

<b>Grade: 6</b>	<b>Content Area: Mathematics</b>
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**Introduction:**

Students in 6th grade will complete 5 critical areas.

Adopted on:	October 23, 2018
Revised on:	November 26, 2019
Revised by:	Katie Micek, Stephanie Konsig, Stephanie Cecchini
Proposed Revision Date	Summer 2021

<b>Beach Haven School District Mathematics Curriculum</b>	
Content Area: Math	
Course Title: Math	Grade Level: 6
Instructional Materials: "Big Ideas Math"	
<b>Critical Area 1: Ratios and Proportional Relationships</b> <b>Focus:</b> <ul style="list-style-type: none"> <li>Understand Ratio Concepts; Use Ratio Reasoning</li> </ul>	<b>40 Days- ongoing</b>
<b>Critical Area 2: The Number System</b> <b>Focus:</b> <ul style="list-style-type: none"> <li>Perform Fraction and Decimal Operations; Understand Rational Numbers</li> </ul>	<b>30 Days- ongoing</b>
<b>Critical Area 3: Expressions and Equations</b> <b>Focus:</b> <ul style="list-style-type: none"> <li>Write, Interpret, and Use Expressions, Equations, and Inequalities</li> </ul>	<b>40 Days- ongoing</b>
<b>Critical Area 4: Geometry</b> <b>Focus:</b> <ul style="list-style-type: none"> <li>Solve problems involving area, surface area, and volume</li> </ul>	<b>40 Days- ongoing</b>

<p><b>Critical Area 5: Statistics and Probability</b></p> <p style="text-align: center;"><b>Focus:</b></p> <ul style="list-style-type: none"> <li>● Summarize and Describe Distributions;; Understand Variability</li> </ul>	<p><b>30 Days- ongoing</b></p>
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<p><b>Critical Area 1: Ratios and Proportional Relationships</b></p>	<p><b>Duration: 40 Days- ongoing</b></p>
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**Standards/Learning Targets**

**New Jersey Student Learning Standards: (Chapter 5)**

6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.”

6.RP.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. For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is  $3/4$  cup of flour for each cup of sugar.” “We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.”<sup>1</sup>

6.RP.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 line diagrams, or equations.

6.RP.3a 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

6.RP.3b Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?

6.RP.3c 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.

6.RP.3d Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

**Standards for Mathematical Practice:**

- MP.1 Make sense of problems and persevere in solving them.
- MP.4 Model with mathematics.
- MP.5 Use appropriate tools strategically.
- MP.6 Attend to precision.

**Interdisciplinary Connections:**

**ELA:**

- SL.6.3. Deconstruct a speaker’s argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.

**Career Ready Practices:**

- CRP1. Act as a responsible and contributing citizen and employee.

- CRP4. Communicate clearly and effectively and with reason.
- CRP12. Work productively in teams while using cultural global competence.

**21st Century Life and Career Standards:**

- 9.1.4.A.1- Explain the difference between a career and a job, and identify various jobs in the community and the related earnings.

**Technology:**

- 8.1.2.A.1 Identify the basic features of a digital device and explain its purpose.
- 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
- 8.2.2.C.1 Brainstorm ideas on how to solve a problem or build a product
- 8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.
- 8.2.2.E.1 List and demonstrate the steps to an everyday task

**Modifications and Accommodations**

**English Language Learners:**

- Simplify written and verbal instructions
- Provide written directions with models and diagrams when possible
- Build in more group work to allow ELL students to interact and communicate with peers
- Provide vocabulary ahead of time
- Use sentence frames to give students practice with academic language
- Pre-teach as often as possible- share videos, articles, vocabulary etc. with ELL students prior to use in class
- Utilize visual charts/cues
- Highlight key words
- Provide manipulatives
- Frequently check for understanding

**Special Education/Students with Disabilities:**

- Follow specific students accommodations and modifications as listed in individual student IEP
- Provide opportunities for movement
- Have manipulatives and other math resources available for student use
- Incorporate small group instruction
- Utilize visual charts/cues
- Facilitate successful experiences
- Provide tutoring if needed
- Provide positive praise to increase motivation
- Answers to be dictated
- Frequent rest breaks
- Additional time
- Oral testing
- Untimed tests
- Choice of test format (multiple-choice, essay, true-false)

**504:**

- Follow specific students accommodations and modifications as listed in individual student 504
- Provide opportunities for movement
- Have manipulatives and other math resources available for student use

- Incorporate small group instruction
- Utilize visual charts/cues
- Facilitate successful experiences
- Provide tutoring if needed
- Provide positive praise to increase motivation
- Answers to be dictated
- Frequent rest breaks
- Additional time
- Oral testing
- Untimed tests
- Choice of test format (multiple-choice, essay, true-false)

**Students at Risk of Failure:**

- Ensure child has access to all appropriate academic resources both in school and at home
- Provide structure and adhere to a consistent daily routine with clear and concise rules
- Facilitate successful experiences
- Provide tutoring if needed
- Allow students to complete assignments in school
- Do not penalize for late or missing assignments/materials
- Offer encouragement and understanding
- Allow students to have personal possessions and property in school
- Give choice to provide a sense of control

**Economically Disadvantaged:**

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input

**Culturally Diverse:**

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Teach study skills
- Provided students with necessary academic resources and materials
- Allow for alternative assignments
- Provide visuals
- Assign peer tutor
- Support verbal explanations with non verbal cues: Gestures/ facial expressions, props, realia, manipulatives, concrete materials, visuals, graphs, pictures, maps
- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education
- Communicate high expectations for the success of all students
- Integrate the arts into learning activities

## Knowledge & Skills

### Enduring Understandings:

- Understand ratio concepts and use ratio reasoning to solve problems
- Ratios compare two values.
- Unit rates are  $a/b$  given that the ratio is  $a:b$ , such that  $b \neq 0$ .

### Essential Questions:

- Why does one need to compare numbers?
- When does one need to use ratios to compare numbers?
- How can one compare and contrast numbers?

## Core Instructional & Supplemental Materials

### Suggested Activities/Resources:

- [Happy Numbers](#)
- [Reflex Math](#)
- [Better Lessons](#)
  - [Number & Operations in Base Ten](#)
  - [Operations & Algebraic Thinking](#)
- ST Math
- Self-reflection
- Math Center Activities
- Math Games
- Draw and Show
- Math Journals
- Bedtime Math
- Xtra Math
- Number Rock
- Math Antics
- Khan Academy
- Prodigy

### Varied Levels of Text:

*Sea Creatures: Solving Equations And Inequalities* Barker, Lori T.  
*Guides To Space* Robertson, Kay  
*STEM Guides To Travel* Robertson, Kay  
*Where Germs Lurk: Writing, Simplifying, And Evaluating Expressions* Barker, Lori T  
*Grandpa's Birthday Present* McMillan, Dawn  
*Percents And Ratios* Wingard-Nelson, Rebecca P.  
*Pythagoras And The Ratios: A Math Adventure* Ellis, Julie  
*Save Now, Buy Later: Finding Unit Prices* Brunner-Jass, Renata W  
*How Do They Make That? Fractions, Decimals, And Percents* Barker, Lori T  
*Shipwreck Detectives Wall*, Julia S  
*Geometry* Wingard-Nelson, Rebecca  
*Package Design: Surface Area And Volume* Lane, Chloe  
*A Sense Of Art: Perimeter And Area* Dugan, Christine S  
*Data, Graphing, And Statistics Smarts!* Wingard-Nelson, Rebecca  
*The Runaway Puppy: A Mystery With Probability* Barriman, Lydia  
*STEM Guides To Weather* Robertson, Kay  
*That's A Possibility! A Book About What Might Happen* Goldstone, Bruce AD

## Evidence of Student Learning

<p><b>Formative Tasks:</b></p> <ul style="list-style-type: none"> <li>● Solve and Share</li> <li>● Quick Check quizzes</li> <li>● Daily Review</li> <li>● Cooperative group learning</li> <li>● Exit slips</li> <li>● Analysis of student work</li> <li>● Teacher observations/anecdotal/checklists</li> <li>● Self-reflection</li> <li>● Math journals</li> </ul>	<p><b>Alternative Assessments:</b></p> <ul style="list-style-type: none"> <li>● Performance Tasks</li> <li>● Student created models</li> <li>● Written/verbal explanations</li> <li>● Peer assessment</li> <li>● Self-assessment</li> </ul>
<p><b>Summative Assessments:</b></p> <ul style="list-style-type: none"> <li>● Topic tests</li> <li>● Extension Projects</li> <li>● Topic Performance Assessment</li> </ul>	<p><b>Benchmark Assessments:</b></p> <ul style="list-style-type: none"> <li>● Beginning of the year, mid year, and end of the year</li> </ul>

<p><b>Critical Area 2: The Number System</b></p>	<p><b>Duration: 30 Days- ongoing</b></p>
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**Standards/Learning Targets**

**New Jersey Student Learning Standards:**

6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for  $(\frac{2}{3}) \div (\frac{3}{4})$  and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that  $(\frac{2}{3}) \div (\frac{3}{4}) = \frac{8}{9}$  because  $\frac{3}{4}$  of  $\frac{8}{9}$  is  $\frac{2}{3}$ . (In general,  $(\frac{a}{b}) \div (\frac{c}{d}) = \frac{ad}{bc}$ ). How much chocolate will each person get if 3 people share  $\frac{1}{2}$  lb of chocolate equally? How many  $\frac{3}{4}$ - cup servings are in  $\frac{2}{3}$  of a cup of yogurt? How wide is a rectangular strip of land with length  $\frac{3}{4}$  mi and area  $\frac{1}{2}$  square mi?

6.NS.2 Fluently divide multi-digit numbers using the standard algorithm.

6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

6.NS.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. For example, express  $36 + 8$  as  $4(9 + 2)$ .

6.NS.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.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.

6.NS.6a 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

6.NS.6b 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.

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

6.NS.7a Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret  $-3 > -7$  as a statement that  $-3$  is located to the right of  $-7$  on a number line oriented from left to right

6.NS.7b Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write  $-3^{\circ}\text{C} > -7^{\circ}\text{C}$  to express the fact that  $-3^{\circ}\text{C}$  is warmer than  $-7^{\circ}\text{C}$ .

6.NS.7c Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real world situation. For example, for an account balance of  $-30$  dollars, write  $|-30| = 30$  to describe the size of the debt in dollars.

6.NS.7d Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than  $-30$  dollars represents a debt greater than 30 dollars.

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

6.ee.1 Write and evaluate numerical expressions involving whole-number exponents.

6.ee.2 Write, read, and evaluate expressions in which letters stand for numbers.

6.ee.2b 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. For example, describe the expression  $2(8 + 7)$  as a product of two factors; view  $(8 + 7)$  as both a single entity and a sum of two terms.

**Standards for Mathematical Practice:**

- MP.3 Construct viable arguments and critique the reasoning of others.
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**Interdisciplinary Connections:**

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## Knowledge & Skills

### Enduring Understandings:

- Apply and extend previous understandings of multiplication and division to divide fractions by fractions
- Compute fluently with multi-digit numbers and find common factors and multiples
- Apply and extend previous understandings of numbers to the system of rational numbers

### Essential Questions:

- What is represented by division of a fraction by a fraction?
- What type of visual models can be used to represent division of fractions?
- How are division and multiplication of a fraction by a fraction related?
- Why would one need to find common factors and multiples?
- In what situation would one want to use the distributive property to add two whole numbers?
- What type(s) of problems require using multi-digit decimal operations?
- What are some rational numbers around us?
- What are some non-rational numbers around us?
- How can ordering of rational numbers help to make sense of the world around us?
- When is the absolute value of a rational number used in real life?

## Core Instructional & Supplemental Materials

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*Save Now, Buy Later: Finding Unit Prices* Brunner-Jass, Renata W  
*How Do They Make That? Fractions, Decimals, And Percents* Barker, Lori T  
*Shipwreck Detectives* Wall, Julia S

	<p> <i>Geometry</i> Wingard-Nelson, Rebecca  <i>Package Design: Surface Area And Volume</i> Lane, Chloe  <i>A Sense Of Art: Perimeter And Area</i> Dugan, Christine S  <i>Data, Graphing, And Statistics Smarts!</i> Wingard-Nelson, Rebecca  <i>The Runaway Puppy: A Mystery With Probability</i> Barriman, Lydia  <i>STEM Guides To Weather</i> Robertson, Kay  <i>That's A Possibility! A Book About What Might Happen</i> Goldstone, Bruce AD </p> <p> Marilyn Burns Math Library List  <a href="http://teacher.scholastic.com/reading/bestpractices/pdfs/mbmath_TitleList.pdf">http://teacher.scholastic.com/reading/bestpractices/pdfs/mbmath_TitleList.pdf</a> </p>
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Critical Area 3: Expressions and Equations

Duration:40 Days- ongoing

**Standards/Learning Targets**

**New Jersey Student Learning Standards:**

6.NS.2 Fluently divide multi-digit numbers using the standard algorithm.

6.NS.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. For example, express  $36 + 8$  as  $4(9 + 2)$ .

6.NS.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.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.

6.NS.6a 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

6.NS.6b 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.

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

6.NS.7a Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret  $-3 > -7$  as a statement that  $-3$  is located to the right of  $-7$  on a number line oriented from left to right

6.NS.7b Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write  $-3 \text{ } ^\circ\text{C} > -7 \text{ } ^\circ\text{C}$  to express the fact that  $-3 \text{ } ^\circ\text{C}$  is warmer than  $-7 \text{ } ^\circ\text{C}$ .

6.NS.7c Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real world situation. For example, for an account balance of  $-30$  dollars, write  $|-30| = 30$  to describe the size of the debt in dollars.

6.NS.7d Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than  $-30$  dollars represents a debt greater than 30 dollars.

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

6.ee.1 Write and evaluate numerical expressions involving whole-number exponents.

6.ee.2 Write, read, and evaluate expressions in which letters stand for numbers.

6.ee.2a Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation "Subtract  $y$  from 5" as  $5 - y$ .

6.ee.2b 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. For example, describe the expression  $2(8 + 7)$  as a product of two factors; view  $(8 + 7)$  as both a single entity and a sum of two terms

6.ee.2c Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those New Jersey Student Learning Standards for Mathematics 44 involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas  $V = s^3$  and  $A = 6s^2$  to find the volume and surface area of a cube with sides of length  $s = 1/2$ .

6.ee.3 Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression  $3(2 + x)$  to produce the equivalent expression  $6 + 3x$ ; apply the distributive property to the expression  $24x + 18y$  to produce the equivalent expression  $6(4x + 3y)$ ; apply properties of operations to  $y + y + y$  to produce the equivalent expression  $3y$ .

6.ee.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). For example, the expressions  $y + y + y$  and  $3y$  are equivalent because they name the same number regardless of which number  $y$  stands for.

6.ee.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.

**Standards for Mathematical Practice:**

- MP.3 Construct viable arguments and critique the reasoning of others.
- MP.4 Model with mathematics.
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**Interdisciplinary Connections:**

**ELA:**

- SL.6.3. Deconstruct a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.

**Career Ready Practices:**

- CRP1. Act as a responsible and contributing citizen and employee.
- CRP4. Communicate clearly and effectively and with reason.
- CRP12. Work productively in teams while using cultural global competence.

**21st Century Life and Career Standards:**

- 9.1.4.A.1- Explain the difference between a career and a job, and identify various jobs in the community and the related earnings.

**Technology:**

- 8.1.2.A.1 Identify the basic features of a digital device and explain its purpose.
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- 8.2.2.C.1 Brainstorm ideas on how to solve a problem or build a product
- 8.1.2.E.1 Use digital tools and online resources to explore a problem or issue.
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## Modifications and Accommodations

### English Language Learners:

- Simplify written and verbal instructions
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- Allow students to complete assignments in school
- Do not penalize for late or missing assignments/materials
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- Allow students to have personal possessions and property in school
- Give choice to provide a sense of control

**Economically Disadvantaged:**

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**Culturally Diverse:**

- Involve families in student learning
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- Provided students with necessary academic resources and materials
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- Support verbal explanations with non verbal cues: Gestures/ facial expressions, props, realia, manipulatives, concrete materials, visuals, graphs, pictures, maps
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- Integrate the arts into learning activities

**Knowledge & Skills**

**Enduring Understandings:**

- Apply and extend previous understandings of arithmetic to algebraic expressions.
- Reason about and solve one-variable equations and inequalities.
- Represent and analyze quantitative relationships between dependent and independent variables.

**Essential Questions:**

- How are mathematical expressions in which letters stand for numbers useful in real life?
- What is the purpose of identifying equivalent expressions?
- What is the difference between an algebraic expression and an arithmetic expression?
- What is the difference between an equation and an inequality?

	<ul style="list-style-type: none"> <li>• What does it mean when a number does not satisfy an equation or inequality?</li> <li>• How is a relationship represented in tables?</li> <li>• How is a relationship represented in graphs?</li> <li>• How is a relationship represented in an equation?</li> <li>• How can one tell that there is a relationship between two quantities?</li> <li>• Why is it useful to write an equation to express one quantity in terms of another quantity?</li> </ul>
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**Core Instructional & Supplemental Materials**

<p><b>Suggested Activities/Resources:</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Happy Numbers</a></li> <li>• <a href="#">Reflex Math</a></li> <li>• <a href="#">Better Lessons</a> <ul style="list-style-type: none"> <li>• <a href="#">Number &amp; Operations in Base Ten</a></li> <li>• <a href="#">Operations &amp; Algebraic Thinking</a></li> </ul> </li> <li>• ST Math</li> <li>• Self-reflection</li> <li>• Math Center Activities</li> <li>• Math Games</li> <li>• Draw and Show</li> <li>• Math Journals</li> <li>• Bedtime Math</li> <li>• Xtra Math</li> <li>• Number Rock</li> <li>• Math Antics</li> <li>• Khan Academy</li> <li>• Prodigy</li> </ul>	<p>Varied Levels of Text:</p> <p><i>Sea Creatures: Solving Equations And Inequalities</i> Barker, Lori T.</p> <p><i>Guides To Space</i> Robertson, Kay</p> <p><i>STEM Guides To Travel</i> Robertson, Kay</p> <p><i>Where Germs Lurk: Writing, Simplifying, And Evaluating Expressions</i> Barker, Lori T</p> <p><i>Grandpa's Birthday Present</i> McMillan, Dawn O.</p> <p><i>Percents And Ratios</i> Wingard-Nelson, Rebecca P.</p>
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<b>Evidence of Student Learning</b>	
<p><b>Formative Tasks:</b></p> <ul style="list-style-type: none"> <li>● Solve and Share</li> <li>● Quick Check quizzes</li> <li>● Daily Review</li> <li>● Cooperative group learning</li> <li>● Exit slips</li> <li>● Analysis of student work</li> <li>● Teacher observations/anecdotal/checklists</li> <li>● Self-reflection</li> <li>● Math journals</li> </ul>	<p><b>Alternative Assessments:</b></p> <ul style="list-style-type: none"> <li>● Performance Tasks</li> <li>● Student created models</li> <li>● Written/verbal explanations</li> <li>● Peer assessment</li> <li>● Self-assessment</li> </ul>
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<b>Critical Area 4: Geometry</b>	<b>Duration: 40 Days- ongoing</b>
<b>Standards/Learning Targets</b>	
<p><b>New Jersey Student Learning Standards:</b></p> <p>6.G.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.</p> <p>6.G.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 <math>V = l w h</math> and <math>V = B h</math> to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.</p> <p>6.G.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.</p> <p>6.G.4 Represent three-dimensional figures 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.</p> <p><b>Standards for Mathematical Practice:</b></p> <ul style="list-style-type: none"> <li>● MP.1 Make sense of problems and persevere in solving them.</li> <li>● MP.2 Reason Abstractly and quantitatively.</li> <li>● MP.4 Model with mathematics.</li> <li>● MP.5 Use appropriate tools strategically.</li> <li>● MP.6 Attend to precision.</li> </ul>	

<p><b>Interdisciplinary Connections:</b></p> <p><b>ELA:</b></p> <ul style="list-style-type: none"> <li>● SL.6.3. Deconstruct a speaker’s argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.</li> </ul> <p><b>Career Ready Practices:</b></p> <ul style="list-style-type: none"> <li>● CRP1. Act as a responsible and contributing citizen and employee.</li> <li>● CRP4. Communicate clearly and effectively and with reason.</li> <li>● CRP12. Work productively in teams while using cultural global competence.</li> </ul> <p><b>21st Century Life and Career Standards:</b></p> <ul style="list-style-type: none"> <li>● 9.1.4.A.1- Explain the difference between a career and a job, and identify various jobs in the community and the related earnings.</li> </ul> <p><b>Technology:</b></p> <ul style="list-style-type: none"> <li>● 8.1.2.A.1 Identify the basic features of a digital device and explain its purpose.</li> <li>● 8.1.2.A.4 Demonstrate developmentally appropriate navigation skills in virtual</li> </ul>
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**Knowledge & Skills**

**Enduring Understandings:**

- Solve real-world and mathematical problems involving area, surface area, and volume
- triangles and rectangles can be used to

**Essential Questions:**

- Why would one want to calculate areas of polygons?
- How are areas of polygons found?
- How are volume and surface area of a

<p>find areas of other polygons</p> <ul style="list-style-type: none"> <li>• a 2-D net of a 3-D figure can be used to find the surface area of the figure</li> <li>• surface area is related to “wrapping” or “covering” of a surface with square units, i.e. squares with side length of one unit</li> <li>• volume is related to “filling” of space with cubic units, i.e. cubes with edges of one-unit length</li> </ul>	<p>right rectangular prism found?</p> <ul style="list-style-type: none"> <li>• Are volumes represented in cubic units?</li> <li>• What is the connection between the net and surface area of 3-D figures?</li> </ul>
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- Performance Tasks
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**Summative Assessments:**

- Topic tests
- Extension Projects
- Topic Performance Assessment

**Benchmark Assessments:**

- Beginning of the year, mid year, and end of the year

<b>Critical Area 5: Statistics and Probability</b>	<b>Duration: 30 Days- ongoing</b>
<b>Standards/Learning Targets</b>	
<p><b>New Jersey Student Learning Standards:</b></p> <p>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. For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages.</p> <p>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.</p> <p>6.SP.A.3- Recognize that a measure of 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.</p> <p>6.SP.B.4- Display numerical data in plots on a number line, including dot plots, histograms, and box plots.</p> <p>6.SP.B.5-Summarize numerical data sets in relation to their context, such as by:</p> <p>6.SP.B.5a- Reporting the number of observations.</p> <p>6.SP.B.5b- Describing the nature of the attribute under investigation, including how it was measured and its units of measurement</p> <p>6.SP.B.5c- 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.</p> <p>6.SP.B.5d- 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.</p> <p><b>Standards for Mathematical Practice:</b></p> <ul style="list-style-type: none"> <li>● MP.1 Make sense of problems and persevere in solving them.</li> <li>● MP.2 Reason Abstractly and quantitatively.</li> <li>● MP.3 Construct viable arguments and critique the reasoning of others.</li> <li>● MP.4 Model with mathematics.</li> <li>● MP.5 Use appropriate tools strategically.</li> <li>● MP.6 Attend to precision.</li> <li>● MP.7 Look for and make use of structure.</li> </ul>	

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## Knowledge & Skills

### Enduring Understandings:

- Develop understanding of statistical variability.
- Summarize and describe distributions.

### Essential Questions:

- What is a statistical question?
- What is a distribution?
- What is the difference between the center and the spread of a numerical set?
- How are data sets described?
- How do measures of center and variability help us make sense of the world around us?
- In what contexts are the measures of center and variability preferred descriptions of the data?
- Why do we need multiple ways of describing numerical data?

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<b>Evidence of Student Learning</b>	
<p><b>Formative Tasks:</b></p> <ul style="list-style-type: none"> <li>● Solve and Share</li> <li>● Quick Check quizzes</li> <li>● Daily Review</li> <li>● Cooperative group learning</li> <li>● Exit slips</li> <li>● Analysis of student work</li> <li>● Teacher observations/anecdotal/checklists</li> <li>● Self-reflection</li> <li>● Math journals</li> </ul>	<p><b>Alternative Assessments:</b></p> <ul style="list-style-type: none"> <li>● Performance Tasks</li> <li>● Student created models</li> <li>● Written/verbal explanations</li> <li>● Peer assessment</li> <li>● Self-assessment</li> </ul>
<p><b>Summative Assessments:</b></p> <ul style="list-style-type: none"> <li>● Topic tests</li> <li>● Extension Projects</li> <li>● Topic Performance Assessment</li> </ul>	<p><b>Benchmark Assessments:</b></p> <ul style="list-style-type: none"> <li>● Beginning of the year, mid year, and end of the year</li> </ul>