Academic Prep Math 8

Unit Title: Unit 1: Linear equations

Stage 1: Desired Results

Standards & Indicators:

8.EE.C.7b: Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

8.EE.B.5: Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.

8.EE.C.8c: Solve real-world and mathematical problems leading to two linear equations in two variables.

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

Career Readiness, Life Literacies and Key Skills

Standard	Performance Expectations	Core Ideas
9.4.8.TL.2	Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).	Some digital tools are appropriate for gathering, organizing, analyzing, and presenting information, while other types of digital tools are appropriate for creating text, visualizations, models, and communicating with others.
9.4.8.TL.3	Select appropriate tools to organize and present information digitally.	Some digital tools are appropriate for gathering, organizing, analyzing, and presenting information, while other types of digital tools are appropriate for creating text, visualizations, models, and communicating with

		others.

Central Idea/Enduring Understanding:

The numerical factor of a term that contains a variable is called the coefficient of the variable. When the coefficient is a fraction, multiply each side by the multiplicative inverse of the fraction. A two-step equation is an equation that contains two operations. To solve two-step equations, use inverse operations to undo each operation in reverse order of the order of operations.

Solving equations sometimes requires several steps.

A linear relationship has a constant rate of change. In a proportional linear relationship between two quantities a and b: the ration b/a is constant, the change in b / change in a is constant, and the graph passes through the origin. The slope of a line is the ratio of the vertical change (rise) between any two points on a line and the horizontal change (run) between the same two points. The slope formula can be used to find the slope of the line between any two points on the line.

Essential/Guiding Question:

At the end of the Unit, students should be able to answer the Essential Questions:

How is the multiplicative inverse used to solve an equation that has a rational coefficient?

Why is it important to define a variable before writing an equation?

How is solving an equation with the variable on each side similar to solving a two step equation?

How many possible solutions are there to a linear equation in one variable?

How can you use a table to determine if there is a proportional relationship between two quantities?

In any linear relationship, why is the slope always the same?

Content:

Integer Skills
Order of Operations
Fraction & Decimal Operations
Solve Equations with Rational Coefficients
Solve and Write Two-Step Equations
Solve Multi-Step Equations
Constant Rate of Change
Slope
Equations in y=mx Form

Skills(Objectives):

Simplify expressions with integers and fractions.

Solve equations with rational coefficients.

Solve and write two-step equations that represent situations.

Solve multi-step equations.

Identify proportional and nonproportional linear relationships by finding a constant rate of change.

Use tables and graphs to find the slope of a line.

Interdisciplinary Connections:

Interdisciplinary connections are integrated in each unit with ELA, Science, Social Studies, Art and Music to the mathematical practices where applicable.

Academic Prep Math 8

Stage 2: Assessment Evidence

Performance Task(s):
IXL skill plan
Small group activities
Cell Phone Plans

Other Evidence:
Online Assignments
IXL Diagnostic test

Stage 3: Learning Plan

Learning Opportunities/Strategies:

Order of operations- Have students work with partners to identify operations of integers, fractions and decimals.

Solve and Write Two-Step Equations-Have students write a sentence that can be translated into a two-step equation. Then have them trade their sentences with a partner. Each partner writes and solves the equation the other student wrote.

Solve Multi-Step Equations-Have students work in pairs to create a flowchart of the steps involved in solving a multi-step equation

Slope-Have students prepare a chart of words or phrases that have similar meanings as slope.

Think, Pair, Share
Small group instruction
Teach Like a Champion Strategies

Resources:
IXL
Kahoot
Khan Academy
Lesson Presentations
Google Forms and Sheets
Virtual Manipulatives App
Google apps for education
Brain Pop
Edulastic

LGBT and Disabilities Resources:

- LGBTQ-Inclusive Lesson & Resources by Garden State Equality and Make it Better for Youth
- LGBTQ+ Books
- Inclusive Math Class

DEI Resources:

- Learning for Justice
- GLSEN Educator Resources
- Supporting LGBTQIA Youth Resource List
- Respect Ability: Fighting Stigmas, Advancing Opportunities
- NJDOE Diversity, Equity & Inclusion Educational Resources
- Diversity Calendar

Differentiation
*Please note: Teachers who have students with 504 plans that require curricular accommodations are to refer to Struggling and/or Special Needs Section for differentiation

High-Achieving Students	On Grade Level Students	Struggling Students	Special Needs/ELL
Khan Academy Project based learning Tablets Challenging problems with higher degree of difficulty Higher order thinking	Tutoring Tables Graphic organizers Differentiation of learning strategies: visual, auditory, kinetic and	Provide a highly structured, predictable learning environment Provide organizers/study guides	Any student requiring further accommodations and/or modifications will have them individually listed in their 504 Plan or IEP. These might include, but are not limited to: breaking assignments into smaller tasks,

questions Differentiation of pacing and activities Differentiation of learning strategies: visual, auditory, kinetic and cooperative Enrichment and extension Technology connection Practice assignments Puzzle time activities	cooperative Technology connection Practice Assignments Puzzle time activities Differentiating the lesson activities Lesson tutorials	Lessons designed to the style of learning that matches the student Cooperative Learning Positive reinforcement Announce test with adequate prep time Lessons presentation available on google classroom Frequent check for understanding Break down task into manageable units One-on-one instruction Tutoring Pair student with a high achieving student	giving directions through several channels (auditory, visual, kinesthetic, model), and/or small group instruction for reading/writing ELL supports should include, but are not limited to, the following:: Extended time Provide visual aids Repeated directions Differentiate based on proficiency Provide word banks Allow for translators, dictionaries Frequent check for understanding Preferential seating Modify tests, quizzes, homework assignments Read directions allowed Provide copy of notes Stand in proximity to student to focus attention Extended time to complete assignments, tests, quizzes Allow use of calculator One-on-one instruction as needed Assign peer buddies Graphic organizers Lesson presentation available on google classroom Lessons designed to the style of learning that matches the student

Academic Prep Math 8

Unit Title: Unit 2: Functions

Stage 1: Desired Results

Standards & Indicators:

8.F.A.1: Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.

8.F.A.2: Compare properties (e.g. rate of change, intercepts, domain and range) of two functions each represented in a different way (algebraically, graphically,numerically in tables, or by verbal descriptions).

8.F.B.5: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g. where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

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

Career Readiness, Life Literacies and Key Skills

Standard	Performance Expectations	Core Ideas
9.4.8.TL.2	Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).	Some digital tools are appropriate for gathering, organizing, analyzing, and presenting information, while other types of digital tools are appropriate for creating text, visualizations, models, and communicating with others.
9.4.8.TL.3	Select appropriate tools to organize and present information digitally.	Some digital tools are appropriate for gathering, organizing, analyzing, and presenting information, while other types of digital tools are appropriate for creating text, visualizations,

		models, and communicating with others.

Central Idea/Enduring Understanding:

A relation is a set of ordered pairs that can be represented as a table or a graph.

A function is a special type of relation in which each member of the domain is paired with exactly one member in the range.

Some functions are linear and others are nonlinear. You can use a table or a graph to make the determination. If a function is linear, its graph is a straight line and a table of values for the function exhibits a constant rate of change. A nonlinear function is a function whose graph is not a straight line and a table of values for the function displays a rate of change that is not constant.

Essential/Guiding Question:

At the end of the Unit, students should be able to answer the Essential Questions:

How does the domain affect the range in a function?

How can functions be used to solve real-world Situations?

How is the initial value of a function represented in a table and in a graph?

How can you use a table or a graph to determine if a function is linear or nonlinear?

Content:

Represent Relationships
Functions
Linear Functions
Compare Properties of Functions
Construct Functions
Linear and NonLinear Function

Skills(Objectives):

Translate tables and graphs into linear equations.

Represent relations using tables and graphs.

Find function values and complete function tables.

Represent linear functions using tables and graphs.

Compare properties of functions represented in different ways.

Find and interpret the rate of change and initial value of a function.

Determine whether a function is linear or nonlinear.

Interdisciplinary Connections:

Interdisciplinary connections are integrated in each unit with ELA, Science, Social Studies, Art and Music to the mathematical practices where applicable.

Stage 2: Assessment Evidence

Performance Task(s):

IXL skill plan
Small group activities
Introducing Functions

Other Evidence:

Online Assignments
IXL Diagnostic test

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Stage 3: Learning Plan

Learning Opportunities/Strategies:

Represent Relationships-Have students write a real-world problem and trade their partners with a partner. Each partner should create a table of values, create a graph, and write an equation that represents the relationship. Have students check each other's work, and discuss and resolve any differences.

Linear and NonLinear Function-Students write down two facts and one fib about linear functions or nonlinear functions. Students then form teams of 3. The job of the team is to identify the fib in each group of statements.

Think, Pair, Share
Small group instruction
Teach Like a Champion Strategies

Resources:

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Kahoot
Khan Academy
Lesson Presentations
Google Forms and Sheets
Virtual Manipulatives App
Google apps for education
Brain Pop
Edulastic

LGBT and Disabilities Resources:

- LGBTQ-Inclusive Lesson & Resources by Garden State Equality and Make it Better for Youth
- LGBTQ+ Books
- Inclusive Math Class

DEI Resources:

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- GLSEN Educator Resources
- Supporting LGBTQIA Youth Resource List
- Respect Ability: Fighting Stigmas, Advancing Opportunities
- NJDOE Diversity, Equity & Inclusion Educational Resources
- Diversity Calendar

Differentiation

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Khan Academy Project based learning Tablets Challenging problems with higher degree of difficulty Higher order thinking questions Differentiation of pacing and activities Differentiation of learning strategies: visual, auditory, kinetic	Tutoring Tables Graphic organizers Differentiation of learning strategies: visual, auditory, kinetic and cooperative Technology connection Practice Assignments Puzzle time	Provide a highly structured, predictable learning environment Provide organizers/study guides Lessons designed to the style of learning that matches the student Cooperative Learning	Any student requiring further accommodations and/or modifications will have them individually listed in their 504 Plan or IEP. These might include, but are not limited to: breaking assignments into smaller tasks, giving directions through several channels (auditory, visual, kinesthetic, model), and/or small group instruction for reading/writing

and cooperative Enrichment and extension Technology connection Practice assignments Puzzle time activities	activities Differentiating the lesson activities Lesson tutorials	Positive reinforcement Announce test with adequate prep time Lessons presentation available on google classroom Frequent check for understanding Break down task into manageable units One-on-one instruction Tutoring Pair student with a high achieving student	ELL supports should include, but are not limited to, the following:: Extended time Provide visual aids Repeated directions Differentiate based on proficiency Provide word banks Allow for translators, dictionaries Frequent check for understanding Preferential seating Modify tests, quizzes, homework assignments Read directions allowed Provide copy of notes Stand in proximity to student to focus attention Extended time to complete assignments, tests, quizzes Allow use of calculator One-on-one instruction as needed Assign peer buddies Graphic organizers Lesson presentation available on google classroom Lessons designed to the style of learning that matches the student

Academic Prep Math 8

Unit Title: Unit 3: Exponents & Triangles

Stage 1: Desired Results

Standards & Indicators:

8.EE.A.1: Know and apply the properties of integer exponents to generate equivalent numerical expressions.

8.EE.A.2: Use square root and cube root symbols to represent solutions to equations of the form $x^2=p$ and $x^3=p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$is irrational.

8.G.A.5: Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.

8.G.B.6: Explain a proof of the Pythagorean Theorem and its converse.

8.G.B.7: Apply the Pythagorean Theorem to determine unknown-side lengths in right triangles in real-world and mathematical problems in two and three dimensions.

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

Career Readiness, Life Literacies and Key Skills

Standard	Performance Expectations	Core Ideas
9.4.8.TL.2	Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).	Some digital tools are appropriate for gathering, organizing, analyzing, and presenting information, while other types of digital tools are appropriate for creating text, visualizations, models, and communicating with others.

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9.4.8.TL.3	Select appropriate tools to organize and present information digitally.	Some digital tools are appropriate for gathering, organizing, analyzing, and presenting information, while other types of digital tools are appropriate for creating text, visualizations, models, and communicating with others.

Central Idea/Enduring Understanding:

Rational numbers are numbers that can be written as fractions. Both terminating and repeating decimals can be written as fractions, but non-terminating, non-repeating numbers cannot be written as fractions. The rules and properties for adding, subtracting, multiplying, and dividing rational numbers are the same as those for integers and fractions.

A product of repeated factors can be expressed as a power, using an exponent and a base. From this definition comes the Laws and Exponents, which include: Product of Powers, Quotient of Powers, Power of a Power, and Power of a Product.

By definition, any nonzero number to the zero power is 1 and any nonzero number to a negative power, n, is the multiplicative inverse of its nth power.

Squaring a number and finding a square root are inverse operations. Cubing a number and finding a cube are inverse operations.

Triangles are classified according to their angle measures or their number of congruent sides. The best way to classify a quadrilateral is by using the most specific description of its sides and angles. Since the angle sum of any triangle is 180 ∘ , the angle sum of any quadrilateral is 360 ∘ . A polygon is a closed figure formed by three or more line segments

Essential/Guiding Question:

At the end of the Unit, students should be able to answer the Essential Questions:

How can you determine if a number is a rational number?

How can I write repeated multiplication using powers?

How can I use the properties of integer exponents to simplify algebraic and numeric expressions?

How does the Product of Powers law apply to finding the power of a power?

How are negative exponents and positive exponents related?

Why would I need to use square roots and cube roots?

How can you find the missing measure of an angle in a triangle if you know two of the interior angles?

How can I find the sum of the interior angle measures of a polygon?

What is the relationship among the legs and the hypotenuse of a right triangle?

How do you solve a right triangle?

How can you use the Pythagorean Theorem to find the distance between two points on the coordinate plane?

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Polygons are classified by their number of sides. The Pythagorean Theorem describes the relationship between the legs and the hypotenuse for any right triangle. The converse of the Pythagorean Theorem is also true.	
Content: Rational Numbers Powers and Exponents Multiply and Divide Monomials Powers of Monomials Negative Exponents Roots The Pythagorean Theorem	**Skills(Objectives):** Write fractions as decimals and decimals as fractions. Write and evaluate expressions involving powers and exponents. Simplify real number expressions by multiplying and dividing monomials. Use the Laws of Exponents to find powers of monomials. Simplify expressions involving negative exponents. Find square roots and cube roots. Solve problems using the Pythagorean Theorem
Interdisciplinary Connections: Interdisciplinary connections are integrated in each unit with ELA, Science, Social Studies, Art and Music to the mathematical practices where applicable.	
Stage 2: Assessment Evidence	
Performance Task(s): IXL skill plan Small group activities Running on Football field	**Other Evidence:** Online Assignments IXL Diagnostic test
Stage 3: Learning Plan	
Learning Opportunities/Strategies: Rational Numbers-Make up sets of index cards with different types of number sets, such as odd and even, fractions, and decimals. Each set of cards should have 10-20 different numbers. Divide students into small groups and give each group a set of cards. Ask them	**Resources:** IXL Kahoot Khan Academy Lesson Presentations Google Forms and Sheets Virtual Manipulatives App Google apps for education Brain Pop

to classify each number in as many ways as you can. Powers and Exponents-Remind students how to find the volume of a cube. First have them write the side length three times. Then, have them rewrite the expression without exponents. Finally, have them write the expression using only one base and one exponent. Roots- Designate a leader to call out each of the following numbers one at a time: 100, 9, 36, 64, 49, 4, 25, 81, and 16. Ask students to hold up the square root of the number using their fingers. Pythagorean Theorem- Have students work in pairs to create a real-world problem in which the Pythagorean Theorem must be used to solve the problem. Think, Pair, Share Small group instruction Teach Like a Champion Strategies	Edulastic LGBT and Disabilities Resources: • LGBTQ-Inclusive Lesson & Resources by Garden State Equality and Make it Better for Youth • LGBTQ+ Books • Inclusive Math Class DEI Resources: • Learning for Justice • GLSEN Educator Resources • Supporting LGBTQIA Youth Resource List • Respect Ability: Fighting Stigmas, Advancing Opportunities • NJDOE Diversity, Equity & Inclusion Educational Resources • Diversity Calendar

Differentiation

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High-Achieving Students	On Grade Level Students	Struggling Students	Special Needs/ELL
Khan Academy Project based learning Tablets Challenging problems with higher degree of difficulty Higher order thinking questions Differentiation of pacing and activities Differentiation of learning strategies: visual, auditory, kinetic and cooperative Enrichment and	Tutoring Tables Graphic organizers Differentiation of learning strategies: visual, auditory, kinetic and cooperative Technology connection Practice Assignments Puzzle time activities Differentiating the	Provide a highly structured, predictable learning environment Provide organizers/study guides Lessons designed to the style of learning that matches the student Cooperative Learning Positive reinforcement	Any student requiring further accommodations and/or modifications will have them individually listed in their 504 Plan or IEP. These might include, but are not limited to: breaking assignments into smaller tasks, giving directions through several channels (auditory, visual, kinesthetic, model), and/or small group instruction for reading/writing ELL supports should include, but are not limited to, the following::

Academic Prep Math 8

extension Technology connection Practice assignments Puzzle time activities	lesson activities Lesson tutorials	Announce test with adequate prep time Lessons presentation available on google classroom Frequent check for understanding Break down task into manageable units One-on-one instruction Tutoring Pair student with a high achieving student	Extended time Provide visual aids Repeated directions Differentiate based on proficiency Provide word banks Allow for translators, dictionaries Frequent check for understanding Preferential seating Modify tests, quizzes, homework assignments Read directions allowed Provide copy of notes Stand in proximity to student to focus attention Extended time to complete assignments, tests, quizzes Allow use of calculator One-on-one instruction as needed Assign peer buddies Graphic organizers Lesson presentation available on google classroom Lessons designed to the style of learning that matches the student

Academic Prep Math 8

Unit Title: Unit 4: Geometry & Statistics

Stage 1: Desired Results

Standards & Indicators:

8.G.A.1: Verify experimentally the properties of rotations, reflections, and translations.

8.G.A.1a: Lines are transformed to lines, and line segments to line segments of the same length.

8.G.A.1b: Angles are transformed to angles of the same measure.

8.G.A.2: Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.

8.G.A.4: Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations;given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.

8.SP.A.2: Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line and informally assess the model fit by judging the closeness of the data points to the line.

Mathematical Practices:
MP.1 Make sense of problems and persevere in solving them
MP 2. Reason abstractly and quantitatively
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MP 7. Look for and make use of structure
MP 8. Look for and express regularity in repeated reasoning

Career Readiness, Life Literacies and Key Skills

Standard	Performance Expectations	Core Ideas
9.4.8.TL.2	Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4).	Some digital tools are appropriate for gathering, organizing, analyzing, and presenting information, while other types of digital tools are appropriate for creating text, visualizations, models, and communicating with

		others.
9.4.8.TL.3	Select appropriate tools to organize and present information digitally.	Some digital tools are appropriate for gathering, organizing, analyzing, and presenting information, while other types of digital tools are appropriate for creating text, visualizations, models, and communicating with others.

Central Idea/Enduring Understanding:

In two congruent figures, you can determine the transformation, or series of transformations, that maps one figure onto the other by analyzing the orientation or relative position of the figures. If two figures are congruent, their corresponding sides are congruent and their corresponding angles are congruent.

Two figures are similar if the second can be obtained from the first by a sequence of transformations and dilations. Similar figures have the same shape, but may have different sizes. The sizes of the two figures are related to the scale factor of the dilation. Two polygons are similar if their corresponding angles are congruent and the measures of their corresponding sides are proportional. The ratio of the lengths or corresponding sides is called the scale factor.

The lateral area of a prism is the sum of the areas of the lateral faces. The surface area is the sum of the lateral area and the area of the base(s). Similar solids are 3D figures that have the same shape and whose corresponding linear measures are proportional. The scale factor of similar solids is how much larger or smaller one solid is than another. It is written as a ratio in simplest form.

Essential/Guiding Question:

At the end of the Unit, students should be able to answer the Essential Questions:

How can the coordinate plane help you determine that corresponding sides are congruent?

What is the difference between using transformations to create similar figures versus using transformations to create congruent figures?

How does the scale factor of a dilation relate to the ratio of two of the corresponding sides of the preimage and the image?

How do similar triangles make it easier to measure very tall objects?

If you know two figures are similar and you are given the area of both figures, how can you determine the scale factor of the similarity?

How is the formula for the volume of a cylinder to the formula for the volume of a rectangular prism?

What would have a greater effect on the volume of a cone: doubling its radius or doubling its height?

How is a two-way table used when determining possible associations between two different categories from the same sample group

A scatter plot is used to explore possible relationships between a data set with two variables. The data may have a positive, negative or no relationship. A line of best fit is a line that is very close to most of the data points. A two-way table shows data from one sample group as it relates to two different categories.	
Content: Congruence , Similarity and Transformations Properties of Similar Polygons Volume of Cylinders, Cones, Spheres Surface Area of Cylinders and Cones Scatter Plots Lines of Best Fit Two-Way Tables	**Skills(Objectives):** Use a series of transformations to create congruent figures. Write congruence statements for congruent figures. Use transformations to create similar figures. Find the volume of cylinders, cones, and spheres. Find the surface area of cylinders and cones. Draw lines of best fit and use them to make predictions about data. Construct and interpret two-way tables.
Interdisciplinary Connections: Interdisciplinary connections are integrated in each unit with ELA, Science, Social Studies, Art and Music to the mathematical practices where applicable.	
Stage 2: Assessment Evidence	
Performance Task(s): IXL skill plan Small group activities Congruent rectangles	**Other Evidence:** Online Assignments IXL Diagnostic test
Stage 3: Learning Plan	
Learning Opportunities/Strategies: Congruence , Similarity and Transformations-Give pairs of students tracing paper. Have them trace both figures from an exercise and cut them out. Then have them use the cut outs to try different transformations, keeping a record of which transformations they tried, until they determine if the figures are congruent. Have them write down which	**Resources:** IXL Kahoot Khan Academy Lesson Presentations Google Forms and Sheets Virtual Manipulatives App Google apps for education Brain Pop

set of transformations worked. Then have them complete two more. Volume of Cylinders, Cones, Spheres-Have students work with a partner to complete two exercises. Have them use the following template to find the volume of each cylinder: volume=area of base x height of cylinder. If they are still struggling, have them replace the area of base with pi x r x r. Have pairs complete a graphic organizer. Have them come up with as many real world examples of spheres as possible or objects that are approximately spheres. Scatter Plots- Before constructing the scatter plot for an exercise, have students study the data in the table and make a conjecture about the association. Have them explain why their association makes sense in the real world context of the problem. Think, Pair, Share Small group instruction Teach Like a Champion Strategies	Edulastic LGBT and Disabilities Resources: • LGBTQ-Inclusive Lesson & Resources by Garden State Equality and Make it Better for Youth • LGBTQ+ Books • Inclusive Math Class DEI Resources: • Learning for Justice • GLSEN Educator Resources • Supporting LGBTQIA Youth Resource List • Respect Ability: Fighting Stigmas, Advancing Opportunities • NJDOE Diversity, Equity & Inclusion Educational Resources • Diversity Calendar

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Academic Prep Math 8

extension Technology connection Practice assignments Puzzle time activities	lesson activities Lesson tutorials	Announce test with adequate prep time Lessons presentation available on google classroom Frequent check for understanding Break down task into manageable units One-on-one instruction Tutoring Pair student with a high achieving student	Extended time Provide visual aids Repeated directions Differentiate based on proficiency Provide word banks Allow for translators, dictionaries Frequent check for understanding Preferential seating Modify tests, quizzes, homework assignments Read directions allowed Provide copy of notes Stand in proximity to student to focus attention Extended time to complete assignments, tests, quizzes Allow use of calculator One-on-one instruction as needed Assign peer buddies Graphic organizers Lesson presentation available on google classroom Lessons designed to the style of learning that matches the student

Academic Prep Math 8

PACING GUIDE

Academic Prep Math 6	Resource - IXL	Standards
MP 1		
UNIT 1 Linear equations (25 Days)	IXL Skill Plan IXL Diagnostic Assessment	8.EE.C.7b 8.EE.B.5 8.EE.C.8c
MP 2		
UNIT 2 Functions (25 Days)	IXL Skill Plan IXL Diagnostic Assessment	8.F.A.1 8.F.A.2 8.F.B.5
MP 3		
UNIT 3 Exponents & Triangles (25 Days)	IXL Skill Plan IXL Diagnostic Assessment	8.EE.1 8.EE.2 8.G.A.5 8.G.B.6 8.G.B.7
MP 4		
UNIT 4 Geometry & Statistics (25 Days)	IXL Skill Plan IXL Diagnostic Assessment	8.G.A.1 8.G.A.1a 8.G.A.1b 8.G.A.2 8.G.A.4 8.SP.A.2