Tab 1

VERNON TOWNSHIP
SCHOOL DISTRICT

Math Grade 6
Curriculum Map

Adapted from:
Understanding By Design

Reviewed by:
Vincent Gagliostro - Director of Curriculum & Instruction

Adopted:
August 2025

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Course Description

Based upon the following list of proficiencies, each student must demonstrate a minimum competency level of 65%. Competencies will be measured by way of an evaluation program consisting of teacher observations of student performance, tests, quizzes, classwork, homework, projects, and class participation, as well as class attendance in accordance with the high school's attendance policy.

Various Levels of Text: Supplemental text and audio visual materials are provided for above grade level and below grade level for students who need them.

AI tools and Text to Speech tools may be used to adapt the lexile level of grade level materials.

New Jersey Learning Standards covered throughout the course

In conjunction with the New Jersey Student Learning Standards, students enrolled in the **Math Grade 6** courses will demonstrate the ability to:

New Jersey learning Standards covered throughout the course

In conjunction with the 2023 New Jersey Student Learning Standards for Mathematics Grade 6, students enrolled in the **Illustrative Math** courses will demonstrate the ability to:

- 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.
- 6.RP.3a Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.
- 6.RP.3b Solve unit rate problems including those involving unit pricing and constant speed.
- 6.RP.3c 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.
- 6.RP.3d Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.
- 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.2 Fluently divide multi-digit numbers using the standard algorithm.
- 6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

- 6.NS.4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 12100 with a common factor as a multiple of a sum of two whole numbers with no common factor.
- 6.NS.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
- 6.NS.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.
- 6.NS.6a Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., 2(23) = 3, and that 0 is its own opposite.
- 6.NS.6b Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.
- 6.NS.6c Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
- 6.NS.7 Understand ordering and absolute value of rational numbers.
- 6.NS.7a Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.
- 6.NS.7b Write, interpret, and explain statements of order for rational numbers in real-world contexts.
- 6.NS.7c Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.
- 6.NS.7d Distinguish comparisons of absolute value from statements about order.
- 6.NS.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.
- 6.EE.1 Write and evaluate numerical expressions involving whole-number exponents.
- 6.EE.2 Write, read, and evaluate expressions in which letters stand for numbers.
- 6.EE.2a Write expressions that record operations with numbers and with letters standing for numbers.
- 6.EE.2b Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.
- 6.EE.2c Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those 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.5 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
- 6.EE.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 differ only by signs, the locations of the points are related by reflections across one or both axes.
- 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.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.
- 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 by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = \ell wh$ and $V = bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
- 6.G.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 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.
- 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.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:

- 6.SP.5a Reporting the number of observations.
- 6.SP.5b Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
- 6.SP.5c Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
- 6.SP.5d Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Grading Criteria
● Participation - 10% ● Tests - 40% ● Quizzes - 30 % ● Homework/Projects - 20%

Course Resources
Core Text: ● Illustrative Math **Technologies** ● Personal computer with Internet access, a web browser and word processing, presentation software for both teacher and student use ● Software and web-based presentation resources **Supplemental Materials** ● Learning Plans and UBD Units of Study ● Workbook ● Extra Practice ● Homework ● Enrichment Book ● Learning Stations

Scope and Sequence- Topical Outline		
Unit	Title	Time
1	Area and Surface Area	5.5 weeks
2	Introducing Ratios	4 weeks
3	Unit Rates and Percentages	4 weeks
4	Dividing Fractions	4 weeks
5	Arithmetic in Base Ten	3 weeks
6	Expressions and Equations	4.5 weeks
7	Rational Numbers	4 weeks
8	Data Sets and Distributions	4 weeks
9	Putting It All Together	3 weeks

The timeline is only an approximation. The inclusion of a classroom project in any one of the above units would extend the time allotted

Subject Area: Math **Grade Level: Grade 6**	
Unit	**1: Area and Surface Area**
Timeframe	5.5 Weeks
Established Goals	Students will reason about areas of polygons and surface area of polyhedra. Students also learn to use exponents 2 and 3 to express surface areas and volumes of cubes and their units. Students will use appropriate mathematical language for purposes such as comparing, explaining, and describing.

NJSLS	6.EE.A-Apply and extend previous understandings of arithmetic to algebraic expressions 6.EE.A.1-Write and evaluate numerical expressions involving whole-number exponents. 6.EE.A.2.a-Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5 as 5-y”. 6.EE.A.2.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). For example, use the formulas and to find the volume and surface area of a cube with sides of length . 6.G.A.1-Geometry-Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems. 6.G.A.2-Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas and to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. 6.G.A.4-Represent three-dimensional figures (e.g., pyramid, triangular prism, rectangular prism) using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems. MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments & 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.
Essential Questions	● How do you find the area of parallelograms, triangles, and other polygons? ● How do you find the surface area of three-dimensional figures, such as prisms and pyramids? ● What strategies can you use to find the area of compound shapes?
Content Knowledge	*Students will learn to:* Compare ● Geometric patterns and shapes ● Strategies for finding areas of shapes and polygons. ● The characteristics of prisms and pyramids. ● The measurements and units of 1-, 2-, and 3-dimensional attributes. ● Representations of area and volume. Explain ● How to find areas by composing. ● Strategies used to find areas of parallelograms and triangles. ● How to determine the area of a triangle using its base and height. ● Strategies to find surface areas of polyhedra. Describe ● Observations about decomposition of parallelograms. ● Information needed to find the surface area of rectangular prisms. ● The features of polyhedra and their nets. ● The features of polyhedra. ● Relationships among features of a tent and the amount of fabric needed for the tent.

Skills	• Decomposing and rearranging shapes:. • Identifying bases and heights of parallelograms and triangles, essential for calculating the area of these shapes. • Applying formulas for area: Students will learn formulas for the area of parallelograms and triangles, and will practice using them to solve problems. • Calculating surface area: Students will learn how to find the surface area of prisms and pyramids by adding up the areas of their faces. • Using exponents to express area and volume: Students will learn how to use exponents of 2 and 3 to represent the area of squares and the volume of cubes, respectively.
Performance Tasks	Unit 1-Lesson 19-Let's Put It To Work-All About Tents Walking the Block Area of special polygons
Other Assessment Evidence	**Benchmark Assessment** (Measures progress toward grade-level standards at specific points in the year) • Beginning, Mid-Year and End-of-Year Benchmark Assessment- iReady • Check Your Readiness – Given before a unit or topic to gauge prior knowledge. • NJSLA Question Examination – Reviewing state test-style questions to assess readiness for standardized testing. **Formative Assessment** (Ongoing assessments used to guide instruction and provide feedback) • Gamification – A quick daily online game to collect data on students' level of content mastery • Guided Practice – Teacher-monitored activities where students practice new skills with support • Checkpoints– A short problem or question to assess each learning objective • Cool Down – A short problem or question at the end of a lesson to assess learning • Class Discussions – Encouraging students to explain their thinking and reasoning aloud • Quizzes - (by topic) Finding the Area of Polygons, Finding the Area of Compound Shapes, Finding the Surface Area of 3 Dimensional Shapes **Summative Assessment** (Evaluates mastery of skills at the end of a unit or grading period) • End of the Unit Assessment – Illustrative Mathematics Unit 1 • Project/Performance Tasks - Lesson 19-Let's Put It To Work **Alternative Assessment** (Non-traditional ways of assessing understanding) • Leveled Independent Practice/Classwork – Differentiated work based on student ability. • Homework – Provides additional practice but is not always a direct measure of understanding. • Peer or Self-Assessment – Students reflect on their work or assess a peer's explanation.

	• Project-Based Learning (PBL) – Real-world applications, such as designing a theme park with scaled measurements. • Peer Teaching - Assess understanding as students explain a concept to a classmate • Teacher Questioning/Observation
Resources/Materials	**Text:** • **Text:** Illustrative Mathematics IMV. 360 Grade 6 Consumable Text • **Text:** Teacher's Edition Illustrative Mathematics Grade 6 **Technologies** • Students have 1:1 Chromebook access • Online IMv. 360 Grade 6 student/teacher access to the digital platform • iReady My Path for students • BenQ Board • Schoology learning management system • Quizizz, Kahoot, Gimkit, Quizlet, 99 Math, Number Hive, Blooket for gamification **Supplemental Materials** • Digital Black Line Master materials for homework and additional practice • Learning Stations (Created by the teacher using teacher created materials and manipulatives) • Checks for understanding (problems from the textbook, Google Forms, teacher-created materials) • Project-Based Learning Activities (created by the teacher) • Spiral review activities (created by the teacher)
Interdisciplinary Connections	**Project Title: Polygonal Designs: Exploring Area in the Real World** Overview: Students will explore the concept of area by calculating the areas of polygons (triangles, rectangles, parallelograms, trapezoids, and irregular polygons). They will apply their knowledge in practical contexts like architecture, nature, and art to see how geometry plays a role in their surroundings. **Cross-Curricular Connections:** **1. New Jersey Student Learning Standards - Science:** **MS.ESS3-1:**

	Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes. **MS.LS1.:** Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function. **2. Art Standards:** **NJSLS-VPA 1.1.6.Cr2a (Creating Art)** Explore and use a variety of geometric shapes, patterns, and forms to create artwork.
Learning Activities	Reasoning to find area Parallelograms Triangles and other polygons Surface area Squares and cubes

Subject Area: Math **Grade Level: 6**	
Unit	**2: Introducing Ratios**
Timeframe	4 Weeks
Established Goals	Students will: learn that a ratio is an association between two quantities. use sentences, drawings or discreet diagrams to represent ratios. represent and reason about equivalent ratios

NJSLS	• 6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. • 6.R.P.A.2 Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. • 6.R.P.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. • 6.R.P.A.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. • 6.R.P.A.3.b Solve unit rate problems including those involving unit pricing and constant speed • MP.1 Make sense of problems and persevere in solving them. • MP.2 Reason abstractly and quantitatively. • MP.3 Construct viable arguments & 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
Essential Questions	How can ratios be represented using various methods such as sentences, drawings, diagrams, double number lines and tables? How can scaling be used to understand equivalent ratios and apply this knowledge to real world situations involving speed and uniform pricing?
Content Knowledge	Interpret • Statements and notations describing ratios. • Different representations of ratios. • Situations involving equivalent ratios. • Situations with different rates. • Tables of equivalent ratios. • Questions about situations involving ratios. Explain • Reasoning about equivalence.

	• Reasoning about equivalent rates. • Reasoning with reference to tables. • Reasoning with reference to tape diagrams. Compare • Situations with and without equivalent ratios. • Representations of ratios. • Situations with different rates. • Situations with the same rates and different rates. • Representations of ratio and rate situations.
Skills	• Recognizing the relationship between two quantities. • Using different methods to visualize and describe ratios. • Understanding that equivalent ratios represent the same relationship but with different values. • Multiplying or dividing both parts of a ratio by the same number to find an equivalent ratio. • Applying ratio concepts to real-world scenarios like recipes, speed, and pricing.
Performance Tasks	Unit 2 Lesson 17- A Fermi Problem Apply Reasoning to an Unfamiliar Problem Climbing the steps of El Castille Games at Recess
Other Assessment Evidence	**Benchmark Assessment** (Measures progress toward grade-level standards at specific points in the year) • Beginning, Mid-Year and End-of-Year Benchmark Assessment- iReady • Check Your Readiness – Given before a unit or topic to gauge prior knowledge. • NJSLA Question Examination – Reviewing state test-style questions to assess readiness for standardized testing. **Formative Assessment** (Ongoing assessments used to guide instruction and provide feedback) • Gamification – A quick daily online game to collect data on students' level of content mastery • Guided Practice – Teacher-monitored activities where students practice new skills with support • Checkpoints– A short problem or question to assess each learning objective • Cool Down – A short problem or question at the end of a lesson to assess learning • Class Discussions – Encouraging students to explain their thinking and reasoning aloud • Quizzes - (by topic) Understanding Ratios; Writing Equivalent Ratios **Summative Assessment** (Evaluates mastery of skills at the end of a unit or grading period) • End of the Unit Assessment – Illustrative Mathemathics Unit 2 • Project/Performance Tasks - Lesson 17-Let's Put It To Work **Alternative Assessment** (Non-traditional ways of assessing understanding) • Leveled Independent Practice/Classwork – Differentiated work based on student ability.

	• Homework – Provides additional practice but is not always a direct measure of understanding. • Peer or Self-Assessment – Students reflect on their work or assess a peer's explanation. • Project-Based Learning (PBL) – Real-world applications, such as designing a theme park with scaled measurements. • Peer Teaching - Assess understanding as students explain a concept to a classmate • Teacher Questioning/Observation
Resources/Materials	**Text:** • **Text:** Illustrative Mathematics IMV. 360 Grade 6 Consumable Text • **Text:** Teacher's Edition Illustrative Mathematics Grade 6 **Technologies** • Students have 1:1 Chromebook access • Online IMv. 360 Grade 6 student/teacher access to the digital platform • iReady My Path for students • BenQ Board • Schoology learning management system • Quizizz, Kahoot, Gimkit, Quizlet, 99 Math, Number Hive, Blooket for gamification **Supplemental Materials** • Digital Black Line Master materials for homework and additional practice • Learning Stations (Created by the teacher using teacher created materials and manipulatives) • Checks for understanding (problems from the textbook, Google Forms, teacher-created materials) • Project-Based Learning Activities (created by the teacher) • Spiral review activities (created by the teacher)
Interdisciplinary Connections	**Project Title: The Perfect Recipe** Overview: Students will create a new recipe for a dish using ratios of ingredients, incorporating concepts from math (ratios), science (following a recipe relates to chemistry and biological processes), and art (presentation and plating of the dish). **Cross-Curricular Connections:** **1. Science:**

	New Jersey Student Learning Standards: MS-LS1-3: Plan and conduct an investigation to provide evidence that living things are made of cells, which are composed of molecules and atoms, which relate to the ingredients used in cooking (carbohydrates, proteins, fats). **2. Art Standards: NJSLS-Visual and Performing Arts Standard 1.1:** Creating: Organize and design artwork with understanding of balance, color, and composition through dish presentation.
Learning Activities	What are ratios? Equivalent ratios Representing equivalent ratios Solving ratio and rate problems Part-part whole ratios

Subject Area: Math **Grade Level: 6**	
Unit	**3: Unit Rates and Percentages**
Timeframe	4 Weeks
Established Goals	Students will develop understanding of unit rates and percentages. Students will practice finding unit rates and using them to solve various problems. Students will practice finding percentages. Students will use language for mathematical purposes, such as interpreting, explaining, and justifying.
NJSLS	6.RP.A-Understand ratio and rate concepts and use ratio and rate reasoning to solve problems. 6.RP.A.2-Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger." 6.RP.A.3-Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning

	about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. 6.RP.A.3.b-Solve unit rate problems, including those involving unit pricing, and constant speed. 6.RP.A.3.c-Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. 6.RP.A.3.d-Use ratio reasoning to convert measurement units within and between measurement systems; manipulate and transform units appropriately when multiplying or dividing quantities. MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments & 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.
Essential Questions	● How do you convert between different units of measurement? ● How do you calculate and interpret unit rates in different contexts? ● How do you calculate and solve problems involving percentages?
Content Knowledge	*Students will learn:* Interpret ● Unit rates in different contexts. ● A context in which identifying a unit rate is helpful. ● Situations involving constant speed. ● Diagrams used to represent percentages. ● Situations involving measurement, rate, and cost. Explain ● Reasoning for estimating and sorting measurements.

	• Reasoning about relative sizes of units of measurement. • Reasoning for comparing rates. • Reasoning about percentages. • Strategies for finding missing information involving percentages. Justify • Reasoning about equivalent ratios and unit rates. • Reasoning about finding percentages. • Reasoning about costs and time.
Skills	*Students will be able to:* • Converting between units of measurement using ratios and rates. • Calculating unit rates, understanding their meaning, and using them to solve problems. • Representing percentages as rates per 100. • Calculating percentages of different quantities. • Solving real-world problems involving unit rates and percentages
Performance Tasks	Unit 3 Lesson 17 Painting a Room Hippos Love Pumpkins Price per Pound and Pounds per Dollar Exam Scores Shirt Sale
Other Assessment Evidence	**Benchmark Assessment** (Measures progress toward grade-level standards at specific points in the year) • Beginning, Mid-Year and End-of-Year Benchmark Assessment- iReady • Check Your Readiness – Given before a unit or topic to gauge prior knowledge. • NJSLA Question Examination – Reviewing state test-style questions to assess readiness for standardized testing. **Formative Assessment** (Ongoing assessments used to guide instruction and provide feedback) • Gamification – A quick daily online game to collect data on students' level of content mastery • Guided Practice – Teacher-monitored activities where students practice new skills with support • Checkpoints– A short problem or question to assess each learning objective • Cool Down – A short problem or question at the end of a lesson to assess learning • Class Discussions – Encouraging students to explain their thinking and reasoning aloud • Quizzes - (by topic) -Understanding Rates, Finding Unit Rates and Percentages **Summative Assessment** (Evaluates mastery of skills at the end of a unit or grading period) • End of the Unit Assessment – Illustrative Mathematics Unit 3 • Project/Performance Tasks - Lesson 17-Let's Put It To Work **Alternative Assessment** (Non-traditional ways of assessing understanding)

	• Leveled Independent Practice/Classwork – Differentiated work based on student ability. • Homework – Provides additional practice but is not always a direct measure of understanding. • Peer or Self-Assessment – Students reflect on their work or assess a peer's explanation. • Project-Based Learning (PBL) – Real-world applications, such as designing a theme park with scaled measurements. • Peer Teaching - Assess understanding as students explain a concept to a classmate • Teacher Questioning/Observation
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Interdisciplinary Connections	**Project Title: Exploring Rates in the Real World** Overview: Students will investigate different types of rates in real-world contexts, such as speed (miles per hour), cost per item (unit rates), and rates in scientific contexts (e.g., rates of chemical reactions). They will then apply these rates to solve problems and present their findings through a written report and a visual presentation. **Cross-Curricular Connections:** **Science Standards (Rates in Science):**

	New Jersey Student Learning Standards - Science: **MS-PS1-5:** Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved. **MS-LS1-5:** Use evidence to construct an explanation for how environmental factors affect the growth rate of plants. (Students can study how different environments affect the growth rate of plants.) **Language Arts Standards (Writing & Presentation):** **NJSLS-ELA Standard - W.WR.6.5.** Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate. **NJSLS-ELA Standard RI.AA.6.7**. Trace the development of and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not **NJSLS-ELA Standard W.IW.6.2.** Write informative/explanatory texts (including the narration of historical events, scientific procedures/ experiments, or technical processes) to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
Learning Activities	Units of measurement and measurement conversion Rates Percentages

Subject Area: Math **Grade Level: 6**	
Unit	**4 Dividing Fractions**
Timeframe	4 Weeks
Established Goals	*Students will:* understand division of fractions by fractions.

	Apply their knowledge of dividing fractions by fractions to solve problems involving geometric figures and real-world situations.

NJSLS	• 6.E.E.A.2.b Apply and extend previous understandings of arithmetic to algebraic expression. Write, read, and evaluate expressions in which letters stand for numbers. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity • 6.NS.A Apply and extend previous understandings of multiplication and division to divide fractions by fractions • 6.NS.A.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 • 6.G.A.1 Solve real-world and mathematical problems involving area, surface area, and volume. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems. • 6.G.A.2 Solve real-world and mathematical problems involving area, surface area, and volume.Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. • MP.1 Make sense of problems and persevere in solving them. • MP.2 Reason abstractly and quantitatively. • MP.3 Construct viable arguments & 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.

Essential Questions	• How can you divide fractions by fractions? • How can you use multiplication, division and fractions to solve problems involving geometric figures and real world situations?
Content Knowledge	Interpret and Represent • Situations involving division • Situations involving measurement constraints Justify • Reasoning about division and diagrams • Strategies for dividing numbers • Reasoning about volume Explain • How to create and make sense of division diagram • How to represent division situations • How to find missing lengths • A plan for optimizing costs .
Skills	*Students will learn to:* ● Interpret division situations involving fractions, determining what information is known and unknown. ● Represent division situations using tape diagrams and equations. ● Reason about the relationship between multiplication and division to solve for unknown quantities. ● Develop a general algorithm for dividing fractions by fractions. ● Apply the division algorithm to solve problems involving fractional lengths, areas, and volumes of geometric figures. ● Solve multi-step problems involving fractions in various contexts.
Performance Tasks	Unit 4 Lesson 17 Putting Boxes into Boxes Video Game Credits How much in one batch? Baking Cookies

Other Assessment Evidence	**Benchmark Assessment** (Measures progress toward grade-level standards at specific points in the year) ● Beginning, Mid-Year and End-of-Year Benchmark Assessment- iReady ● Check Your Readiness – Given before a unit or topic to gauge prior knowledge. ● NJSLA Question Examination – Reviewing state test-style questions to assess readiness for standardized testing. **Formative Assessment** (Ongoing assessments used to guide instruction and provide feedback) ● Gamification – A quick daily online game to collect data on students' level of content mastery ● Guided Practice – Teacher-monitored activities where students practice new skills with support ● Checkpoints– A short problem or question to assess each learning objective ● Cool Down – A short problem or question at the end of a lesson to assess learning ● Class Discussions – Encouraging students to explain their thinking and reasoning aloud ● Quizzes - (by topic) -Dividing Fractions, Modeling Fractions, Solving Real-World Problems **Summative Assessment** (Evaluates mastery of skills at the end of a unit or grading period) ● End of the Unit Assessment – Illustrative Math Unit 4 ● Project/Performance Tasks - Lesson 17-Let's Put It To Work **Alternative Assessment** (Non-traditional ways of assessing understanding) ● Leveled Independent Practice/Classwork – Differentiated work based on student ability. ● Homework – Provides additional practice but is not always a direct measure of understanding. ● Peer or Self-Assessment – Students reflect on their work or assess a peer's explanation. ● Project-Based Learning (PBL) – Real-world applications, such as designing a theme park with scaled measurements. ● Peer Teaching - Assess understanding as students explain a concept to a classmate ● Teacher Questioning/Observation
Resources/Materials	**Text:** ● **Text:** Illustrative Mathematics IMV. 360 Grade 6 Consumable Text ● **Text:** Teacher's Edition Illustrative Mathematics Grade 6 **Technologies** ● Students have 1:1 Chromebook access ● Online IMv. 360 Grade 6 student/teacher access to the digital platform ● iReady My Path for students ● BenQ Board ● Schoology learning management system ● Quizizz, Kahoot, Gimkit, Quizlet, 99 Math, Number Hive, Blooket for gamification **Supplemental Materials** ● Digital Black Line Master materials for homework and additional practice ● Learning Stations (Created by the teacher using teacher created materials and manipulatives) ● Checks for understanding (problems from the textbook, Google Forms, teacher-created materials)

	• Project-Based Learning Activities (created by the teacher) • Spiral review activities (created by the teacher)
Interdisciplinary Connections	**Project Title: Cooking with Fractions: Baking and Dividing Recipes** Overview: In this project, students will apply their understanding of dividing fractions to scale recipes, understand measurements in the kitchen, and engage in a real-world math experience. They will solve problems involving dividing fractions by adjusting ingredient quantities, analyzing the relationships between measurements, and presenting their findings. **Cross-Curricular Connections:** **1. Science (Measurement and Ratios):** **New Jersey Student Learning Standards: MS-PS2-2:** Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object. **2. English/Language Arts (Writing and Presentations):** Standard: ELA - W.IW.6.2. Write informative/explanatory texts (including the narration of historical events, scientific procedures/ experiments, or technical processes) to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. **3. ELA and Social Studies (Cultural Foods and Recipes):** Standard: ELA - RI.MF.6.6. Integrate information when presented in different media or formats (e.g., visually, quantitatively) to develop a coherent understanding of a topic or issue.
Learning Activities	Making sense of division Meanings of fraction division Algorithm for fraction division Fractions in lengths, areas, and volume

Subject Area: Math **Grade Level: Algebra I CP**

Unit	5 Arithmetic in Base Ten
Timeframe	3 Weeks
Established Goals	• Students solidify their understanding of the base-ten number system. • Students extend their use of the standard algorithms to add, subtract, and multiply decimals beyond tenths and hundredths. • Students learn to use algorithms to calculate quotients.
NJSLS	6.NS.B-Compute fluently with multi-digit numbers and find common factors and multiples. 6.NS.B.2-Fluently divide multi-digit numbers using the standard algorithm. 6.NS.B.3-Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. 6.EE.A-Apply and extend previous understandings of arithmetic to algebraic expressions. MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments & 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.
Essential Questions	• How do you add, subtract, multiply and divide decimals beyond tenths and hundredths? • How can the various methods to solve the problems give you a solid understanding of how these operations work?
Content Knowledge	*Students will learn to:* Explain • Processes of estimating and finding costs.

	• Approaches to adding and subtracting decimals.. • Reasoning about products and quotients involving powers of 10. • Methods for multiplying decimals. • Reasoning about relationships among measurements. Interpret • Representations of decimals. • Base-ten diagrams showing addition or subtraction of decimals. • Area diagrams showing products of decimals. • Base-ten diagrams representing division of a whole number or a decimal by a whole number.. • Calculations showing partial quotients or steps in long division. Compare • Base-ten diagrams with numerical calculations.. • Methods for multiplying decimals. • Methods for finding quotients. • Measurements of two- and three-dimensional objects.
Skills	*Students will be able to:* • Add and subtract decimals beyond hundredths. • Multiply decimals using various methods: They will explore multiplying decimals using fractions, converting to whole numbers, and utilizing area diagrams to represent partial products. • Divide multi-digit numbers • Find quotients using strategies like partial quotients and long division, building towards mastery of the standard algorithm for division. • Divide decimals.
Performance Tasks	Unit 5 Lesson 15 Making and Measuring Boxes Tenths of Tenths and Hundredths of Hundredths What's the Best Way to Divide? Batting Average
Other Assessment Evidence	**Benchmark Assessment** (Measures progress toward grade-level standards at specific points in the year) • Beginning, Mid-Year and End-of-Year Benchmark Assessment- iReady • Check Your Readiness – Given before a unit or topic to gauge prior knowledge. • NJSLA Question Examination – Reviewing state test-style questions to assess readiness for standardized testing. **Formative Assessment** (Ongoing assessments used to guide instruction and provide feedback) • Gamification – A quick daily online game to collect data on students' level of content mastery

	• Guided Practice – Teacher-monitored activities where students practice new skills with support • Checkpoints– A short problem or question to assess each learning objective • Cool Down – A short problem or question at the end of a lesson to assess learning • Class Discussions – Encouraging students to explain their thinking and reasoning aloud • Quizzes - (by topic) Operations of Decimals and Real World Problems **Summative Assessment** (Evaluates mastery of skills at the end of a unit or grading period) • End of the Unit Assessment – Illustrative Math Unit 5 • Project/Performance Tasks - Lesson 15-Let's Put It To Work **Alternative Assessment** (Non-traditional ways of assessing understanding) • Leveled Independent Practice/Classwork – Differentiated work based on student ability. • Homework – Provides additional practice but is not always a direct measure of understanding. • Peer or Self-Assessment – Students reflect on their work or assess a peer's explanation. • Project-Based Learning (PBL) – Real-world applications, such as designing a theme park with scaled measurements. • Peer Teaching - Assess understanding as students explain a concept to a classmate • Teacher Questioning/Observation
Resources/Materials	**Text:** • **Text:** Illustrative Mathematics IMV. 360 Grade 6 Consumable Text • **Text:** Teacher's Edition Illustrative Mathematics Grade 6 **Technologies** • Students have 1:1 Chromebook access • Online IMv. 360 Grade 6 student/teacher access to the digital platform • iReady My Path for students • BenQ Board • Schoology learning management system • Quizizz, Kahoot, Gimkit, Quizlet, 99 Math, Number Hive, Blooket for gamification **Supplemental Materials** • Digital Black Line Master materials for homework and additional practice • Learning Stations (Created by the teacher using teacher created materials and manipulatives) • Checks for understanding (problems from the textbook, Google Forms, teacher-created materials) • Project-Based Learning Activities (created by the teacher) • Spiral review activities (created by the teacher)
Interdisciplinary Connections	

Learning Activities	Exploring adding and subtracting decimals Multiplying decimals Dividing decimals

Subject Area: Math **Grade Level: 6**	
Unit	**6 Expressions and Equations**
Timeframe	4.5 Weeks
Established Goals	● Understand and solve equations. ● Write and evaluate algebraic expressions. ● Work with exponents beyond squares and cubes. ● Analyze relationships between quantities.
NJSLS	● 6.EE.A Apply and extend previous understandings of arithmetic to algebraic expressions ● 6.EE.A.1 Write and evaluate numerical expressions involving whole-number exponents. ● 6.EE.A.2 Write, read, and evaluate expressions in which letters stand for numbers. ● 6.EE.A.2.a Write expressions that record operations with numbers and with letters standing for numbers. ● 6.EE.A.2.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.A.3 Apply the properties of operations to generate equivalent expressions. ● 6.EE.A.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them) ● 6.EE.B Reason about and solve one-variable equations and inequalities ● 6.EE.B.5 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. ● 6.EE.B.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. ● 6.EE.B.7 Solve real-world and mathematical problems by writing and solving equations of the form

	$x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers. • 6.EE.C.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation • 6.NS.B.3 Compute fluently with multi-digit numbers & find common factors & multiples. With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. • MP.1 Make sense of problems and persevere in solving them. • MP.2 Reason abstractly and quantitatively. • MP.3 Construct viable arguments & 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.
Essential Questions	• How can you understand and solve equations? • How can you write and evaluate algebraic expressions? • What are exponents? • How can you use tables, graphs and equations to represent and to reason about the relationships between quantities?
Content Knowledge	*Students will learn:* Interpret • tape diagrams involving letters that stand for numbers • the parts of an equation • numerical expressions involving exponents • different representations of the same relationship between quantities Describe • solutions to equations • stories represented by given equations • patterns of growth that can be represented using exponents

	• relationships between independent and dependent variables using tables, graphs, and equations Explain • the meaning of a solution using hanger diagrams • how to solve an equation • how to use equations to solve problems involving percentages • how to determine whether two expressions are equivalent, including with reference to diagrams • strategies for determining whether expressions are equivalent
Skills	*Students will be able to:* ● Solving equations: Students will learn to solve equations using methods like substitution, reasoning about number relationships, and applying inverse operations. ● Writing and evaluating expressions: Students will learn to translate verbal descriptions into algebraic expressions and evaluate them for given values. ● Simplifying expressions: Students will learn to use properties of operations, including the commutative, associative, and distributive properties, to identify and write equivalent expressions. ● Working with exponents: Students will learn to write expressions using exponents and evaluate them following the order of operations. ● Analyzing relationships: Students will learn to analyze relationships between quantities presented in different formats like tables, graphs, and equations. They'll also learn to identify independent and dependent variables.
Performance Tasks	Unit 6 Lesson 19 Tables, Equations and Graphs, Oh My! Exponent Experimentation Distance to School Busy Day Log Ride
Other Assessment Evidence	**Benchmark Assessment** (Measures progress toward grade-level standards at specific points in the year) • Beginning, Mid-Year and End-of-Year Benchmark Assessment- iReady • Check Your Readiness – Given before a unit or topic to gauge prior knowledge. • NJSLA Question Examination – Reviewing state test-style questions to assess readiness for standardized testing. **Formative Assessment** (Ongoing assessments used to guide instruction and provide feedback) • Gamification – A quick daily online game to collect data on students' level of content mastery

	• Guided Practice – Teacher-monitored activities where students practice new skills with support • Checkpoints– A short problem or question to assess each learning objective • Cool Down – A short problem or question at the end of a lesson to assess learning • Class Discussions – Encouraging students to explain their thinking and reasoning aloud • Quizzes - (by topic) Write and Evaluate Algebraic Expressions, **Summative Assessment** (Evaluates mastery of skills at the end of a unit or grading period) • End of the Unit Assessment – Illustrative Math Chapter 1 • Project/Performance Tasks - Lesson 19-Let's Put It To Work **Alternative Assessment** (Non-traditional ways of assessing understanding) • Leveled Independent Practice/Classwork – Differentiated work based on student ability. • Homework – Provides additional practice but is not always a direct measure of understanding. • Peer or Self-Assessment – Students reflect on their work or assess a peer's explanation. • Project-Based Learning (PBL) – Real-world applications, such as designing a theme park with scaled measurements. • Peer Teaching - Assess understanding as students explain a concept to a classmate • Teacher Questioning/Observation
Resources/Materials	**Text:** • **Text:** Illustrative Mathematics IMV. 360 Grade 6 Consumable Text • **Text:** Teacher's Edition Illustrative Mathematics Grade 6 **Technologies** • Students have 1:1 Chromebook access • Online IMv. 360 Grade 6 student/teacher access to the digital platform • iReady My Path for students • BenQ Board • Schoology learning management system • Quizizz, Kahoot, Gimkit, Quizlet, 99 Math, Number Hive, Blooket for gamification **Supplemental Materials** • Digital Black Line Master materials for homework and additional practice • Learning Stations (Created by the teacher using teacher created materials and manipulatives) • Checks for understanding (problems from the textbook, Google Forms, teacher-created materials) • Project-Based Learning Activities (created by the teacher) • Spiral review activities (created by the teacher)
Interdisciplinary Connections	**Project Title: Creating Expressions for Real-World Problems**

	Overview: Students will learn how algebraic expressions can represent different real-world situations. They will create their own expressions based on scenarios related to everyday life, science, and economics. The final product will be a report and presentation that includes both the mathematical solutions and the real-world context. **Cross-Curricular Connections:** **1. New Jersey Student Learning Standards - Science:** **MS-PS2-5**: Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact. **MS-ESS3-4**: Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems. 2. **Language Arts Standards (Writing & Presentation):** **NJSLS-ELA Standard - W.WR.6.5.** Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate. **NJSLS-ELA Standard RI.AA.6.7**. Trace the development of and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not **NJSLS-ELA Standard W.IW.6.2.** Write informative/explanatory texts (including the narration of historical events, scientific procedures/ experiments, or technical processes) to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
Learning Activities	Equations in one variable Equal and equivalent Expressions and exponents Relationships between quantities

Subject Area: Math
Grade Level: 6

Unit	7 Rational Numbers
Timeframe	4 Weeks
Established Goals	Learn about negative numbers and ways to represent them on a number line and the coordinate plane. Write and graph simple inequalities in one variable. Determine the greatest common factor and least common multiple of two whole numbers. Use language for mathematical purposes, such as describing, interpreting, justifying, and generalizing.
NJSLS	6.G.A.3-Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. 6.EE.A.2.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. 6.EE.B.5-Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. 6.EE.B.6- Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. 6.EE.B.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.NS.B.4- Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express 36 + 8 as 4(9 + 2). 6.NS.C-Apply and extend previous understandings of numbers to the system of rational numbers.

	6.NS.C.5- Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. 6.NS.C.6-Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. 6.NS.C.7.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., , and that 0 is its own opposite. 6.NS.C.7.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. 6.NS.C.7.c-Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane. 6.NS.C.8-Understand ordering and absolute value of rational numbers. MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments & 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.

Essential Questions	• What is a negative number and how is it applied in the real world? • What is an absolute value? • How do you graph inequalites on a number line? • How do plot coordinates in all four quadrants? • How do you find the Greatest Common Factor and Least Common Multiple of a set of numbers?
Content Knowledge	*Students will learn to:* Describe and Interpret • Situations involving negative numbers. • Features of a number line. • Situations involving elevation. • Situations involving minimums and maximums. • Points on a coordinate plane. • Situations involving factors and multiples. Justify • Reasoning about magnitude. • Reasoning about a situation involving negative numbers. • Reasoning about solutions to inequalities. • That all possible pairs of factors have been identified. Generalize • The meaning of integers for a specific context. • Understanding of solutions to inequalities. • About the relationships between shapes. • About greatest common factors. • About least common multiples.
Skills	*Students will be able to:* • Compare and order rational numbers, including negative numbers. • Write and graph inequalities. • Plot ordered pairs on the coordinate plane in all four quadrants. • Calculate horizontal and vertical distances between points on the coordinate plane • Determine the greatest common factor (GCF) and least common multiple (LCM) of two whole numbers.

Performance Tasks	Unit 7 Lesson 19 Drawing in the Coordinate Plane Extending the Number Line Above and Below Sea Level Jumping Flea
Other Assessment Evidence	**Benchmark Assessment** (Measures progress toward grade-level standards at specific points in the year) ● Beginning, Mid-Year and End-of-Year Benchmark Assessment- iReady ● Check Your Readiness – Given before a unit or topic to gauge prior knowledge. ● NJSLA Question Examination – Reviewing state test-style questions to assess readiness for standardized testing. **Formative Assessment** (Ongoing assessments used to guide instruction and provide feedback) ● Gamification – A quick daily online game to collect data on students' level of content mastery ● Guided Practice – Teacher-monitored activities where students practice new skills with support ● Checkpoints– A short problem or question to assess each learning objective ● Cool Down – A short problem or question at the end of a lesson to assess learning ● Class Discussions – Encouraging students to explain their thinking and reasoning aloud ● Quizzes - (by topic) Identifying Negative Numbers on a number line and Coordinate Plane, Writing Inequalities, Finding the Greatest Common Factor (GCF) and Least Common Multiple (LCM) **Summative Assessment** (Evaluates mastery of skills at the end of a unit or grading period) ● End of the Unit Assessment – Illustrative Math Unit 7 ● Project/Performance Tasks - Lesson 19-Let's Put It To Work **Alternative Assessment** (Non-traditional ways of assessing understanding) ● Leveled Independent Practice/Classwork – Differentiated work based on student ability. ● Homework – Provides additional practice but is not always a direct measure of understanding. ● Peer or Self-Assessment – Students reflect on their work or assess a peer's explanation. ● Project-Based Learning (PBL) – Real-world applications, such as designing a theme park with scaled measurements. ● Peer Teaching - Assess understanding as students explain a concept to a classmate ● Teacher Questioning/Observation
Resources/Materials	**Text:** ● **Text:** Illustrative Mathematics IMV. 360 Grade 6 Consumable Text ● **Text:** Teacher's Edition Illustrative Mathematics Grade 6 **Technologies** ● Students have 1:1 Chromebook access ● Online IMv. 360 Grade 6 student/teacher access to the digital platform ● iReady My Path for students ● BenQ Board ● Schoology learning management system

	• Quizizz, Kahoot, Gimkit, Quizlet, 99 Math, Number Hive, Blooket for gamification **Supplemental Materials** • Digital Black Line Master materials for homework and additional practice • Learning Stations (Created by the teacher using teacher created materials and manipulatives) • Checks for understanding (problems from the textbook, Google Forms, teacher-created materials) • Project-Based Learning Activities (created by the teacher) • Spiral review activities (created by the teacher)
Interdisciplinary Connections	• Science Standard: NJSLS Science - HS-LS2-1 (Ecosystems: Interactions, Energy, and Dynamics) Description: Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales. ○ Students model population growth with exponential functions using exponents (math), applying these to analyze how resources limit ecosystem carrying capacity (science). • Career Readiness Standard: NJSLS Career Readiness, Life Literacies, and Key Skills - 9.1.12.FP.1 Description: Demonstrate an understanding of the interrelationship between compound interest, time, rate, and principal, and how these impact personal financial goals. ○ Students transform exponential expressions for compound interest using exponent properties (math), analyzing how interest grows over time for savings or loans (career readiness).
Learning Activities	Negative numbers and Absolute value Inequalities The coordinate plane Common factors and common multiples

Subject Area: Math **Grade Level: 6**	
Unit	**8 Data Sets and Distributions**
Timeframe	4 Weeks
Established Goals	• Distinguish between numerical and categorical data. • Identify questions that require data analysis due to variability in responses. • Create and interpret dot plots and histograms to represent data. • Calculate and understand the meaning of mean and median. • Determine and apply measures of spread like mean absolute deviation (MAD), range, and interquartile range

	(IQR). ● Analyze and compare data representations using dot plots, histograms, and box plots.
NJSLS	6.SP.A Develop understanding of statistical variability 6.SP.A.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. 6.SP.A.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. 6.SP.A.3 Recognize that a measure of 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.B.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots. 6.SP.B.5 Summarize numerical data sets in relation to their context, such as by: 6.SP.B.5.a Reporting the number of observations. 6.SP.B.5.b Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. 6.SP.B.5.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. 6.SP.B.5.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. MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments & 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.

Essential Questions	● How can you distinguish between numerical and categorical data? ● How do you identify questions that require data analysis due to variability in responses? ● How can you create and interpret dot plots and histograms to represent data? ● How do you calculate and understand the meaning of mean and median?
Content Knowledge	Justify ● Reasoning for matching data sets to questions ● Reasoning about dot plots ● Reasoning about mean and median ● Reasoning about changes in mean and median ● Reasoning about which information is needed ● Which summaries and graphs best represent given data sets Represent ● Data using dot plots ● Data using histograms ● Mean using bar graphs ● Data with five number summaries ● Data using box plots Interpret ● Dot plots ● Histograms ● Mean of a data set ● Five-number summaries ● Box plots
Skills	*Students will be able to:* ● Distinguish between numerical and categorical data, and identifying statistical questions. ● Construct and interpret data displays: Creating and analyzing dot plots, histograms, and box plots. ● Calculate measures of center and variability: Determining mean, median, MAD, range, and IQR. ● Describe data distributions: Using appropriate language to discuss the center, spread, and shape of data distributions.

Performance Tasks	Unit 8 Lesson 18 Using Data to Solve Problems Buttons: Statistical Questions Describing Distributions Electoral College
Other Assessment Evidence	**Benchmark Assessment** (Measures progress toward grade-level standards at specific points in the year) ● Beginning, Mid-Year and End-of-Year Benchmark Assessment- iReady ● Check Your Readiness – Given before a unit or topic to gauge prior knowledge. ● NJSLA Question Examination – Reviewing state test-style questions to assess readiness for standardized testing. **Formative Assessment** (Ongoing assessments used to guide instruction and provide feedback) ● Gamification – A quick daily online game to collect data on students' level of content mastery ● Guided Practice – Teacher-monitored activities where students practice new skills with support ● Checkpoints– A short problem or question to assess each learning objective ● Cool Down – A short problem or question at the end of a lesson to assess learning ● Class Discussions – Encouraging students to explain their thinking and reasoning aloud ● Quizzes - (by topic) Distinguishing Appropriate Display of Data, Finding Measures of Central Tendencies, Composing Different Types of Graphs, Analyzing Data Displayed in Graphs. **Summative Assessment** (Evaluates mastery of skills at the end of a unit or grading period) ● End of the Unit Assessment – Illustrative Math Unit 8 ● Project/Performance Tasks - Lesson 18-Let's Put It To Work **Alternative Assessment** (Non-traditional ways of assessing understanding) ● Leveled Independent Practice/Classwork – Differentiated work based on student ability. ● Homework – Provides additional practice but is not always a direct measure of understanding. ● Peer or Self-Assessment – Students reflect on their work or assess a peer's explanation. ● Project-Based Learning (PBL) – Real-world applications, such as designing a theme park with scaled measurements. ● Peer Teaching - Assess understanding as students explain a concept to a classmate ● Teacher Questioning/Observation
Resources/Materials	**Text:** ● **Text:** Illustrative Mathematics IMV. 360 Grade 6 Consumable Text ● **Text:** Teacher's Edition Illustrative Mathematics Grade 6 **Technologies** ● Students have 1:1 Chromebook access ● Online IMv. 360 Grade 6 student/teacher access to the digital platform ● iReady My Path for students ● BenQ Board ● Schoology learning management system

	● Quizizz, Kahoot, Gimkit, Quizlet, 99 Math, Number Hive, Blooket for gamification **Supplemental Materials** ● Digital Black Line Master materials for homework and additional practice ● Learning Stations (Created by the teacher using teacher created materials and manipulatives) ● Checks for understanding (problems from the textbook, Google Forms, teacher-created materials) ● Project-Based Learning Activities (created by the teacher) ● Spiral review activities (created by the teacher)
Interdisciplinary Connections	● Science Standard: NJSLS Science - HS-PS2-1 (Motion and Stability: Forces and Interactions) Description: Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration. ○ Students factor polynomials to find zeros representing time or distance in motion equations (math), linking these to experimental data on acceleration (science). ● Social Studies Standard: NJSLS Social Studies - 6.1.12.EconNE.4.a Description: Analyze how economic indicators (e.g., gross domestic product, unemployment rate, inflation rate) are used to evaluate the health of the economy over time. ○ Connection: Students factor quadratic polynomials to find break-even points or maximum profit (math), analyzing how these relate to economic trends like GDP growth (social studies). ● Visual Arts Standard: NJSLS Visual and Performing Arts - 1.3.12acc.Cr1a Description: Use multiple approaches to begin creative endeavors, including envisioning and planning artistic solutions that incorporate form, structure, and materials. ○ Students factor polynomials to find intercepts and sketch curves (math), using these to design symmetrical or dynamic patterns in artwork like sculptures or digital graphics (arts). ● Career Readiness Standard: NJSLS Career Readiness, Life Literacies, and Key Skills - 9.1.12.FP.3 Description: Analyze how personal financial decisions (e.g., loans, investments) impact short- and long-term financial stability. ○ Students create and factor polynomial equations to find zeros representing break-even points (math), evaluating their impact on financial planning (career readiness).

Learning Activities	Data, variability, and statistical questions Dot plots and histograms Measures of center and variability Median and IQR

Subject Area: Math **Grade Level: 6**	
Unit	**9 Putting It All Together**
Timeframe	4 Weeks
Established Goals	Apply concepts learned throughout the year to real world situations using estimation, decimals,large numbers, ratios, rates, and percentages. Compare election results, analyze the impact of voter turnout, and learn about plurality, runoff, and instant runoff elections. Connect algebraic and geometric representations of fractions and mixed numbers
NJSLS	● 6.G.A-Solve real-world and mathematical problems involving area, surface area, and volume ● 6.NS.A-Apply and extend previous understandings of multiplication and division to divide fractions by fractions ● 6.NS.B-Compute fluently with multi-digit numbers & find common factors & multiples ● 6.NS.B.3 -With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. ● 6.RP.A-Understand ratio concepts and use ratio reasoning to solve problems ● 6.RP.A.1-Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.” ● 6.RP.A.2-Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠0, and use rate

	language in the context of a ratio relationship. For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is ¾-cup of flour for each cup of sugar.” “We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger.” (Clarification: Expectations for unit rates in this grade are limited to non-complex fractions.) ● 6.RP.A.3-Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. ● 6.RP.A.3.c-Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means times the quantity); solve problems involving finding the whole, given a part and the percent. ● 6.RP.A.3.d-Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. ● MP.1 Make sense of problems and persevere in solving them. ● MP.2 Reason abstractly and quantitatively. ● MP.3 Construct viable arguments & 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.
Essential Questions	● How do you apply skills using estimation, decimals, large numbers, ratios, rates, and percentages into real-world scenarios? ● How do you compare election results, analyze the impact of voter turnout, and learn about plurality, runoff, and instant runoff elections? ● How do you making connections focusing on connecting algebraic and geometric representations of fractions and mixed numbers?
Content Knowledge	*Students will learn:* Critique ● Reasoning about Fermi problems ● Claims about percentages ● Reasoning about the fairness of voting systems Justify ● Reasoning about Fermi problems ● Claims about percentages.

	• Reasoning about the fairness of voting systems Compare • Sources of energy • Rectangles and fractions • Voting systems
Skills	*Students will be able to:* • Estimate Values and convert units to solve Fermi problems. • Work with large numbers: Analyze data related to water and energy usage. • Percentages: Understand and apply percentages to real-world situations. • Analyze election data: Compare results and understand different voting systems. • Connect algebraic and geometric representations: Relate fractions and mixed numbers to visual models.
Performance Tasks	Hunger Games vs Divergent Bag of Marbles Ticket Booth Nets for pyramids and prisms
Other Assessment Evidence	**Benchmark Assessment** (Measures progress toward grade-level standards at specific points in the year) • Beginning, Mid-Year and End-of-Year Benchmark Assessment- iReady • Check Your Readiness – Given before a unit or topic to gauge prior knowledge. • NJSLA Question Examination – Reviewing state test-style questions to assess readiness for standardized testing. **Formative Assessment** (Ongoing assessments used to guide instruction and provide feedback) • Gamification – A quick daily online game to collect data on students' level of content mastery • Guided Practice – Teacher-monitored activities where students practice new skills with support • Checkpoints– A short problem or question to assess each learning objective • Cool Down – A short problem or question at the end of a lesson to assess learning • Class Discussions – Encouraging students to explain their thinking and reasoning aloud • Quizzes - (by topic) Distinguishing Appropriate Display of Data, Finding Measures of Central Tendencies, Composing Different Types of Graphs, Analyzing Data Displayed in Graphs. **Summative Assessment** (Evaluates mastery of skills at the end of a unit or grading period) • End of the Unit Assessment – Illustrative Math Unit 8 • Project/Performance Tasks - Lesson 18-Let's Put It To Work **Alternative Assessment** (Non-traditional ways of assessing understanding) • Leveled Independent Practice/Classwork – Differentiated work based on student ability. • Homework – Provides additional practice but is not always a direct measure of understanding.

	• Peer or Self-Assessment – Students reflect on their work or assess a peer's explanation. • Project-Based Learning (PBL) – Real-world applications, such as designing a theme park with scaled measurements. • Peer Teaching - Assess understanding as students explain a concept to a classmate • Teacher Questioning/Observation
Resources/Materials	Text: Text: Illustrative Mathematics IMV. 360 Grade 6 Consumable Text Text: Teacher's Edition Illustrative Mathematics Grade 6 Technologies Students have 1:1 Chromebook access Online IMv. 360 Grade 6 student/teacher access to the digital platform iReady My Path for students BenQ Board Schoology learning management system Quizizz, Kahoot, Gimkit, Quizlet, 99 Math, Number Hive, Blooket for gamification Supplemental Materials Digital Black Line Master materials for homework and additional practice Learning Stations (Created by the teacher using teacher created materials and manipulatives) Checks for understanding (problems from the textbook, Google Forms, teacher-created materials) Project-Based Learning Activities (created by the teacher) Spiral review activities (created by the teacher)

Interdisciplinary Connections	• Science Standard: NJSLS Science - HS-LS2-1 (Ecosystems: Interactions, Energy, and Dynamics) Description: Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.
	  ○ Students model population growth with exponential functions using exponents (math), applying these to analyze how resources limit ecosystem carrying capacity (science).
	• Career Readiness Standard: NJSLS Career Readiness, Life Literacies, and Key Skills - 9.1.12.FP.1 Description: Demonstrate an understanding of the interrelationship between compound interest, time, rate, and principal, and how these impact personal financial goals.
	  ○ Students transform exponential expressions for compound interest using exponent properties (math), analyzing how interest grows over time for savings or loans (career readiness).

Learning Activities	Exploring our world Voting Making Connections

ADDITIONAL INFORMATION

21st Century Skills Integration: Career Readiness, Life Literacies, and Key Skills	**Credit and Debt Management:** ● 9.1.8.CDM.1: Compare and contrast the use of credit cards and debit cards for specific purchases and the advantages and disadvantages of using each. ● 9.1.8.CDM.2: Demonstrate an understanding of the terminology associated with different types of credit (e.g., credit cards, installment loans, mortgages, lines of credit) and compare and calculate the interest rates associated with each. ● 9.1.8.CDM.3: Compare and contrast loan management strategies, including interest charges and total principal repayment costs. **Credit Profile:** ● 9.1.8.CP.1: Compare prices for the same goods or services. ● 9.1.8.CP.2: Analyze how spending habits affect one's ability to save. **Economic and Government Influences:** ● 9.1.8.EG.1: Explain how taxes affect disposable income and the difference between net and gross income ● 9.1.8.EG.2: Explain why various sources of income are taxed differently. ● 9.1.8.EG.3: Explain the concept and forms of taxation and evaluate how local, state and federal governments use taxes to fund public activities and Initiatives. **Financial Institutions:** ● 9.1.8.FI.2: Determine the most appropriate use of various financial products and services to borrow and access money for making purchases (e.g., ATM, debit cards, credit cards, check books, online/mobile banking). ● 9.1.8.FI.3: Evaluate the most appropriate financial institutions to assist with meeting various personal financial needs and goals. ● 9.1.8.FI.4: Analyze the interest rates and fees associated with financial products. **Planning and Budgeting:** ● 9.1.8.PB.3: Explain how to create a budget that aligns with financial goals. ● 9.1.8.PB.4: Construct a simple personal savings and spending plan based on various sources of income and different stages of life (e.g. teenager, young adult, family). **Career Awareness and Planning:**

	• 9.2.8.CAP.1: Identify offerings such as high school and county career and technical school courses, apprenticeships, military programs, and dual enrollment courses that support career or occupational areas of interest. • 9.2.8.CAP.2: Develop a plan that includes information about career areas of interest. • 9.2.8.CAP.3: Explain how career choices, educational choices, skills, economic conditions, and personal behavior affect income. • 9.2.8.CAP.4: Explain how an individual's online behavior (e.g., social networking, photo exchanges, video postings) may impact opportunities for employment or advancement. • 9.2.8.CAP.8: Compare education and training requirements, income potential, and primary duties of at least two jobs of interest. • 9.2.8.CAP.9: Analyze how a variety of activities related to career preparation (e.g., volunteering, apprenticeships, structured learning experiences, dual enrollment, job search, scholarships) impacts postsecondary options. • 9.2.8.CAP.19: Relate academic achievement, as represented by high school diplomas, college degrees, and industry credentials, to employability and to potential level. **Creativity and Innovation:** • 9.4.8.CI.2: Repurpose an existing resource in an innovative way (e.g., 8.2.8.NT.3). • 9.4.8.CI.3: Examine challenges that may exist in the adoption of new ideas (e.g., 2.1.8.SSH, 6.1.8.CivicsPD.2). **Critical Thinking and Problem Solving:** • 9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1). **Digital Citizenship:** • 9.4.8.DC.4: Explain how information shared digitally is public and can be searched, copied, and potentially seen by public audiences. **Information and Media Literacy:** • 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping (e.g., 6.SP.B.4, 7.SP.B.8b). • 9.4.8.IML.4: Ask insightful questions to organize different types of data and create meaningful visualizations. 9.4.8.IML.5: Analyze and interpret local or public data sets to summarize and effectively communicate the data.
Career Education with Diversity, Equity, and	**Each career will be explored in the context of its content area, along with specific lessons on all named professionals below.**

Inclusion	1. Engineer ● Algebra, Geometry, Ratios, Measurement ● Aprille Ericsson-Jackson: An aerospace engineer and activist for women and minorities in STEM 2. Data Analyst ● Data Analysis, Percentages, Averages, Graphing ● W.E.B Du Bois: A pioneering scholar in sociology who combined data, storytelling, and lyricism to combat racism and Jim Crow laws of early twentieth century America 3. Architect ● Geometry, Measurement, Ratios, Proportions ● David Gissen: Professor of Architecture at the California College of the Arts. He became an above-the-knee amputee due to pediatric bone cancer 4. Accountant ● Decimal Addition, Subtraction and Multiplication; Percentages; Fractions ● Randy Giannini: An accountant for the past 38 years, he spent the majority of his career as a person with blindness 5. Chef or Nutritionist ● Fractions, Percentages, Ratios, Measurement ● Ferran Adrià: Considered a pioneer of molecular gastronomy and one of the most influential chefs of all time 6. Graphic Designer ● Geometry, Proportions, Measurement ● Explore famous Filipino graphic designers including Lucille Tenazas, Camille Anne Ferreol, and Miguel Spinola, known for their diverse styles and contributions to the field. 7. Carpenter ● Measurement, Geometry, Ratios ● Barbara Jones: A trailblazer in sustainable building, she trained as a carpenter and founded Amazon Nails, a women's roofing company 8. Fashion Designer ● Geometry, Ratios, Measurement ● Saisha Shinde: Credited as India's first transgender fashion designer 9. Scientist (e.g., Biologist, Chemist) ● Data Analysis, Ratios, Percentages, Averages ● Professor Stephen Hawking: Cambridge University physicist and cosmologist who survived with ALS for 55 years 10. Computer Programmer/Software Developer ● Algebra, Problem-Solving, Logic, Data Analysis ● Owen McGirr: A notable software developer and passionate advocate for accessibility and technology for people with disabilities

	11. Economist ● Data Analysis, Percentages, Ratios, Averages ● Carmen Reinhart: One of the most influential living female macroeconomists 12. Surveyor ● Geometry, Measurement, Trigonometry ● Alice Fletcher: The first American female surveyor 13. Marketing Specialist ● Percentages, Ratios, Data Analysis, Graphing ● Tom Burrell:: The first black man advertiser in Chicago in the 1960s. He has led multicultural campaigns for brands like McDonalds and Coca-Cola. 14. Nurse ● Fractions, Percentages, Ratios ● Harriet Tubman: A famed conductor of the Underground Railroad; a former slave who also acted as a nurse during the Civil War, tending to Black soldiers and liberated slaves 15. Real Estate Agent ● Percentages, Fractions, Ratios, Measurement ● Ryan Gebauer: Well-known real estate broker who specializes in accessible homes for clients with disabilities 16. Environmental Scientist ● Data Analysis, Percentages, Ratios, Averages ● Rachel Carson (she/her): A famous LGBTQ+ writer, conservationist, and marine biologist
Diversity, Equity, and Inclusion	**Analyzing Real-World Data on Social Issues**: Use functions and statistical analysis to examine data sets related to social justice topics, such as income inequality or environmental impacts on different communities. This approach helps students apply mathematical concepts to understand and discuss societal issues. **Exploring Mathematics in Various Cultures**: Investigate mathematical contributions from diverse cultures, like the development of algebra in the Islamic world or ancient Chinese mathematics. This can deepen students' appreciation for the global nature of mathematical thought. **Project-Based Learning on Community Issues**: Encourage students to identify local community challenges and use precalculus concepts to propose solutions. For example, modeling traffic patterns to improve safety or analyzing demographic trends to address local needs. **Collaborative Group Work Emphasizing Diverse Perspectives**: Design group activities that require students to approach problems from multiple viewpoints, fostering an inclusive environment where diverse problem-solving strategies are valued.

Technology Integration: Computer Science and Design Thinking	• Course catalog includes CTE programs such as Engineering, Computer Science, and Graphic Arts to provide technological opportunities to prepare for careers • All students are one-to-one with Chromebooks for day-to-day use in the classroom • All students log onto computers where they utilize a variety of instructional and online tools to enhance their classroom instruction as well as aid in the problem solving process • Many of the concepts that are explored in the high school mathematics curriculum involve solving problems using a step by step process and are eventually summarized using and algorithm • All classrooms have access to an interactive Smart Board with speaker system so lessons can include video, sound, and interactive lessons for all learners • TECH.8.1.8 All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. • TECH.8.1.8.A.CS1 Understand and use technology systems. • TECH.8.1.8.A.CS2 Select and use applications effectively and productively. • TECH.8.1.8.C Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others. • TECH.8.1.8.C.CS1 Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media. • TECH.8.1.8.F Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. • TECH 8.2.12.D.1 Design and create a prototype to solve a real world problem using a design process, identify constraints addressed during the creation of the prototype, identify trade-offs made, and present the solution for peer review • TECH 8.1.12.A.2 Produce and edit a multi-page digital document for a commercial or professional audience and present it to peers and/or professionals in that related are for review • TECH 8.1.12.A.CS2 Select and use applications effectively and productively • 8.2.12.ED.1: Use research to design and create a product or system that addresses a problem and make modifications based on input from potential consumers. • 8.2.12.ED.2: Create scaled engineering drawings for a new product or system and make modification to increase optimization based on feedback. • 8.2.12.ED.3: Evaluate several models of the same type of product and make recommendations for a new design based on a cost benefit analysis. • 8.2.12.ED.4: Design a product or system that addresses a global problem and document decisions made based on research, constraints, trade-offs, and aesthetic and ethical considerations and share this information with an appropriate audience • 8.2.12.ED.5: Evaluate the effectiveness of a product or system based on factors that are related to its requirements, specifications, and constraints (e.g., safety, reliability, economic considerations, quality control, environmental concerns, manufacturability, maintenance and repair, ergonomics). • 8.2.12.ED.6: Analyze the effects of changing resources when designing a specific product or system (e.g., materials, energy, tools, capital, labor). • 8.2.12.ITH.1: Analyze a product to determine the impact that economic, political, social, and/or cultural factors

	have had on its design, including its design constraints. • 8.2.12.ITH.2: Propose an innovation to meet future demands supported by an analysis of the potential costs, benefits, trade-offs, and risks related to the use of the innovation. • 8.2.12.ITH.3: Analyze the impact that globalization, social media, and access to open source technologies has had on innovation and on a society's economy, politics, and culture. • 8.2.12.NT.1: Explain how different groups can contribute to the overall design of a product. • 8.2.12.NT.2: Redesign an existing product to improve form or function. • 8.2.12.ETW.1: Evaluate ethical considerations regarding the sustainability of environmental resources that are used for the design, creation, and maintenance of a chosen product. • 8.2.12.ETW.2: Synthesize and analyze data collected to monitor the effects of a technological product or system on the environment. • 8.2.12.ETW.3: Identify a complex, global environmental or climate change issue, develop a systemic plan of investigation, and propose an innovative sustainable solution. • 8.2.12.EC.1: Analyze controversial technological issues and determine the degree to which individuals, businesses, and governments have an ethical role in decisions that are made. • 8.2.12.EC.2: Assess the positive and negative impacts of emerging technologies on developing countries and evaluate how individuals, non-profit organizations, and governments have responded. • 8.2.12.EC.3: Synthesize data, analyze trends, and draw conclusions regarding the effect of a technology on the individual, culture, society, and environment and share this information with the appropriate audience. • 8.2.12.ETW.4: Research historical tensions between environmental and economic considerations as driven by human needs and wants in the development of a technological product and present the competing viewpoints. • https://www.nj.gov/education/standards/compsci/Docs/2020%20NJSLS-CSDT.pdf
Differentiation and Accommodations for: Special Education	• Special Education modifications will be implemented as per the Individualized Education Programs of the students in the class. • Please click here for an overview of the variety of accommodations set in place for IEPs and 504 plans. • Accommodations will be dictated by the general makeup of the class. Specific to 6th-grade math: • Use of calculator • Use of multiplication chart • Use of manipulatives • Use of graph paper • Use of visual aids and organizational support • Modify problems using easier numbers • Adjustment of the number of problems assigned • Use of worked examples as a model for independent work • Allow use of index card for reminders (integer rules, exponent rules, fraction rules)

MTSS/RTI	The VTSD Response to Intervention and MTSS Manual and the NJTSS Early Reading Screening Guidelines outline the policies and procedures that 'exist to ensure a coordinated system for planning, delivering, measurement, and modification of intervention and referral services implemented in each school by a multidisciplinary team to address the learning, behavioral, and health needs of all students. (N.J.A.C. 6A:16-8)' This requirement is fulfilled through the district New Jersey Tiered System of Support (NJTSS) Early Reading grant initiative and our Multi-Tiered Systems of Support (MTSS) Response to Intervention plan which includes A. A continuum of supports and interventions available in each school to support learning, behavior, and health needs; B. Action plans for interventions based on student data and desired outcomes; C. Professional development for multidisciplinary teams and staff who provide interventions; and D. Review and assessment of effectiveness of interventions (e.g., progress monitoring).
English Language Learners	● Coordinate activities with ESL teacher to accommodate individual learning needs ● Provide appropriate leveled texts ● Students complete the ACCESS 2.0 test yearly to measure growth and guide instruction Specific to 6th-grade math: ● Peer tutoring or assistance ● Use of manipulatives ● Visual aids and organizational support ● Use of bilingual and picture-based resources ● Use of worked examples limited to mathematical symbols and numbers ● Visual instructions
Risk for School-Failure	● Counseling interventions ● Parent meetings ● Student meetings ● Individual and group counseling ● Individualized instruction ● Small-group instruction ● Peer tutoring or assistance ● Reduced distractions ● Suggest joining 21st Century Community Learning Centers Program (21st CCLC) Specific to 6th-grade math: ● Math skills lab ● Peer tutoring or assistance ● Use of manipulatives ● Visual aids and organizational support ● Simplify word problems ● Adjust the number of word problems assigned

	• Use of worked examples as a model for independent work • Emphasize mastery of core skills
Gifted and Talented Learners	• Inclusive identification process that depicts the child as a whole in order to provide the best learning environment possible for each student (Click here for Identification Profile Sample) • Tiered Services utilizing NAGC K-12 Programming standards to ensure individual needs are being met Click here for the GATE program handbook. • Formative Assessment utilized in order to promote acceleration, curriculum compacting, grouping, and asynchronous learning where appropriate • Social-emotional support • Increased depth and complexity of the grade-level curriculum • Alternative assessment methods Specific to 6th-grade math: • Independent research projects incorporating measures of central tendency and variability, ratio and percent • Real-world, open-ended and higher-order-thinking problem-solving tasks • In addition to all cross curricular projects above, students leveraging the general education curriculum may also be assigned Journey to Space: Integer Operations and Space Travel Project to align with Unit 14 in Math Grade 6 Accelerated.
Climate Change	• The following standards will be implemented in the topics that discuss using functions and equations, specifically in units 2, 3, 4, 5, 6, and 7. • A.CED.A.1 Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. Climate Change Example: Students may create equations and/or inequalities to represent the economic impact of climate change. • A.CED.A.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods. Climate Change Example: Students may represent constraints describing the economic impact of climate change by equations, inequalities, and/or by systems of inequalities, and interpret solutions as viable or nonviable options. • A.CED.A.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law to highlight resistance R. Climate Change Example: Students may rearrange formulas related to the economic impact of climate change to highlight a quantity of interest, using the same reasoning as in solving equations. • F.IF.A.2 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. Climate Change Example: Students may use function notation to determine the amount of carbon dioxide produced by burning a given number of molecules of ethane (gasoline), m, where c(m) is the number of molecules of carbon dioxide. • F.IF.B.5 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function. Climate Change Example:

	Students may relate the domain of a function c(m) representing the amount of carbon dioxide produced by burning m molecules of ethane (gasoline), to its graph in order to determine the appropriate domain for c(m). ● F.IF.B.6 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. Climate Change Example: Students may calculate the average rate of change of a function c(m) presented symbolically or as a table, where c(m) represents the amount of carbon dioxide produced by burning a given number of molecules of ethane (gasoline).

Tab 2