

Lakewood Public School District Curriculum Guide

Grade: 6	Content Area: Mathematics
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Original Adoption: Original Adoption: 2023 NJSLS English Language Arts and English as a Second Language (8-21-24); Math NJSLS Mathematics (8-21-24); 2020 NJSLS Science, Social Studies, Career Readiness, Life Literacies & Key Skills, Computer Design & Thinking, Visual & Performing Arts, World Language, Comprehensive Health and Physical Education (5-11-22)

Created By:

Recommended Pacing Guide

Recommended Pacing Guide	
Unit 1: Operations with Whole Numbers and Decimals	16 days
Unit 2: Fraction Operations	19 days
Unit 3: Integers and Rational Numbers	16 days
Unit 4: Understanding Ratios	18 days
Unit 5: Ratio and Proportions; Graphing and Percents	18 days
Unit 6: Expressions	16 days
Unit 7: Equations and Inequalities	14 days
Unit 8: Geometry	17 days
Unit 9: Introduction to Statistics and Probability	13 days

Alignment with State Mandates

The following colors are used throughout this document to indicate areas in which the curriculum is aligned with the following NJSA requirements:

- Holocaust and genocides ([N.J.S.A. 18A:35-28](#))
- History and contributions of African-Americans (Amistad Law) ([N.J.S.A. 18A:35-4.43](#))
- Highlight and promote diversity and inclusion (Diversity & Inclusion Law) ([N.J.S.A. 18A:35-4.36a](#))
- History of disabled and LGBT persons included in middle and high school curriculum ([Section 18A:35-4.35](#))
- Climate Change - to prepare students to understand how and why climate change happens, the impact it has on our local and global communities and to act in informed and sustainable ways. Please [click here](#) for specific examples (by subject).

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Unit 1: Operations with Whole Numbers and Decimals	Duration: 16 days
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<u>New Jersey Student Learning Standards</u>	
6.NS.A	Apply and extend previous understandings of multiplication and division to divide fractions by fractions
6.NS.2	With accuracy and efficiency, divide multi-digit numbers using the standard algorithm.
6.NS.B	Compute fluently with multi-digit numbers & find common factors and multiples
6.NS.3	With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

<u>New Jersey Standards for Mathematical Practice</u>	
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.

New Jersey Social and Emotional Competencies and Sub-Competencies	
Self-Awareness	<ul style="list-style-type: none"> ● Recognize one's feelings and thoughts. ● Recognize the impact of one's feelings and thoughts on one's own behavior. ● Recognize one's personal traits, strengths, and limitations. ● Recognize the importance of self-confidence in handling daily tasks and challenges.
Self-Management	<ul style="list-style-type: none"> ● Understand and practice strategies for managing one's own emotions, thoughts, and behaviors. ● Recognize the skills needed to establish and achieve personal and educational goals. ● Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one's goals.

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Social Awareness	<ul style="list-style-type: none"> ● Recognize and identify the thoughts, feelings, and perspectives of others. ● Demonstrate an awareness of the differences among individuals, groups, and others' cultural backgrounds. ● Demonstrate an understanding of the need for mutual respect when viewpoints differ. ● Demonstrate an awareness of the expectations for social interactions in a variety of settings.
Responsible Decision Making	<ul style="list-style-type: none"> ● Develop, implement, and model effective problem-solving and critical thinking skills. ● Identify the consequences associated with one's actions in order to make constructive choices. ● Evaluate personal, ethical, safety, and civic impact of decisions.
Relationship Skills	<ul style="list-style-type: none"> ● Establish and maintain healthy relationships. ● Utilize positive communication and social skills to interact effectively with others. ● Identify ways to resist inappropriate social pressure. ● Demonstrate the ability to prevent and resolve interpersonal conflicts in constructive ways. ● Identify who, when, where, or how to seek help for oneself or others when needed.

<u>Interdisciplinary Connections</u>

ELA Standards

L.SS.6.1	<p>Demonstrate command of the system and structure of the English language when writing or speaking.</p> <ul style="list-style-type: none"> A. Ensure that pronouns are in the proper case (subjective, objective, possessive). B. Use intensive pronouns (e.g., myself, ourselves). C. Recognize and correct inappropriate shifts in pronoun number and person. D. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents). E. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive and parenthetical elements. F. Recognize spelling conventions.
L.KL.6.2	<p>Use knowledge of language and its conventions when writing, speaking, reading, or listening.</p> <ul style="list-style-type: none"> A. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases. B. Gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
L.VL.6.3	<p>Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, including technical meanings, choosing flexibly from a range of strategies.</p> <ul style="list-style-type: none"> A. Use context (e.g., the overall meaning of a sentence or paragraph; a

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	<p>word’s position or function in a sentence) as a clue to the meaning of a word or phrase.</p> <p>C. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).</p>
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SL.PE.6.1	<p>Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others’ ideas and expressing their own clearly.</p> <p>A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.</p> <p>B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.</p> <p>C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.</p> <p>D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.</p>
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Science

MS-ETS1-1	<p>Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p>
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MS-ETS1-2	<p>Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</p>
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<u>Computer Science & Design Thinking</u>
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8.1.8.AP.2	<p>Create clearly named variables that represent different data types and perform operations on their values.</p>
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8.1.8.DA.1	<p>Organize and transform data collected using computational tools to make it usable for a specific purpose.</p>
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8.1.8.DA.5	<p>Test, analyze, and refine computational models.</p>
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8.2.8.ED.2	<p>Identify the steps in the design process that could be used to solve a problem.</p>
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8.2.8.ED.3	<p>Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketches).</p>
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<u>Career Readiness, Life Literacies & Key Skills</u>
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9.4.8.GCA.1	<p>Model how to navigate cultural differences with sensitivity and respect</p>
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9.4.8.GCA.2	<p>Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.</p>
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9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.
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Evidence of Student Learning

<p>Formative Tasks:</p> <ul style="list-style-type: none"> ● Teacher observations ● Class discussions ● Whiteboard/Communicators ● Math routine responses ● Daily DOLs ● Daily classwork ● Checks for understanding ● Spiral Quizzes ● Fluency Quizzes ● <i>Number Talks</i> ● NJSLA released items 	<p>Alternative Assessments:</p> <ul style="list-style-type: none"> ● Oral assessments ● Istation
<p>Summative Assessments:</p> <ul style="list-style-type: none"> ● Unit Assessment 	<p>Benchmark Assessments:</p> <ul style="list-style-type: none"> ● Istation Diagnostic ● Monthly ISIP ● Beginning of the Year Screener

Knowledge & Skills

<p>Enduring Understandings:</p> <ul style="list-style-type: none"> ● Division is a way to find how many equal groups or shares are in a number. ● The standard division algorithm uses place value to divide multi-digit numbers accurately. ● Estimation helps predict and check whether division answers are reasonable. ● Efficient strategies and clear steps improve accuracy in multi-digit division. ● Understanding division supports problem-solving in real-world situations. ● Accuracy and efficiency in division build fluency and confidence with numbers. ● Decimal operations follow the same place-value principles as whole-number operations. ● Using the standard algorithms allows decimals to be added, subtracted, multiplied, and divided accurately and efficiently. 	<p>Essential Questions:</p> <ul style="list-style-type: none"> ● How does place value help me divide multi-digit numbers accurately? ● Why is the standard algorithm an efficient way to divide large numbers? ● How can I use estimation to predict and check my division answers? ● What steps help me divide accurately and avoid common mistakes? ● How does dividing multi-digit numbers help me solve real-world problems? ● How does place value help me add, subtract, multiply, and divide decimals accurately? ● Why are standard algorithms efficient and reliable for decimal operations? ● How do I know where to place the decimal point in my answer? ● How can estimation help me check whether my decimal answers make sense?
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<ul style="list-style-type: none"> ● Understanding place value is essential for aligning decimals and placing decimal points correctly. ● Estimation helps determine whether decimal answers are reasonable. ● Accurate and efficient decimal computation supports real-world problems. ● Fluency with decimal operations builds confidence and mathematical reasoning. 	
<p>Content <i>Students will know...</i></p> <ul style="list-style-type: none"> ● The standard algorithm for division can be used when dividing multi-digit whole numbers. ● Division is a “grouping” operation. The divisor can be thought of as the group size. ● Estimation and multiplication can be used to determine how many groups can be made when dividing. ● Multiplication can be used to check the answer to a division problem. ● Remainders can be interpreted and represented as fractions ● The standard algorithm can be used to add, subtract, multiply, and divide decimal numbers with accuracy and efficiency. ● When multiplying decimals, place value understanding can be used to determine the unit of the product. ● Place value understanding can be used to support thinking when applying the standard algorithm for an operations. 	<p>Skills <i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Use the standard algorithm for division to divide multi-digit whole numbers by multi-digit divisors. ● Represent remainders as fractions. ● Use the standard algorithm to add decimals. ● Model addition with base-10 blocks. ● Use the standard algorithm to subtract decimals. ● Use the standard algorithm to multiply decimals. ● Use the standard algorithm to divide decimals. ● Represent remainders as decimals. ● Sketch a visual model to represent the value of the remainder when represented as a fraction.

Core Instructional & Supplemental Materials

<p>Suggested Activities/Resources:</p> <ul style="list-style-type: none"> ● Manipulatives ● Istation ● District Created Lessons (Unit 1) ● District Created Parent Resources ● Communicators ● Unit Review Jeopardy ● <i>Number Talks</i> ● NJSLA released items 	<p>Supplemental Materials</p> <ul style="list-style-type: none"> ● <i>Big Ideas Math</i> textbook <ul style="list-style-type: none"> ○ Section 2.6 - Dividing Whole Numbers (81) ○ Section 2.4 - Adding and Subtracting Decimals (67) ○ Section 2.5 - Multiplying Decimals (73)
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- Section 2.7 - Dividing Decimals (87)
- [Khan Academy](#)
- [Pearson](#)
- [IXL](#)
- Illustrated Mathematics
 - [6.NS.2](#)
 - [6.NS.3](#)
- *Great Estimations* by Bruce Goldstone
- *Lucky Beans* by Becky Birtha
- *Millions, Billions, and Trillions* by David A. Adler
- Data from the [Kupferberg Holocaust Center](#) can be used in real-world problems involving the four operations
- [Climate Change Lessons](#)

Suggested Accommodations

English Language Learners:

- Multi-sensory instruction
- Flexible grouping
- Small group instruction
- Provide peer tutoring
- Use a strong student as a “buddy” (does not necessarily have to speak the primary language)
- Chunking information
- Scaffolded questioning
- Manipulatives/concrete models
- Pre-Teach vocabulary
- Co-Constructed Word Banks
- Anchor charts
- Gradual release model
- Visual models
- Hands-on activities
- Native language support when possible
- Sheltered English Instruction Strategies
- Sentence starters

Special Education/Students with Disabilities:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Follow all IEP modifications
- Calculators
- Manipulatives/concrete models
- Directions repeated, clarified, and reworded
- Breakdown task into manageable parts

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504 Plans:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Calculators
- Manipulatives/concrete models
- Follow all 504 modifications

Gifted and Talented:

- Higher level questioning
- Enriched assignments
- Tiered assignments
- Choice board to extend learning
- NJSLA released items

Students at Risk of Failure:

- Provide peer tutoring
- Use a strong student as a “buddy”
- Allow extra time to complete assignments or tests
- Work in a small group
- One on one instruction
- Provide immediate praise and feedback
- Create a nurturing environment
- Provide visuals
- Be flexible with assignments and time frames
- Provide needed academic resources
- Chunking information
- Scaffolded questioning
- Tiered activities
- Manipulatives/concrete models
- Modified assignments
- Brain breaks

Economically Disadvantaged:

- Pre-teach vocabulary using visuals and gestures
- Chunk texts
- Summarize as you go
- Preview lessons
- Graphic organizers
- Highlight key words
- Sentence starters
- Prompting and cueing
- Activate schema
- Build background knowledge

Culturally Diverse:

- Create an emotionally positive classroom climate.
- Create effective communication
- Model and teach cultural respect
- Build relationships with students by interviewing students to understand their background

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Unit 2: Fraction Operations	Duration: 19 days
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<u>New Jersey Student Learning Standards</u>	
6.NS.A	Apply and extend previous understandings of multiplication and division to divide fractions by fractions
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.
6.NS.B	Compute fluently with multi-digit numbers & find common factors & multiples
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.

<u>New Jersey Standards for Mathematical Practice</u>	
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.
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New Jersey Social and Emotional Competencies and Sub-Competencies	
Self-Awareness	<ul style="list-style-type: none"> ● Recognize one's feelings and thoughts. ● Recognize the impact of one's feelings and thoughts on one's own behavior. ● Recognize one's personal traits, strengths, and limitations. ● Recognize the importance of self-confidence in handling daily tasks and challenges.
Self-Management	<ul style="list-style-type: none"> ● Understand and practice strategies for managing one's own emotions, thoughts, and behaviors.

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	<ul style="list-style-type: none"> ● Recognize the skills needed to establish and achieve personal and educational goals. ● Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one’s goals.
Social Awareness	<ul style="list-style-type: none"> ● Recognize and identify the thoughts, feelings, and perspectives of others. ● Demonstrate an awareness of the differences among individuals, groups, and others’ cultural backgrounds. ● Demonstrate an understanding of the need for mutual respect when viewpoints differ. ● Demonstrate an awareness of the expectations for social interactions in a variety of settings.
Responsible Decision Making	<ul style="list-style-type: none"> ● Develop, implement, and model effective problem-solving and critical thinking skills. ● Identify the consequences associated with one’s actions in order to make constructive choices. ● Evaluate personal, ethical, safety, and civic impact of decisions.
Relationship Skills	<ul style="list-style-type: none"> ● Establish and maintain healthy relationships. ● Utilize positive communication and social skills to interact effectively with others. ● Identify ways to resist inappropriate social pressure. ● Demonstrate the ability to prevent and resolve interpersonal conflicts in constructive ways. ● Identify who, when, where, or how to seek help for oneself or others when needed.

Interdisciplinary Connections

ELA Standards

L.SS.6.1	<p>Demonstrate command of the system and structure of the English language when writing or speaking.</p> <ul style="list-style-type: none"> A. Ensure that pronouns are in the proper case (subjective, objective, possessive). B. Use intensive pronouns (e.g., myself, ourselves). C. Recognize and correct inappropriate shifts in pronoun number and person. D. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents). E. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive and parenthetical elements. F. Recognize spelling conventions.
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L.VL.6.3	<p>Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, including technical meanings, choosing flexibly from a range of strategies.</p> <ul style="list-style-type: none"> A. Use context (e.g., the overall meaning of a sentence or paragraph; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase. C. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).
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SL.PE.6.1	<p>Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others’ ideas and expressing their own clearly.</p> <ul style="list-style-type: none"> A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.
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Science

MS-ETS1-1	<p>Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p>
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MS-ETS1-2	<p>Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</p>
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Computer Science & Design Thinking

8.1.8.AP.2	<p>Create clearly named variables that represent different data types and perform operations on their values.</p>
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8.1.8.DA.1	<p>Organize and transform data collected using computational tools to make it usable for a specific purpose.</p>
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8.1.8.DA.5	<p>Test, analyze, and refine computational models.</p>
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8.2.8.ED.2	<p>Identify the steps in the design process that could be used to solve a problem.</p>
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8.2.8.ED.3	<p>Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketches).</p>
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Career Readiness, Life Literacies & Key Skills

9.4.8.GCA.1	<p>Model how to navigate cultural differences with sensitivity and respect</p>
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9.4.8.GCA.2	Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.

Career Readiness, Life Literacies, and Key Skills Practices

CLKS.1	Act as a responsible and contributing community member and employee.
CLKS.2	Attend to financial well-being.
CLKS.3	Consider the environmental, social and economic impacts of decisions.
CLKS.4	Demonstrate creativity and innovation.
CLKS.5	Utilize critical thinking to make sense of problems and persevere in solving them.
CLKS.6	Model integrity, ethical leadership and effective management.
CLKS.7	Plan education and career paths aligned to personal goals.
CLKS.8	Use technology to enhance productivity, increase collaboration and communicate effectively.
CLKS.9	Work productively in teams while using cultural/global competence.

Evidence of Student Learning

Formative Tasks: <ul style="list-style-type: none"> • Teacher observations • Class discussions • Whiteboard/Communicators • Math routine responses • Daily DOLs • Daily classwork • Checks for understanding • Spiral Quizzes • Fluency Quizzes • <i>Number Talks</i> • NJSLA released items 	Alternative Assessments: <ul style="list-style-type: none"> • Oral assessments • Istation
Summative Assessments: <ul style="list-style-type: none"> • Unit Assessment 	Benchmark Assessments: <ul style="list-style-type: none"> • Istation Diagnostic • Monthly ISIP

Knowledge & Skills

Enduring Understandings:	Essential Questions:
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<ul style="list-style-type: none"> ● Division of fractions represents equal sharing or measuring how many groups fit into a quantity. ● Visual fraction models help explain and make sense of fraction division. ● Equations can represent and solve fraction division problems clearly. ● Understanding fraction division supports solving real-world word problems. ● Different strategies can be used to interpret and compute quotients of fractions. ● Fraction division is connected to multiplication through inverse operations. ● Factors and multiples describe relationships between whole numbers. ● The greatest common factor (GCF) helps identify the largest shared factor of two numbers. ● The least common multiple (LCM) helps find the smallest multiple shared by two numbers. ● The distributive property can be used to rewrite expressions in equivalent forms. ● Factoring a sum using a common factor shows how numbers are related and simplifies expressions. ● Equivalent expressions represent the same value even when written in different ways. 	<ul style="list-style-type: none"> ● What does it mean to divide one fraction by another fraction? ● How can visual fraction models help me understand fraction division? ● How can equations represent fraction division in a word problem? ● Why does dividing by a fraction sometimes result in a larger number? ● How can I check whether my answer to a fraction division problem makes sense? ● How do factors and multiples help describe relationships between numbers? ● How can I find the greatest common factor of two numbers? ● How can I find the least common multiple of two numbers? ● How does the distributive property help rewrite a sum using a common factor? ● How can I tell if two expressions are equivalent?
<p>Content <i>Students will know...</i></p> <ul style="list-style-type: none"> ● Understand that a is a factor of b if you can multiply a by a whole number and get the product b. ● The <i>greatest common factor</i> of two numbers is the greatest number that is a factor of both of them. ● A <i>prime number</i> has exactly 2 factors: 1 and itself. ● A <i>composite number</i> has 3 or more factors. ● Parentheses can be used to indicate multiplication. ● <i>Multiples</i> are all of the products of whole numbers and a given factor. 	<p>Skills <i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Find the greatest common factor by listing the factors of two whole numbers, in a table, as factor pairs. ● Find the greatest common factor using prime factorization. ● Rewrite the sum as the product of the greatest common and a sum using the distributive property. ● Find the least common multiple by listing the multiples of two numbers. ● Find the least common multiple by listing the multiples of two numbers. ● Sketch a visual model to show the multiplication of two fractions. ● Multiply fractions using the standard

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<ul style="list-style-type: none"> ● The <i>least common multiple</i> is the smallest multiple that two numbers share. ● Multiplication problems can be described in terms of “groups of.” ● We can simplify a fraction by dividing by a form of 1. ● We can simplify fractions before multiplying so that the product is in simplest form. ● When dividing fractions, the divisor can be interpreted as the group size. The quotient can be interpreted as the number of groups made. ● The standard algorithm can be used to multiply and divide fractions. ● When we flip a fraction over and make the original denominator the numerator and original numerator the denominator, this is called a <i>reciprocal fraction</i>. ● Improper fractions and mixed numbers are equivalent forms of the same value. 	<p>algorithm.</p> <ul style="list-style-type: none"> ● Simplify fractions before multiplying. ● Divide a whole number by a unit fraction. ● Use a visual model to divide a whole number by any fraction. ● Use the algorithm to divide a whole number by any fraction. ● Use the algorithm to divide a fraction by a fraction or a whole number. ● Use the algorithm to divide mixed numbers. ● Interpret the fractional piece of the quotient in terms of group size.
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Core Instructional & Supplemental Materials

<p>Suggested Activities/Resources:</p> <ul style="list-style-type: none"> ● Manipulatives ● Istation ● District Created Lessons (Unit 2) ● District Created Parent Resources ● Communicators ● Unit Review Jeopardy ● <i>Number Talks</i> ● NJSLA released items 	<p>Supplemental Materials</p> <ul style="list-style-type: none"> ● <i>Big Ideas Math</i> textbook <ul style="list-style-type: none"> ○ Section 1.3 - Prime Factorization (15) ○ Section 1.4 - Greatest Common Factor (21) ○ Section 1.5 - Least Common Multiple (27) ○ Section 2.1 - Multiplying Fractions (45) ○ Section 2.2 - Dividing Fractions (53) ○ Section 2.3 - Dividing Mixed Numbers (61) ○ Section 5.5 - Factoring Expressions (227) ● Khan Academy ● Pearson ● IXL ● Illustrated Mathematics <ul style="list-style-type: none"> ○ 6.NS.1 ○ 6.NS.4 ● Climate Change Lessons
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Suggested Accommodations

English Language Learners:

- Multi-sensory instruction
- Flexible grouping
- Small group instruction
- Provide peer tutoring
- Use a strong student as a “buddy” (does not necessarily have to speak the primary language)
- Chunking information
- Scaffolded questioning
- Manipulatives/concrete models
- Pre-Teach vocabulary
- Co-Constructed Word Banks
- Anchor charts
- Gradual release model
- Visual models
- Hands-on activities
- Native language support when possible
- Sheltered English Instruction Strategies
- Sentence starters

Special Education/Students with Disabilities:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Follow all IEP modifications
- Calculators
- Manipulatives/concrete models
- Directions repeated, clarified, and reworded
- Breakdown task into manageable parts

504 Plans:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Calculators
- Manipulatives/concrete models
- Follow all 504 modifications

Gifted and Talented:

- Higher level questioning
- Enriched assignments
- Tiered assignments
- Choice board to extend learning
- NJSLA released items

Students at Risk of Failure:

- Provide peer tutoring
- Use a strong student as a “buddy”

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<ul style="list-style-type: none"> ● Allow extra time to complete assignments or tests ● Work in a small group ● One on one instruction ● Provide immediate praise and feedback ● Create a nurturing environment ● Provide visuals ● Be flexible with assignments and time frames ● Provide needed academic resources ● Chunking information ● Scaffolded questioning ● Tiered activities ● Manipulatives/concrete models ● Modified assignments ● Brain breaks <p>Economically Disadvantaged:</p> <ul style="list-style-type: none"> ● Pre-teach vocabulary using visuals and gestures ● Chunk texts ● Summarize as you go ● Preview lessons ● Graphic organizers ● Highlight key words ● Sentence starters ● Prompting and cueing ● Activate schema ● Build background knowledge <p>Culturally Diverse:</p> <ul style="list-style-type: none"> ● Create an emotionally positive classroom climate. ● Create effective communication ● Model and teach cultural respect ● Build relationships with students by interviewing students to understand their background
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Unit 3: Integers and Rational Numbers	Duration: 16 days
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<u>New Jersey Student Learning Standards</u>	
6.NS.C	Apply and extend previous understandings of numbers to the system of rational numbers
6.NS.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperatures 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

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6.NS.6	<p>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 in the line and in the plane with negative number coordinates.</p> <ol style="list-style-type: none"> 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.7	<p>Understand ordering and absolute value of rational numbers.</p> <ol style="list-style-type: none"> 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 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. d. Distinguish comparisons of absolute value from statements about order.
6.NS.8	<p>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.</p>

New Jersey Standards for Mathematical Practice

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.

New Jersey Social and Emotional Competencies and Sub-Competencies

Self-Awareness	<ul style="list-style-type: none"> ● Recognize one's feelings and thoughts. ● Recognize the impact of one's feelings and thoughts on one's own behavior.
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	<ul style="list-style-type: none"> ● Recognize one’s personal traits, strengths, and limitations. ● Recognize the importance of self-confidence in handling daily tasks and challenges.
Self-Management	<ul style="list-style-type: none"> ● Understand and practice strategies for managing one’s own emotions, thoughts, and behaviors. ● Recognize the skills needed to establish and achieve personal and educational goals. ● Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one’s goals.
Social Awareness	<ul style="list-style-type: none"> ● Recognize and identify the thoughts, feelings, and perspectives of others. ● Demonstrate an awareness of the differences among individuals, groups, and others’ cultural backgrounds. ● Demonstrate an understanding of the need for mutual respect when viewpoints differ. ● Demonstrate an awareness of the expectations for social interactions in a variety of settings.
Responsible Decision Making	<ul style="list-style-type: none"> ● Develop, implement, and model effective problem-solving and critical thinking skills. ● Identify the consequences associated with one’s actions in order to make constructive choices. ● Evaluate personal, ethical, safety, and civic impact of decisions.
Relationship Skills	<ul style="list-style-type: none"> ● Establish and maintain healthy relationships. ● Utilize positive communication and social skills to interact effectively with others. ● Identify ways to resist inappropriate social pressure. ● Demonstrate the ability to prevent and resolve interpersonal conflicts in constructive ways. ● Identify who, when, where, or how to seek help for oneself or others when needed.

<u>Interdisciplinary Connections</u>	
ELA Standards	
L.SS.6.1	<p>Demonstrate command of the system and structure of the English language when writing or speaking.</p> <ul style="list-style-type: none"> A. Ensure that pronouns are in the proper case (subjective, objective, possessive). B. Use intensive pronouns (e.g., myself, ourselves). C. Recognize and correct inappropriate shifts in pronoun number and person. D. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents). E. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive

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	<p>and parenthetical elements.</p> <p>F. Recognize spelling conventions.</p>
L.KL.6.2	<p>Use knowledge of language and its conventions when writing, speaking, reading, or listening.</p> <p>A. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases.</p> <p>B. Gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.</p>
L.VL.6.3	<p>Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, including technical meanings, choosing flexibly from a range of strategies.</p> <p>A. Use context (e.g., the overall meaning of a sentence or paragraph; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase.</p> <p>C. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).</p>
SL.PE.6.1	<p>Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others’ ideas and expressing their own clearly.</p> <p>A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.</p> <p>B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.</p> <p>C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.</p> <p>D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.</p>

Science

MS-ETS1-1	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
MS-ETS1-2	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

Computer Science & Design Thinking

8.1.8.AP.2	Create clearly named variables that represent different data types and perform operations on their values.
8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.
8.1.8.DA.5	Test, analyze, and refine computational models.

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8.2.8.ED.2	Identify the steps in the design process that could be used to solve a problem.
8.2.8.ED.3	Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketches).

<u>Career Readiness, Life Literacies & Key Skills</u>
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9.4.8.GCA.1	Model how to navigate cultural differences with sensitivity and respect
9.4.8.GCA.2	Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.

Career Readiness, Life Literacies, and Key Skills Practices
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CLKS.1	Act as a responsible and contributing community member and employee.
CLKS.2	Attend to financial well-being.
CLKS.3	Consider the environmental, social and economic impacts of decisions.
CLKS.4	Demonstrate creativity and innovation.
CLKS.5	Utilize critical thinking to make sense of problems and persevere in solving them.
CLKS.6	Model integrity, ethical leadership and effective management.
CLKS.7	Plan education and career paths aligned to personal goals.
CLKS.8	Use technology to enhance productivity, increase collaboration and communicate effectively.
CLKS.9	Work productively in teams while using cultural/global competence.

Evidence of Student Learning

<p>Formative Tasks:</p> <ul style="list-style-type: none"> ● Teacher observations ● Class discussions ● Whiteboard/Communicators ● Math routine responses ● Daily DOLs ● Daily classwork ● Checks for understanding ● Spiral Quizzes ● Fluency Quizzes ● <i>Number Talks</i> ● NJSLA released items 	<p>Alternative Assessments:</p> <ul style="list-style-type: none"> ● Oral assessments ● Istation
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Summative Assessments:

- Unit Assessment

Benchmark Assessments:

- Istation Diagnostic
- Monthly ISIP

Knowledge & Skills

Enduring Understandings:

- Positive and negative numbers describe quantities with opposite directions or values.
- Real-world situations, like temperatures, elevations, financial transactions, or charges, can be represented using positive and negative numbers.
- Context determines whether a number is considered positive or negative and what it represents.
- Rational numbers can be represented as points on a number line, including both positive and negative values.
- Opposite numbers are located the same distance from zero but on opposite sides of the number line.
- The opposite of a number's opposite returns the original number, and zero is its own opposite.
- Signs in ordered pairs indicate locations in specific quadrants of the coordinate plane.
- Points that differ only by signs are reflections across one or both axes.
- Understanding how to position integers and rational numbers on number lines and coordinate planes helps describe, compare, and visualize relationships between numbers.
- Extending previous knowledge of number lines and the first quadrant allows reasoning about all four quadrants and negative coordinates.
- Rational numbers can be ordered on a number line.
- Statements of inequality describe the relative positions of numbers on a number line.

Essential Questions:

- How can positive and negative numbers be used to describe quantities with opposite directions or values?
- What does zero represent in different real-world situations?
- How do positive and negative numbers help me understand temperature, elevation, finances, or other real-world problems?
- How can I decide whether a number should be positive or negative in a given context?
- How can I represent positive and negative numbers on a number line?
- What does it mean for a number to have an opposite, and how does it relate to its position on the number line?
- How can I find the opposite of a number's opposite?
- How do the signs of numbers in an ordered pair determine their location in a coordinate plane?
- How are points related if they differ only by signs on the coordinate plane?
- How can understanding number line positions and reflections help me visualize relationships between numbers?
- How can I use a number line to compare and order rational numbers?
- What does a statement of inequality tell me about the relative positions of two numbers?
- What does the absolute value of a number represent?
- How is absolute value different from the actual value of a number?
- How can I graph points in all four quadrants of the coordinate plane?

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<p>The absolute value of a number represents its distance from zero, regardless of direction.</p> <ul style="list-style-type: none"> ● Absolute value shows the magnitude of a quantity, which can be useful in situations like temperature changes, elevation, or finances. ● Comparing absolute values is different from comparing the actual values of numbers; context matters when interpreting differences. ● Points can be graphed in all four quadrants using ordered pairs with positive and negative coordinates. ● Coordinates help identify the exact location of a point on the coordinate plane. ● Absolute value can be used to find the distance between points that share the same x-coordinate or y-coordinate. 	<ul style="list-style-type: none"> ● How do coordinates help me find the exact location of a point? ● How can I use absolute value to find the distance between points with the same x-coordinate or the same y-coordinate? ● How does reflection help me see relationships between points on the coordinate plane?
<p>Content <i>Students will know...</i></p> <ul style="list-style-type: none"> ● Positive and negative numbers can be used to describe real-world situations ● A rational number is a point on the number line. ● Use the symbols $<$, $=$, and $>$ to compare integers. ● Use the symbols $<$, $=$, and $>$ to compare rational numbers. ● Opposite signs of numbers indicate locations on opposite sides of 0 on the number line ● The opposite of the opposite is the number itself. ● An even number of negatives results in a positive and an odd number of negatives results in a negative. ● That the absolute value of a number is its distance from 0 on the number line. ● Signs of numbers in ordered pairs indicate locations in quadrants of the coordinate plane ● Points on the coordinate plane are described in reference to the origin ● When plotting a point, always begin with the horizontal direction and then the vertical direction. 	<p>Skills <i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Assign an integer value to a real-life situation. ● Plot integers on a number line. ● Record integer comparisons using the symbols $<$, $=$, and $>$. ● Use the number line to explain thinking about integer comparisons. ● Order a set of integers from least to greatest or from greatest to least. ● Use an open number line to organize integers when ordering. ● Plot rational numbers on a number line, using whole numbers as benchmarks for plotting. ● Record comparisons of rational numbers using the symbols $<$, $=$, and $>$. ● Interpret comparisons with rational numbers. ● Interpret expressions that include absolute value. ● Plot points in all 4 quadrants of the coordinate plane. ● Identify a point with a given distance from another point. ● Find the distance between two points.

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- When two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.

- Name and describe the reflection of a given point over the x - or y -axis.

Core Instructional & Supplemental Materials

Suggested Activities/Resources:

- Manipulatives
- Istation
- District Created Lessons (Unit 3)
- District Created Parent Resources
- Communicators
- Unit Review Jeopardy
- *Number Talks*
- NJSLA released items

Supplemental Materials

- *Big Ideas Math* textbook
 - Section 8.1 - Integers (345)
 - Section 8.2 - Comparing and Ordering Integers (351)
 - Section 8.3 - Rational Numbers (357)
 - Section 8.4 - Absolute Value (363)
 - Section 8.5 - The Coordinate Plane (369)
 - Section 8.6 - Polygons in the Coordinate Plane (377)
- [Khan Academy](#)
- [Pearson](#)
- [IXL](#)
- Illustrated Mathematics
 - [6.NS.5](#)
 - [6.NS.6](#)
 - [6.NS.7](#)
 - [6.NS.8](#)
- [Climate Change Lessons](#)

Suggested Accommodations

English Language Learners:

- Multi-sensory instruction
- Flexible grouping
- Small group instruction
- Provide peer tutoring
- Use a strong student as a “buddy” (does not necessarily have to speak the primary language)
- Chunking information
- Scaffolded questioning
- Manipulatives/concrete models
- Pre-Teach vocabulary
- Co-Constructed Word Banks
- Anchor charts
- Gradual release model
- Visual models
- Hands-on activities
- Native language support when possible

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- Sheltered English Instruction Strategies
- Sentence starters

Special Education/Students with Disabilities:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Follow all IEP modifications
- Calculators
- Manipulatives/concrete models
- Directions repeated, clarified, and reworded
- Breakdown task into manageable parts

504 Plans:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Calculators
- Manipulatives/concrete models
- Follow all 504 modifications

Gifted and Talented:

- Higher level questioning
- Enriched assignments
- Tiered assignments
- Choice board to extend learning
- NJSLA released items

Students at Risk of Failure:

- Provide peer tutoring
- Use a strong student as a “buddy”
- Allow extra time to complete assignments or tests
- Work in a small group
- One on one instruction
- Provide immediate praise and feedback
- Create a nurturing environment
- Provide visuals
- Be flexible with assignments and time frames
- Provide needed academic resources
- Chunking information
- Scaffolded questioning
- Tiered activities
- Manipulatives/concrete models
- Modified assignments
- Brain breaks

Economically Disadvantaged:

- Pre-teach vocabulary using visuals and gestures
- Chunk texts
- Summarize as you go

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<ul style="list-style-type: none"> ● Preview lessons ● Graphic organizers ● Highlight key words ● Sentence starters ● Prompting and cueing ● Activate schema ● Build background knowledge <p>Culturally Diverse:</p> <ul style="list-style-type: none"> ● Create an emotionally positive classroom climate. ● Create effective communication ● Model and teach cultural respect ● Build relationships with students by interviewing students to understand their background

Unit 4: Understanding Ratios	Duration: 18 days
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<u>New Jersey Student Learning Standards</u>	
6.RP.	Understand ratio concepts and use ratio reasoning to solve problems
6.RP.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.
6.RP.2	Understand the concept of a unit rate $\frac{a}{b}$ associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship.
6.RP.3	<p>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.</p> <ul style="list-style-type: none"> 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. c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $\frac{30}{100}$ times the quantity); solve problems involving finding the whole, given a part and the percent. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

<u>New Jersey Standards for Mathematical Practice</u>	
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.

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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.

New Jersey Social and Emotional Competencies and Sub-Competencies	
Self-Awareness	<ul style="list-style-type: none"> ● Recognize one’s feelings and thoughts. ● Recognize the impact of one’s feelings and thoughts on one’s own behavior. ● Recognize one’s personal traits, strengths, and limitations. ● Recognize the importance of self-confidence in handling daily tasks and challenges.
Self-Management	<ul style="list-style-type: none"> ● Understand and practice strategies for managing one’s own emotions, thoughts, and behaviors. ● Recognize the skills needed to establish and achieve personal and educational goals. ● Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one’s goals.
Social Awareness	<ul style="list-style-type: none"> ● Recognize and identify the thoughts, feelings, and perspectives of others. ● Demonstrate an awareness of the differences among individuals, groups, and others’ cultural backgrounds. ● Demonstrate an understanding of the need for mutual respect when viewpoints differ. ● Demonstrate an awareness of the expectations for social interactions in a variety of settings.
Responsible Decision Making	<ul style="list-style-type: none"> ● Develop, implement, and model effective problem-solving and critical thinking skills. ● Identify the consequences associated with one’s actions in order to make constructive choices. ● Evaluate personal, ethical, safety, and civic impact of decisions.
Relationship Skills	<ul style="list-style-type: none"> ● Establish and maintain healthy relationships. ● Utilize positive communication and social skills to interact effectively with others. ● Identify ways to resist inappropriate social pressure. ● Demonstrate the ability to prevent and resolve interpersonal conflicts in constructive ways. ● Identify who, when, where, or how to seek help for oneself or others when needed.

<u>Interdisciplinary Connections</u>
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ELA Standards	
L.SS.6.1	<p>Demonstrate command of the system and structure of the English language when writing or speaking.</p> <ul style="list-style-type: none"> A. Ensure that pronouns are in the proper case (subjective, objective, possessive). B. Use intensive pronouns (e.g., myself, ourselves). C. Recognize and correct inappropriate shifts in pronoun number and person. D. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents). E. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive and parenthetical elements. F. Recognize spelling conventions.
L.KL.6.2	<p>Use knowledge of language and its conventions when writing, speaking, reading, or listening.</p> <ul style="list-style-type: none"> A. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases. B. Gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
L.VL.6.3	<p>Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, including technical meanings, choosing flexibly from a range of strategies.</p> <ul style="list-style-type: none"> A. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. C. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).
SL.PE.6.1	<p>Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p> <ul style="list-style-type: none"> A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.
Science	
MS-ETS1-1	<p>Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p>

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MS-ETS1-2	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
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Computer Science & Design Thinking

8.1.8.AP.2	Create clearly named variables that represent different data types and perform operations on their values.
8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.
8.1.8.DA.5	Test, analyze, and refine computational models.
8.2.8.ED.2	Identify the steps in the design process that could be used to solve a problem.
8.2.8.ED.3	Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketches).

Career Readiness, Life Literacies & Key Skills

9.4.8.GCA.1	Model how to navigate cultural differences with sensitivity and respect
9.4.8.GCA.2	Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.

Career Readiness, Life Literacies, and Key Skills Practices

CLKS.1	Act as a responsible and contributing community member and employee.
CLKS.2	Attend to financial well-being.
CLKS.3	Consider the environmental, social and economic impacts of decisions.
CLKS.4	Demonstrate creativity and innovation.
CLKS.5	Utilize critical thinking to make sense of problems and persevere in solving them.
CLKS.6	Model integrity, ethical leadership and effective management.
CLKS.7	Plan education and career paths aligned to personal goals.
CLKS.8	Use technology to enhance productivity, increase collaboration and communicate effectively.
CLKS.9	Work productively in teams while using cultural/global competence.

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Evidence of Student Learning

<p>Formative Tasks:</p> <ul style="list-style-type: none"> ● Teacher observations ● Class discussions ● Whiteboard/Communicators ● Math routine responses ● Daily DOLs ● Daily classwork ● Checks for understanding ● Spiral Quizzes ● Fluency Quizzes ● <i>Number Talks</i> ● NJSLA released items 	<p>Alternative Assessments:</p> <ul style="list-style-type: none"> ● Oral assessments ● Istation
<p>Summative Assessments:</p> <ul style="list-style-type: none"> ● Unit Assessment 	<p>Benchmark Assessments:</p> <ul style="list-style-type: none"> ● Istation Diagnostic ● Monthly ISIP

Knowledge & Skills

<p>Enduring Understandings:</p> <ul style="list-style-type: none"> ● A ratio compares two quantities and shows how many times one value contains or is contained within the other. ● Ratios can describe part-to-part or part-to-whole relationships. ● Understanding ratios helps interpret relationships between quantities in real-world situations. ● Ratios can be represented in multiple ways: as a fraction, with a colon, or with words. ● Reasoning with ratios builds a foundation for understanding rates, proportions, and scaling. ● Comparing ratios helps make predictions and solve problems across different contexts. ● A unit rate describes how many units of one quantity correspond to one unit of another quantity. ● Understanding unit rates allows comparison of different quantities efficiently. ● Rates can be used to solve real-world problems, such as speed, price per item, or density. 	<p>Essential Questions:</p> <ul style="list-style-type: none"> ● What is a ratio, and how does it compare two quantities? ● How can I represent a ratio in different ways (fraction, colon, or words)? ● How can understanding ratios help me describe relationships between quantities in real-world situations? ● How can I compare two ratios to make predictions or solve problems? ● What is a unit rate, and how is it different from a ratio? ● How can I calculate a unit rate from a given ratio or problem? ● How can unit rates help me compare different quantities effectively? ● How can understanding unit rates help me solve real-world problems, like speed, price, or density? ● How can ratios and rates help me solve real-world problems? ● How do I decide which quantities to compare when using ratios or rates? ● How can tables, diagrams, or equations help me organize and solve ratio and rate problems?
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<ul style="list-style-type: none"> ● Ratios and rates can be used to solve real-world problems. ● Understanding how quantities are related allows for predicting, comparing, and scaling values. ● Tables, diagrams, and equations are tools that can help organize and solve ratio and rate problems. 	
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<p>Content <i>Students will know...</i></p> <ul style="list-style-type: none"> ● A ratio is the relationship between two quantities. ● Equivalent ratios represent the same relationship between quantities. ● Ratios can be extended to larger quantities or we can work backwards towards smaller quantities. ● A unit rate describes the relationship between two quantities, expressing how much of one quantity there is for one of the second quantity. ● Strategies for solving ratio problems include: <ul style="list-style-type: none"> ○ Making copies of a given ratio to reach a third quantity, ○ Grouping a given ratio to get to a third quantity ○ Determining the unit rate and use this to reach a third quantity ● Multiplying by a form of 1 will extend a given ratio to generate an equivalent ratio. ● Dividing by a form of 1 will group a given ratio to generate an equivalent ratio. 	<p>Skills <i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Use ratio language to describe the relationship between two quantities. ● Create visual models to represent ratios and equivalent ratios. ● Use a given ratio to find additional quantities that can be represented by the ratio. ● Create visual models to find/show equivalent ratios. ● Use a visual model to find the missing quantity in a ratio when given one quantity and the original ratio. ● Use a double number line to find the missing quantity in a ratio when given one quantity and the original ratio. ● Use a triple number line to find the missing quantity in a ratio when given two quantities. ● Use unit rate and a double number line to find the missing quantity in a ratio when given one quantity and the original ratio. ● Interpret scenarios and use strategies learned to find the missing quantity in a ratio when given one quantity and the original ratio. ● Use the Big 1 to find the missing quantity in a ratio when given one quantity and the original ratio. ● Use the unit rate and the Big 1 to find the missing quantity in a ratio when given one quantity and the original ratio.
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Core Instructional & Supplemental Materials
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<p>Suggested Activities/Resources:</p> <ul style="list-style-type: none"> ● Manipulatives ● Istation ● District Created Lessons (Unit 4) 	<p>Supplemental Materials</p> <ul style="list-style-type: none"> ● <i>Big Ideas Math</i> textbook <ul style="list-style-type: none"> ○ Section 3.1 - Ratios (107)
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| <ul style="list-style-type: none">● District Created Parent Resources● Communicators● Unit Review Jeopardy● <i>Number Talks</i>● NJSLA released items | <ul style="list-style-type: none">○ Section 3.2 - Using Tape Diagrams (115)○ Section 3.5 - Rates and Unit Rates (135)● Khan Academy● Pearson● IXL● Illustrated Mathematics<ul style="list-style-type: none">○ 6.RP.1○ 6.RP.2○ 6.RP.3● Finding and Using Unit Rate● Climate Change Lessons |
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Suggested Accommodations

English Language Learners:

- Multi-sensory instruction
- Flexible grouping
- Small group instruction
- Provide peer tutoring
- Use a strong student as a “buddy” (does not necessarily have to speak the primary language)
- Chunking information
- Scaffolded questioning
- Manipulatives/concrete models
- Pre-Teach vocabulary
- Co-Constructed Word Banks
- Anchor charts
- Gradual release model
- Visual models
- Hands-on activities
- Native language support when possible
- Sheltered English Instruction Strategies
- Sentence starters

Special Education/Students with Disabilities:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Follow all IEP modifications
- Calculators
- Manipulatives/concrete models
- Directions repeated, clarified, and reworded
- Breakdown task into manageable parts

504 Plans:

- Allow extra time to complete assignments or tests
- Work in a small group

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- Allow answers to be given orally or dictated
- Calculators
- Manipulatives/concrete models
- Follow all 504 modifications

Gifted and Talented:

- Higher level questioning
- Enriched assignments
- Tiered assignments
- Choice board to extend learning
- NJSLA released items

Students at Risk of Failure:

- Provide peer tutoring
- Use a strong student as a “buddy”
- Allow extra time to complete assignments or tests
- Work in a small group
- One on one instruction
- Provide immediate praise and feedback
- Create a nurturing environment
- Provide visuals
- Be flexible with assignments and time frames
- Provide needed academic resources
- Chunking information
- Scaffolded questioning
- Tiered activities
- Manipulatives/concrete models
- Modified assignments
- Brain breaks

Economically Disadvantaged:

- Pre-teach vocabulary using visuals and gestures
- Chunk texts
- Summarize as you go
- Preview lessons
- Graphic organizers
- Highlight key words
- Sentence starters
- Prompting and cueing
- Activate schema
- Build background knowledge

Culturally Diverse:

- Create an emotionally positive classroom climate.
- Create effective communication
- Model and teach cultural respect
- Build relationships with students by interviewing students to understand their background

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Unit 5: Ratio and Proportions; Graphing and Percents	Duration: 18 days
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<u>New Jersey Student Learning Standards</u>	
6.RP.	Understand ratio concepts and use ratio reasoning to solve problems
6.RP.1	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.
6.RP.2	Understand the concept of a unit rate $\frac{a}{b}$ associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship.
6.RP.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. <ul style="list-style-type: none"> 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. c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $\frac{30}{100}$ times the quantity); solve problems involving finding the whole, given a part and the percent. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

<u>New Jersey Standards for Mathematical Practice</u>	
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.

New Jersey Social and Emotional Competencies and Sub-Competencies

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Self-Awareness	<ul style="list-style-type: none"> ● Recognize one’s feelings and thoughts. ● Recognize the impact of one’s feelings and thoughts on one’s own behavior. ● Recognize one’s personal traits, strengths, and limitations. ● Recognize the importance of self-confidence in handling daily tasks and challenges.
Self-Management	<ul style="list-style-type: none"> ● Understand and practice strategies for managing one’s own emotions, thoughts, and behaviors. ● Recognize the skills needed to establish and achieve personal and educational goals. ● Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one’s goals.
Social Awareness	<ul style="list-style-type: none"> ● Recognize and identify the thoughts, feelings, and perspectives of others. ● Demonstrate an awareness of the differences among individuals, groups, and others’ cultural backgrounds. ● Demonstrate an understanding of the need for mutual respect when viewpoints differ. ● Demonstrate an awareness of the expectations for social interactions in a variety of settings.
Responsible Decision Making	<ul style="list-style-type: none"> ● Develop, implement, and model effective problem-solving and critical thinking skills. ● Identify the consequences associated with one’s actions in order to make constructive choices. ● Evaluate personal, ethical, safety, and civic impact of decisions.
Relationship Skills	<ul style="list-style-type: none"> ● Establish and maintain healthy relationships. ● Utilize positive communication and social skills to interact effectively with others. ● Identify ways to resist inappropriate social pressure. ● Demonstrate the ability to prevent and resolve interpersonal conflicts in constructive ways. ● Identify who, when, where, or how to seek help for oneself or others when needed.

Interdisciplinary Connections

ELA Standards

L.SS.6.1	<p>Demonstrate command of the system and structure of the English language when writing or speaking.</p> <ul style="list-style-type: none"> A. Ensure that pronouns are in the proper case (subjective, objective, possessive). B. Use intensive pronouns (e.g., myself, ourselves). C. Recognize and correct inappropriate shifts in pronoun number and person. D. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents). E. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive
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	<p>and parenthetical elements.</p> <p>F. Recognize spelling conventions.</p>
L.KL.6.2	<p>Use knowledge of language and its conventions when writing, speaking, reading, or listening.</p> <p>A. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases.</p> <p>B. Gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.</p>
L.VL.6.3	<p>Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, including technical meanings, choosing flexibly from a range of strategies.</p> <p>A. Use context (e.g., the overall meaning of a sentence or paragraph; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase.</p> <p>C. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).</p>
SL.PE.6.1	<p>Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others’ ideas and expressing their own clearly.</p> <p>A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.</p> <p>B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.</p> <p>C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.</p> <p>D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.</p>

Science

MS-ETS1-1	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
MS-ETS1-2	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

Computer Science & Design Thinking

8.1.8.AP.2	Create clearly named variables that represent different data types and perform operations on their values.
8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.
8.1.8.DA.5	Test, analyze, and refine computational models.

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8.2.8.ED.2	Identify the steps in the design process that could be used to solve a problem.
8.2.8.ED.3	Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketches).

<u>Career Readiness, Life Literacies & Key Skills</u>	
9.4.8.GCA.1	Model how to navigate cultural differences with sensitivity and respect
9.4.8.GCA.2	Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.

Career Readiness, Life Literacies, and Key Skills Practices	
CLKS.1	Act as a responsible and contributing community member and employee.
CLKS.2	Attend to financial well-being.
CLKS.3	Consider the environmental, social and economic impacts of decisions.
CLKS.4	Demonstrate creativity and innovation.
CLKS.5	Utilize critical thinking to make sense of problems and persevere in solving them.
CLKS.6	Model integrity, ethical leadership and effective management.
CLKS.7	Plan education and career paths aligned to personal goals.
CLKS.8	Use technology to enhance productivity, increase collaboration and communicate effectively.
CLKS.9	Work productively in teams while using cultural/global competence.

Evidence of Student Learning	
<p>Formative Tasks:</p> <ul style="list-style-type: none"> ● Teacher observations ● Class discussions ● Whiteboard/Communicators ● Math routine responses ● Daily DOLs ● Daily classwork ● Checks for understanding ● Spiral Quizzes ● Fluency Quizzes ● <i>Number Talks</i> ● NJSLA released items 	<p>Alternative Assessments:</p> <ul style="list-style-type: none"> ● Oral assessments ● Istation

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Summative Assessments:

- Unit Assessment

Benchmark Assessments:

- Istation Diagnostic
- Monthly ISIP

Knowledge & Skills

Enduring Understandings:

- Equivalent ratios show the same relationship between quantities even when the numbers are different.
- Tables can organize ratios and help find missing values in a pattern.
- Plotting pairs of values on a coordinate plane helps visualize relationships between quantities.
- Comparing ratios using tables helps identify proportional relationships.
- Understanding equivalent ratios and their representation in tables and graphs supports solving real-world problems.
- Tables, graphs, and ratios are connected tools that help describe and analyze relationships between quantities.
- A percent represents a part of a quantity out of 100.
- Finding a percent of a quantity involves using ratios or multiplication to determine a part of the whole.
- Percent problems can involve finding the part, the whole, or the percent itself.
- Understanding percents connects fractions, decimals, and ratios in real-world contexts.
- Solving percent problems helps interpret situations involving discounts, tax, tips, and probability.
- Percent reasoning supports making comparisons and informed decisions in practical contexts.
- Ratios can describe the relationship between different measurement units.
- Unit conversions involve multiplying or dividing by the appropriate factor to change from one unit to another.

Essential Questions:

- How can I use a table to organize ratios and find missing values?
- What does it mean for two ratios to be equivalent?
- How can plotting pairs of values on a coordinate plane help me see relationships between quantities?
- How can I use tables and graphs to compare ratios?
- What does a percent represent, and how is it related to a whole?
- How can I find a part of a quantity when given a percent?
- How can I find the whole when I know a part and its percent?
- How can understanding percents help me solve real-world problems like discounts, tax, or tips?
- How are fractions, decimals, and percents connected when solving problems?
- How can ratios help me convert from one measurement unit to another?
- When should I multiply or divide to change units?
- How do I make sure my units match when solving problems?
- Why is it important to pay attention to both numbers and units in a calculation?
- How can understanding unit conversions help me solve real-world problems involving measurement?

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<ul style="list-style-type: none"> ● Understanding how to manipulate units helps solve problems accurately and efficiently. ● Converting units requires attention to both the numbers and the labels (units). ● Ratio reasoning and unit conversion are essential for real-world problem solving, including measurement, distance, capacity, and time. ● Using consistent units allows comparison, calculation, and interpretation of quantities across contexts. 	
<p>Content <i>Students will know...</i></p> <ul style="list-style-type: none"> ● The multiplicative relationship between quantities can be used to determine if a unit rate applies to multiple given ratios. ● Noticing how the values of the coordinates are changing along a given line can help us determine the ratio that is being represented by the line. ● Strategies to identify a ratio represented in a graph are: <ul style="list-style-type: none"> ○ Start at the origin and determine how each quantity increased between the origin and a plotted point. ○ Find the increase between any two points on the line. ● Cross multiplication can be used to find equivalent ratios in any problem, however it is not always the most efficient strategy. ● Two ratios that are equivalent are said to be <i>in proportion</i>. ● The word <i>percent</i> means per 100. ● Fractions, decimals, and percents can all be used to represent an equivalent value. 	<p>Skills <i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Use equivalent ratios to complete a ratio table. ● Identify which ratio table can be described by a given unit rate. ● Create a graph to represent a ratio. ● Use a graph to answer questions about a scenario. ● Identify the ratio that is being represented by a given graph. ● Find equivalent ratios using cross multiplication. ● Find equivalent ratios that require measurement conversions. ● Find the percent of a number using a visual model. ● Solve for the whole when given a percent, using a visual model. ● Find percentage using cross multiplication. ● Find the missing quantity (either the part or the whole) in a percent problem using cross multiplication.

Core Instructional & Supplemental Materials
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<p>Suggested Activities/Resources:</p> <ul style="list-style-type: none"> ● Manipulatives ● Istation ● District Created Lessons (Unit 5) ● District Created Parent Resources ● Communicators ● Unit Review Jeopardy 	<p>Supplemental Materials</p> <ul style="list-style-type: none"> ● <i>Big Ideas Math</i> textbook <ul style="list-style-type: none"> ○ Section 3.3 - Using Ratio Tables (121) ○ Section 3.4 - Graphing Ratio Relationships (129)
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| <ul style="list-style-type: none">• <i>Number Talks</i>• NJSLA released items• NJSLA Mathematics Reference Sheet | <ul style="list-style-type: none">○ Section 3.6 - Converting Measurements (141)○ Section 4.1 - Percents and Fractions (163)○ Section 4.4 - Solving Percent Problems (181)• Khan Academy• Pearson• IXL• Illustrated Mathematics<ul style="list-style-type: none">○ 6.RP.1○ 6.RP.2○ 6.RP.3• Data from the Kupferberg Holocaust Center can be used in real-world problems involving percents• Calculating the Distance: a lesson that requires use of the four operations and measurement conversions.• Climate Change Lessons |
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Suggested Accommodations

English Language Learners:

- Multi-sensory instruction
- Flexible grouping
- Small group instruction
- Provide peer tutoring
- Use a strong student as a “buddy” (does not necessarily have to speak the primary language)
- Chunking information
- Scaffolded questioning
- Manipulatives/concrete models
- Pre-Teach vocabulary
- Co-Constructed Word Banks
- Anchor charts
- Gradual release model
- Visual models
- Hands-on activities
- Native language support when possible
- Sheltered English Instruction Strategies
- Sentence starters

Special Education/Students with Disabilities:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Follow all IEP modifications
- Calculators
- Manipulatives/concrete models

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- Directions repeated, clarified, and reworded
- Breakdown task into manageable parts

504 Plans:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Calculators
- Manipulatives/concrete models
- Follow all 504 modifications

Gifted and Talented:

- Higher level questioning
- Enriched assignments
- Tiered assignments
- Choice board to extend learning
- NJSLA released items

Students at Risk of Failure:

- Provide peer tutoring
- Use a strong student as a “buddy”
- Allow extra time to complete assignments or tests
- Work in a small group
- One on one instruction
- Provide immediate praise and feedback
- Create a nurturing environment
- Provide visuals
- Be flexible with assignments and time frames
- Provide needed academic resources
- Chunking information
- Scaffolded questioning
- Tiered activities
- Manipulatives/concrete models
- Modified assignments
- Brain breaks

Economically Disadvantaged:

- Pre-teach vocabulary using visuals and gestures
- Chunk texts
- Summarize as you go
- Preview lessons
- Graphic organizers
- Highlight key words
- Sentence starters
- Prompting and cueing
- Activate schema
- Build background knowledge

Culturally Diverse:

- Create an emotionally positive classroom climate.
- Create effective communication

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- Model and teach cultural respect
- Build relationships with students by interviewing students to understand their background

Unit 6: Expressions	Duration: 16 days
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[New Jersey Student Learning Standards](#)

6.EE.A	Apply and extend previous understandings of arithmetic to algebraic expressions
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. <ol style="list-style-type: none"> 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. 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. 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.3	Apply the properties of operations to generate equivalent expressions.
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).
6.EE.B	Reason about and solve one-variable equations and inequalities.
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.

[New Jersey Standards for Mathematical Practice](#)

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.

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MP.7	Look for and make use of structure.
MP.8	Look for and express regularity in repeated reasoning.

New Jersey Social and Emotional Competencies and Sub-Competencies
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Self-Awareness	<ul style="list-style-type: none"> ● Recognize one’s feelings and thoughts. ● Recognize the impact of one’s feelings and thoughts on one’s own behavior. ● Recognize one’s personal traits, strengths, and limitations. ● Recognize the importance of self-confidence in handling daily tasks and challenges.
Self-Management	<ul style="list-style-type: none"> ● Understand and practice strategies for managing one’s own emotions, thoughts, and behaviors. ● Recognize the skills needed to establish and achieve personal and educational goals. ● Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one’s goals.
Social Awareness	<ul style="list-style-type: none"> ● Recognize and identify the thoughts, feelings, and perspectives of others. ● Demonstrate an awareness of the differences among individuals, groups, and others’ cultural backgrounds. ● Demonstrate an understanding of the need for mutual respect when viewpoints differ. ● Demonstrate an awareness of the expectations for social interactions in a variety of settings.
Responsible Decision Making	<ul style="list-style-type: none"> ● Develop, implement, and model effective problem-solving and critical thinking skills. ● Identify the consequences associated with one’s actions in order to make constructive choices. ● Evaluate personal, ethical, safety, and civic impact of decisions.
Relationship Skills	<ul style="list-style-type: none"> ● Establish and maintain healthy relationships. ● Utilize positive communication and social skills to interact effectively with others. ● Identify ways to resist inappropriate social pressure. ● Demonstrate the ability to prevent and resolve interpersonal conflicts in constructive ways. ● Identify who, when, where, or how to seek help for oneself or others when needed.

Interdisciplinary Connections

ELA Standards

L.SS.6.1	Demonstrate command of the system and structure of the English language when writing or speaking. <ul style="list-style-type: none"> A. Ensure that pronouns are in the proper case (subjective, objective,
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	<p>possessive).</p> <p>B. Use intensive pronouns (e.g., myself, ourselves).</p> <p>C. Recognize and correct inappropriate shifts in pronoun number and person.</p> <p>D. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents).</p> <p>E. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive and parenthetical elements.</p> <p>F. Recognize spelling conventions.</p>
L.KL.6.2	<p>Use knowledge of language and its conventions when writing, speaking, reading, or listening.</p> <p>A. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases.</p> <p>B. Gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.</p>
L.VL.6.3	<p>Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, including technical meanings, choosing flexibly from a range of strategies.</p> <p>A. Use context (e.g., the overall meaning of a sentence or paragraph; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase.</p> <p>C. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).</p>
SL.PE.6.1	<p>Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others’ ideas and expressing their own clearly.</p> <p>A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.</p> <p>B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed.</p> <p>C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.</p> <p>D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.</p>
Science	
MS-ETS1-1	<p>Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p>
MS-ETS1-2	<p>Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.</p>

<u>Computer Science & Design Thinking</u>
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8.1.8.AP.2	Create clearly named variables that represent different data types and perform operations on their values.
8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.
8.1.8.DA.5	Test, analyze, and refine computational models.
8.2.8.ED.2	Identify the steps in the design process that could be used to solve a problem.
8.2.8.ED.3	Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketches).

Career Readiness, Life Literacies & Key Skills

9.4.8.GCA.1	Model how to navigate cultural differences with sensitivity and respect
9.4.8.GCA.2	Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.

Career Readiness, Life Literacies, and Key Skills Practices

CLKS.1	Act as a responsible and contributing community member and employee.
CLKS.2	Attend to financial well-being.
CLKS.3	Consider the environmental, social and economic impacts of decisions.
CLKS.4	Demonstrate creativity and innovation.
CLKS.5	Utilize critical thinking to make sense of problems and persevere in solving them.
CLKS.6	Model integrity, ethical leadership and effective management.
CLKS.7	Plan education and career paths aligned to personal goals.
CLKS.8	Use technology to enhance productivity, increase collaboration and communicate effectively.
CLKS.9	Work productively in teams while using cultural/global competence.

Evidence of Student Learning

Formative Tasks: <ul style="list-style-type: none"> ● Teacher observations ● Class discussions ● Whiteboard/Communicators 	Alternative Assessments: <ul style="list-style-type: none"> ● Oral assessments ● Istation
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<ul style="list-style-type: none"> ● Math routine responses ● Daily DOLs ● Daily classwork ● Checks for understanding ● Spiral Quizzes ● Fluency Quizzes ● <i>Number Talks</i> ● NJSLA released items 	
Summative Assessments: <ul style="list-style-type: none"> ● Unit Assessment 	Benchmark Assessments: <ul style="list-style-type: none"> ● Istation Diagnostic ● Monthly ISIP

Knowledge & Skills	
Enduring Understandings: <ul style="list-style-type: none"> ● Exponents provide a concise way to represent repeated multiplication. ● A whole-number exponent tells how many times a base is multiplied by itself. ● Numerical expressions can include exponents and follow the order of operations. ● Evaluating expressions with exponents requires understanding both the meaning of the exponent and the structure of the expression. ● Letters can represent numbers in mathematical expressions and allow us to describe general relationships. ● Mathematical terms such as <i>sum</i>, <i>term</i>, <i>product</i>, <i>factor</i>, <i>quotient</i>, and <i>coefficient</i> describe parts of an expression and help communicate mathematical thinking. ● Expressions can model real-world situations using formulas and variables. ● The order of operations ensures expressions are evaluated consistently and accurately, even when exponents are involved. ● Understanding expressions builds a foundation for solving equations and inequalities. ● Equivalent expressions represent the same value, even when written in different forms. 	Essential Questions: <ul style="list-style-type: none"> ● What does an exponent tell me about a number? ● How is an expression with exponents different from repeated multiplication written out? ● How do I correctly evaluate expressions that include exponents? ● Why is the order of operations important when working with exponents? ● How are exponents useful in representing real-world quantities or mathematical patterns? ● How do letters represent numbers in mathematical expressions? ● How can I write an expression to represent a real-world situation or calculation? ● What do terms like <i>sum</i>, <i>product</i>, <i>factor</i>, and <i>coefficient</i> tell me about an expression? ● How can viewing parts of an expression as a single unit help me understand its structure? ● Why is the order of operations important when evaluating expressions? ● How do algebraic expressions help describe and solve real-world problems? ● What does it mean for two expressions to be equivalent?

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<ul style="list-style-type: none"> ● Properties of operations (commutative, associative, and distributive) can be used to rewrite expressions. ● The distributive property connects multiplication and addition and helps reveal structure in expressions. ● Equivalent expressions can look different but represent the same mathematical relationship. ● Variables are symbols that represent numbers in mathematical expressions. ● A variable can represent an unknown value or any number in a given set, depending on the situation. ● Writing expressions with variables helps model real-world and mathematical problems. ● The meaning of a variable depends on the context of the problem. 	<ul style="list-style-type: none"> ● How can the properties of operations help rewrite expressions? ● Why is the distributive property useful when working with expressions? ● What does it mean for two expressions to be equivalent? ● What is a variable, and how is it used to represent numbers? ● How can a variable represent an unknown number or many possible values? ● How do I write an expression using variables to model a real-world situation? ● Why is it useful to use variables when solving mathematical problems? ● How does the context of a problem affect what a variable represents?
<p>Content <i>Students will know...</i></p> <ul style="list-style-type: none"> ● Exponential expressions are expressions that have exponents in them. ● An exponent is written above and to the right of the factor and tells us how many times the factor is repeated in the expression. ● Parts of an expression may include sum, term, product, factor, quotient, coefficient. ● The base is the repeated factor in the expression and is located directly to the left of the exponent. ● When the base has an exponent of 0, the value of the expression is 0. ● The order of operations can be thought of in 4 steps: <ol style="list-style-type: none"> 1) Parentheses 2) Exponents 3) Multiplication and Division 4) Addition and Subtraction ● Using the distributive property means that we are multiplying the factor outside the parenthesis by each term inside the parenthesis. ● Expressions involving multiplication can be described in terms of “groups of.” ● We can use the distributive property or 	<p>Skills <i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Identify the exponent and base in an exponential expression. ● Rewrite an exponential expression in expanded form. ● Write an exponential expressions when given an expression with repeated factors. ● Evaluate a given exponential expression by expanding the expression. ● Evaluate numeric expressions using the Order of Operations. ● Write a variable expression to represent a phrase. ● Write a variable expression to represent a scenario. ● Evaluate an expression for a specific variable. ● Simplify an expression by combining like terms. ● Write an equivalent expression by distributing, using the distributive property. ● Write an equivalent expression by factoring, using the distributive property.

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- factoring to write equivalent expressions.
- Variables can be used to represent unknown numbers.

Core Instructional & Supplemental Materials

Suggested Activities/Resources:

- Manipulatives
- Istation
- District Created Lessons (Unit 6)
- District Created Parent Resources
- Communicators
- Unit Review Jeopardy
- Number Talks*
- NJSLA released items

Supplemental Materials

- Big Ideas Math* textbook
 - Section 1.1 - Powers and Exponents (3)
 - Section 1.2 - Order of Operations (9)
 - Section 5.1 - Algebraic Expressions (201)
 - Section 5.2 - Writing Expressions (209)
 - Section 5.3 - Properties of Addition and Multiplication (215)
 - Section 5.4 - The Distributive Property (221)
 - Section 5.5 - Factoring Expressions (227)
- [Khan Academy](#)
- [Pearson](#)
- [IXL](#)
- Illustrated Mathematics
 - [6.EE.1](#)
 - [6.EE.2](#)
 - [6.EE.3](#)
 - [6.EE.4](#)
 - [6.EE.6](#)
- [Climate Change Lessons](#)

Suggested Accommodations

English Language Learners:

- Multi-sensory instruction
- Flexible grouping
- Small group instruction
- Provide peer tutoring
- Use a strong student as a “buddy” (does not necessarily have to speak the primary language)
- Chunking information
- Scaffolded questioning
- Manipulatives/concrete models
- Pre-Teach vocabulary
- Co-Constructed Word Banks
- Anchor charts
- Gradual release model

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- Visual models
- Hands-on activities
- Native language support when possible
- Sheltered English Instruction Strategies
- Sentence starters

Special Education/Students with Disabilities:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Follow all IEP modifications
- Calculators
- Manipulatives/concrete models
- Directions repeated, clarified, and reworded
- Breakdown task into manageable parts

504 Plans:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Calculators
- Manipulatives/concrete models
- Follow all 504 modifications

Gifted and Talented:

- Higher level questioning
- Enriched assignments
- Tiered assignments
- Choice board to extend learning
- NJSLA released items

Students at Risk of Failure:

- Provide peer tutoring
- Use a strong student as a “buddy”
- Allow extra time to complete assignments or tests
- Work in a small group
- One on one instruction
- Provide immediate praise and feedback
- Create a nurturing environment
- Provide visuals
- Be flexible with assignments and time frames
- Provide needed academic resources
- Chunking information
- Scaffolded questioning
- Tiered activities
- Manipulatives/concrete models
- Modified assignments
- Brain breaks

Economically Disadvantaged:

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<ul style="list-style-type: none"> ● Pre-teach vocabulary using visuals and gestures ● Chunk texts ● Summarize as you go ● Preview lessons ● Graphic organizers ● Highlight key words ● Sentence starters ● Prompting and cueing ● Activate schema ● Build background knowledge <p>Culturally Diverse:</p> <ul style="list-style-type: none"> ● Create an emotionally positive classroom climate. ● Create effective communication ● Model and teach cultural respect ● Build relationships with students by interviewing students to understand their background
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Unit 7: Equations and Inequalities	Duration: 14 days
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<u>New Jersey Student Learning Standards</u>	
6.EE.B	Reason about and solve one-variable equations and inequalities.
6.EE.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 substitutions to determine whether a given number in a specified set makes an equation or inequality true.
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.
6.EE.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.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	Represent and analyze quantitative relationships between dependent and independent variables.
6.EE.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 using graphs and tables, and relate these to the equation.

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New Jersey Standards for Mathematical Practice

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.

New Jersey Social and Emotional Competencies and Sub-Competencies

Self-Awareness	<ul style="list-style-type: none"> ● Recognize one’s feelings and thoughts. ● Recognize the impact of one’s feelings and thoughts on one’s own behavior. ● Recognize one’s personal traits, strengths, and limitations. ● Recognize the importance of self-confidence in handling daily tasks and challenges.
Self-Management	<ul style="list-style-type: none"> ● Understand and practice strategies for managing one’s own emotions, thoughts, and behaviors. ● Recognize the skills needed to establish and achieve personal and educational goals. ● Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one’s goals.
Social Awareness	<ul style="list-style-type: none"> ● Recognize and identify the thoughts, feelings, and perspectives of others. ● Demonstrate an awareness of the differences among individuals, groups, and others’ cultural backgrounds. ● Demonstrate an understanding of the need for mutual respect when viewpoints differ. ● Demonstrate an awareness of the expectations for social interactions in a variety of settings.
Responsible Decision Making	<ul style="list-style-type: none"> ● Develop, implement, and model effective problem-solving and critical thinking skills. ● Identify the consequences associated with one’s actions in order to make constructive choices. ● Evaluate personal, ethical, safety, and civic impact of decisions.
Relationship Skills	<ul style="list-style-type: none"> ● Establish and maintain healthy relationships. ● Utilize positive communication and social skills to interact effectively with others.

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	<ul style="list-style-type: none"> ● Identify ways to resist inappropriate social pressure. ● Demonstrate the ability to prevent and resolve interpersonal conflicts in constructive ways. ● Identify who, when, where, or how to seek help for oneself or others when needed.
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Interdisciplinary Connections

ELA Standards

L.SS.6.1	<p>Demonstrate command of the system and structure of the English language when writing or speaking.</p> <ul style="list-style-type: none"> A. Ensure that pronouns are in the proper case (subjective, objective, possessive). B. Use intensive pronouns (e.g., myself, ourselves). C. Recognize and correct inappropriate shifts in pronoun number and person. D. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents). E. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive and parenthetical elements. F. Recognize spelling conventions.
L.KL.6.2	<p>Use knowledge of language and its conventions when writing, speaking, reading, or listening.</p> <ul style="list-style-type: none"> A. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases. B. Gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
L.VL.6.3	<p>Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, including technical meanings, choosing flexibly from a range of strategies.</p> <ul style="list-style-type: none"> A. Use context (e.g., the overall meaning of a sentence or paragraph; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase. C. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).
SL.PE.6.1	<p>Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others’ ideas and expressing their own clearly.</p> <ul style="list-style-type: none"> A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.

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Science	
MS-ETS1-1	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
MS-ETS1-2	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

<u>Computer Science & Design Thinking</u>	
8.1.8.AP.2	Create clearly named variables that represent different data types and perform operations on their values.
8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.
8.1.8.DA.5	Test, analyze, and refine computational models.
8.2.8.ED.2	Identify the steps in the design process that could be used to solve a problem.
8.2.8.ED.3	Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketches).

<u>Career Readiness, Life Literacies & Key Skills</u>	
9.4.8.GCA.1	Model how to navigate cultural differences with sensitivity and respect
9.4.8.GCA.2	Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.

Career Readiness, Life Literacies, and Key Skills Practices	
CLKS.1	Act as a responsible and contributing community member and employee.
CLKS.2	Attend to financial well-being.
CLKS.3	Consider the environmental, social and economic impacts of decisions.
CLKS.4	Demonstrate creativity and innovation.
CLKS.5	Utilize critical thinking to make sense of problems and persevere in solving them.
CLKS.6	Model integrity, ethical leadership and effective management.

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CLKS.7	Plan education and career paths aligned to personal goals.
CLKS.8	Use technology to enhance productivity, increase collaboration and communicate effectively.
CLKS.9	Work productively in teams while using cultural/global competence.

Evidence of Student Learning	
<p>Formative Tasks:</p> <ul style="list-style-type: none"> ● Teacher observations ● Class discussions ● Whiteboard/Communicators ● Math routine responses ● Daily DOLs ● Daily classwork ● Checks for understanding ● Spiral Quizzes ● Fluency Quizzes ● <i>Number Talks</i> ● NJSLA released items 	<p>Alternative Assessments:</p> <ul style="list-style-type: none"> ● Oral assessments ● Istation
<p>Summative Assessments:</p> <ul style="list-style-type: none"> ● Unit Assessment 	<p>Benchmark Assessments:</p> <ul style="list-style-type: none"> ● Istation Diagnostic ● Monthly ISIP

Knowledge & Skills	
<p>Enduring Understandings:</p> <ul style="list-style-type: none"> ● Solving an equation or inequality means finding which values make the statement true. ● Not all numbers will make an equation or inequality true; solutions come from a specified set. ● Substituting values into an equation or inequality helps determine whether they are solutions. ● Variables are symbols that stand for numbers in mathematical expressions. ● A variable can represent an unknown value or any number in a given set, depending on the situation. ● Writing expressions with variables helps model and solve real-world and mathematical problems. ● The meaning of a variable depends on the context of the problem being solved. 	<p>Essential Questions:</p> <ul style="list-style-type: none"> ● What does it mean to solve an equation or inequality? ● How can I use substitution to test whether a value is a solution? ● Why is it important to consider a specified set of values when solving equations or inequalities? ● How can I explain why a value does or does not make an equation or inequality true? ● What is a variable, and how does it represent numbers in a problem? ● How can a variable represent an unknown number or many possible values? ● How do I write an expression using variables to model a real-world situation? ● Why is using variables helpful when solving mathematical problems?

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<ul style="list-style-type: none"> • Equations represent relationships between quantities and can model real-world situations. • One-step equations can be solved by using inverse operations. • Writing equations helps translate word problems into mathematical language. • Solving equations allows us to find unknown values and check if solutions make sense in context. • Inequalities represent constraints or conditions rather than exact values. • Writing an inequality helps model real-world situations with limits or boundaries. • Number line diagrams are useful tools for representing and visualizing solutions to inequalities. • Understanding inequalities supports reasoning about ranges of possible solutions. • Variables can represent quantities that change in relation to one another. • One variable can depend on another, creating a dependent-independent relationship. • Equations can describe how one quantity changes based on another. • Tables and graphs help organize and visualize relationships between variables. • The same relationship can be represented using words, equations, tables, and graphs. • Understanding variable relationships helps model and solve real-world problems. 	<ul style="list-style-type: none"> • How does the context of a problem affect what a variable represents? • How can I write an equation to represent a real-world situation? • How do inverse operations help me solve equations? • How can I check whether my solution makes sense in the context of the problem? • How does an inequality differ from an equation? • How can I write an inequality to represent a real-world constraint or condition? • Why do inequalities have infinitely many solutions? • How can I represent solutions to an inequality on a number line? • How can variables represent two quantities that change together? • What is the difference between an independent variable and a dependent variable? • How can I write an equation to show how one quantity depends on another? • How do tables and graphs help explain the relationship between two variables? • How can I tell if my equation, table, and graph represent the same relationship? • Why is it helpful to represent relationships in more than one way?
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<p>Content <i>Students will know...</i></p> <ul style="list-style-type: none"> • The solution to an equation is the value that makes the equation true. • An inverse operation is the operation that we use to undo the operation being performed in the equation. • An inequality is an expression that is greater than or less than a given value. • Solutions to inequalities can be

<p>Skills <i>Students will be able to ...</i></p> <ul style="list-style-type: none"> • Determine which solution in a set of solutions will make a given equation true. • Use addition and subtraction to solve one-step equations. • Use multiplication and division to solve one-step equations. • Use the four operations to solve one-step

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<p>represented on a number line.</p> <ul style="list-style-type: none"> ● There may be more than one value that satisfies an inequality. This is because when solving an inequality there are infinitely many solutions with the resulting value after isolating the variable representing the boundary of the set. ● Any value can be substituted for the independent variable. ● The value of the dependent variable depends on the value of the independent variable. 	<p>equations.</p> <ul style="list-style-type: none"> ● Write an inequality to represent a scenario. ● Represent an inequality on a number line. ● Interpret a solution graphed on a number line and determine which inequality is being represented. ● Determine which solution in a set of solutions will make a given inequality true. ● Write an equation in two variables to represent a scenario. ● Use tables to show the values of the variables and discuss the relationship between them. ● Represent an equation in two variables on a graph. ● Given a graph, write an equation to represent the relationship between the two variables.
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Core Instructional & Supplemental Materials

<p>Suggested Activities/Resources:</p> <ul style="list-style-type: none"> ● Manipulatives ● Istation ● District Created Lessons (Unit 7) ● District Created Parent Resources ● Communicators ● Unit Review Jeopardy ● <i>Number Talks</i> ● NJSLA released items 	<p>Supplemental Materials</p> <ul style="list-style-type: none"> ● <i>Big Ideas Math</i> textbook <ul style="list-style-type: none"> ○ Section 6.2 - Solving Equations using Addition or Subtraction (251) ○ Section 6.3 Solving Equations using Multiplication and Division (259) ○ Section 6.4 - Writing Equations in Two Variables (265) ○ Section 8.7 - Writing and Graphing Inequalities (383) ○ Section 8.8 - Solving Inequalities (391) ● Khan Academy ● Pearson ● IXL ● Illustrated Mathematics <ul style="list-style-type: none"> ○ 6.EE.5 ○ 6.EE.6 ○ 6.EE.7 ○ 6.EE.8 ○ 6.EE.9 ● Climate Change Lessons
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Suggested Accommodations

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English Language Learners:

- Multi-sensory instruction
- Flexible grouping
- Small group instruction
- Provide peer tutoring
- Use a strong student as a “buddy” (does not necessarily have to speak the primary language)
- Chunking information
- Scaffolded questioning
- Manipulatives/concrete models
- Pre-Teach vocabulary
- Co-Constructed Word Banks
- Anchor charts
- Gradual release model
- Visual models
- Hands-on activities
- Native language support when possible
- Sheltered English Instruction Strategies
- Sentence starters

Special Education/Students with Disabilities:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Follow all IEP modifications
- Calculators
- Manipulatives/concrete models
- Directions repeated, clarified, and reworded
- Breakdown task into manageable parts

504 Plans:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Calculators
- Manipulatives/concrete models
- Follow all 504 modifications

Gifted and Talented:

- Higher level questioning
- Enriched assignments
- Tiered assignments
- Choice board to extend learning
- NJSLA released items

Students at Risk of Failure:

- Provide peer tutoring
- Use a strong student as a “buddy”
- Allow extra time to complete assignments or tests
- Work in a small group

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<ul style="list-style-type: none"> ● One on one instruction ● Provide immediate praise and feedback ● Create a nurturing environment ● Provide visuals ● Be flexible with assignments and time frames ● Provide needed academic resources ● Chunking information ● Scaffolded questioning ● Tiered activities ● Manipulatives/concrete models ● Modified assignments ● Brain breaks <p>Economically Disadvantaged:</p> <ul style="list-style-type: none"> ● Pre-teach vocabulary using visuals and gestures ● Chunk texts ● Summarize as you go ● Preview lessons ● Graphic organizers ● Highlight key words ● Sentence starters ● Prompting and cueing ● Activate schema ● Build background knowledge <p>Culturally Diverse:</p> <ul style="list-style-type: none"> ● Create an emotionally positive classroom climate. ● Create effective communication ● Model and teach cultural respect ● Build relationships with students by interviewing students to understand their background
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Unit 8: Geometry	Duration: 17 days
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<u>New Jersey Student Learning Standards</u>	
6.G.A	Solve real-world and mathematical problems involving area, surface area, and volume
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.
6.G.2	Find the volume of a right rectangular prism with fractional 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.

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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.
6.G.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.

<u>New Jersey Standards for Mathematical Practice</u>	
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.

New Jersey Social and Emotional Competencies and Sub-Competencies	
Self-Awareness	<ul style="list-style-type: none"> ● Recognize one’s feelings and thoughts. ● Recognize the impact of one’s feelings and thoughts on one’s own behavior. ● Recognize one’s personal traits, strengths, and limitations. ● Recognize the importance of self-confidence in handling daily tasks and challenges.
Self-Management	<ul style="list-style-type: none"> ● Understand and practice strategies for managing one’s own emotions, thoughts, and behaviors. ● Recognize the skills needed to establish and achieve personal and educational goals. ● Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one’s goals.
Social Awareness	<ul style="list-style-type: none"> ● Recognize and identify the thoughts, feelings, and perspectives of others. ● Demonstrate an awareness of the differences among individuals, groups, and others’ cultural backgrounds. ● Demonstrate an understanding of the need for mutual respect when viewpoints differ.

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	<ul style="list-style-type: none"> ● Demonstrate an awareness of the expectations for social interactions in a variety of settings.
Responsible Decision Making	<ul style="list-style-type: none"> ● Develop, implement, and model effective problem-solving and critical thinking skills. ● Identify the consequences associated with one's actions in order to make constructive choices. ● Evaluate personal, ethical, safety, and civic impact of decisions.
Relationship Skills	<ul style="list-style-type: none"> ● Establish and maintain healthy relationships. ● Utilize positive communication and social skills to interact effectively with others. ● Identify ways to resist inappropriate social pressure. ● Demonstrate the ability to prevent and resolve interpersonal conflicts in constructive ways. ● Identify who, when, where, or how to seek help for oneself or others when needed.

<u>Interdisciplinary Connections</u>

ELA Standards

L.SS.6.1	<p>Demonstrate command of the system and structure of the English language when writing or speaking.</p> <ul style="list-style-type: none"> A. Ensure that pronouns are in the proper case (subjective, objective, possessive). B. Use intensive pronouns (e.g., myself, ourselves). C. Recognize and correct inappropriate shifts in pronoun number and person. D. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents). E. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive and parenthetical elements. F. Recognize spelling conventions.
L.KL.6.2	<p>Use knowledge of language and its conventions when writing, speaking, reading, or listening.</p> <ul style="list-style-type: none"> A. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases. B. Gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
L.VL.6.3	<p>Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, including technical meanings, choosing flexibly from a range of strategies.</p> <ul style="list-style-type: none"> A. Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. C. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).

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SL.PE.6.1	<p>Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.</p> <ul style="list-style-type: none"> A. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. B. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.
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Science

MS-ETS1-1	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
MS-ETS1-2	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

Computer Science & Design Thinking

8.1.8.AP.2	Create clearly named variables that represent different data types and perform operations on their values.
8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.
8.1.8.DA.5	Test, analyze, and refine computational models.
8.2.8.ED.2	Identify the steps in the design process that could be used to solve a problem.
8.2.8.ED.3	Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketches).

Career Readiness, Life Literacies & Key Skills

9.4.8.GCA.1	Model how to navigate cultural differences with sensitivity and respect
9.4.8.GCA.2	Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.

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Career Readiness, Life Literacies, and Key Skills Practices	
CLKS.1	Act as a responsible and contributing community member and employee.
CLKS.2	Attend to financial well-being.
CLKS.3	Consider the environmental, social and economic impacts of decisions.
CLKS.4	Demonstrate creativity and innovation.
CLKS.5	Utilize critical thinking to make sense of problems and persevere in solving them.
CLKS.6	Model integrity, ethical leadership and effective management.
CLKS.7	Plan education and career paths aligned to personal goals.
CLKS.8	Use technology to enhance productivity, increase collaboration and communicate effectively.
CLKS.9	Work productively in teams while using cultural/global competence.

Evidence of Student Learning	
<p>Formative Tasks:</p> <ul style="list-style-type: none"> ● Teacher observations ● Class discussions ● Whiteboard/Communicators ● Math routine responses ● Daily DOLs ● Daily classwork ● Checks for understanding ● Spiral Quizzes ● Fluency Quizzes ● <i>Number Talks</i> ● NJSLA released items 	<p>Alternative Assessments:</p> <ul style="list-style-type: none"> ● Oral assessments ● Istation
<p>Summative Assessments:</p> <ul style="list-style-type: none"> ● Unit Assessment 	<p>Benchmark Assessments:</p> <ul style="list-style-type: none"> ● Istation Diagnostic ● Monthly ISIP

Knowledge & Skills	
<p>Enduring Understandings:</p> <ul style="list-style-type: none"> ● Complex shapes can be decomposed into simpler shapes (such as rectangles and triangles) to find their area. ● The area of triangles, quadrilaterals, and polygons can be determined by relating them to rectangles. 	<p>Essential Questions:</p> <ul style="list-style-type: none"> ● How can complex shapes be broken apart or combined to help us find their area? ● Why does decomposing a shape make it easier to calculate area? ● How is the area of a triangle related to the area of a rectangle?

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- Different strategies can be used to find area, and some methods may be more efficient depending on the shape.
- Area formulas are not isolated rules; they are derived from geometric reasoning.
- Accurate area calculations require an understanding of units, dimensions, and spatial relationships.
- Volume measures the space inside a three-dimensional object.
- The volume of a right rectangular prism can be found by counting unit cubes, even when the edge lengths are fractions.
- Multiplying the length, width, and height of a prism represents the total number of cubic units that fill the prism.
- The formulas $V = l \times w \times h$ and $V = B \times h$ are equivalent and connected, where the base area multiplied by height gives the same volume.
- Fractional edge lengths result in fractional volumes, which still represent real, measurable space.
- Volume formulas are derived from spatial reasoning, not just memorized rules.
- Three-dimensional figures can be represented as two-dimensional nets made of rectangles and triangles.
- Nets show how the faces of a solid are connected and help visualize the structure of 3D shapes.
- The surface area of a three-dimensional figure is the sum of the areas of all its faces.
- Understanding the faces and edges of solids helps ensure accurate surface area calculations.
- Surface area formulas are based on geometric reasoning, not memorization.
- Polygons can be accurately drawn by plotting ordered pairs that represent their vertices.
- The distance between two points with the same x-coordinate or the same y-coordinate can be found by subtracting coordinate values.
- What strategies can be used to find the area of irregular or composite shapes?
- How do we decide which method is most efficient for finding the area of a given shape?
- How can finding area help us solve real-world problems?
- How does understanding area help us make sense of space and design?
- What does volume tell us about a three-dimensional object?
- How can unit cubes be used to explain volume when dimensions are fractions?
- Why does multiplying the edge lengths of a prism give its volume?
- How are the formulas $V = l \times w \times h$ and $V = B \times h$ connected?
- How does using fractional dimensions affect the volume of a prism?
- What strategies help ensure accuracy when finding volume with fractions?
- How do we choose the most efficient method to find the volume of a prism?
- How do nets help us understand and represent three-dimensional figures?
- How can a two-dimensional net be folded to form a three-dimensional shape?
- How do we identify and count all the faces of a solid using a net?
- Why might different nets result in the same surface area?
- What strategies help avoid missing or double-counting faces when finding surface area?
- How does surface area differ from volume?
- How do coordinates help us represent and draw polygons?
- What information does each ordered pair tell us about a point's location?
- How can we find the length of a side when two points share the same x- or y-coordinate?
- Why does subtracting coordinates give the distance between horizontal or vertical points?

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<ul style="list-style-type: none"> ● Horizontal and vertical distances represent side lengths of polygons on the coordinate plane. 	<ul style="list-style-type: none"> ● How can errors in plotting affect the shape or size of a polygon? ● How does the coordinate plane connect geometry and measurement? ● What strategies help us work efficiently and accurately with coordinates?
<p>Content <i>Students will know...</i></p> <ul style="list-style-type: none"> ● The area of a triangle is half of the area of the rectangle that has the same base and height. ● Area is measured in square units. ● The area of a parallelogram is the same as the area of the rectangle that has the same base and height. ● The side length of a parallelogram is different from the height of a parallelogram. ● Because area is additive, the area of irregular figures can be found by decomposing them into triangles and rectangles. ● Depending on the figure, it may be more efficient to find the area of the larger rectangle that encompasses the figure and then subtract the areas of the parts that are outside of the figure. ● Volume is the space within a prism and is measured in cubic units. ● Dimensions of a rectangular prism can be thought of in terms of the size of a specified cube. ● A net is what a three-dimensional figure would look like if we opened it up. ● Prisms are solid figures that have two identical bases. ● Pyramids are solid figures that have one base and faces that meet at a point. ● A cube is a rectangular prism whose faces are all equivalent squares. ● Surface area is the measurement of the space needed to cover the outside of a three-dimensional figure. 	<p>Skills <i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Find the area of a triangle by creating a rectangle with the same base and height, using visuals. ● Find the area of a triangle by using the formula. ● Find the area of a parallelogram by using the formula. ● Find the area of irregular figures by decomposing into rectangles and triangles, applying the area formulas, and finding the sum of each part to determine the total. ● Find the area of irregular figures by sketching a rectangle around the figure, finding the area of the rectangle, and subtracting the area of the parts of the rectangle that are not included in the irregular figure. ● Interpret real-world situations that require finding area; apply the area formulas to solve real-world problems. ● Find the volume of a rectangular prism with fractional side lengths by counting the cubes within the prism and then determining the unit represented by each cube. ● Find the volume of a rectangular prism by using the formula. ● When given a rectangular prism with dimensions, determine the number of cubes of a given size that can be packed into the prism. ● Identify the net that could be used to create a specific prism or pyramid. ● Identify the prism or pyramid that could be made from a given net. ● Find the surface area of a prism or pyramid using the given net. ● Find the surface area of a solid figure by using formulas to find the area of each face and then adding them together.

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	<ul style="list-style-type: none"> Plot points on the coordinate plane and connect the points to create a polygon. Find the area and perimeter of polygons on the coordinate plane.
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Core Instructional & Supplemental Materials

<p>Suggested Activities/Resources:</p> <ul style="list-style-type: none"> Manipulatives Istation District Created Lessons (Unit 8) District Created Parent Resources Communicators Unit Review Jeopardy <i>Number Talks</i> NJSLA released items 	<p>Supplemental Materials</p> <ul style="list-style-type: none"> <i>Big Ideas Math</i> textbook <ul style="list-style-type: none"> Section 7.1 - Areas of Parallelograms (285) Section 7.2 - Areas of Triangles (291) Section 7.3 - Areas of Trapezoids and Kites (297) Section 7.5 - Surface Areas of Prisms (311) Section 7.6 - Surface Areas of Pyramids (319) Section 7.7 - Volumes of Rectangular Prisms (325) Section 8.6 - Polygons in the Coordinate Plane (377) Khan Academy Pearson IXL Illustrated Mathematics <ul style="list-style-type: none"> 6.G.1 6.G.2 6.G.3 6.G.4 <i>Perimeter, Area, and Volume</i> by David A. Adler Climate Change Lessons
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Suggested Accommodations

<p>English Language Learners:</p> <ul style="list-style-type: none"> Multi-sensory instruction Flexible grouping Small group instruction Provide peer tutoring Use a strong student as a “buddy” (does not necessarily have to speak the primary language) Chunking information Scaffolded questioning Manipulatives/concrete models Pre-Teach vocabulary Co-Constructed Word Banks Anchor charts

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- Gradual release model
- Visual models
- Hands-on activities
- Native language support when possible
- Sheltered English Instruction Strategies
- Sentence starters

Special Education/Students with Disabilities:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Follow all IEP modifications
- Calculators
- Manipulatives/concrete models
- Directions repeated, clarified, and reworded
- Breakdown task into manageable parts

504 Plans:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Calculators
- Manipulatives/concrete models
- Follow all 504 modifications

Gifted and Talented:

- Higher level questioning
- Enriched assignments
- Tiered assignments
- Choice board to extend learning
- NJSLA released items

Students at Risk of Failure:

- Provide peer tutoring
- Use a strong student as a “buddy”
- Allow extra time to complete assignments or tests
- Work in a small group
- One on one instruction
- Provide immediate praise and feedback
- Create a nurturing environment
- Provide visuals
- Be flexible with assignments and time frames
- Provide needed academic resources
- Chunking information
- Scaffolded questioning
- Tiered activities
- Manipulatives/concrete models
- Modified assignments
- Brain breaks

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<p>Economically Disadvantaged:</p> <ul style="list-style-type: none"> ● Pre-teach vocabulary using visuals and gestures ● Chunk texts ● Summarize as you go ● Preview lessons ● Graphic organizers ● Highlight key words ● Sentence starters ● Prompting and cueing ● Activate schema ● Build background knowledge <p>Culturally Diverse:</p> <ul style="list-style-type: none"> ● Create an emotionally positive classroom climate. ● Create effective communication ● Model and teach cultural respect ● Build relationships with students by interviewing students to understand their background
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Unit 9: Introduction to Statistics and Probability	Duration: 13 days
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<u>New Jersey Student Learning Standards</u>	
6.SP.A	Develop understanding of statistical variability
6.SP.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.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.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.
6.SP.B	Summarize and describe distributions
6.SP.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
6.SP.5	Summarize numerical data sets in relation to their context, such as by: <ol style="list-style-type: none"> 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.

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	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.
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New Jersey Standards for Mathematical Practice

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.

New Jersey Social and Emotional Competencies and Sub-Competencies

Self-Awareness	<ul style="list-style-type: none"> ● Recognize one’s feelings and thoughts. ● Recognize the impact of one’s feelings and thoughts on one’s own behavior. ● Recognize one’s personal traits, strengths, and limitations. ● Recognize the importance of self-confidence in handling daily tasks and challenges.
Self-Management	<ul style="list-style-type: none"> ● Understand and practice strategies for managing one’s own emotions, thoughts, and behaviors. ● Recognize the skills needed to establish and achieve personal and educational goals. ● Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one’s goals.
Social Awareness	<ul style="list-style-type: none"> ● Recognize and identify the thoughts, feelings, and perspectives of others. ● Demonstrate an awareness of the differences among individuals, groups, and others’ cultural backgrounds. ● Demonstrate an understanding of the need for mutual respect when viewpoints differ. ● Demonstrate an awareness of the expectations for social interactions in a variety of settings.
Responsible Decision Making	<ul style="list-style-type: none"> ● Develop, implement, and model effective problem-solving and critical thinking skills. ● Identify the consequences associated with one’s actions in order to make constructive choices. ● Evaluate personal, ethical, safety, and civic impact of decisions.

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Relationship Skills	<ul style="list-style-type: none"> ● Establish and maintain healthy relationships. ● Utilize positive communication and social skills to interact effectively with others. ● Identify ways to resist inappropriate social pressure. ● Demonstrate the ability to prevent and resolve interpersonal conflicts in constructive ways. ● Identify who, when, where, or how to seek help for oneself or others when needed.
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Interdisciplinary Connections

ELA Standards	
L.SS.6.1	Demonstrate command of the system and structure of the English language when writing or speaking. <ul style="list-style-type: none"> A. Ensure that pronouns are in the proper case (subjective, objective, possessive). B. Use intensive pronouns (e.g., myself, ourselves). C. Recognize and correct inappropriate shifts in pronoun number and person. D. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents). E. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive and parenthetical elements. F. Recognize spelling conventions.
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	<p>C. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion.</p> <p>D. Review the key ideas expressed and demonstrate understanding of multiple perspectives through reflection and paraphrasing.</p>
Science	
MS-ETS1-1	Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.
MS-ETS1-2	Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

Computer Science & Design Thinking	
8.1.8.AP.2	Create clearly named variables that represent different data types and perform operations on their values.
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8.2.8.ED.2	Identify the steps in the design process that could be used to solve a problem.
8.2.8.ED.3	Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketches).

Career Readiness, Life Literacies & Key Skills	
9.4.8.GCA.1	Model how to navigate cultural differences with sensitivity and respect
9.4.8.GCA.2	Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.
9.4.8.IML.4	Ask insightful questions to organize different types of data and create meaningful visualizations.

Career Readiness, Life Literacies, and Key Skills Practices	
CLKS.1	Act as a responsible and contributing community member and employee.
CLKS.2	Attend to financial well-being.
CLKS.3	Consider the environmental, social and economic impacts of decisions.

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CLKS.4	Demonstrate creativity and innovation.
CLKS.5	Utilize critical thinking to make sense of problems and persevere in solving them.
CLKS.6	Model integrity, ethical leadership and effective management.
CLKS.7	Plan education and career paths aligned to personal goals.
CLKS.8	Use technology to enhance productivity, increase collaboration and communicate effectively.
CLKS.9	Work productively in teams while using cultural/global competence.

Evidence of Student Learning

<p>Formative Tasks:</p> <ul style="list-style-type: none"> ● Teacher observations ● Class discussions ● Whiteboard/Communicators ● Math routine responses ● Daily DOLs ● Daily classwork ● Checks for understanding ● Spiral Quizzes ● Fluency Quizzes ● <i>Number Talks</i> ● NJSLA released items 	<p>Alternative Assessments:</p> <ul style="list-style-type: none"> ● Oral assessments ● Istation
<p>Summative Assessments:</p> <ul style="list-style-type: none"> ● Unit Assessment 	<p>Benchmark Assessments:</p> <ul style="list-style-type: none"> ● Istation Diagnostic ● Monthly ISIP ● End of Year Assessment

Knowledge & Skills

<p>Enduring Understandings:</p> <ul style="list-style-type: none"> ● Statistical questions are designed to gather data with variability. ● Answers to statistical questions are based on data distributions, not single facts. ● Variability is a natural and important feature of real-world data. ● Data sets form distributions that can be analyzed. ● Distributions can be described using center, spread, and shape. ● Looking at the whole distribution provides more insight than looking at individual data points. 	<p>Essential Questions:</p> <ul style="list-style-type: none"> ● What makes a question a statistical question? Why must statistical questions allow for more than one possible answer? ● How does variability affect how we answer questions with data? ● What is a data distribution? ● Why is it important to examine both the center and spread of a data set? ● What does it mean for a number to represent a data set? ● How do the mean and the median differ? ● When might one measure of center be more useful than another?
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<ul style="list-style-type: none"> ● Measures of center provide a summary value that represents a data set. ● Mean and median each describe the center in a different way. ● No single measure of center is always the “best” choice. ● Variability describes how spread out data values are. ● Measures such as range and interquartile range help explain differences within data. ● Visual displays (dot plots, histograms, box plots) help reveal patterns and variability. ● Measures of center and variability must be interpreted in context. ● Outliers can significantly affect data analysis. ● Comparing distributions helps support data-based conclusions. 	<ul style="list-style-type: none"> ● What does variability tell us about a data set? ● Why is variability important when interpreting data? ● How can data be displayed to clearly communicate information? ● How do outliers affect measures of center and variability? ● What conclusions are reasonable based on the data—and which are not? How does context influence how we interpret data?
<p>Content <i>Students will know...</i></p> <ul style="list-style-type: none"> ● Statistical questions are questions that can result in a variety of responses. ● A histogram is visually similar to a bar graph and is used to display numerical data. ● A dot plot is similar to a line plot, but it uses dots rather than Xs for each piece of data. ● The mean is the quantitative measure of center for a set of data. It represents the data set after the values in the set have been evenly distributed. ● The median is a quantitative measure of the center for a set of data. It is the middle value when the data set is ordered from least to greatest. ● The range tells us about the spread of the data, or how far apart the lowest point of data and the highest point of data are from one another. ● A box plot displays the data in quartiles so that we can clearly see where the middle half of the data falls. It also allows for analysis of clusters. ● The interquartile range is a quantitative measure of variability for a set of data and gives the spread for the middle 50% of the data. 	<p>Skills <i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Represent and interpret numerical data on a graph. ● Answer questions using data displayed in a graph. ● Calculate the mean for a given set of data. ● Determine what numerical data will result in a given mean. ● Create visual models to aid in the interpretation of real-world scenarios. ● Find the range of a data set. ● Find the median of a data set. ● Create a box plot to represent a given data set. ● Calculate the interquartile range for a numerical data set. ● Calculate the mean absolute deviation for a set of data. ● Use given measures of center to analyze and compare data. ● Solve real-world and mathematical problems by applying what has been learned about statistics.

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Core Instructional & Supplemental Materials

Suggested Activities/Resources:

- Manipulatives
- Istation
- District Created Lessons (Unit 9)
- District Created Parent Resources
- Communicators
- Unit Review Jeopardy
- *Number Talks*
- NJSLA released items

Supplemental Materials

- *Big Ideas Math* textbook
 - Section 9.1 - Introduction to Statistics (413)
 - Section 9.2 - Mean (419)
 - Section 9.3 - Measures of Center (425)
 - Section 9.4 - Measures of Variation (433)
 - Section 9.5 - Mean Absolute Deviation (439)
 - Section 10.2 - Histograms (463)
 - Section 10.5 - Box-and-Whiskers Plot (483)
- [Khan Academy](#)
- [Pearson](#)
- [IXL](#)
- Illustrated Mathematics
 - [6.SP.1](#)
 - [6.SP.2](#)
 - [6.SP.3](#)
 - [6.SP.4](#)
 - [6.SP.5](#)
- *Hidden Figures* by Margot Lee Shetterly and Winifried Conkling
- Data from the [Kupferberg Holocaust Center](#) can be used in real-world problems involving the interpretation of graphs and statistics
- [Climate Change Lessons](#)

Suggested Accommodations

English Language Learners:

- Multi-sensory instruction
- Flexible grouping
- Small group instruction
- Provide peer tutoring
- Use a strong student as a “buddy” (does not necessarily have to speak the primary language)
- Chunking information
- Scaffolded questioning
- Manipulatives/concrete models
- Pre-Teach vocabulary
- Co-Constructed Word Banks
- Anchor charts
- Gradual release model
- Visual models

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- Hands-on activities
- Native language support when possible
- Sheltered English Instruction Strategies
- Sentence starters

Special Education/Students with Disabilities:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Follow all IEP modifications
- Calculators
- Manipulatives/concrete models
- Directions repeated, clarified, and reworded
- Breakdown task into manageable parts

504 Plans:

- Allow extra time to complete assignments or tests
- Work in a small group
- Allow answers to be given orally or dictated
- Calculators
- Manipulatives/concrete models
- Follow all 504 modifications

Gifted and Talented:

- Higher level questioning
- Enriched assignments
- Tiered assignments
- Choice board to extend learning
- NJSLA released items

Students at Risk of Failure:

- Provide peer tutoring
- Use a strong student as a “buddy”
- Allow extra time to complete assignments or tests
- Work in a small group
- One on one instruction
- Provide immediate praise and feedback
- Create a nurturing environment
- Provide visuals
- Be flexible with assignments and time frames
- Provide needed academic resources
- Chunking information
- Scaffolded questioning
- Tiered activities
- Manipulatives/concrete models
- Modified assignments
- Brain breaks

Economically Disadvantaged:

- Pre-teach vocabulary using visuals and gestures

Lakewood Public School District Curriculum Guide

Grade: 6

Content Area: Mathematics

- Chunk texts
- Summarize as you go
- Preview lessons
- Graphic organizers
- Highlight key words
- Sentence starters
- Prompting and cueing
- Activate schema
- Build background knowledge

Culturally Diverse:

- Create an emotionally positive classroom climate.
- Create effective communication
- Model and teach cultural respect
- Build relationships with students by interviewing students to understand their background