responsible and contributing citizen and employee.</p> <p>CRP2: Apply appropriate academic and technical skills.</p> <p>CRP3: Attend to personal health and financial well-being.</p> <p>CRP4: Communicate clearly and effectively and with reason.</p> <p>CRP5: Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6: Demonstrate creativity and innovation.</p> <p>CRP7: Employ valid and reliable research strategies.</p> <p>CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP9: Model integrity, ethical leadership and effective management.</p> <p>CRP10: Plan education and career paths aligned to personal goals.</p> <p>CRP11: Use technology to enhance productivity.</p> <p>CRP12: Work productively in teams while using cultural global competence.</p>	<p>Lessons (Chapter 4 Big Ideas Red CC):</p> <ul style="list-style-type: none"> ● 4.1 Writing and Graphing Inequalities (2 days) ● 4.2 Solving Inequalities Using Addition or Subtraction (2 days) ● 4.3 Solving Inequalities Using Multiplication or Division (2 days) ● Review and Quiz (2 days) ● 4.4 Solving Two-Step Inequalities (2 days) ● Review and Test (2 days)
Differentiation	Assessments
<p>Interdisciplinary Connections</p> <ul style="list-style-type: none"> ● STEM activities (“Distance and Brightness of the Stars”) referenced in Big Ideas textbook. <p>Questions discussed with students:</p> <ul style="list-style-type: none"> ○ How far away are the stars? ○ How is the brightness of a star measured? ○ What are the brightest stars in the sky? <ul style="list-style-type: none"> ● Students will analyze the distance from Earth and the brightness of specific stars. The students will write, solve, and graph inequalities to solve problems about stars. <p>Technology Integration</p> <ul style="list-style-type: none"> ● Quizziz and EdPuzzle 	<p>Formative Assessments:</p> <ul style="list-style-type: none"> ● Quizziz assignments, EdPuzzles, lesson-based homework assignments, Do-Nows <p>Summative Assessments, Projects, and Celebrations:</p> <ul style="list-style-type: none"> ● Quiz - One Step Inequalities ● Test - One and Two Step Inequalities

<table border="1"> <thead> <tr> <th colspan="3">Supports for English Language Learners</th></tr> <tr> <th>Sensory Supports</th><th>Graphic Supports</th><th>Interactive Supports</th></tr> </thead> <tbody> <tr> <td>Real-life objects</td><td>Charts</td><td>In pairs or partners</td></tr> <tr> <td>Manipulatives</td><td>Graphic Organizers</td><td>In triands or small groups</td></tr> <tr> <td>Pictures</td><td>Tables</td><td>In a whole group</td></tr> <tr> <td>Illustrations, diagrams & drawings</td><td>Graphs</td><td>Using cooperative group</td></tr> <tr> <td>Magazines & Newspapers</td><td>Timelines</td><td>Structures</td></tr> <tr> <td>Physical activities</td><td>Number lines</td><td>Internet / Software support</td></tr> <tr> <td>Videos & Film</td><td></td><td>In the home language</td></tr> <tr> <td>Broadcasts</td><td></td><td>With mentors</td></tr> <tr> <td>Models & Figures</td><td></td><td></td></tr> </tbody> </table>			Supports for English Language Learners			Sensory Supports	Graphic Supports	Interactive Supports	Real-life objects	Charts	In pairs or partners	Manipulatives	Graphic Organizers	In triands or small groups	Pictures	Tables	In a whole group	Illustrations, diagrams & drawings	Graphs	Using cooperative group	Magazines & Newspapers	Timelines	Structures	Physical activities	Number lines	Internet / Software support	Videos & Film		In the home language	Broadcasts		With mentors	Models & Figures		
Supports for English Language Learners																																			
Sensory Supports	Graphic Supports	Interactive Supports																																	
Real-life objects	Charts	In pairs or partners																																	
Manipulatives	Graphic Organizers	In triands or small groups																																	
Pictures	Tables	In a whole group																																	
Illustrations, diagrams & drawings	Graphs	Using cooperative group																																	
Magazines & Newspapers	Timelines	Structures																																	
Physical activities	Number lines	Internet / Software support																																	
Videos & Film		In the home language																																	
Broadcasts		With mentors																																	
Models & Figures																																			
<table border="1"> <thead> <tr> <th colspan="3">Intervention Strategies</th></tr> <tr> <th>Accommodations</th><th>Interventions</th><th>Modifications</th></tr> </thead> <tbody> <tr> <td>Allow for verbal responses</td><td>Multi-sensory techniques</td><td>Modified tasks/expectations</td></tr> <tr> <td>Repeat/confirm directions</td><td>Increase task structure (e.g. directions, checks for understanding, feedback</td><td>Differentiated materials</td></tr> <tr> <td>Permit response provided via computer or electronic device</td><td>Increase opportunities to engage in active academic responding</td><td>Individualized assessment tools based on student need</td></tr> <tr> <td>Audio Books</td><td>Utilize pre-reading</td><td>Modified</td></tr> </tbody> </table>			Intervention Strategies			Accommodations	Interventions	Modifications	Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations	Repeat/confirm directions	Increase task structure (e.g. directions, checks for understanding, feedback	Differentiated materials	Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need	Audio Books	Utilize pre-reading	Modified															
Intervention Strategies																																			
Accommodations	Interventions	Modifications																																	
Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations																																	
Repeat/confirm directions	Increase task structure (e.g. directions, checks for understanding, feedback	Differentiated materials																																	
Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need																																	
Audio Books	Utilize pre-reading	Modified																																	

	strategies and activities previews, anticipatory guides, and semantic mapping	assessment grading	
--	---	--------------------	--

Unit 5: Ratios and Proportions

Big Ideas: *Course Objectives/ Content Statement(s)*

- Find unit rates associated with ratios of fractions, areas, and other quantities in like or different units.
- Decide whether two quantities are proportional using ratio tables and graphs.
- Identify the constant of proportionality (unit rate) in tables, graphs, equations, and diagrams.
- Represent proportional relationships with equations.
- Explain what a point (x, y) means on a proportional graph in context, particularly $(0, 0)$ and $(1, r)$, where r is the unit rate.
- Use proportionality to solve ratio problems.
- Solve problems involving scale drawings.

Essential Questions

What provocative questions will foster inquiry, understanding, and transfer of learning?

- Can you think of any situation where it might be important to make a comparison of amounts?
- How do rates help you describe real-life problems?
- How can you use a table of different unit rates, a graph in a coordinate plane, and an equation to solve ratio problems?
- How can you write a proportion that solves a problem in real life?
- How can you use ratio tables and cross products to solve proportions?
- How can you compare two rates graphically?

Enduring Understandings

What will students understand about the big ideas?

Students will understand that:

- A ratio can be understood like a fraction.
- They can write equivalent ratios and proportional relationships.
- They can model ratio relationships, proportional relationships, and percents to solve real-life problems.
- They can identify the constant of proportionality (unit rate) in tables, graphs, . . . diagrams, and verbal descriptions of proportional relationships.
- Ratios can be used to create scale drawings and calculate missing dimensions in scale drawings

Areas of Focus: Proficiencies (New Jersey Student Learning Standards)

Students will:

Lessons

Lessons (Chapter 5 Big Ideas Red CC):

- 5.1 Ratios and Rates (2 days)

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.

7.RP.A.2

- a) Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
- b) Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
- c) Represent proportional relationships by equations.
- d) Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.

7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems.

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.

Career-Ready Practices

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.

CRP5: Consider the environmental, social and economic impacts of decisions.

CRP6: Demonstrate creativity and innovation.

CRP7: Employ valid and reliable research strategies.

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

CRP9: Model integrity, ethical leadership and effective management.

CRP10: Plan education and career paths aligned to personal goals.

- Review/Quiz (2 days)
- 5.2 Proportions (2 days)
- 5.2E Graphing Proportional Relationships (2 days)
- 5.3 Writing Proportions (2 days)
- 5.4 Solving Proportions (2 days)
- 5.5 and 5.6 Constant of Proportionality (3 days)
- Review/Quiz (2 days)
- 7.4 Similar Figures and Scale Drawings (2 days)
- Review/Test (3 days)

CRP11: Use technology to enhance productivity.
CRP12: Work productively in teams while using cultural global competence.

Differentiation

Interdisciplinary Connections

- STEM activities (“Mixing Paint”) referenced in Big Ideas textbook. Questions discussed with students:
 - How do you use paint tints to make a desired paint color?
- Students will be given a table of paint colors that can be made by adding paint tints to base paint. Using the table, the students will answer a series of questions requiring them to find ratios, rates, and unit rates, and use proportional relationships.

Technology Integration

- Quizziz and EdPuzzle

Supports for English Language Learners

Sensory Supports	Graphic Supports	Interactive Supports
Real-life objects	Charts	In pairs or partners
Manipulatives	Graphic Organizers	In triads or small groups
Pictures	Tables	In a whole group
Illustrations, diagrams & drawings	Graphs	Using cooperative group
Magazines & Newspapers	Timelines	Structures
Physical activities	Number lines	Internet / Software support
Videos & Film		In the home language
Broadcasts		With mentors

Assessments

Formative Assessments:

- Quizziz assignments, EdPuzzles, lesson-based homework assignments, Do-Nows

Summative Assessments, Projects, and Celebrations:

- Quiz - Ratios and Unit Rate
- Quiz - Proportions and COP
- Test - Ratios, Proportions and Scale Drawings

Models & Figures																				
<table border="1"> <thead> <tr> <th colspan="3">Intervention Strategies</th></tr> <tr> <th>Accommodations</th><th>Interventions</th><th>Modifications</th></tr> </thead> <tbody> <tr> <td>Allow for verbal responses</td><td>Multi-sensory techniques</td><td>Modified tasks/expectations</td></tr> <tr> <td>Repeat/confirm directions</td><td>Increase task structure (e.g. directions, checks for understanding, feedback</td><td>Differentiated materials</td></tr> <tr> <td>Permit response provided via computer or electronic device</td><td>Increase opportunities to engage in active academic responding</td><td>Individualized assessment tools based on student need</td></tr> <tr> <td>Audio Books</td><td>Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping</td><td>Modified assessment grading</td></tr> </tbody> </table>			Intervention Strategies			Accommodations	Interventions	Modifications	Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations	Repeat/confirm directions	Increase task structure (e.g. directions, checks for understanding, feedback	Differentiated materials	Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need	Audio Books	Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping	Modified assessment grading
Intervention Strategies																				
Accommodations	Interventions	Modifications																		
Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations																		
Repeat/confirm directions	Increase task structure (e.g. directions, checks for understanding, feedback	Differentiated materials																		
Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need																		
Audio Books	Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping	Modified assessment grading																		

Unit 6: Percents	
Big Ideas: <i>Course Objectives/ Content Statement(s)</i> <ul style="list-style-type: none"> ● Rewrite fractions, decimals, and percents using different representations. ● Use the percent proportion and equation to find missing quantities. ● Find percentages of change in quantities. ● Solve percent problems involving discounts, tax, tip and markups. ● Understand and apply the simple interest formula. ● Solve percent problems involving percents of increase and decrease, and simple interest. 	
Essential Questions <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i>	Enduring Understandings <i>What will students understand about the big ideas?</i>
	Students will understand that:

<ul style="list-style-type: none"> ● How does the decimal point move when you rewrite a percent as a decimal and when you rewrite a decimal as a percent? ● How can you order numbers that are written as fractions, decimals, and percents? ● What is a percent of decrease? What is a percent of increase? ● How can you find discounts and selling prices? ● How can you find the amount of simple interest earned on a savings account? ● How can you find the amount of interest owed on a loan? 	<ul style="list-style-type: none"> ● You can rewrite, compare and order fractions, decimals, and percents. ● Students can use the percent proportion or percent equation to find a percent, a part, or a whole. ● The original price is always represented as 100% and they can use proportions and the percent equation to calculate discounts and markups.
Areas of Focus: Proficiencies (New Jersey Student Learning Standards)	Lessons
<p>Students will:</p> <p>7.EE.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.</p> <p>7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems.</p> <p>Career-Ready Practices</p> <p>CRP1: Act as a responsible and contributing citizen and employee.</p> <p>CRP2: Apply appropriate academic and technical skills.</p> <p>CRP3: Attend to personal health and financial well-being.</p> <p>CRP4: Communicate clearly and effectively and with reason.</p> <p>CRP5: Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6: Demonstrate creativity and innovation.</p> <p>CRP7: Employ valid and reliable research strategies.</p> <p>CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP9: Model integrity, ethical leadership and effective management.</p> <p>CRP10: Plan education and career paths aligned to personal goals.</p>	<p>Lessons (Chapter 6 Big Ideas Red CC):</p> <ul style="list-style-type: none"> ● 6.1 Percents and Decimals (2 days) ● 6.2 Comparing and Ordering Fractions, Decimals, and Percents (2 days) ● 6.3 The Percent Proportion (2 days) ● 6.4 The Percent Equation (2 days) ● Review/Quiz (2 days) ● 6.5 Percents of Increase and Decrease (2 days) ● 6.6 Discounts and Markups (2 days) ● 6.7 Simple Interest (2 days) ● Review/Test (2 days)

CRP11: Use technology to enhance productivity.
CRP12: Work productively in teams while using cultural global competence.

Differentiation

Interdisciplinary Connections

- STEM activities (“Tornado Alley”) referenced in Big Ideas textbook. Questions discussed with students:
 - What is Tornado Alley and what percent of tornadoes occur there?
 - When do the tornadoes occur most frequently?
- Students will identify the part, whole, and percent in a percent problem. They will solve for a missing quantity using the given information. They will also estimate by rounding their answers to the nearest tenth or whole number.

Technology Integration

- Quizziz and EdPuzzle

Supports for English Language Learners

Sensory Supports	Graphic Supports	Interactive Supports
Real-life objects	Charts	In pairs or partners
Manipulatives	Graphic Organizers	In triands or small groups
Pictures	Tables	In a whole group
Illustrations, diagrams & drawings	Graphs	Using cooperative group
Magazines & Newspapers	Timelines	Structures
Physical activities	Number lines	Internet / Software support
Videos & Film		In the home language

Assessments

Formative Assessments:

- Quizziz assignments, EdPuzzles, lesson-based homework assignments, Do-Nows

Summative Assessments, Projects, and Celebrations:

- Quiz - Percents and Percent Proportions
- Test - Percent Applications (Discounts, Markups, Simple Interest)

Broadcasts		With mentors																		
Models & Figures																				
<table border="1"> <thead> <tr> <th colspan="3">Intervention Strategies</th></tr> <tr> <th>Accommodations</th><th>Interventions</th><th>Modifications</th></tr> </thead> <tbody> <tr> <td>Allow for verbal responses</td><td>Multi-sensory techniques</td><td>Modified tasks/expectations</td></tr> <tr> <td>Repeat/confirm directions</td><td>Increase task structure (e.g. directions, checks for understanding, feedback</td><td>Differentiated materials</td></tr> <tr> <td>Permit response provided via computer or electronic device</td><td>Increase opportunities to engage in active academic responding</td><td>Individualized assessment tools based on student need</td></tr> <tr> <td>Audio Books</td><td>Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping</td><td>Modified assessment grading</td></tr> </tbody> </table>			Intervention Strategies			Accommodations	Interventions	Modifications	Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations	Repeat/confirm directions	Increase task structure (e.g. directions, checks for understanding, feedback	Differentiated materials	Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need	Audio Books	Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping	Modified assessment grading
Intervention Strategies																				
Accommodations	Interventions	Modifications																		
Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations																		
Repeat/confirm directions	Increase task structure (e.g. directions, checks for understanding, feedback	Differentiated materials																		
Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need																		
Audio Books	Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping	Modified assessment grading																		

Unit 7: Angles and Triangles	
Big Ideas: <i>Course Objectives/ Content Statement(s)</i> <ul style="list-style-type: none"> ● Use supplementary, complementary, vertical, and adjacent angles. ● Classify triangles by sides and angles. ● Use facts about angle relationships to find unknown angle measures. 	
Essential Questions <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i>	Enduring Understandings <i>What will students understand about the big ideas?</i>
<ul style="list-style-type: none"> ● What can you conclude about the angles formed 	Students will understand that: <ul style="list-style-type: none"> ● Intersecting lines form various angle relationships

<p>by two intersecting lines?</p> <ul style="list-style-type: none"> • How can you classify two angles as complementary or supplementary? • How can you classify two angles as adjacent or vertical? • How do you solve problems involving angle measures? • How can you classify quadrilaterals? 	<ul style="list-style-type: none"> • Angle relationships can be used to calculate angle measures utilizing algebra. • Angles can be classified as adjacent, vertical, complementary and/or supplementary. • Triangles can be classified by sides and angles. • Then can solve real-world problems with angle relationship facts. • Quadrilaterals can be classified by angle measurements and side lengths.
Areas of Focus: Proficiencies (New Jersey Student Learning Standards)	Lessons
<p>Students will:</p> <p>7.G.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.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>Career-Ready Practices</p> <p>CRP1: Act as a responsible and contributing citizen and employee.</p> <p>CRP2: Apply appropriate academic and technical skills.</p> <p>CRP3: Attend to personal health and financial well-being.</p> <p>CRP4: Communicate clearly and effectively and with reason.</p> <p>CRP5: Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6: Demonstrate creativity and innovation.</p> <p>CRP7: Employ valid and reliable research strategies.</p> <p>CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP9: Model integrity, ethical leadership and effective management.</p> <p>CRP10: Plan education and career paths aligned to personal goals.</p>	<p>Lessons (Chapter 7 Big Ideas Red CC):</p> <ul style="list-style-type: none"> • 7.1 Adjacent and Vertical Angles (1 day) • 7.2 Complementary and Supplementary Angles (2 days) • 7.3 Triangles (2 days) • 7.3E Angles of triangles (1 day) • Review/Quiz (2 days) • 7.4 Quadrilaterals (2 day) • Review/Test (3 days)

CRP11: Use technology to enhance productivity.
CRP12: Work productively in teams while using cultural global competence.

Differentiation

Interdisciplinary Connections

- STEM activities (“Matte Artist”) referenced in Big Ideas textbook. Questions discussed with students:
 - When you watch a movie, do you ever wonder how action-packed scenes and breathtaking views are filmed?
 - Today, these visual effects are often made using computers. But how were visual effects added to movies before computers were so common?
 - Did filmmakers build larger scale sets or travel to faraway places to film scenes?
 - How can math be used to create visual effects?
- Students will find the scale and scale factor of a painting of the Mount Rushmore National Memorial. Using the scale and scale factor, students will calculate dimensions. They will then create a scale drawing on a grid.

Technology Integration

- Quizziz and EdPuzzle

Supports for English Language Learners

Sensory Supports	Graphic Supports	Interactive Supports
Real-life objects	Charts	In pairs or partners
Manipulatives	Graphic Organizers	In triands or small groups
Pictures	Tables	In a whole group
Illustrations, diagrams & drawings	Graphs	Using cooperative group

Assessments

Formative Assessments:

- Quizziz assignments, EdPuzzles, lesson-based homework assignments, Do-Nows

Summative Assessments, Projects, and Celebrations:

- Quiz - Angles and Triangles
- Test - Angles, Triangles and Quadrilaterals

Magazines & Newspapers	Timelines	Structures
Physical activities	Number lines	Internet / Software support
Videos & Film		In the home language
Broadcasts		With mentors
Models & Figures		

Intervention Strategies		
Accommodations	Interventions	Modifications
Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations
Repeat/confirm directions	Increase task structure (e.g. directions, checks for understanding, feedback)	Differentiated materials
Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need
Audio Books	Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping	Modified assessment grading

Unit 8: Circles
<p>Big Ideas: <i>Course Objectives/ Content Statement(s)</i></p> <ul style="list-style-type: none"> • Understand pi and its estimates. • Use values of pi to estimate and calculate the circumference and area of circles. • Find perimeters and areas of composite two-dimensional figures, including semi-circles.

Essential Questions <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i>	Enduring Understandings <i>What will students understand about the big ideas?</i>
<ul style="list-style-type: none"> ● How can you find the circumference of a circle? ● What regular shapes is a specific composite shape composed of? ● How can you find the perimeter of a composite figure? ● How can you find the area of a circle? ● How can you find the area of a composite figure? 	Students will understand that: <ul style="list-style-type: none"> ● The value of pi is used to estimate circumference and area of circles. ● Explain how to find the circumference and area of a circle. ● Find the areas of circles and composite figures.
Areas of Focus: Proficiencies (New Jersey Student Learning Standards)	Lessons
<p>Students will:</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 circumference and area of a circle.</p> <p>Career-Ready Practices</p> <p>CRP1: Act as a responsible and contributing citizen and employee.</p> <p>CRP2: Apply appropriate academic and technical skills.</p> <p>CRP3: Attend to personal health and financial well-being.</p> <p>CRP4: Communicate clearly and effectively and with reason.</p> <p>CRP5: Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6: Demonstrate creativity and innovation.</p> <p>CRP7: Employ valid and reliable research strategies.</p> <p>CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP9: Model integrity, ethical leadership and effective management.</p> <p>CRP10: Plan education and career paths aligned to personal goals.</p> <p>CRP11: Use technology to enhance productivity.</p> <p>CRP12: Work productively in teams while using cultural global competence.</p>	<p>Lessons (Chapter 8 Big Ideas Red CC):</p> <ul style="list-style-type: none"> ● 8.1 Circles and Circumference (1 day) ● 8.2 Perimeters of Composite Figures (1 day) ● Review/Quiz (2 days) ● 8.3 Areas of Circles (2 days) ● Area Formulas (1 day) ● 8.4 Areas of Composite Figures (2 days) ● Review/Test (2 days)

Differentiation	Assessments																																	
<p>Interdisciplinary Connections</p> <ul style="list-style-type: none">STEM activities (“Finding the Area and Perimeter of a Track”) referenced in Big Ideas textbook. Questions discussed with students:<ul style="list-style-type: none">How can you use formulas that you already know to find the area and perimeter of a composite figure?Students will find the area and perimeter of the lanes in a straightaway of a track. Students will find the area of the inner field. Students will find the area and perimeter of the composite figure made up of the lanes and the inner field. <p>Technology Integration</p> <ul style="list-style-type: none">Quizziz and EdPuzzle	<p>Formative Assessments:</p> <ul style="list-style-type: none">Quizziz assignments, EdPuzzles, lesson-based homework assignments, Do-Nows <p>Summative Assessments, Projects, and Celebrations:</p> <ul style="list-style-type: none">Quiz - Circles and Composite PerimeterTest - Area and Perimeter (Circles and Composite Figures)																																	
<table><tr><th colspan="3">Supports for English Language Learners</th></tr><tr><th>Sensory Supports</th><th>Graphic Supports</th><th>Interactive Supports</th></tr><tr><td>Real-life objects</td><td>Charts</td><td>In pairs or partners</td></tr><tr><td>Manipulatives</td><td>Graphic Organizers</td><td>In triands or small groups</td></tr><tr><td>Pictures</td><td>Tables</td><td>In a whole group</td></tr><tr><td>Illustrations, diagrams & drawings</td><td>Graphs</td><td>Using cooperative group</td></tr><tr><td>Magazines & Newspapers</td><td>Timelines</td><td>Structures</td></tr><tr><td>Physical activities</td><td>Number lines</td><td>Internet / Software support</td></tr><tr><td>Videos & Film</td><td></td><td>In the home language</td></tr><tr><td>Broadcasts</td><td></td><td>With mentors</td></tr><tr><td>Models & Figures</td><td></td><td></td></tr></table>		Supports for English Language Learners			Sensory Supports	Graphic Supports	Interactive Supports	Real-life objects	Charts	In pairs or partners	Manipulatives	Graphic Organizers	In triands or small groups	Pictures	Tables	In a whole group	Illustrations, diagrams & drawings	Graphs	Using cooperative group	Magazines & Newspapers	Timelines	Structures	Physical activities	Number lines	Internet / Software support	Videos & Film		In the home language	Broadcasts		With mentors	Models & Figures		
Supports for English Language Learners																																		
Sensory Supports	Graphic Supports	Interactive Supports																																
Real-life objects	Charts	In pairs or partners																																
Manipulatives	Graphic Organizers	In triands or small groups																																
Pictures	Tables	In a whole group																																
Illustrations, diagrams & drawings	Graphs	Using cooperative group																																
Magazines & Newspapers	Timelines	Structures																																
Physical activities	Number lines	Internet / Software support																																
Videos & Film		In the home language																																
Broadcasts		With mentors																																
Models & Figures																																		

Intervention Strategies		
Accommodations	Interventions	Modifications
Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations
Repeat/confirm directions	Increase task structure (e.g. directions, checks for understanding, feedback)	Differentiated materials
Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need
Audio Books	Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping	Modified assessment grading

Unit 9: Surface Area and Volume	
<p>Big Ideas: <i>Course Objectives/ Content Statement(s)</i></p> <ul style="list-style-type: none"> Find the surface area of prisms, pyramids and cylinders. Find the volume of prisms and pyramids. Describe the cross sections of a solid. Solve real-world problems involving surface areas and volumes of objects composed of prisms, pyramids, and cylinders. 	
Essential Questions <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i>	Enduring Understandings <i>What will students understand about the big ideas?</i>
<ul style="list-style-type: none"> How can you find the surface area of a prism? How can you find the surface area of a pyramid? How can you find the surface area of a cylinder? How can you find the volume of a prism? How can you find the volume of a pyramid? 	<p>Students will understand that:</p> <ul style="list-style-type: none"> They can describe the surface area and volume of different shapes. They can use formulas to find surface areas and volumes of solids.

<ul style="list-style-type: none"> How can you find and compare the areas and volumes of similar solids? 	<ul style="list-style-type: none"> They can solve real-life problems involving surface area and volume. How to describe cross sections of solids.
Areas of Focus: Proficiencies (New Jersey Student Learning Standards)	Lessons
<p>Students will:</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 Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.</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 circumference and area of a circle.</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>Career-Ready Practices</p> <p>CRP1: Act as a responsible and contributing citizen and employee.</p> <p>CRP2: Apply appropriate academic and technical skills.</p> <p>CRP3: Attend to personal health and financial well-being.</p> <p>CRP4: Communicate clearly and effectively and with reason.</p> <p>CRP5: Consider the environmental, social and economic impacts of decisions.</p> <p>CRP6: Demonstrate creativity and innovation.</p> <p>CRP7: Employ valid and reliable research strategies.</p> <p>CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p>CRP9: Model integrity, ethical leadership and effective management.</p> <p>CRP10: Plan education and career paths aligned to personal goals.</p> <p>CRP11: Use technology to enhance productivity.</p>	<p>Lessons (Chapter 9 Big Ideas Red CC):</p> <ul style="list-style-type: none"> 9.1 Surface Areas of Prisms (2 days) 9.2 Surface Areas of Pyramids (2 days) 9.3 Surface Areas of Cylinders (1 day) Review/Quiz (2 days) 9.4 Volumes of Prisms (2 days) 9.5 Volumes of Pyramids (1 day) Cross Sections (1 day) Review/Test (3 days)

CRP12: Work productively in teams while using cultural global competence.

Differentiation

Interdisciplinary Connections

- STEM activities (“Specialty Breakfast Bars”) referenced in Big Ideas textbook. Questions discussed with students:
 - How can you find the volume of a prism?
 - How can you find the volume of a portion of a prism?
- Students will find the volumes of entire prisms and portions of prisms. They will also compare the volumes and surface areas of two prisms to answer questions.

Technology Integration

- Quizziz and EdPuzzle

Supports for English Language Learners

Sensory Supports	Graphic Supports	Interactive Supports
Real-life objects	Charts	In pairs or partners
Manipulatives	Graphic Organizers	In triands or small groups
Pictures	Tables	In a whole group
Illustrations, diagrams & drawings	Graphs	Using cooperative group
Magazines & Newspapers	Timelines	Structures
Physical activities	Number lines	Internet / Software support
Videos & Film		In the home language
Broadcasts		With mentors
Models & Figures		

Assessments

Formative Assessments:

- Quizziz assignments, EdPuzzles, lesson-based homework assignments, Do-Nows

Summative Assessments, Projects, and Celebrations:

- Quiz - Surface Area
- Test - Surface Area and Volume

Intervention Strategies		
Accommodations	Interventions	Modifications
Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations
Repeat/confirm directions	Increase task structure (e.g. directions, checks for understanding, feedback	Differentiated materials
Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need
Audio Books	Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping	Modified assessment grading

Unit 10: Probability and Statistics	
<p>Big Ideas: <i>Course Objectives/ Content Statement(s)</i></p> <ul style="list-style-type: none"> Understand how the probability of an event indicates its likelihood. Develop probability models using experimental and theoretical probability. Find sample spaces and probabilities of compound events. Understand how to use random samples to make conclusions about a population. Understand variability in samples of a population. Compare populations using measures of center. 	
<p>Essential Questions</p> <p><i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i></p>	<p>Enduring Understandings</p> <p><i>What will students understand about the big ideas?</i></p>
<ul style="list-style-type: none"> In an experiment, how can you determine the number of possible results? 	<p>Students will understand that:</p> <ul style="list-style-type: none"> Each event has a certain amount of outcomes

<ul style="list-style-type: none"> ● How can you describe the likelihood of an event? ● How can you use relative frequencies to find probabilities? ● How can you find the number of possible outcomes of one or more events? ● What is the difference between dependent and independent events? ● How can you determine whether a sample accurately represents a population? ● How can you compare data sets that represent two populations? ● How can you make and interpret different representations of data? 	<ul style="list-style-type: none"> ● Probability is the amount of times a desired outcome occurs out of the total outcomes ● They can explain the meaning of experimental and theoretical probability. ● They can make predictions using probabilities. ● How to determine the validity of a conclusion. ● How to explain variability in samples of a population. ● Can solve a problem using statistics. ● Can compare populations.
Areas of Focus: Proficiencies (New Jersey Student Learning Standards)	Lessons
<p>Students will:</p> <p>7.SP.A Use random sampling to draw inferences about a population.</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>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.</p> <p>7.SP.B Draw informal comparative inferences about two populations.</p> <p>Career-Ready Practices</p> <p>CRP1: Act as a responsible and contributing citizen and employee.</p> <p>CRP2: Apply appropriate academic and technical skills.</p> <p>CRP3: Attend to personal health and financial well-being.</p> <p>CRP4: Communicate clearly and effectively and with</p>	<p>Lessons (Chapter 10 Big Ideas Red CC):</p> <ul style="list-style-type: none"> ● Introduction to Probability (2 days) ● 10.1 Outcomes and Events (2 days) ● 10.2 Probability (2 days) ● 10.3 Experimental and Theoretical Probability (2 days) ● 10.4 Compound Events (2 days) ● 10.5 Independent and Dependent Events (2 days) ● Review/Quiz (2 days) ● 10.6 Samples and Populations (2 days) ● 10.7 Comparing Populations (2 days) ● Review/Test (2 days)

reason.

CRP5: Consider the environmental, social and economic impacts of decisions.

CRP6: Demonstrate creativity and innovation.

CRP7: Employ valid and reliable research strategies.

CRP8: Utilize critical thinking to make sense of problems and persevere in solving them.

CRP9: Model integrity, ethical leadership and effective management.

CRP10: Plan education and career paths aligned to personal goals.

CRP11: Use technology to enhance productivity.

CRP12: Work productively in teams while using cultural global competence.

Differentiation

Interdisciplinary Connections

- STEM activities (“Fair and Unfair Carnival Games”) referenced in Big Ideas textbook. Questions discussed with students:
 - How can someone use theoretical probability to his or her advantage?
- Students will apply their knowledge of theoretical and experimental probability to analyze whether a carnival game is fair. Students will then compare the probabilities of winning the carnival game with dependent and independent events. Students will summarize their knowledge of probability by creating unfair carnival games.

Technology Integration

- Quizziz and EdPuzzle

Supports for English Language Learners

Sensory Supports	Graphic Supports	Interactive Supports
Real-life objects	Charts	In pairs or partners
Manipulatives	Graphic Organizers	In triands or small groups

Assessments

Formative Assessments:

- Quizziz assignments, EdPuzzles, lesson-based homework assignments, Do-Nows

Summative Assessments, Projects, and Celebrations:

- Quiz - Probability
- Test - Probability and Statistics

Pictures	Tables	In a whole group
Illustrations, diagrams & drawings	Graphs	Using cooperative group
Magazines & Newspapers	Timelines	Structures
Physical activities	Number lines	Internet / Software support
Videos & Film		In the home language
Broadcasts		With mentors
Models & Figures		

Intervention Strategies		
Accommodations	Interventions	Modifications
Allow for verbal responses	Multi-sensory techniques	Modified tasks/expectations
Repeat/confirm directions	Increase task structure (e.g. directions, checks for understanding, feedback	Differentiated materials
Permit response provided via computer or electronic device	Increase opportunities to engage in active academic responding	Individualized assessment tools based on student need
Audio Books	Utilize pre-reading strategies and activities previews, anticipatory guides, and semantic mapping	Modified assessment grading

Recommended Texts to Support Units:

- Big Ideas Math (Grade 7 Red CC) © 2010