

Quinton Township School District
Mathematics
Grade 6
Pacing Chart/Curriculum MAP

Marking Period:	1	Unit Title:	Use Positive Rational Numbers	Pacing:	23 days
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Unit Summary: During this unit, students discover algorithms to perform operations with fractions and decimals using models. They are able to utilize these algorithms to evaluate expressions.

Objectives:

- Add and subtract decimals with precision.
- Multiply Decimals.
- Add subtract, and multiply decimals to solve real-world problems.
- Use place-value structures to divide whole numbers and decimals.
- Divide whole numbers and decimals to solve real-world problems.
- Use models to multiply fractions.
- Multiply the numerators and then the denominators to find the product of two fractions.
- Multiply mixed numbers.
- Use mathematical modeling to represent a problem situation and to propose a solution.
- Test and verify the appropriateness of their math models.
- Use models to divide with fractions.
- Use equations to divide with fractions.
- Use models to divide fractions by fractions.
- Use the algorithm to divide fractions by fractions.
- Divide with mixed numbers.
- Estimate the quotient of mixed numbers.
- Solve multistep problems with fractions and decimals.

Essential Questions:

- How can you add, subtract and multiply with decimals?
- How can you divide whole numbers and decimals?
- How can you multiply fractions and mixed numbers?
- How can you represent division of fractions?
- How can you divide a fraction by a fraction?
- How can you divide with mixed numbers?
- How can you solve problems with rational numbers?

NJSLS Standards/Learning Targets:

6.NS.A: Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

6.NS.B.2: With accuracy and efficiency, divide multi-digit numbers using the standard algorithm.

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

Mathematics Practices: MP.1, MP.2, MP.3, MP.4, MP.7

Interdisciplinary Connections

Cross Curricular Standards: RI.TS.6.4

Overview of Activities	Teacher's Guide/ Resources	Core Instructional Materials	Technology Infusion
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<p>1-1 Fluently Add, Subtract, and Multiply Decimals</p> <p>1-2 Fluently Divide Whole numbers and Decimals</p> <p>1-3 Multiply Fractions</p> <p>1-4 Understand Division with Fractions</p> <p>1-5 Divide Fractions by Fractions</p> <p>1-6 Divide Mixed Numbers</p> <p>1-7 Solve Problems with Rational Numbers</p>	<p>Curriculum Map</p> <p>Reteach to Build Understanding</p> <p>Additional Vocabulary Support</p> <p>Build Mathematical Literacy</p> <p>Enrichment</p> <p>Desmos.com</p> <p>IXL</p> <p>STEM Project</p> <p>Pick a Project</p>	<p>Student Textbook</p> <p>Additional Practice Workbook</p> <p>Notebook</p> <p>Pen/Pencil</p> <p>Index Cards</p>	<ul style="list-style-type: none"> ● Smart Board Applications ● Google Applications ● Interactive student edition ● Today's Challenge ● Adaptive Practice ● Desmos ● IXL
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Formative Assessment Plan	Summative Assessment Plan
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<p>Suggested activities to assess student progress: Weekly Homework Completion Classwork & Basic Skill Practice Corrections & Reflections Kahoot! Quizizz Desmos Rubric-for projects Self-reflection Adaptive practice- on-line Savvas resources</p>	<p>Final Assessment/Benchmark/Project: Mid-Topic Performance Task Performance Task/Topic Assessment Pick a Project Fall MAP Assessment</p> <p>Suggested skills to be assessed: With accuracy and efficiency, add, subtract, multiply, and divide decimals. Multiply and divide fractions. Solve real-life problems.</p>
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Differentiation

Special Education	ELL	At Risk	Gifted and Talented
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<ul style="list-style-type: none"> • RTI • Modify and accommodate as listed in student's IEP or 504 plan • Utilize effective amount of wait time • Communicate directions clearly and concisely and repeat, reword, modify as necessary. • Utilize open-ended questioning techniques • Utilize scaffolding to support instruction. • Chunk tasks into smaller components • Provide step by step instructions • Model and use visuals as often as possible • Utilize extended time and/or reduce amount of items given for homework, quizzes, and tests. • Teach Tiers 1,2, and 3 words to assist students' understanding of instructional texts. • Utilize a variety of formative assessments to drive next point of instruction/differentiated instructional practices. • Create rubrics/allow students to assist with task, so that all are aware of expectations. • Create modified assessments. • Allow students to utilize online books, when available, to listen to oral recorded reading. • Allow for group work (strategically selected) and collaboration as necessary. • Utilize homework recorder within SIS. • Allow for copies of notes to be shared out. • Utilize assistive technology as appropriate. • Utilize graphic organizers • Introduce/review study skills • Provide reading material at or slightly above students' 	<ul style="list-style-type: none"> • RTI • Speech/Language Therapy • Rosetta Stone • Hold high expectations • Provide English/Spanish Dictionary for use • Place with Spanish speaking teacher/paraprofessional as available • Learn/Utilize/Display some words in the students' native language • Invite student to after school tutoring sessions • Basic Skills Instruction • Utilize formative assessments to drive instruction • Translate printed communications for parents in native language • Hold conferences with translator present • Utilize additional NJDOE resources/recommendations • Review Special Education listing for additional recommendations • Establish a consistent and daily routine 	<ul style="list-style-type: none"> • RTI Tiered Interventions following RTI framework • Support instruction with RTI intervention resources • Provide after school tutoring services • Basic Skills Instruction • Hold high expectations • Utilize Go Math! RTI strategies • Fountas and Pinnell Phonics • Hold parent conferences fall and spring • Make modifications to instructional plans based on I and RS Plan. • Develop a record system to encourage good behavior and completion of work. • Establish a consistent and daily routine. 	<ul style="list-style-type: none"> • Organize the curriculum to include more elaborate, complex, and in-depth study of major ideas and problems through Compacting. • Allow for the development and application of productive thinking skills to enable students to re-conceptualize existing knowledge and/or generate new knowledge. • Enable students to explore continually changing knowledge and information and develop the attitude that knowledge is worth pursuing in an open world. • Encourage exposure to, selection and use of appropriate and specialized resources. • Promote self-initiated and self-directed learning and growth. • Provide for the development of self-understanding of one's relationships with people, societal institutions, nature and culture. • Continue to offer Accelerated Mathematics 7 (7th grade) and Algebra 1 (8th grade).
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**Quinton Township School District
Mathematics
Grade 6**

Pacing Chart/Curriculum MAP

Marking Period:	1	Unit Title:	Integers and Rational Numbers	Pacing:	22 days
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Unit Summary: Students extend their knowledge of the number system to include all rational numbers. They apply this knowledge to the coordinate graph. Students also learn to represent and interpret absolute value in mathematical and real-world situations.

Objectives:

- Identify opposites of integers.
- Compare and order integers.
- Use integers to represent real-world quantities and explain the meaning of 0 in each context.
- Plot rational numbers on a number line.
- Compare and order rational numbers.
- Use rational numbers to represent real-world quantities.
- Use absolute value to represent a number's distance from zero.
- Interpret absolute value in real-world situations.
- Identify and graph points with rational coordinates on the coordinate plane.
- Reflect points with rational coordinates across both axes.
- Use mathematical modeling to represent a problem situation and to propose a situation.
- Use absolute value to find the distance between two points that lie on the same horizontal or vertical line on a coordinate plane.
- Solve real-world and mathematical problems involving distances on the coordinate plane.
- Find side lengths of polygons on the coordinate plane.
- Find the perimeter of polygons on the coordinate plane.

Essential Questions:

- What are the integers and how are they used to represent real-world quantities?
- How can you plot, compare, and order rational numbers using a number line?
- How are absolute values used to describe quantities?
- How can you graph a point with rational coordinates on a coordinate plane?
- How can you find the distance between two points on a coordinate plane?

NJSLA Standards/Learning Targets:

6.NS.C.5: Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

6.NS.C.6: Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.

- a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite.
- b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.
- c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.

6.NS.C.7: Understand ordering and absolute value of rational numbers.

- a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.
- b. Write, interpret, and explain statements of order for rational numbers in real-world contexts.
- c. Understand that the absolute value of a rational number as its distance from 0 on the numberline, interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.

6.NS.C.8: Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

6.G.A.3: Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.

Mathematics Practices: MP.2, MP.3, MP.6, MP.7, MP.8

Interdisciplinary Connections**Cross Curricular Standards: RI.TS.6.4**

Overview of Activities	Teacher's Guide/ Resources	Core Instructional Materials	Technology Infusion
2-1 Understanding Integers	Curriculum Map	Student Textbook	<ul style="list-style-type: none">● Smart Board Applications● Google Applications● Interactive student edition● Today's Challenge● Adaptive Practice● Desmos● IXL
2-2 Present Rational Numbers on the Number Line	Reteach to Build Understanding	Additional Practice Workbook	
2-3 Absolute Values of Rational Numbers	Additional Vocabulary Support	Notebook	
2-4 Represent Rational Numbers on the Coordinate Plane	Build Mathematical Literacy	Pen/Pencil	
2-5 Find Distances on the Coordinate Plane	Enrichment	Index Cards	
2-6 Represent Polygons on the Coordinate Plane	Desmos.com		
	IXL		
	STEM Project		
	Pick a Project		

Formative Assessment Plan**Summative Assessment Plan**

<p>Suggested activities to assess student progress:</p> <p>Weekly Homework Completion Classwork & Basic Skill Practice Corrections & Reflections Kahoot! Quizizz Desmos Rubric-for projects Self-reflection Adaptive practice- on-line Savvas resources</p>	<p>Final Assessment/Benchmark/Project:</p> <p>Mid-Topic Performance Task Performance Task/Topic Assessment Pick a Project</p> <p>Suggested skills to be assessed:</p> <p>Integers and rational numbers Graphing on a coordinate plane Solving real-life problems.</p>
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Differentiation

Special Education	ELL	At Risk	Gifted and Talented
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**Quinton Township School District
Mathematics
Grade 6**

Pacing Chart/Curriculum MAP

Marking Period:	2	Unit Title:	Numeric and Algebraic Expressions	Pacing:	21 days
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Unit Summary: Students learn to write and evaluate numerical and algebraic expressions with whole number exponents. They will build upon their understanding of factors and multiples to identify prime factors, and they use this skill to find the greatest common factor and least common multiple of a pair of numbers. Students will also use properties to generate equivalent expressions and simplify expressions.

Objectives:

- Write expressions using whole-number exponents to represent real-world and mathematical problems?
- Evaluate expressions with whole-number exponents.
- Find the prime factorization of a whole number.
- Find the greatest common factor (GCF) and the least common multiple (LCM) of two whole numbers.
- Use the GCF and the distributive property to add.
- Used the GCF and LCM to solve problems.
- Evaluate expressions using the order of operations.
- Insert grouping symbols in a numerical expression to affect the value of the expression.
- Write an algebraic expression to model a pattern.
- Write an algebraic expression from a word phrase.
- Use precise mathematical language when identifying parts of an expression.
- Evaluate algebraic expressions, including those with whole numbers, decimals, and fractions.
- Write equivalent algebraic expressions.
- Identify equivalent algebraic expressions.
- Justify whether two expressions are equivalent.
- Use properties of operations to simplify algebraic expressions by combining like terms.

Essential Questions:

- How can you write and evaluate numbers with exponents?
- How can you write prime factorization and find the greatest common factor and least common multiple of two numbers?
- How do you write and evaluate numerical expressions?
- How can you write an algebraic expression?
- How can you evaluate an algebraic expression?
- How can you identify and write equivalent expressions?
- How can you simplify algebraic expressions?

NJSLA Standards/Learning Targets:

6.NS.B.4: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor.

6.EE.A.1: Write and evaluate numerical expressions involving whole-number exponents.

6.EE.A.2: Write, read, and evaluate expressions in which letters stand for numbers.

a. Write expressions that record operations with numbers and with letters standing for numbers.

b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.

6.EE.A.3: Apply the properties of operations to generate equivalent expressions.

6.EE.A.4: Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).

6.EE.B.6: Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

Mathematics Practices: MP.1, MP.2, MP.3, MP.4, MP.7, MP.8

Interdisciplinary Connections

Cross Curricular Standards: RI.TS.6.4

Overview of Activities	Teacher's Guide/ Resources	Core Instructional Materials	Technology Infusion
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<p>3-1 Understand and Represent Exponents</p> <p>3-2 Find the Greatest Common Factor and Least Common Multiple</p> <p>3-3 Write and Evaluate Numerical Expressions</p> <p>3-4 Write Algebraic Expressions</p> <p>3-5 Evaluate Algebraic Expressions</p> <p>3-6 Generate Equivalent Expressions</p> <p>3-7 Simplify Algebraic Expressions</p>	<p>Curriculum Map</p> <p>Reteach to Build Understanding</p> <p>Additional Vocabulary Support</p> <p>Build Mathematical Literacy</p> <p>Enrichment</p> <p>Desmos.com</p> <p>IXL</p> <p>STEM Project</p> <p>Pick a Project</p>	<p>Student Textbook</p> <p>Additional Practice Workbook</p> <p>Notebook</p> <p>Pen/Pencil</p> <p>Index Cards</p>	<ul style="list-style-type: none"> ● Smart Board Applications ● Google Applications ● Interactive student edition ● Today's Challenge ● Adaptive Practice ● Desmos ● IXL
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Formative Assessment Plan	Summative Assessment Plan
<p>Suggested activities to assess student progress:</p> <p>Weekly Homework Completion</p> <p>Classwork & Basic Skill Practice</p> <p>Corrections & Reflections</p> <p>Kahoot!</p> <p>Quizizz</p> <p>Desmos</p> <p>Rubric-for projects</p> <p>Self-reflection</p> <p>Adaptive practice- on-line Savvas resources</p>	<p>Final Assessment/Benchmark/Project:</p> <p>Mid-Topic Performance Task</p> <p>Performance Task/Topic Assessment</p> <p>Pick a Project</p> <p>Suggested skills to be assessed:</p> <p>Understand expressions and how they can be written and evaluated.</p> <p>Solve real-life problems.</p>

Differentiation

Special Education	ELL	At Risk	Gifted and Talented
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**Quinton Township School District
Mathematics
Grade 6**

Pacing Chart/Curriculum MAP

Marking Period:	2	Unit Title:	Represent and Solve Equations and Inequalities	Pacing:	24 days
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Unit Summary: Students continue working on skills learned from the previous unit. They extend their knowledge of expressions to create equations. Using a balance model, students discover the steps to solve one-step equations and inequalities. Once these skills are mastered, students will be able to solve multi-step equations in 7th grade.

Objectives:

- Identify equations and variables.
- Use substitution to find the solutions to equations.
- Use the properties of equality to keep both sides of an equation equal.
- Identify which properties of equality are used to write equivalent expressions.
- Write one-variable addition and subtraction equations.
- Use inverse relationships and properties of equality to solve one-step addition and subtraction equations.
- Write one-variable multiplication and division equations.
- Use inverse relationships and properties of equality to solve one-step multiplication and division equations.
- Write and solve equations that involve fractions, decimals, and mixed numbers
- Understand the symbols required to write an inequality.
- Write inequalities to describe mathematical or real-world situations.
- Describe solutions to an inequality.
- Represent solutions to an inequality on a number line.
- Identify dependent variables.
- Identify independent variables.
- Analyze the relationships between variables by using tables.
- Write equations to represent the relationships between variables
- Analyze the relationship between dependent and independent variables using variables, graphs, and equations.

Essential Questions:

- How can you determine whether a given number makes an equation true?
- How can you use the properties of equality to write equivalent equations?
- How can you write and solve an addition or subtraction equation?
- How can you write and solve a multiplication or division equation?
- How can you write and solve equations involving rational numbers?
- How can you write an inequality to describe a situation?
- How can you represent the solutions of an inequality?
- What does it mean for one variable to be dependent on another variable?
- How can you use a pattern to write and solve an equation?

NJSLA Standards/Learning Targets:

6.EE.A.4: Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).

6.EE.B.5: Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

6.EE.B.6: Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

6.EE.B.7: Solve real-world and mathematical problems by writing and solving equations of the form $x+p=q$ and $px=q$ for cases in which p , q , and x are all nonnegative rational numbers.

6.EE.B.8: Write an inequality of the form $x>c$ or $x<c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x>c$ or $x<c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

6.EE.C.9: Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.

Mathematics Practices: MP.1, MP.2, MP.3, MP.4, MP.7

Interdisciplinary Connections

Cross Curricular Standards: **RI.TS.6.4**

Overview of Activities	Teacher's Guide/ Resources	Core Instructional Materials	Technology Infusion
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<p>4-1 Understand Equations and Solutions</p> <p>4-2 Apply Properties of Equality</p> <p>4-3 Write and Solve Addition and Subtraction Equations</p> <p>4-4 Write and Solve Multiplication and Division Equations</p> <p>4-5 Write and Solve Equations with Rational Numbers</p> <p>4-6 Understand and Write Inequalities</p> <p>4-7 Solve Inequalities</p> <p>4-8 Understand Independent and Dependent Variables</p> <p>4-9 Use Patterns to Write and Solve Equations</p> <p>4-10 Relate Tables, Graphs, and Equations</p>	<p>Curriculum Map</p> <p>Reteach to Build Understanding</p> <p>Additional Vocabulary Support</p> <p>Build Mathematical Literacy</p> <p>Enrichment</p> <p>Desmos.com</p> <p>IXL</p> <p>STEM Project</p> <p>Pick a Project</p>	<p>Student Textbook</p> <p>Additional Practice Workbook</p> <p>Notebook</p> <p>Pen/Pencil</p> <p>Index Cards</p>	<ul style="list-style-type: none"> ● Smart Board Applications ● Google Applications ● Interactive student edition ● Today's Challenge ● Adaptive Practice ● Desmos ● IXL
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Formative Assessment Plan	Summative Assessment Plan
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<p>Suggested activities to assess student progress:</p> <ul style="list-style-type: none"> Weekly Homework Completion Classwork & Basic Skill Practice Corrections & Reflections Kahoot! Quizizz Desmos Rubric-for projects Self-reflection Adaptive practice- on-line Savvas resources 	<p>Final Assessment/Benchmark/Project:</p> <ul style="list-style-type: none"> Mid-Topic Performance Task Performance Task/Topic Assessment Pick a Project <p>Suggested skills to be assessed:</p> <ul style="list-style-type: none"> Write and graph equations and inequalities. Use substitution to check whether a number is a solution of an inequality. Solve equations and inequalities using addition or subtraction. Solve equations using multiplication or division. Solve real-life problems.
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Differentiation

Special Education	ELL	At Risk	Gifted and Talented
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<ul style="list-style-type: none"> • RTI • Modify and accommodate as listed in student's IEP or 504 plan • Utilize effective amount of wait time • Hold high expectations • Communicate directions clearly and concisely and repeat, reword, modify as necessary. • Utilize open-ended questioning techniques • Utilize scaffolding to support instruction. • Chunk tasks into smaller components • Provide step by step instructions • Model and use visuals as often as possible • Utilize extended time and/or reduce amount of items given for homework, quizzes, and tests. • Teach Tiers 1,2, and 3 words to assist students' understanding of instructional texts. • Utilize a variety of formative assessments to drive next point of instruction/differentiated instructional practices. • Create rubrics/allow students to assist with task, so that all are aware of expectations. • Create modified assessments. • Allow students to utilize online books, when available, to listen to oral recorded reading. • Provide individualized assistance as necessary. • Allow for group work (strategically selected) and collaboration as necessary. • Utilize homework recorder within SIS. • Allow for copies of notes to be shared out. • Utilize assistive technology as appropriate. 	<ul style="list-style-type: none"> • RTI • Speech/Language Therapy • Rosetta Stone • Hold high expectations • Provide English/Spanish Dictionary for use • Place with Spanish speaking teacher/paraprofessional as available • Learn/Utilize/Display some words in the students' native language • Invite student to after school tutoring sessions • Basic Skills Instruction • Utilize formative assessments to drive instruction • Translate printed communications for parents in native language • Hold conferences with translator present • Utilize additional NJDOE resources/recommendations • Review Special Education listing for additional recommendations • Establish a consistent and daily routine 	<ul style="list-style-type: none"> • RTI Tiered Interventions following RTI framework • Support instruction with RTI intervention resources • Provide after school tutoring services • Basic Skills Instruction • Hold high expectations • Utilize Go Math! RTI strategies • Fountas and Pinnell Phonics • Hold parent conferences fall and spring • Make modifications to instructional plans based on I and RS Plan. • Develop a record system to encourage good behavior and completion of work. • Establish a consistent and daily routine. 	<ul style="list-style-type: none"> • Organize the curriculum to include more elaborate, complex, and in-depth study of major ideas and problems through Compacting. • Allow for the development and application of productive thinking skills to enable students to re-conceptualize existing knowledge and/or generate new knowledge. • Enable students to explore continually changing knowledge and information and develop the attitude that knowledge is worth pursuing in an open world. • Encourage exposure to, selection and use of appropriate and specialized resources. • Promote self-initiated and self-directed learning and growth. • Provide for the development of self-understanding of one's relationships with people, societal institutions, nature and culture. • Continue to offer Accelerated Mathematics 7 (7th grade) and Algebra 1 (8th grade).
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**Quinton Township School District
Mathematics
Grade 6**

Pacing Chart/Curriculum MAP

Marking Period:	3	Unit Title:	Understand and Use Ratio and Rate	Pacing:	25 days
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Unit Summary: In this unit, students are introduced to the concepts of ratios and rates. Using models, students compare ratios and rates. Using equivalent ratios, students also convert between different units of measurement.

Objectives:

- Use ratios to describe the relationship between two quantities.
- Use bar graphs and double number line diagrams to model ratio relationships.
- Use multiplication and division to find equivalent ratios.
- Solve problems by finding equivalent ratios.
- Use ratio tables to compare ratios.
- Compare ratios to solve problems.
- Represent equivalent ratios on graphs.
- Use ratio tables and graphs to solve problems.
- Use rates to describe ratios in which the terms have different units.
- Use rates and unit rates to solve problems.
- Use ratio reasoning to compare rates and solve problems.
- Use unit rates to solve problems involving constant speed.
- Use unit rates to solve problems involving unit price.
- Solving unit rate problems using equations.
- Use mathematical modeling to represent a problem situation and to propose a solution.
- Test and verify the appropriateness of their math models.
- Explain why the results from their mathematical models may not align exactly to the problem situation.
- Use ratio reasoning and conversion factors to convert customary units of measure.

Essential Questions:

- What is a mathematical way to compare quantities?
- How can you find equivalent ratios?
- How can you compare ratios to solve a problem?
- How can you use tables and graphs to show equivalent ratios?
- What are ratios and unit rates?
- How can you use unit rates to make comparisons?
- How can you use unit rates to solve problems?
- How can you use ratios to convert customary units of measure?
- How can you use ratios to convert metric units of measure?
- How can you use ratios to convert metric and customary units of measure?

NJSLA Standards/Learning Targets:

6.RP.A.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

6.RP.A.2: Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship.

6. RP.A.3: Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number lines diagrams, or equations.

- a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.
- b. Solve unit rate problems including those involving unit pricing and constant speed.
- d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

Mathematics Practices: MP.1, MP.2, MP.3, MP.4, MP.5, MP.6, MP.7

Interdisciplinary Connections**Cross Curricular Standards:** RI.TS.6.4,9.2.8.CAP.20

Overview of Activities	Teacher's Guide/ Resources	Core Instructional Materials	Technology Infusion
5-1 Understanding Ratios	Curriculum Map	Student Textbook	<ul style="list-style-type: none">● Smart Board Applications● Google Applications● Interactive student edition● Today's Challenge● Adaptive Practice● Desmos● IXL
5-2 Generate Equivalent Ratios	Reteach to Build Understanding	Additional Practice Workbook	
5-3 Compare Ratios	Additional Vocabulary Support	Notebook	
5-4 Represent and Graph Ratios	Build Mathematical Literacy	Pen/Pencil	
5-5 Understand Rates and Unit Rates	Enrichment	Index Cards	
5-6 Compare Unit Rates	Desmos.com		
5-7 Solve Unit Rate Problems	IXL		
5-8 Ratio Reasoning: Convert Customary Units	STEM Project		
5-9 Ratio Reasoning: Convert Metric Units	Pick a Project		
5-10 Relate Customary and Metric Units			

Formative Assessment Plan**Summative Assessment Plan**

<p>Suggested activities to assess student progress:</p> <ul style="list-style-type: none"> Weekly Homework Completion Classwork & Basic Skill Practice Corrections & Reflections Kahoot! Quizizz Desmos Rubric-for projects Self-reflection Adaptive practice- on-line Savvas resources 	<p>Final Assessment/Benchmark/Project:</p> <ul style="list-style-type: none"> Mid-Topic Performance Task Performance Task/Topic Assessment Pick a Project <p>Suggested skills to be assessed:</p> <ul style="list-style-type: none"> Find ratios, rates, and unit rates. Find ratios and rates involving ratios of fractions. Use equivalent ratios to determine whether two ratios are equivalent. Determine unit rates. Convert between Customary and Metric Systems.
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Differentiation

Special Education	ELL	At Risk	Gifted and Talented
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**Quinton Township School District
Mathematics
Grade 6**

Pacing Chart/Curriculum MAP

Marking Period:	3	Unit Title:	Understand and Use Percent	Pacing:	20 days
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Unit Summary: Students begin to work with percents. They create percentages by creating equivalent ratios out of 100. Students create algorithms to find percent of a number and the whole given the percent.

Objectives:

- Represent the percent of a whole.
- Find the percent of a whole.
- Write equivalent values as fractions, decimals, and percents.
- Write fractions as decimals and percents when the denominator of the fraction is not 100.
- Write percentages that are greater than 100.
- Write percentages that are less than 1.
- Equivalent fractions and compatible numbers can be used to estimate the percent of a number.
- Finding the percent of a whole is like finding the fractional part of a whole.
- Models and equations can be used to find the whole amount when the percent and a part are known.
- Many real-world problem situations can be represented with a mathematical model.

Essential Questions:

- How can you represent a rate with 100 as the whole?
- How are fractions, decimals, and percents related?
- How can you write a percent greater than 100 or less than 1 as a fraction or a decimal?
- How can you estimate the percent of a number?
- How can you find percentages?
- How can you find the whole in a percent problem?

NJSLA Standards/Learning Targets:

6.RP.A.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

6.RP.A.3: Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number lines diagrams, or equations.

- c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.

Mathematics Practices: MP.1, MP.2, MP.7, MP.8

Interdisciplinary Connections

Cross Curricular Standards: [RI.TS.6.4](#), [9.1.8.CDM.1](#)

Overview of Activities	Teacher's Guide/ Resources	Core Instructional Materials	Technology Infusion
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<p>6-1 Understand Percent</p> <p>6-2 Relate Fractions, Decimals, and Percents</p> <p>6-3 Represent Percents Greater than 100 or Less Than 1</p> <p>6-4 Estimate to Find Percent</p> <p>6-5 Find the Percent of a Number</p> <p>6-6 Find the Whole Given a Part and the Percent</p>	<p>Curriculum Map</p> <p>Reteach to Build Understanding</p> <p>Additional Vocabulary Support</p> <p>Build Mathematical Literacy</p> <p>Enrichment</p> <p>Desmos.com</p> <p>IXL</p> <p>STEM Project</p> <p>Pick a Project</p>	<p>Student Textbook</p> <p>Additional Practice Workbook</p> <p>Notebook</p> <p>Pen/Pencil</p> <p>Index Cards</p>	<ul style="list-style-type: none"> ● Smart Board Applications ● Google Applications ● Interactive student edition ● Today's Challenge ● Adaptive Practice ● Desmos ● IXL
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Formative Assessment Plan	Summative Assessment Plan
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<p>Suggested activities to assess student progress:</p> <ul style="list-style-type: none"> Weekly Homework Completion Classwork & Basic Skill Practice Corrections & Reflections Kahoot! Quizizz Desmos Rubric-for projects Self-reflection Adaptive practice- on-line Savvas resources 	<p>Final Assessment/Benchmark/Project:</p> <ul style="list-style-type: none"> Mid-Topic Performance Task Performance Task/Topic Assessment Pick a Project <p>Suggested skills to be assessed:</p> <ul style="list-style-type: none"> Write percents as decimals. Write decimals as percents. Compare and order fractions, decimals, and percents. Find the whole or the part. Solve real-life problems.
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Differentiation

Special Education	ELL	At Risk	Gifted and Talented
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**Quinton Township School District
Mathematics
Grade 6**

Pacing Chart/Curriculum MAP

Marking Period:	4	Unit Title:	Solve Area, Surface Area, and Volume Problems	Pacing:	25 days
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Unit Summary: In this unit, students discover the formulas to determine the areas of parallelograms, triangles, and trapezoids. Students can use these formulas to determine the area of composite shapes by decomposition. Students also determine the vertical or horizontal distance between two coordinate points by examining the x or y value that is different. Students are introduced to three-dimensional figures. They learn the parts of three-dimensional figures and how to draw them. Using nets, students develop strategies for determining the surface area of the figures. Students also determine the formula for finding the volume of rectangular prisms.

Objectives:

- Use formulas to find the areas of parallelograms and rhombuses.
- Find the base or height of a parallelogram or rhombus when the area and the height or base are known.
- Find the areas of triangles, including right triangles.
- Find the corresponding base or height of a triangle.
- Find the area of trapezoids.
- Find the areas of kites.
- Find the areas of polygons by composing and decomposing shapes, including polygons on the coordinate plane.
- Classify solid figures.
- Identify solid figures from nets.
- Draw nets of solid figures.
- Find the surface area of rectangular prisms, including cubes.
- Find the surface area of square and triangular pyramids.
- Use cubes and a formula to find the volume of a rectangular prism or a cube with fractional edge lengths.

Essential Questions:

- How can you use the area formula of a rectangle to find the area of a parallelogram?
- How can you find the area of triangles, trapezoids, kites, and other polygons?
- How do you classify and represent solid figures?
- 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 volume of a rectangular prism with fractional edge lengths?

NJSLA Standards/Learning Targets:

6.NS.C.6: Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.

- c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.

6.NS.C.8: Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

6.EE.A.2: Apply and extend previous understandings of arithmetic to algebraic expressions.

- a. Write expressions that record operations with numbers and with letters standing for numbers.
- c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).

6.EE.B.6: Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

6.G.A.1: Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

6.G.A.2: Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $v=lwh$ and $V=Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

6.G.A.4: Represent three-dimensional figures (e.g., pyramid, triangular prism, rectangular prism) using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Mathematics Practices: MP.1, MP.2, MP.3, MP.4, MP.5, MP.6, MP.7, MP.8

Interdisciplinary Connections**Cross Curricular Standards:** **RI.TS.6.4, RI.MF.6.6.**

Overview of Activities	Teacher's Guide/ Resources	Core Instructional Materials	Technology Infusion
7-1 Find Areas of Parallelograms and Rhombuses 7-2 Solve Triangle Area Problems 7-3 Find the Areas of Trapezoids and Kites 7-4 Find the Areas of Polygons 7-5 Represent Solid Figures Using Nets 7-6 Find the Surface Areas of Prisms 7-7 Find the Surface Areas of Pyramids 7-8 Find the Volume with Fractional Edge Lengths	Curriculum Map Reteach to Build Understanding Additional Vocabulary Support Build Mathematical Literacy Enrichment Desmos.com IXL STEM Project Pick a Project	Student Textbook Additional Practice Workbook Notebook Pen/Pencil Index Cards	<ul style="list-style-type: none">● Smart Board Applications● Google Applications● Interactive student edition● Today's Challenge● Adaptive Practice● Desmos● IXL

Formative Assessment Plan**Summative Assessment Plan**

<p>Suggested activities to assess student progress:</p> <p>Weekly Homework Completion Classwork & Basic Skill Practice Corrections & Reflections Kahoot! Quizizz Desmos Rubric-for projects Self-reflection Adaptive practice- on-line Savvas resources</p>	<p>Final Assessment/Benchmark/Project:</p> <p>Mid-Topic Performance Task Performance Task/Topic Assessment Pick a Project</p> <p>Suggested skills to be assessed:</p> <p>Find the areas of parallelograms, trapezoids, and triangles. Find surface areas of prisms and pyramids. Find the volume of rectangular prisms with fractional edges. Solve real-life problems.</p>
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Differentiation

Special Education	ELL	At Risk	Gifted and Talented
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**Quinton Township School District
Mathematics
Grade 6**

Pacing Chart/Curriculum MAP

Marking Period:	4	Unit Title:	Display, Describe, and Summarize Data	Pacing:	20 days
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Unit Summary: In this unit, students investigate statistics. They determine that a question is statistical if they expect to receive different responses. Using the data collected by statistical questions, students determine and analyze measures of center and measures of variation. They will create appropriate data displays and students can compare their data displays to other data sets.

Objectives: Students will be able to:

- Identify statistical questions.
- Write statistical questions and display the collected data.
- Determine the mean, median, mode and range of a data set.
- Display data in a box plot
- Interpret and analyze a box plot.
- Organize data into equal intervals and display data in a frequency table or histogram.
- Interpret and analyze a histogram.
- Calculate the mean absolute deviation(MAD) and interquartile range(IQR) of a data set.
- Summarize data using measures of variability.
- Select the most appropriate measure of center and variability for a data set.
- Use measures to describe data sets.
- Describe the center, spread, and overall shape of a data set.
- Summarize numerical data sets using measures of center and related measures of variability.

Essential Questions:

- How are statistical questions different from other questions?
- How can you use a single measure to describe a data set?
- Why is a box plot useful for representing certain types of data?
- How can a frequency table or histogram help you organize and analyze data?
- How can the variability of data be described using a single number?
- Why is one statistical measure more useful than another to describe a given situation?
- How can you summarize a data distribution?

NJSLA Standards/Learning Targets:

6.SP.A.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.

6.SP.A.2: Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

6.SP.A.3: Recognize that a measure of a center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

6.SP.B.4: Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

6.SP.B.5: Summarize numerical data sets in relation to their context, such as by:

a. Reporting the number of observations.

b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.

c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.

d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Mathematics Practices: MP.1, MP.2, MP.3, MP.4, MP.5, MP.6, MP.7, MP.8

Interdisciplinary Connections

Cross Curricular Standards: [RI.TS.6.4](#), [RI.MF.6.6](#), [SL.II.6.2](#), [8.1.8.DA.1](#), [8.1.12.DA.1](#), [9.4.8.IML.3](#), [9.4.8.IML.4](#), [9.4.8.IML.5](#), [9.4.8.TL.3](#)

Overview of Activities

Teacher's Guide/ Resources

**Core Instructional
Materials**

Technology Infusion

8-1 Recognize Statistical Questions	Curriculum Map	Student Textbook	<ul style="list-style-type: none"> ● Smart Board Applications ● Google Applications ● Interactive student edition ● Today's Challenge ● Adaptive Practice ● Desmos ● IXL
8-2 Summarize Data Using Mean, Median, and Mode	Reteach to Build Understanding	Additional Practice Workbook	
8-3 Display Data in Box Plots	Additional Vocabulary Support	Notebook	
8-4 Display Data in Frequency Tables and Histograms	Build Mathematical Literacy	Pen/Pencil	
8-5 Summarize Data Using Measures of Variability	Enrichment	Index Cards	
8-6 Choose Appropriate Statistical Measures	Desmos.com		
8-7 Summarize Data Distributions	IXL		
	STEM Project		
	Pick a Project		

Formative Assessment Plan	Summative Assessment Plan
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<p>Suggested activities to assess student progress: Weekly Homework Completion Classwork & Basic Skill Practice Corrections & Reflections Kahoot! Quizizz Desmos Rubric-for projects Self-reflection Adaptive practice- on-line Savvas resources</p>	<p>Final Assessment/Benchmark/Project: Mid-Topic Performance Task Performance Task/Topic Assessment Pick a Project</p> <p>Suggested skills to be assessed: Identify statistical data. Determine Measures of Center and Measures of Variation. Choose appropriate data displays. Solve real-life problems.</p>
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Differentiation

Special Education	ELL	At Risk	Gifted and Talented
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<ul style="list-style-type: none"> • RTI • Modify and accommodate as listed in student's IEP or 504 plan • Utilize effective amount of wait time • Hold high expectations • Communicate directions clearly and concisely and repeat, reword, modify as necessary. • Utilize open-ended questioning techniques • Utilize scaffolding to support instruction. • Chunk tasks into smaller components • Provide step by step instructions • Model and use visuals as often as possible • Utilize extended time and/or reduce amount of items given for homework, quizzes, and tests. • Teach Tiers 1,2, and 3 words to assist students' understanding of instructional texts. • Utilize a variety of formative assessments to drive next point of instruction/differentiated instructional practices. • Create rubrics/allow students to assist with task, so that all are aware of expectations. • Create modified assessments. • Allow students to utilize online books, when available, to listen to oral recorded reading. • Provide individualized assistance as necessary. • Allow for group work (strategically selected) and collaboration as necessary. • Utilize homework recorder within SIS. • Allow for copies of notes to be shared out. • Utilize assistive technology as appropriate. 	<ul style="list-style-type: none"> • RTI • Speech/Language Therapy • Rosetta Stone • Hold high expectations • Provide English/Spanish Dictionary for use • Place with Spanish speaking teacher/paraprofessional as available • Learn/Utilize/Display some words in the students' native language • Invite student to after school tutoring sessions • Basic Skills Instruction • Utilize formative assessments to drive instruction • Translate printed communications for parents in native language • Hold conferences with translator present • Utilize additional NJDOE resources/recommendations • Review Special Education listing for additional recommendations • Establish a consistent and daily routine 	<ul style="list-style-type: none"> • RTI Tiered Interventions following RTI framework • Support instruction with RTI intervention resources • Provide after school tutoring services • Basic Skills Instruction • Hold high expectations • Utilize Go Math! RTI strategies • Fountas and Pinnell Phonics • Hold parent conferences fall and spring • Make modifications to instructional plans based on I and RS Plan. • Develop a record system to encourage good behavior and completion of work. • Establish a consistent and daily routine. 	<ul style="list-style-type: none"> • Organize the curriculum to include more elaborate, complex, and in-depth study of major ideas and problems through Compacting. • Allow for the development and application of productive thinking skills to enable students to re-conceptualize existing knowledge and/or generate new knowledge. • Enable students to explore continually changing knowledge and information and develop the attitude that knowledge is worth pursuing in an open world. • Encourage exposure to, selection and use of appropriate and specialized resources. • Promote self-initiated and self-directed learning and growth. • Provide for the development of self-understanding of one's relationships with people, societal institutions, nature and culture. • Continue to offer Accelerated Mathematics 7 (7th grade) and Algebra 1 (8th grade).
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