Mathematics Curriculum

Grade 7

Born on August 23, 2022 by the South Bergen Jointure Commission Board of Education
Revisions adopted on August 26, 2025 by the South Bergen Jointure Commission Board of Education
Aligned to the 2016 New Jersey Student Learning Standards for English Language Arts (NJSLS-S)

SOUTH BERGEN JOINTURE COMMISSION

The mission of the South Bergen Jointure Commission is to unlock the potential of every student. As a leading educational provider, we will focus on the development of each student's social, emotional, and academic needs. By fostering an environment that is supportive and challenging, we will empower students to maximize their independence and potential in becoming fulfilled and productive members of their community.

General Curriculum Overview

Introduction:
In Grade 7, instructional time should focus on four critical areas: (1) developing understanding of and applying proportional relationships; (2) developing understanding of operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume; and (4) drawing inferences about populations based on samples.

Grade 7 NJSLS-M Overview

Ratios and Proportional Relationships
- Analyze proportional relationships and use them to solve real-world and mathematical problems.

The Number System
- Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

Expressions and Equations
- Use properties of operations to generate equivalent expressions.
- Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

Geometry
- Draw, construct and describe geometrical figures and describe the relationships between them.
- Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

Statistics and Probability
- Use random sampling to draw inferences about a population.
- Draw informal comparative inferences about two populations.
- Investigate chance processes and develop, use, and evaluate probability models.

Standards for Mathematical Practices

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

2016 New Jersey Student Learning Standards for Mathematics (NJSLS-M)
Grade 7

Ratios and Proportional Relationships (7.RP)

A. Analyze proportional relationships and use them to solve real-world and mathematical problems.

- 7.RP.A.1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour.
- 7.RP.A.2. Recognize and represent proportional relationships between quantities.
    - 7.RP.A.2.a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
    - 7.RP.A.2.b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
    - 7.RP.A.2.c. Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$.
    - 7.RP.A.2.d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.
- 7.RP.A.3. Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

The Number System (7.NS)

A. Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

- 7.NS.A.1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
    - 7.NS.A.1.a. Describe situations in which opposite quantities combine to make 0. For example, in the first round of a game, Maria scored 20 points. In the second round of the same game, she lost 20 points. What is her score at the end of the second round?
    - 7.NS.A.1.b. Understand $p + q$ as the number located a distance $|q|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
    - 7.NS.A.1.c. Understand subtraction of rational numbers as adding the additive inverse, $p – q = p + (–q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
    - 7.NS.A.1.d. Apply properties of operations as strategies to add and subtract rational numbers.
- 7.NS.A.2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.
    - 7.NS.A.2.a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(–1)(–1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
    - 7.NS.A.2.b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $–(p/q) = (–p)/q = p/(–q)$. Interpret quotients of rational numbers by describing real world contexts.
    - 7.NS.A.2.c. Apply properties of operations as strategies to multiply and divide rational numbers.
    - 7.NS.A.2.d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.

- 7.NS.A.3. Solve real-world and mathematical problems involving the four operations with rational numbers.

Expressions and Equations (7.EE)

A. Use properties of operations to generate equivalent expressions.

- 7.EE.A.1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
- 7.EE.A.2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."

B. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

- 7.EE.B.3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.
- 7.EE.B.4. Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
    - 7.EE.B.4.a. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?
    - 7.EE.B.4.b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.

Geometry (7.G)

A. Draw, construct, and describe geometrical figures and describe the relationships between them.

- 7.G.A.1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
- 7.G.A.2. Draw (with technology, with ruler and protractor, as well as freehand) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
- 7.G.A.3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.

B. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

- 7.G.B.4. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
- 7.G.B.5. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
- 7.G.B.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Statistics and Probability (7.SP)

A. Use random sampling to draw inferences about a population.

- 7.SP.A.1. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
- 7.SP.A.2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.

B. Draw informal comparative inferences about two populations.

- 7.SP.B.3. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.
- 7.SP.B.4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.

C. Investigate chance processes and develop, use, and evaluate probability models.

- 7.SP.C.5. Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
- 7.SP.C.6. Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.
- 7.SP.C.7. Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
    - 7.SP.C.7.a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.
    - 7.SP.C.7.b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?
- 7.SP.C.8. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
    - 7.SP.C.8.a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.
    - 7.SP.C.8.b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.
    - 7.SP.C.8.c. Design and use a simulation to generate frequencies for compound events. For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?

Textbook Series

McGraw Hill: Reveal Math

Reveal Math 6–8: A Middle School Math Curriculum
Reveal the Full Potential in Every Student

- The principles of Reveal Math™ derive from the latest research on how students learn best—through productive struggle, rich tasks, and mathematical discourse. Reveal Math empowers educators to uncover the mathematician in every middle school student through powerful explorations, rich technology, and timely and insightful differentiation opportunities. The unique approach of Reveal Math ensures students don't just meet the standards, they master them.

Reveal Math 6-8 Program Overview Brochure

MATHEMATICS: GRADE 7
GENERAL CURRICULUM: PACING GUIDE

SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY
Module 1: Exponents and Scientific Notation NJSLS- M 8.EE.A.1, 8.EE.A.3, 8.EE.A.4	**Module 2: Real Numbers** NJSLS- M 8.NS.A.1, 8.NS.A.2, 8.EE.A.2	**Module 3: Solve Equations with Variables on Each Side** NJSLS- M 8.EE.C.7, 8.EE.C.7.A, 8.EE.C.7.B	**Module 4: Linear Relationships and Slope** NJSLS- M 8.EE.B.5, 8.EE.B.6, 8.EE.C.8.B, 8.F.A.3., 8.F.B.4, 8.SP.A.3	**Module 5: Functions** NJSLS- M 8.F.A.1, 8.F.A.2, 8.F.A.3, 8.F.B.4, 8.F.B.5

FEBRUARY	MARCH	APRIL	MAY	JUNE
Module 6: Systems of Linear Equations NJSLS- M 8.EE.C.8, 8.EE.C.8.A, 8.EE.C.8.B, 8.EE.C.8.C	**Module 7: Triangles and the Pythagorean Theorem** NJSLS- M 8.G.A.5, 8.G.B.6, 8.G.B.7, 8.G.B.8 **Module 8: Transformations** NJSLS- M 8.G.A.1, 8.G.A.1.A., 8.G.A.3	**Module 9: Congruence and Similarity** NJSLS- M 8.G.A.1, 8.G.A.1.A, 8.G.A.1.B, 8.G.A.1.C, 8.G.A.2, 8.G.A.4, 8.G.A.5	**Module 10: Volume** NJSLS- M 8.G.C.9	**Module 11: Scatter Plots and Two-Way Tables** NJSLS- M 8.SP.A.1 8.SP.A.2 8.SP.A.3 8.SP.A.4

MATHEMATICS: GRADE 7
GENERAL CURRICULUM: COURSE OVERVIEW

SEPTEMBER

Module 1: Exponents and Scientific Notation

Essential Question: Why are exponents useful when working with very large or very small numbers?

Module Goal:

LESSONS	KEY VOCABULARY	NJSLS-M
1-1: Powers and Exponents 1-2: Multiply and Divide Monomials 1-3: Powers of Monomials 1-4: Zero and Negative Exponents 1-5: Scientific Notation 1-6: Compute with Scientific Notation	base evaluate exponent monomial negative exponent order of operations Product of Powers Property power Power of a Power Property Power of a Product Property Quotient of Powers Property scientific notation standard form term Zero Exponent Rule	8.EE.A.1 8.EE.A.3 8.EE.A.4

LESSON OBJECTIVES

1-1: Students will write and evaluate expressions involving powers and exponents.
1-2: Students will use Laws of Exponents to multiply and divide monomials.
1-3: Students will use Laws of Exponents to find powers of monomials.
1-4: Students will simplify expressions that have zero and negative exponents.
1-5: Students will write numbers in scientific notation.
1-6: Students will compute with numbers written in scientific notation.

LESSON STRUCTURE	ASSESSMENT
- Launch - Explore and Develop - Reflect and Practice - Assess	- Lesson Exit Tickets - Math Probe - Unit Review - Fluency Practice - Performance Task - Module Assessment

OCTOBER

Module 2: Real Numbers

Essential Question: Why do we classify numbers?

Module Goal: Learn about the real number system by identifying, calculating, and estimating irrational numbers and comparing them to rational numbers.

LESSONS	KEY VOCABULARY	NJSLS-M
2-1: Terminating and Repeating Decimals 2-2: Roots 2-3: Real Numbers 2-4: Estimate Irrational Numbers 2-5: Compare and Order Real Numbers	bar notation counterexample cute root integers inverse operations irrational number natural numbers perfect cube perfect square principal square root radical sign rational numbers real number repeating decimal square root terminating decimal truncating whole numbers	8.NS.A.1 8.NS.A.2 8.EE.A.2

LESSON OBJECTIVES

2-1: Students will convert rational numbers between decimal and fraction forms.
2-2: Students will find square and cube roots.
2-3: Students will identify and describe sets of numbers in the real number system.
2-4: Students will estimate irrational numbers.
2-5: Students will compare and order numbers in the real number system.

LESSON STRUCTURE	ASSESSMENT
- Launch - Explore and Develop - Reflect and Practice - Assess	- Lesson Exit Tickets - Math Probe - Unit Review - Fluency Practice - Performance Task - Module Assessment

NOVEMBER

Module 3: Solve Equations with Variables on Each Side

Essential Question: How can equations with variables on each side be used to represent everyday situations?

Module Goal: Write and solve linear equations with variables on each side.

LESSONS	**KEY VOCABULARY**	**NJSLS-M**
3-1: Solve Equations with Variables on Each Side 3-2: Write and Solve Equations with Variables on Each side 3-3: Solve Multi-Step Equations 3-4: Write and Solve Multi-Step Equations 3-5: Determine the Number of Solutions	like terms	8.EE.C.7, 8.EE.C.7.A 8.EE.C.7.B

LESSON OBJECTIVES

3-1: Students will solve equations with variables on each side.
3-2: Students will write and solve equations with variables on each side.
3-3: Students will solve multi-step equations with variables on each side.
3-4: Students will write and solve multi-step equations with variables on each side.
3-5: Students will determine the number of solutions to an equation.

LESSON STRUCTURE	**ASSESSMENT**
- Launch - Explore and Develop - Reflect and Practice - Assess	- Lesson Exit Tickets - Math Probe - Unit Review - Fluency Practice - Performance Task - Module Assessment

DECEMBER

Module 4: Linear Relationships and Slope

Essential Question: How are linear relationships related to proportional relationships?

Module Goal:

LESSONS	**KEY VOCABULARY**	**NJSLS-M**
4-1: Proportional Relationships and Slope 4-2: Slope of a Line 4-3: Similar Triangles and Slope 4-4: Direct Variation 4-5: Slope-Intercept Form 4-6: Graph Linear Equations	constant of proportionality constant of variation constant rate of change corresponding parts direct variation initial value linear equation linear relationships rate of change rise run similar figures slope slope-intercept form slope triangles solution unit rate y-intercept	8.EE.B.5 8.EE.B.6 8.EE.C.8.B 8.F.A.3. 8.F.B.4 8.SP.A.3

LESSON OBJECTIVES

4-1: Students will graph and compare proportional relationships, interpreting the unit rate as the slope of the line.
4-2: Students will find the slope of a line from a graph, table, and using the formula.
4-3: Students will relate the slope of a line to similar triangles.
4-4: Students will derive the equation *y-mx* from graphs, tables, and verbal descriptions of proportional relationships.
4-5: Students will write linear equations to represent relationships in the form $y=mx + b$.
4-6: Students will graph lines in slope-intercept form, vertical lines, and horizontal lines.

LESSON STRUCTURE	**ASSESSMENT**
- Launch - Explore and Develop - Reflect and Practice - Assess	- Lesson Exit Tickets - Math Probe - Unit Review - Fluency Practice - Performance Task - Module Assessment

JANUARY

Module 5: Functions

Essential Question: What does it mean for a relationship to be a function?

Module Goal: Identify, construct, and compare linear and nonlinear functions.

LESSONS	KEY VOCABULARY	NJSLS-M
5-1: Identify Functions 5-2: Function Tables 5-3: Construct Linear Functions 5-4: Compare Functions 5-5: Nonlinear Functions 5-6: Qualitative Graphs	function function table input linear function nonlinear function output qualitative graphs relation vertical line test	8.F.A.1 8.F.A.2 8.F.A.3 8.F.B.4 8.F.B.5

LESSON OBJECTIVES

5-1: Students will identify functions from mapping diagrams, tables, and graphs.
5-2: Students will create function tables and graph functions.
5-3: Students will construct functions from graphs, tables,, and verbal descriptions.
5-4: Students will compare functions represented in different forms.
5-5: Students will identify nonlinear functions using tables, graphs, and equations.
5-6: Students will analyze and sketch qualitative graphs.

LESSON STRUCTURE	ASSESSMENT
- Launch - Explore and Develop - Reflect and Practice - Assess	- Lesson Exit Tickets - Math Probe - Unit Review - Fluency Practice - Performance Task - Module Assessment

FEBRUARY

Module 6: Systems of Linear Equations

Essential Question: How can systems of equations be helpful in solving everyday problems?

Module Goal:

LESSONS	**KEY VOCABULARY**	**NJSLS-M**
6-1: Solve Systems of Equations by Graphing 6-2: Determine Number of Solutions 6-3: Solve Systems of Equations by Substitution 6-4: Solve Systems of Equations by Elimination 6-5: Write and Solve Systems of Equations	elimination solution substitution system of equations	8.EE.C.8 8.EE.C.8.A 8.EE.C.8.B 8.EE.C.8.C

LESSON OBJECTIVES

6-1: Students will solve systems of linear equations by graphing.
6-2: Students will determine the number of solutions of a system of linear equations by analyzing the equations.
6-3: Students will solve systems of linear equations by using substitution.
6-4: Students will solve systems of linear equations by using elimination.
6-5: Students will write and solve systems of linear equations.

LESSON STRUCTURE	**ASSESSMENT**
- Launch - Explore and Develop - Reflect and Practice - Assess	- Lesson Exit Tickets - Math Probe - Unit Review - Fluency Practice - Performance Task - Module Assessment

MARCH (I)

Module 7: Triangles and Pythagorean Theorem

Essential Question: How can angle relationships and right triangles be used to solve everyday problems?

Module Goal:

LESSONS	**KEY VOCABULARY**	**NJSLS-M**
7-1: Angle Relationships and Parallel Lines 7-2: Angle Relationships and Triangles 7-3: The Pythagorean Theorem 7-4: Converse of the Pythagorean Theorem 7-5: Distance on the Coordinate Plane	alternate exterior angles alternate interior angles converse converse of the Pythagorean Theorem corresponding angles exterior angles hypotenuse interior angles legs line segment parallel lines perpendicular lines Pythagorean Theorem remote interior angles transversal triangle vertex	8.G.A.5 8.G.B.6 8.G.B.7 8.G.B.8

LESSON OBJECTIVES

7-1: Students will examine relationships of angles formed by parallel lines cut by a transversal.
7-2: Students will examine relationships among the angles in a triangle.
7-3: Students will solve problems using the Pythagorean Theorem.
7-4: Students will solve problems using the converse of the Pythagorean Theorem.
7-5: Students will find the distance between two points on the coordinate plane using the Pythagorean Theorem.

LESSON STRUCTURE	**ASSESSMENT**
- Launch - Explore and Develop - Reflect and Practice - Assess	- Lesson Exit Tickets - Math Probe - Unit Review - Fluency Practice - Performance Task - Module Assessment

MARCH (II)

Module 8: Transformations

Essential Question: What does it mean to perform a transformation on a figure?

Module Goal: Analyze translations, rotations, reflections, and dilations.

LESSONS	KEY VOCABULARY	NJSLS-M
8-1: Translations 8-2: Reflections 8-3: Rotations 8-4: Dilations	center of dilation center of rotation dilation image line of reflection preimage reflection rotation scale factor transformation translation	8.G.A.1 8.G.A.1.A. 8.G.A.3

LESSON OBJECTIVES

8-1: Students will translate figures and describe translations on the coordinate plane.
8-2: Students will reflect figures and describe reflections on the coordinate plane.
8-3: Students will rotate figures and describe rotations on the coordinate plane.
8-4: Students will dilate figures and describe dilations on the coordinate plane.

LESSON STRUCTURE	ASSESSMENT
- Launch - Explore and Develop - Reflect and Practice - Assess	- Lesson Exit Tickets - Math Probe - Unit Review - Fluency Practice - Performance Task - Module Assessment

APRIL

Module 9: Congruence and Similarity

Essential Question: What information is needed to determine if two figures are congruent or similar?

Module Goal: Analyze and use similar and congruent figures using transformations.

LESSONS	**KEY VOCABULARY**	**NJSLS-M**
9-1: Congruence and Transformations 9-2: Congruence and Corresponding Parts 9-3: Similarity and Transformations 9-4: Similarity and Corresponding Parts 9-5: Indirect Measurement	Angle-Angle Similarity composition of transformations congruent corresponding parts indirect measurement similar	8.G.A.1 8.G.A.1.A 8.G.A.1.B 8.G.A.1.C 8.G.A.2 8.G.A.4 8.G.A.5

LESSON OBJECTIVES

9-1: Students will use a sequence of transformations to describe congruency between figures.
9-2: Students will write congruence statements and find missing measures for congruent figures.
9-3: Students will use a sequence of transformations to describe similarity between figures.
9-4: Students will write similarity statements and find missing measures for similar figures.
9-5: Students will solve problems involving similar triangles.

LESSON STRUCTURE	**ASSESSMENT**
- Launch - Explore and Develop - Reflect and Practice - Assess	- Lesson Exit Tickets - Math Probe - Unit Review - Fluency Practice - Performance Task - Module Assessment

MAY

Module 10: Volume

Essential Question: How can you measure a cylinder, cone, or sphere?

Module Goal: Find and use the volumes of cylinders, cones, spheres, and composite figures.

LESSONS	KEY VOCABULARY	NJSLS-M
10-1: Volume of Cylinders 10-2: Volume of Cones 10-3: Volume of Spheres 10-4: Find Missing Dimensions 10-5: Volume of Composite Solids	composite solids cone cylinder hemisphere sphere volume	8.G.C.9

LESSON OBJECTIVES

10-1: students will find the volume of cylinders.
10-2: Students will find the volume of cones.
10-3: Students will find the volume of spheres and hemispheres.
10-4: Students will use volume formulas to find missing dimensions in cylinders, cones, and spheres.
10-5: Students will find the volume of composite solids.

LESSON STRUCTURE	ASSESSMENT
- Launch - Explore and Develop - Reflect and Practice - Assess	- Lesson Exit Tickets - Math Probe - Unit Review - Fluency Practice - Performance Task - Module Assessment

JUNE

Module 11: Scatter Plots and Two-Way Tables

Essential Question: What do patterns in data mean and how are they used?

Module Goal: Create scatter plots and two-way tables and use lines of fit and relative frequencies to identify and use associations.

LESSONS	**KEY VOCABULARY**	**NJSLS-M**
11-1: Scatter Plots 11-2: Draw Lines of Fit 11-3: Equations for Lines of Fit 11-4: Two-Way Tables 11-5: Associations in Two-Way Tables	bivariate data cluster line of fit outlier relative frequency scatter plot two-way table	8.SP.A.1 8.SP.A.2 8.SP.A.3 8.SP.A.4

LESSON OBJECTIVES

11-1: Students will construct and interpret scatter plots.
11-2: Students will informally draw lines that fit a set of data and use them to make conjectures.
11-3: Students will write the equations for lines that fit a set of data and use them to make conjectures.
11-4: Students will construct two-way tables and find and interpret their relative frequencies.
11-5: Students will determine if an association exists between categories in two-way tables.

LESSON STRUCTURE	**ASSESSMENT**
- Launch - Explore and Develop - Reflect and Practice - Assess	- Lesson Exit Tickets - Math Probe - Unit Review - Fluency Practice - Performance Task - Module Assessment

Intervention Curriculum Overview

Introduction: The following curriculum adheres to the Essential Elements for English Language Arts developed as part of the Dynamic Learning Maps™ (DLM®) project. The five domains of Mathematics that form the foundation of this curriculum are: Counting and Cardinality, Operations and Algebraic Thinking, Numbers and Operations in Base 10, Measurement and Data and Geometry. A progression of skills in these areas is represented throughout this district's K-12 Mathematics curricula.

Essential Elements: Mathematics

The Dynamic Learning Maps™ (DLM®) Essential Elements (EEs) are specific statements of knowledge and skills linked to the grade-level expectations identified in college- and career-readiness standards. EEs build a bridge from content standards to academic expectations for students with the most significant cognitive disabilities.

Textbook Series: McGraw Hill: Connecting Math Concepts

Connecting Math Concepts combines facts, procedures, conceptual understanding, applications, and problem-solving skills to provide a comprehensive curriculum for Tier 1 and Tier 3 at-risk students.

MATHEMATICS: GRADE 6
INTERVENTION CURRICULUM: PACING GUIDE

SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY
FEBRUARY	**MARCH**	**APRIL**	**MAY**	**JUNE**

MATHEMATICS GRADE 7: CURRICULUM MAP

Developed by the South Bergen Jointure Commission Curriculum Consortium, 2012