GREEN TOWNSHIP SCHOOL DISTRICT

Content Area: **Mathematics**

Course/Grade Level: **6th Grade**

Curriculum Committee Members: Grade Level Staff Members

Principal:
Jon Paul Bollette

Board Approval Date:
2/18/26

Mission:

A New Jersey education in Mathematics builds quantitatively and analytically literate citizens prepared to meet the demands of college and career, and to engage productively in an information-driven society. All students will have access to a high-quality mathematics education that fosters a population that:

- **leverages data in decision-making and as a lens for discussing, analyzing, and responding to practical questions.**
- **persists to make sense of and model problems arising in everyday life, society, and the workplace.**
- **thinks critically and strategically to assess quantitative relationships and to solutions to complex problems.**
- **employs precise reasoning and constructs viable arguments to deduce conclusions, recognize false statements and assess peers' reasoning.**
- **interprets, evaluates and critiques the mathematics embedded in social, scientific and commercial systems, as well as the claims made in the private and public sectors.**
- **communicates precisely when conveying, representing, and justifying both qualitative and quantitative perspectives.**

Key Performance and Benchmark Tasks/Assessments

Resources for help in creating assessments

Formative assessments:

- Exit Tickets
- Homework
- Sprints
- Mini Quiz

Summative Assessments:

Examples may include:

- Topic/Chapter Quiz
- Unit Test/Assessment
- Culminating Projects

Benchmark Assessments:

- Teacher-created benchmark assessments to be given periodically during the year.

Alternative Assessments:

- Teacher modifies assignments and activities based on student needs.
- Oral assessments administered in place of written when necessary.
- Accommodation and modification ideas may be found here:
    - Modifications & Accommodations Menu
    - *Assessments other than paper & pencil tests See link for more info:* *http://education.gmu.edu/assets/docs/forms/mirs/assessment_brochure.pdf*

Integrated Accommodations & Modifications

Please utilize the link below for ideas and strategies to use with ***ELL, Students with IEPS & 504s, At-Risk Students and Gifted & Talented Students***.

The attached worksheets can be printed ahead of each unit during the planning phase to help the teacher plan for the needs of particular students in each class, allowing for differentiation per unit and per year. The worksheets contain suggested accommodations and modifications for Content & Material, Student Organization, Instructional Strategies, Assessments, Attention/Focus, Written Language, and Social/Behavioral.
Modifications & Accommodations Menu

Unit 1

Ratios, Rates, & Percents	**Pacing:6 Weeks**
Unit Summary: Students learn to represent and solve problems involving ratios, unit rates, and percentages. The module builds on prior knowledge of fractions and multiplication to introduce these new concepts	
Essential Questions: How can we use ratios and rates to solve real-world problems? What makes a relationship proportional, and how can we tell if two quantities are in a proportional relationship? How can percentages, fractions, and decimals be used interchangeably to represent parts of a whole? How can different representations, such as graphs, tables, and equations, help us understand and describe a proportional relationship?	**Enduring Understandings:** Ratios and rates are powerful tools for comparing quantities. They allow us to make sense of relationships between different numbers and units, from prices per pound to speeds in miles per hour. Proportional relationships are foundational in mathematics. Understanding proportionality provides a basis for more advanced topics like linear functions, slope, and scaling. A single relationship can be represented in multiple ways. Whether through a ratio table, a graph, an equation, or a verbal description, different representations can reveal different insights into the same proportional relationship.

New Jersey Student Learning Standards	Student Learning Objectives	Practices
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	**Learning Goal 1:** Write and describe a ratio using ratio language **Learning Goal 2:** Find unit rates using their relationship to ratios	MP.1 Make sense of problems and persevere in solving them MP.2 Reason abstractly and quantitatively

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. a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. b. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed? 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.	**Learning Goal 3:** Solve real-world and mathematical problems involving rates and unit rates using tables, diagrams, number lines, graphs, and equations. **Learning Goal 4:** Find equivalent ratios using tables and plot them as ordered pairs on a coordinate plane. **Learning Goal 5:** Use the idea of percent as a rate per 100 to find a percent of a quantity, a whole given a part, and the percent.	MP.4 Model with mathematics MP.6 Attend to precision MP.7 Look for and make use of structure MP.8 Look for and express regularity in repeated reasoning

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

Interdisciplinary Connections

2020 Career Readiness, Life Literacies, and Key Skills
9.4.8.CT.1: Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).
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).

Unit 1: Core Unit Content

Vocabulary	*Key Concepts*
❑ **Equivalent Ratios** Two ratios A : B and C : D are equivalent ratios if there is a nonzero number c such that C = c × A and D = c × B ❑ **percent** A percent is a fraction with a denominator of 100. A number followed by the percent symbol, N%, indicates N/100 ❑ **rate** A quantity that describes a ratio relationship between two quantities ❑ **ratio** An ordered pair of numbers that are not both zero	❑

❑ **ratio relationship** The set of all ratios that are equivalent ratios ❑ **unit rate** When a rate is written so that the second of the two quantities is 1 unit, the unit rate is the numerical part of the rate ❑ **value of the ratio** For a ratio A : B, the value of the ratio is the quotient A/B as long as B is not zero	

Unit 1: Instructional Materials & Resources	
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Unit 1: Assessments

Formative assessments:

- Exit Tickets
- Homework
- Sprints
- Mini Quiz

Summative Assessments:

Examples may include:

- Topic/Chapter Quiz
- Unit Test/Assessment
- Culminating Projects

Formative assessments:

- Exit Tickets
- Homework
- Sprints
- Mini Quiz

Unit 1: Accommodations & Modifications
Please utilize the link below for ideas and strategies to use with ELL, Students with IEPS & 504s, At-Risk Students and Gifted & Talented Students. Note possible accommodations or modifications for this unit below. Modifications & Accommodations Menu

Unit 2

Operations with Fractions and Multi-Digit Numbers	**Pacing: 5 Weeks**
Unit Summary: Students will learn to divide fractions, fluently compute with multi-digit decimals, and use visual models and strategies to understand and explain their work. They will apply these skills to solve real-world problems and interpret solutions in meaningful contexts.	
Essential Questions: ● How can we divide fractions and use models to make sense of the quotient? ● What strategies help us fluently compute with multi-digit decimals and whole numbers? ● How can we apply operations with fractions and decimals to solve	**Enduring Understandings:** ● Dividing fractions can be understood using visual models and the relationship between multiplication and division. ● Fluency with multi-digit decimals and whole numbers allows us to solve problems efficiently and accurately. ● Operations with fractions and decimals can be applied to

real-world problems?	real-world situations to interpret and solve problems.

New Jersey Student Learning Standards	Student Learning Objectives	Practices
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 problem. **6.NS.B.2** With accuracy and efficiency, divide multi-digit numbers using the standard algorithm. **6.NS.B.3** With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. **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.	**Learning Goal 1:** Compute quotients of fractions. **Learning Goal 2:** Construct visual fraction models to represent quotients of fractions and use the relationship between multiplication and division to explain division of fractions. **Learning Goal 3:** Solve real-world problems involving quotients of fractions and interpret the solutions in the context given. **Learning Goal 4:** Fluently add, subtract, multiply and divide multi-digit decimals. **Learning Goal 5**: Fluently divide multi-digit numbers using the standard algorithms. **Learning Goal 6:** Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two numbers less than or equal to 12, and use these tools to solve problems.	MP.1 Make sense of problems and persevere in solving them MP.2 Reason abstractly and quantitatively MP.4 Model with mathematics MP.6 Attend to precision MP.7 Look for and make use of structure MP.8 Look for and express regularity in repeated reasoning

Interdisciplinary Connections

2020 Career Readiness, Life Literacies, and Key Skills

• 9.4.8.CT.1: Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).
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).

Unit 2: Core Unit Content

Vocabulary	*Key Concepts*
❑ **greatest common factor (GCF)** The greatest common factor of two whole numbers that are not both zero is the greatest nonzero whole number that is a factor of both numbers. ❑ **least common multiple (LCM)** The least common multiple of two whole numbers is the smallest whole number greater than zero that is a multiple of both numbers. ❑ **prime factorization** The prime factorization of a number is the number written as a product of prime numbers. ❑ **reciprocal** The number obtained by inverting a fraction	❑

Unit 2: Instructional Materials & Resources

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Unit 2: Assessments

Formative assessments:

- Exit Tickets
- Homework
- Sprints
- Mini Quiz

Summative Assessments:

Examples may include:

- Topic/Chapter Quiz
- Unit Test/Assessment
- Culminating Projects

Formative assessments:

- Exit Tickets
- Homework
- Sprints
- Mini Quiz

Unit 2: Accommodations & Modifications

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Modifications & Accommodations Menu

Unit 3

Rational Numbers	**Pacing:6 weeks**
Unit Summary: Students will learn to represent, locate, and compare positive and negative rational numbers on number lines and the coordinate plane. They will use these skills, along with inequalities, to interpret real-world situations and describe relationships between numbers.	
Essential Questions: • How can positive and negative numbers represent real-world situations, and what does zero mean in those contexts? • How do rational numbers and their opposites relate to each other on number lines and the coordinate plane? • How can we use inequalities and number order to compare and interpret rational numbers in real-world problems?	**Enduring Understandings:** • Positive and negative numbers represent quantities in real-world situations, and zero indicates a reference point or neutral value. • Rational numbers and their opposites can be located and compared on number lines and in the coordinate plane, showing relationships like reflections across axes. • Understanding the order and relative position of rational numbers allows us to interpret and solve real-worldproblems using inequalities.

Unit 5

Area, Surface Area, and Volume	**Pacing:**
Unit Summary: Students will learn to find the area, volume, and surface area of two- and three-dimensional figures using decomposition, nets, and formulas. They will also use the coordinate plane to graph points and calculate distances, applying these skills to solve real-world and mathematical problems.	
Essential Questions: • **How can we find the area of triangles, quadrilaterals, and other polygons by composing or decomposing shapes?** • **How can graphing points and using coordinate differences help us solve**	**Enduring Understandings:** • The area of triangles, quadrilaterals, and polygons can be found by composing or decomposing shapes, helping to solve real-world and mathematical problems.

problems involving distance and location? • **How can we use unit cubes, formulas, and nets to determine the volume and surface area of three-dimensional figures in real-world situations?**	• Graphing points in all four quadrants and using coordinate differences allows us to solve problems involving distance and location. • Volume and surface area of three-dimensional figures, including those with fractional edge lengths, can be determined using unit cubes, formulas, and nets to model and solve real-world problems.

New Jersey Student Learning Standards	Student Learning Objectives	Practices
6.G.A.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems .**6.G.A.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.	**Learning Goal 1:** Find the area of right triangles, other triangles, special quadrilaterals and polygons by composing into rectangles or decomposing into triangles and other shapes to solve real world or mathematical problems. **Learning Goal 2:** Solve real world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Use the absolute value of the differences of their coordinates to find distances between points with the same first coordinate or same second coordinate. **Learning Goal 3:** Find the volume or missing edge length of a right rectangular prism with fractional edge lengths by packing it with unit cubes and show that the volume is the same as it would be if found by multiplying the edge lengths; apply volume formulas to right	MP.1 Make sense of problems and persevere in solving them MP.2 Reason abstractly and quantitatively MP.4 Model with mathematics MP.6 Attend to precision MP.7 Look for and make use of structure MP.8 Look for and express regularity in repeated reasoning

	rectangular prisms with fractional edge lengths. **Learning Goal 4:** Represent three dimensional figures objects with nets made of rectangles and triangles, and use the nets to find the surface area of the figures in order to solve real world and mathematical problems.	

Interdisciplinary Connections

2020 Career Readiness, Life Literacies, and Key Skills

9.4.8.CT.1: Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).
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).

Unit 5: Core Unit Content

Vocabulary	*Key Concepts*
❑ **base of a triangle** One of the sides of the triangle ❑ **height of a triangle** The perpendicular line segment from the base of the triangle to the opposite vertex ❑ **net** The net of a solid is formed when the surface of the solid is cut along enough edges so that the faces of the solid can be placed	❑

in one plane to form a connected, two-dimensional figure. ❑ **parallel planes** Two planes in space are parallel planes if they do not intersect. ❑ **surface area** The total area of the faces of a solid ❑ **triangular region** The union of a triangle and its interior	

Unit 5: Instructional Materials & Resources	
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Unit 5: Assessments
Formative assessments: • Exit Tickets • Homework • Sprints • Mini Quiz
Summative Assessments: Examples may include: • Topic/Chapter Quiz • Unit Test/Assessment • Culminating Projects

Formative assessments:

- Exit Tickets
- Homework
- Sprints
- Mini Quiz

Unit 5: Accommodations & Modifications

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Modifications & Accommodations Menu

Unit 6

Statistics	**Pacing:5 weeks**
Unit Summary: Students will learn to identify statistical questions and organize numerical data using plots and graphs to reveal patterns. They will calculate and interpret measures of center and variability to analyze data and draw meaningful conclusions in context.	
Essential Questions: ● How can we tell the difference between statistical and non-statistical questions? ● How can data be displayed in plots and graphs to reveal patterns and support conclusions? ● How do measures of center and variability help us describe and interpret data in context?	**Enduring Understandings:** ● Statistical questions anticipate variability in data and help guide meaningful investigations. ● Numerical data can be organized and displayed in plots, graphs, and charts to reveal patterns and relationships. ● Measures of center and variability, such as mean, median, interquartile range, and mean absolute deviation, help describe and interpret data in context.

New Jersey Student Learning Standards	Student Learning Objectives	Practices
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	**Learning Goal 1:** Distinguish questions that are statistical (anticipate variability in data) from those that are not. **Learning Goal 2**: Display numerical data in plots on the number line (including dot plots, histograms, and box plots) and summarize in relation to their context. **Learning Goal 3:** Summarize numerical data in relation to their context by identifying the number of observations and describing how the data	MP.1 Make sense of problems and persevere in solving them MP.2 Reason abstractly and quantitatively MP.4 Model with mathematics MP.6 Attend to precision MP.7 Look for and make use of structure

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.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots. 6.SP.B.5 Summarize numerical data sets in relation to their context, such as by: a. Reporting the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.	was measured. **Learning Goal 4*:*** Calculate, and interpret measures of center (mean and median) and variability (interquartile range and mean absolute deviation); report measures of center and variability appropriate to the shape of the distribution and context.	MP.8 Look for and express regularity in repeated reasoning

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.		

Interdisciplinary Connections
2020 Career Readiness, Life Literacies, and Key Skills 9.4.8.CT.1: Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2). 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).

Unit 6: Core Unit Content	
Vocabulary	***Key Concepts***
❑	❑

Unit 6: Instructional Materials & Resources	
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Unit 6: Assessments
Formative assessments: • Exit Tickets • Homework

- Sprints
- Mini Quiz

Summative Assessments:

Examples may include:

- Topic/Chapter Quiz
- Unit Test/Assessment
- Culminating Projects

Alternative Assessments:

Unit 6: Accommodations & Modifications

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Modifications & Accommodations Menu