Original Adoption:	School Year 2017-2018
Revised On:	July / August 2019
Board Approved:	August 21, 2019

6th grade non-tracked Mathematics Curriculum Documents

TIME PERIOD	UNIT	STANDARDS & STUDENT LEARNING OBJECTIVES	NJSLS CONCEPT
September and October (Days 1-30)	1- Number Operations	• 6.NS.2 • 6.NS.1 • 6.NS.3 • 6.NS.4	**NS.A. The Number System**: Apply and extend previous understandings of multiplication and division to divide fractions. **NS.B. The Number System:** Compute fluently with multi-digit numbers and find common factors and multiples.
October and November (Days 31-54)	2 - Number Systems	• 6.NS.5 • 6.NS.6a • 6.NS.6c • 6.NS.7a • 6.NS.7b • 6.NS.7c • 6.NS.7d • 6.NS.8 • 6.NS.6b	**NS.C The Number System** Apply and extend previous understandings of numbers to the system of rational numbers.
December through January (Days 55-88)	3- Ratio and Rates	• 6.RP.1 • 6.RP.3 • 6.RP.3a • 6.RP.2 • 6.RP.3b • 6.RP.3c • 6.RP.3d	**RP.A Ratios and Proportional Relationships** Understand ratio concepts and use ratio reasoning to solve problems.
February and March (Days 89-115)	4- Expressions	• 6.EE.1 • 6.EE.2a • 6.EE.2b • 6.EE.2c	**EE Expressions and Equations** **6.EE.A** Apply and extend previous understandings of arithmetic to algebraic expressions.

		• 6.EE.3 • 6.EE.4	
March and April (Days 116-131)	5- Equations and Inequalities	• 6.EE.6 • 6.EE.7 • 6.EE.8 • 6.EE.5 • 6.EE.9	**EE Expressions and Equations** **6.EE.B** Reason about and solve one-variable equations and inequalities. **6.EE.C** Represent and analyze quantitative relationships between dependent and independent variables.
April and May (Days 132-160)	6- Geometry	• 6.G.1 • 6.G.3 • 6.G.2 • 6.G.4	**G Geometry** **6.G.A** Solve real-world and mathematical problems involving area, surface area, and volume.
May and June (Days 161-181)	7- Statistics and Data Displays	• 6.SP.1 • 6.SP.4 • 6.SP.5b • 6.SP.2 • 6.SP.3 • 6.SP.5a • 6.SP.5c • 6.SP.5d	**SP Statistics and Probability** **6.SP.A** Develop understanding of statistical variability. **6.SP.B** summarize and describe distributions.

Unit 1: THE NUMBER SYSTEM: Number Operations

Grade Level: 6 (NT)

Timeframe: 40 days	
Unit Essential Questions: ● What is represented by the division of a fraction by a fraction? ● What type of visual models can be used to represent the division of fractions? ● How are division and multiplication of a fraction by a fraction related?	**Unit Enduring Understandings:** *Students will understand that…* ● Understand that the size of a divisor affects the size of the quotient. ● Division of a fraction by a proper fraction creates a larger answer.
Primary Interdisciplinary Connections: Infused within the unit are connections to the content standards for English Language Arts and Technology, specifically: **NJSLS:** ● **RI.6.1.** Cite textual evidence and make relevant connections to support analysis of what the text says explicitly as well as inferences drawn from the text ● **RI.6.7**. Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue. ● **RI.6.8**. Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not. ● 8.1.8.D.1 ● 8.1.8.D.4 ● 8.1.8.E.1	**21st Century Career Ready Practices:** Through well-planned, student-based instruction models, students will develop the attributes that will prepare them for life as citizens and workers in the 21st century: ● CRP2 - Apply appropriate academic and technical skills. ● CRP4 - Communicate clearly and effectively and with reason. ● CRP8 - Utilize critical thinking to make sense of problems and persevere in solving them. ● CRP11 - Use technology to enhance productivity. ● CRP12 - Work productively in teams while using cultural global competence. ● **9.1.8.C.5** Calculate the cost of borrowing various amounts of money using different types of credit (e.g., credit cards, installment loans, mortgages). ● **9.1.8.D.3** Differentiate among various investment options ● **9.2.8.B.2** Develop a Personalized Student Learning Plan with the assistance of an adult mentor that includes information about career areas of interest, goals and an educational plan.
Standards for Mathematical Practices: The following Standards for Mathematical Practice will be covered throughout the unit: ● MP.1 - Make sense of problems and persevere in solving them. ● MP.2 - Reason abstractly and quantitatively. ● MP.3 - Construct viable arguments and critique the reasoning of others. ● MP.4 - Model with Mathematics. ● MP.5 - Use appropriate tools strategically. ● MP.6 - Attend to precision. ● MP.7 - Look for and make use of structure. ● MP.8 - Look for and express regularity in repeated reasoning.	**ISTE Standards:** **1. Empowered Learner** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences. Students: **2. Digital Citizen** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. **5. Computational Thinker** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

Learning Targets		
Content Standard	**StudentLearning Objectives** ***The students will be learning to...***	**Activities & Resources**
NJSLS 6.NS.A Apply and extend previous understandings of multiplication and division to divide fractions by fractions. 1. Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions	• Compute quotients of fractions. • Interpret quotients of fractions. • Solve word problems involving division of fractions.	• Big Ideas Chapter 1 Sections 1, 5, and 6. • Big Ideas Chapter 2 • Big Ideas Chapter 3 Section 4 and extension • Activities on the Team Drive: -The Laundry Problem • i-Ready • ResourcesTeacher made resources including Tpt created resources.
NJSLS 6.NS.B. Compute fluently with multi-digit numbers and find common factors and multiples. 2. Fluently divide multi-digit numbers using the standard algorithm.	• Fluently divide using the standard algorithm.	
3. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	• Fluently add multi-digit decimals using the standard algorithm. • Fluently subtract multi-digit decimals using the standard algorithm. • Fluently multiply multi-digit decimals using the standard algorithm. • Fluently divide multi-digit decimals using the standard algorithm.	
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	• Find the greatest common factor of two whole numbers less than or equal to 100. • Find the least common multiple of two whole numbers less than or equal to 12. • Use the distributive property to express a sum of	

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.	two whole numbers 1-100 with a common factor as a multiple of the sum of two whole numbers with no common factor. Ex. 36+ 8 as 4(9+2)	

Evidence of Learning			
Assessment			
Formative Assessments may include: ● Observation ● Homework ● Class participation ● Whiteboards/communicators ● Do-Now ● Notebook ● Exit passes	**Benchmark Assessments may include:** ● Beginning of Year i-Ready Diagnostic ● Quarterly Portfolio ● NJSLA	**Summative Assessments may include:** ● Chapter/Unit Test ● Quizzes ● Presentations ● i-Ready quizzes ● NJSLA	**Alternative Assessments may include:** ● Authentic Performance Tasks ● Unit Projects
Modifications & Reflections			
Suggested Options for Differentiation *English Language Learners* ● Peer tutoring ● Manipulatives ● Use of Home Language ● Limiting Concepts or Vocabulary ● Providing Visuals *Students at Risk of Failure* ● Extended Time ● Flexible Grouping ● Small Group Instruction ● Peer Buddies ● Graphic Organizers			

- Chunking Information
- Scaffolded Questioning
- Tiered Activities
- Centers in Academic Activity

Special Education

- Extension activities
- Opportunities for Critical Thinking
- Problem Solving/Design Challenges
- Technology Integration
- Student Choice Activities
- Student Driven Activities
- Group Projects
- Tiered Activities

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- Extension activities
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- Technology Integration
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Gifted & Talented

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Unit 2: THE NUMBER SYSTEM~Rational Numbers	
Grade Level: 6 (NT)	
Timeframe: 15 days	
Unit Essential Questions:	**Unit Enduring Understandings:**

• What are some rational numbers around us? • What are some non-rational numbers around us? • How can the 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?	*Students will understand that…* • Positive and negative numbers are used together to describe quantities having opposite directions or values. • A rational number is a point on a number line. • Rational numbers on the right (+) are oriented from left to right. • Rational numbers on the left (-) are oriented from right to left. • The absolute value of a rational number is its distance from 0 on the number line. • The distance from a point on the coordinate plane to the origin (0,0) is related to the absolute value of its x and y coordinates.
Primary Interdisciplinary Connections: Infused within the unit are connections to the content standards for English Language Arts and Technology, specifically: **NJSLS:** • **RI.6.1.** Cite textual evidence and make relevant connections to support analysis of what the text says explicitly as well as inferences drawn from the text • **RI.6.7**. Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue. • **RI.6.8**. Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not. • 8.1.8.D.1 • 8.1.8.D.4 • 8.1.8.E.1	**21st Century Career Ready Practices:** Through well-planned, student-based instruction models, students will develop the attributes that will prepare them for life as citizens and workers in the 21st century: • CRP2 - Apply appropriate academic and technical skills. • CRP4 - Communicate clearly and effectively and with reason. • CRP8 - Utilize critical thinking to make sense of problems and persevere in solving them. • CRP11 - Use technology to enhance productivity. • CRP12 - Work productively in teams while using cultural global competence. • **9.1.8.B.2** Construct a simple personal savings and spending plan based on various sources of income. • **9.1.8.D.2** Differentiate among various savings tools and how to use them most effectively.
Standards for Mathematical Practices: The following Standards for Mathematical Practice will be covered throughout the unit: • MP.1 - Make sense of problems and persevere in solving them. • MP.2 - Reason abstractly and quantitatively. • MP.3 - Construct viable arguments and critique the reasoning of others. • MP.4 - Model with Mathematics. • MP.5 - Use appropriate tools strategically. • MP.6 - Attend to precision. • MP.7 - Look for and make use of structure. • MP.8 - Look for and express regularity in repeated reasoning.	**ISTE Standards:** **1. Empowered Learner** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences. Students: **2. Digital Citizen** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. **5. Computational Thinker** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

Learning Targets		
Content Standard	**Student Learning Objectives** ***The students will be learning to...***	**Activities & Resources**
NJSLS.6.NS.C. Apply and extend previous understandings of numbers to the system of rational numbers. 5. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values	• Use positive and negative numbers to represent quantities in real-world contexts. • Explain the meaning of 0 in situations using positive and negative numbers.	• Big Ideas Chapter 6 • Supporting Understanding Positive vs. Negative Numbers station activity- Team Drive • i-Ready Resources • Teacher made resources including Tpt created resources.
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.	• Extend number-line diagrams and coordinate axes to represent points on the line and in the plane with negative number coordinates. • 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.	
7. Understand ordering and absolute value of rational numbers.	• Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. • Write, interpret, and explain statements of order for rational numbers in real-world contexts. • Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. • Distinguish comparisons of absolute value from statements about order. • Solve real-world and mathematical problems by graphing points in all four quadrants of the	

	coordinate plane. ● Find distances between points with the same first coordinate or the same second coordinate.	

Evidence of Learning			
Assessment			
Formative Assessments may include: ● Observation ● Homework ● Class participation ● Whiteboards/communicators ● Do-Now ● Notebook ● Exit passes	**Benchmark Assessments may include:** ● Quarterly Portfolio ● NJSLA	**Summative Assessments may include:** ● Chapter/Unit Test ● Quizzes ● Presentations ● i-Ready quizzes ● NJSLA	**Alternative Assessments may include:** ● Authentic Performance Tasks ● Unit Projects
Modifications & Reflections			
Suggested Options for Differentiation *English Language Learners* ● Peer tutoring ● Manipulatives ● Use of Home Language ● Limiting Concepts or Vocabulary ● Providing Visuals *Students at Risk of Failure* ● Extended Time ● Flexible Grouping ● Small Group Instruction ● Peer Buddies ● Graphic Organizers ● Chunking Information ● Scaffolded Questioning ● Tiered Activities ● Centers in Academic Activity *Special Education* ● Extension activities			

- Opportunities for Critical Thinking
- Problem Solving/Design Challenges
- Technology Integration
- Student Choice Activities
- Student Driven Activities
- Group Projects
- Tiered Activities

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- Extension activities
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Gifted & Talented

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Unit 3: RATIOS and PROPORTIONS

Grade Level: 6

Timeframe: 15 days

Unit Essential Questions:

- When is it useful to relate one quantity to another?
- What is the best way to compare two quantities?
- How are ratio and rate similar and different?
- What is the connection between a ratio and a fraction?

Unit Enduring Understandings:

Students will understand that…

- A ratio expresses the comparison between two quantities. Special types of ratios are rates, unit rates, and percent.
- A rate is a type of ratio that represents one measure, quantity, or frequency measured against another type of measure, quantity, or

	frequency. ● Ratio and rate reasoning can be applied to many different types of mathematical and real-life problems.
Primary Interdisciplinary Connections: Infused within the unit are connections to the content standards for English Language Arts and Technology, specifically: **NJSLS:** ● **RI.6.1.** Cite textual evidence and make relevant connections to support analysis of what the text says explicitly as well as inferences drawn from the text ● **RI.6.7**. Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue. ● **RI.6.8**. Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not. ● 8.1.8.D.1 ● 8.1.8.D.4 ● 8.1.8.E.1	**21st Century Career Ready Practices:** Through well-planned, student-based instruction models, students will develop the attributes that will prepare them for life as citizens and workers in the 21st century: ● CRP2 - Apply appropriate academic and technical skills. ● CRP4 - Communicate clearly and effectively and with reason. ● CRP8 - Utilize critical thinking to make sense of problems and persevere in solving them. ● CRP11 - Use technology to enhance productivity. ● CRP12 - Work productively in teams while using cultural global competence. ● **9.1.8.E.5** Analyze interest rates and fees associated with financial services, credit cards, debit cards, and gift cards. ● **9.1.8.B.8** Develop a system for keeping and using financial records. ● **9.1.8.D.4** Distinguish between income and investment growth. ● **9.1.8.C.5** Calculate the cost of borrowing various amounts of money using different types of credit (e.g., credit cards, installment loans, mortgages).
Standards for Mathematical Practices: The following Standards for Mathematical Practice will be covered throughout the unit: ● MP.1 - Make sense of problems and persevere in solving them. ● MP.2 - Reason abstractly and quantitatively. ● MP.3 - Construct viable arguments and critique the reasoning of others. ● MP.4 - Model with Mathematics. ● MP.5 - Use appropriate tools strategically. ● MP.6 - Attend to precision. ● MP.7 - Look for and make use of structure. ● MP.8 - Look for and express regularity in repeated reasoning.	**ISTE Standards:** **1. Empowered Learner** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences. Students: **2. Digital Citizen** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. **5. Computational Thinker** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

Learning Targets

Content Standard	Student Learning Objectives *The students will be learning to...*	Activities & Resources
NJSLS6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.	• Use ratio and rate reasoning to solve real-world and mathematical problems. • Make tables of equivalent ratios, tape diagrams, double number lines. • Represent ratios using manipulatives and/or pictures.	• Big Ideas Grade 6 Chapter 5 • i-Ready Resources • Teacher made resources including Tpt created resources.
NJSLS6.RP.2 Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship.	• Represent unit rate associated with ratios using visuals, charts, or graphs. • Make and interpret tables of equivalent ratios. • Create equivalent ratios using models, manipulatives, and numbers • Create unit rates and understand when using unit rates is reasonable strategy.	
NJSLS6.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.	• Use multiple representations to solve ratio problems.	

Evidence of Learning
Assessment

PERFORMANCE TASK(S):

- Students will group objects based on similarities and differences and find a way to communicate their reasoning and evidence.
- Illustrate and show representations of ratios explaining the steps that they took to arrive at their model.
- Students will represent ratios in a variety of ways.
- Students will demonstrate knowledge of equivalent fractions/ratios by creating proportional ratio relationships.
- Students will evaluate their own learning.

Formative Assessments may include:	**Benchmark Assessments may include:**	**Summative Assessments may include:**	**Alternative Assessments may include:**
● Observation ● Homework ● Class participation ● Whiteboards/communicators ● Do-Now ● Notebook ● Exit passes	● Quarterly Portfolio ● NJSLA	● Chapter/Unit Test ● Quizzes ● Presentations ● i-Ready quizzes ● NJSLA	● Authentic Performance Tasks ● Unit Projects

Modifications & Reflections

Suggested Options for Differentiation

English Language Learners

- Peer tutoring
- Manipulatives
- Use of Home Language
- Limiting Concepts or Vocabulary
- Providing Visuals

Students at Risk of Failure

- Extended Time
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Chunking Information
- Scaffolded Questioning
- Tiered Activities
- Centers in Academic Activity

Special Education

- Extension activities
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- Problem Solving/Design Challenges
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Gifted & Talented

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Unit 4: EXPRESSIONS

Grade Level: 6

Timeframe: 15 days

Unit 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 algebraic expressions and arithmetic expressions?

Unit Enduring Understandings:

Students will understand that…

- Algebraic expressions have letters that stand for numbers and arithmetic expressions have only numbers and no letters.
- Numbers can be substituted in place of letters in algebraic expressions.
- Algebraic expressions can be equivalent to each other
- Area, perimeter, or volume formulas are algebraic expressions.
- Verbal sentences or expressions can be written as algebraic

	expressions.
Primary Interdisciplinary Connections: Infused within the unit are connections to the content standards for English Language Arts and Technology, specifically: **NJSLS:** ● **RI.6.1.** Cite textual evidence and make relevant connections to support analysis of what the text says explicitly as well as inferences drawn from the text ● **RI.6.7**. Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue. ● **RI.6.8**. Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not. ● 8.1.8.D.1 ● 8.1.8.D.4 ● 8.1.8.E.1	**21st Century Career Ready Practices:** Through well-planned, student-based instruction models, students will develop the attributes that will prepare them for life as citizens and workers in the 21st century: ● CRP2 - Apply appropriate academic and technical skills. ● CRP4 - Communicate clearly and effectively and with reason. ● CRP8 - Utilize critical thinking to make sense of problems and persevere in solving them. ● CRP11 - Use technology to enhance productivity. ● CRP12 - Work productively in teams while using cultural global competence. ● **9.1.8.E.6** Compare the value of goods or services from different sellers when purchasing large quantities and small quantities. ● **9.1.8.B.2** Construct a simple personal savings and spending plan based on various sources of income. ● **9.1.8.D.2** Differentiate among various savings tools and how to use them most effectively.
Standards for Mathematical Practices: The following Standards for Mathematical Practice will be covered throughout the unit: ● MP.1 - Make sense of problems and persevere in solving them. ● MP.2 - Reason abstractly and quantitatively. ● MP.3 - Construct viable arguments and critique the reasoning of others. ● MP.4 - Model with Mathematics. ● MP.5 - Use appropriate tools strategically. ● MP.6 - Attend to precision. ● MP.7 - Look for and make use of structure. ● MP.8 - Look for and express regularity in repeated reasoning.	**ISTE Standards:** **1. Empowered Learner** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences. Students: **2. Digital Citizen** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. **5. Computational Thinker** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

Learning Targets

Domain: Expressions and Equations

Cluster: Apply and extend previous understandings of arithmetic to algebraic expressions

Content Standard	Student Learning Objectives *The students will be learning to...*	Activities & Resources
NJSLS6.EE.A.1 Write and evaluate numerical expressions involving whole-number exponents.	• Write numerical expressions involving whole-number exponents.	• Big Ideas Chapter 3 section 1-3 • Stations Supporting Commutative and Associative Properties + Substitution (Team Drive) • i-Ready Resources • Teacher made resources including Tpt created resources.
NJSLS6.EE.A.2 (a-c) Write, read, and evaluate expressions in which letters stand for numbers.	• Write numerical expressions in which letters stand for numbers. • Read expressions in which letters stand for numbers. • Evaluate expressions in which letters stand for numbers. • Write expressions that record operations with numbers and with letters standing for numbers. • 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.	
NJSLS6.EE.A.3 Apply the properties of operations to generate equivalent expressions.	• 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. • Apply the properties of operations to generate equivalent expressions and identify when two expressions are equivalent.	

Evidence of Learning			
Assessment			
Formative Assessments may include: • Observation • Homework	**Benchmark Assessments may include:** • Middle of the Year i-Ready Diagnostic	**Summative Assessments may include:** • Chapter/Unit Test • Quizzes	**Alternative Assessments may include:** • Authentic Performance Tasks • Unit Projects

• Class participation • Whiteboards/communicators • Do-Now • Notebook • Exit passes	• Quarterly Portfolio • NJSLA	• Presentations • i-Ready quizzes • NJSLA	

Modifications & Reflections

Suggested Options for Differentiation

English Language Learners

- Peer tutoring
- Manipulatives
- Use of Home Language
- Limiting Concepts or Vocabulary
- Providing Visuals

Students at Risk of Failure

- Extended Time
- Flexible Grouping
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Unit 5: EQUATIONS and INEQUALITIES

Grade Level: 6

Timeframe: 20 days

Unit Essential Questions:

- What is the difference between and equation and an inequality?
- What does it mean when a number does not satisfy an equation or inequality?
- How are mathematical relationships represented in tables, graphs, and equations?
- How can you tell if there is a relationship between two quantities?
- Why is it useful to write an equation to express one quantity in terms of another quantity?

Unit Enduring Understandings:

Students will understand that…

- Solving an equation or inequality will find the value(s) that will make the statement true.
- A variable can represent an unknown number.
- A variable can represent any number in a specified set.
- Quantities can change in relation to one another and the relationship can be expressed as an equation relating the two.
- Two quantities may or may not be related.

Primary Interdisciplinary Connections:

Infused within the unit are connections to the content standards for English Language Arts and Technology, specifically:

NJSLS:

- **RI.6.1.** Cite textual evidence and make relevant connections to support analysis of what the text says explicitly as well as inferences drawn

21st Century Career Ready Practices:

Through well-planned, student-based instruction models, students will develop the attributes that will prepare them for life as citizens and workers in the 21st century:

- CRP2 - Apply appropriate academic and technical skills.
- CRP4 - Communicate clearly and effectively and with reason.
- CRP8 - Utilize critical thinking to make sense of problems and

from the text • **RI.6.7**. Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue. • **RI.6.8**. Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not. • 8.1.8.D.1 • 8.1.8.D.4 • 8.1.8.E.1	persevere in solving them. • CRP11 - Use technology to enhance productivity. • CRP12 - Work productively in teams while using cultural global competence. • **9.1.8.D.2** Differentiate among various savings tools and how to use them most effectively. • **9.1.8.D.3** Differentiate among various investment options • **9.2.8.B.2** Develop a Personalized Student Learning Plan with the assistance of an adult mentor that includes information about career areas of interest, goals and an educational plan.
Standards for Mathematical Practices: The following Standards for Mathematical Practice will be covered throughout the unit: • MP.1 - Make sense of problems and persevere in solving them. • MP.2 - Reason abstractly and quantitatively. • MP.3 - Construct viable arguments and critique the reasoning of others. • MP.4 - Model with Mathematics. • MP.5 - Use appropriate tools strategically. • MP.6 - Attend to precision. • MP.7 - Look for and make use of structure. • MP.8 - Look for and express regularity in repeated reasoning.	**ISTE Standards:** **1. Empowered Learner** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences. Students: **2. Digital Citizen** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. **5. Computational Thinker** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

Learning Targets **Domain: Expressions and Equations** **Cluster: Reason about and solve one-variable equations and inequalities**		
Content Standard	**Student Learning Objectives** ***The students will be learning to...***	**Activities & Resources**
NJSLS6.EE.B.5 & 6 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	• Use substitution to determine whether a given number in a specified set makes an equation or inequality true. • Understand that a random number may not make an equation or inequality statement true.	

whether a given number in a specified set makes an equation or inequality true. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem		• Stations Supporting Representing and Solving 1-Variable Equations (Team Drive) • i-Ready • ResourcesTeacher made resources including Tpt created resources.
NJSLS6.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.	• Solve real-world and mathematical problems by writing and solving equations of the form x + p = q for cases in which p, q, and x are all nonnegative rational numbers. • Solve real-world and mathematical problems by writing and solving equations in the form of px = q for cases in which p, q, and x are all nonnegative rational numbers.	
NJSLS6.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.	• Understand that inequalities in the form of x > c or x < c have infinitely many solutions. • Understand that solutions of inequalities in the form of x> c or x < c can be represented as intervals on the number line.	
NJSLS6.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	• 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. • Use the equation of a relationship between two dependent and independent variable to predict ordered pairs that are not displaced in a given graph or table.	

these to the equation.		

Evidence of Learning			
Assessment			
Formative Assessments may include: ● Observation ● Homework ● Class participation ● Whiteboards/communicators ● Do-Now ● Notebook ● Exit passes	**Benchmark Assessments may include:** ● Quarterly Portfolio ● NJSLA	**Summative Assessments may include:** ● Chapter/Unit Test ● Quizzes ● Presentations ● i-Ready quizzes ● NJSLA	**Alternative Assessments may include:** ● Authentic Performance Tasks ● Unit Projects
Modifications & Reflections			

Suggested Options for Differentiation

English Language Learners

- Peer tutoring
- Manipulatives
- Use of Home Language
- Limiting Concepts or Vocabulary
- Providing Visuals

Students at Risk of Failure

- Extended Time
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Chunking Information
- Scaffolded Questioning
- Tiered Activities
- Centers in Academic Activity

Special Education

- Extension activities
- Opportunities for Critical Thinking

- Problem Solving/Design Challenges
- Technology Integration
- Student Choice Activities
- Student Driven Activities
- Group Projects
- Tiered Activities

504

- Extension activities
- Opportunities for Critical Thinking
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- Technology Integration
- Student Choice Activities
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- Group Projects
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Gifted & Talented

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- Opportunities for Critical Thinking
- Problem Solving/Design Challenges
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- Student Choice Activities
- Student Driven Activities
- Group Projects
- Tiered Activities

Unit 6: GEOMETRY

Grade Level: 6

Timeframe: 25 days

Unit Essential Questions:

- How can we find the area of composite figures?
- How can we draw 2-dimensional figures on a coordinate plane?
- How do we find the volume of rectangular prisms?
- How do we represent 3-dimensional figures using nets?
- How can we use nets to find the surface area of 3-dimensional figures?

Unit Enduring Understandings:

Students will understand that…

- Compartmentalizing a composite figure into more familiar shapes can be a successful strategy for finding the area of that composite figure.
- Graphing 2-dimensional shapes on a coordinate plane will introduce distance between two points which will provide the lengths of the sides of that shape.
- Finding volume of 3-dimensional shapes with fractional side lengths is

	the same strategy as those with whole number side lengths. ● De-comparmentalizing a 3-dimensional figure into a 2-dimensional figure will result in a net that will offer a set of 2-dimensional shapes which result in surface area.
Primary Interdisciplinary Connections: Infused within the unit are connections to the content standards for English Language Arts and Technology, specifically: **NJSLS:** ● **RI.6.1.** Cite textual evidence and make relevant connections to support analysis of what the text says explicitly as well as inferences drawn from the text ● **RI.6.7**. Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue. ● **RI.6.8**. Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not. ● 8.1.8.D.1 ● 8.1.8.D.4 ● 8.1.8.E.1	**21st Century Career Ready Practices:** Through well-planned, student-based instruction models, students will develop the attributes that will prepare them for life as citizens and workers in the 21st century: ● CRP2 - Apply appropriate academic and technical skills. ● CRP4 - Communicate clearly and effectively and with reason. ● CRP8 - Utilize critical thinking to make sense of problems and persevere in solving them. ● CRP11 - Use technology to enhance productivity. ● CRP12 - Work productively in teams while using cultural global competence. ● **9.2.8.B.2** Develop a Personalized Student Learning Plan with the assistance of an adult mentor that includes information about career areas of interest, goals and an educational plan.
Standards for Mathematical Practices: The following Standards for Mathematical Practice will be covered throughout the unit: ● MP.1 - Make sense of problems and persevere in solving them. ● MP.2 - Reason abstractly and quantitatively. ● MP.3 - Construct viable arguments and critique the reasoning of others. ● MP.4 - Model with Mathematics. ● MP.5 - Use appropriate tools strategically. ● MP.6 - Attend to precision. ● MP.7 - Look for and make use of structure. ● MP.8 - Look for and express regularity in repeated reasoning.	**ISTE Standards:** **1. Empowered Learner** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences. Students: **2. Digital Citizen** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. **5. Computational Thinker** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

Learning Targets		
Content Standard	**Student Learning Objectives** ***The students will be learning to...***	**Activities & Resources**
6.G.1	• Find the area of right triangles and other triangles. • Find the area of 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	• Big Ideas Chapter 4 & 8 ○ Sections 4.1, 4.2, 4.3, 4.4, 8.1, 8.2, 8.3, 8.4 • Illustrative Mathematics ○ Nets for Pyramids and Prisms ○ Volume with Fractional Edge Lengths ○ Polygons in the Coordinate Plane • Activities on the Team Drive: ○ Stations Supporting Understanding 3D Figures • PARCC Released Items ○ 2015 PBA: ○ 2015 EOY: ○ 2016: ○ 2017: ○ 2018: • i-Ready Resources • Teacher made resources including Tpt created resources.
6.G.3	• Draw polygons in the coordinate plane given coordinates for the vertices. • Use coordinates to find the length of 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.	
6.G.2	• Find the volume of right rectangular prisms 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. • Solve real-world and mathematical problems using the formula V=LWH	
6.G.4	• Represent three-dimensional figures using nets made up of rectangles and triangles. • Use nets to find the surface area of these figures. • Apply these techniques in the context of solving real-world and mathematical problems.	

Evidence of Learning			
Assessment			
Formative Assessments may	**Benchmark Assessments may**	**Summative Assessments may**	**Alternative Assessments may**

include: ● Observation ● Homework ● Class participation ● Whiteboards/communicators ● Do-Now ● Notebook ● Exit passes	**include:** ● Middle of Year i-Ready Diagnostic ● Quarterly Portfolio ● NJSLA	**include:** ● Chapter/Unit Test ● Quizzes ● Presentations ● i-Ready quizzes ● NJSLA	**include:** ● Authentic Performance Tasks ● Unit Projects

Modifications & Reflections

Suggested Options for Differentiation

English Language Learners

- Peer tutoring
- Manipulatives
- Use of Home Language
- Limiting Concepts or Vocabulary
- Providing Visuals

Students at Risk of Failure

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Special Education

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- Technology Integration
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Gifted & Talented

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- Technology Integration
- Student Choice Activities
- Student Driven Activities
- Group Projects
- Tiered Activities

Unit 7: STATISTICS and PROBABILITY

Grade Level: 6

Timeframe: 15 days

Unit Essential Questions:

- How do measures of center and variability help us to 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?

Unit Enduring Understandings:

Students will understand that…

- Numerical data can be displayed in multiple ways.
- Summaries of numerical data vay based on their contexts.
- Overall patterns of numerical data can vary.

Primary Interdisciplinary Connections:

Infused within the unit are connections to the content standards for English Language Arts and Technology, specifically:

NJSLS:

- **RI.6.1.** Cite textual evidence and make relevant connections to support analysis of what the text says explicitly as well as inferences drawn from the text
- **RI.6.7**. Integrate information presented in different media or formats

21st Century Career Ready Practices:

Through well-planned, student-based instruction models, students will develop the attributes that will prepare them for life as citizens and workers in the 21st century:

- CRP2 - Apply appropriate academic and technical skills.
- CRP4 - Communicate clearly and effectively and with reason.
- CRP8 - Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11 - Use technology to enhance productivity.

(e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue. ● **RI.6.8**. Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not. ● 8.1.8.D.1 ● 8.1.8.D.4 ● 8.1.8.E.1	● CRP12 - Work productively in teams while using cultural global competence. ● **9.2.8.B.2** Develop a Personalized Student Learning Plan with the assistance of an adult mentor that includes information about career areas of interest, goals and an educational plan. ● **9.1.8.D.2** Differentiate among various savings tools and how to use them most effectively. ● **9.1.8.D.3** Differentiate among various investment options
Standards for Mathematical Practices: The following Standards for Mathematical Practice will be covered throughout the unit: ● MP.1 - Make sense of problems and persevere in solving them. ● MP.2 - Reason abstractly and quantitatively. ● MP.3 - Construct viable arguments and critique the reasoning of others. ● MP.4 - Model with Mathematics. ● MP.5 - Use appropriate tools strategically. ● MP.6 - Attend to precision. ● MP.7 - Look for and make use of structure. ● MP.8 - Look for and express regularity in repeated reasoning.	**ISTE Standards:** **1. Empowered Learner** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences. Students: **2. Digital Citizen** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. **5. Computational Thinker** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.

Learning Targets		
Content Standard	**Student Learning Objectives** ***The students will be learning to...***	**Activities & Resources**
NJSLS.SP.6.A **Develop an understanding of statistical variability** **NJSLS.SP.6.A.1** Recognize a statistical question as one that	● Use language for mathematical purposes such as justifying, representing, and interpreting. ● Understand that a statistical question is one for which you do not expect to get a single answer. ● Use a dot plot to record variable answers to statistical questions.	● Big Ideas Math - Green (Grade 6) ○ Sections 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 10.3, Ext. 10.3, 10.4 ● Illustrative Mathematics ○ Identifying Statistical

anticipates variability in the data related to the question and accounts for its answers.		Questions ○ Is it Center or Variability ○ Puppy Weights ○ Average Number of Siblings ○ Mean or Median ● Activities on the Team Drive: ○ Stations Supporting Mean ○ Statistics Post Unit Stations ● PARCC Released Items ○ 2015 PBA: ○ 2015 EOY: ○ 2016: ○ 2017: ○ 2018: ● i-Ready Resources ● Teacher made resources including Tpt created resources.
NJSLS.SP.6.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.	● Understand that the spread is a measure of variation of all values in a data set about the center. ● Find the average (mean) of a distribution set. ● Find the center of a numerical data set.	
NJSLS.SP.6.A.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number	● Calculate the measure of center for a numerical data set to summarize its values. ● Determine the measure of variation to describe how its values vary with a single number.	
NJSLS.SP.6.B. Summarize and describe distributions. **NJSLS.SP.6.B.4** Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	● Construct dot plots, histograms, and box plots.	
NJSLS.SP.6.B.5 Summarize numerical data sets in relation to their context	● Summarize numerical data in multiple ways, including: ○ Reporting the number of observations ○ Describing the nature of the attribute under investigation, including how it was measured and its unit of measurement ● Give quantitative measure of center ● Describe any overall pattern and striking deviations from the overall pattern with reference to the	

	context in which the data was gathered. ● Relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered. ● Find real life examples of patterns with, and without, striking deviations.	

Evidence of Learning			
Assessment			
Formative Assessments may include: ● Observation ● Homework ● Class participation ● Whiteboards/communicators ● Do-Now ● Notebook ● Exit passes	**Benchmark Assessments may include:** ● Middle of Year i-Ready Diagnostic ● Quarterly Portfolio ● NJSLA	**Summative Assessments may include:** ● Chapter/Unit Test ● Quizzes ● Presentations ● i-Ready quizzes ● NJSLA	**Alternative Assessments may include:** ● Authentic Performance Tasks ● Unit Projects
Modifications & Reflections			
Suggested Options for Differentiation *English Language Learners* ● Peer tutoring ● Manipulatives ● Use of Home Language ● Limiting Concepts or Vocabulary ● Providing Visuals *Students at Risk of Failure* ● Extended Time ● Flexible Grouping ● Small Group Instruction ● Peer Buddies ● Graphic Organizers ● Chunking Information ● Scaffolded Questioning			

• Tiered Activities • Centers in Academic Activity *Special Education* • Extension activities • Opportunities for Critical Thinking • Problem Solving/Design Challenges • Technology Integration • Student Choice Activities • Student Driven Activities • Group Projects • Tiered Activities *504* • Extension activities • Opportunities for Critical Thinking • Problem Solving/Design Challenges • Technology Integration • Student Choice Activities • Student Driven Activities • Group Projects • Tiered Activities *Gifted & Talented* • Extension activities • Opportunities for Critical Thinking • Problem Solving/Design Challenges • Technology Integration • Student Choice Activities • Student Driven Activities • Group Projects • Tiered Activities		
Teacher Reflections:		