

Academic Prep Math 6

Unit Title: Unit 1: Ratios and Proportional Relationships

Stage 1: Desired Results

Standards & Indicators:

6.RP.A.1. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

6.RP.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.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.3c. 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.

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 |
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| 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 |

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| | | information, while other types of digital tools are appropriate for creating text, visualizations, models, and communicating with others. |
| <p><u>Central Idea/Enduring Understanding:</u></p> <p>A ratio is a comparison of two quantities. You will explore ratio concepts and use ratio reasoning to solve rate problems.</p> <p>Equivalent forms of fractions, decimals, and percents can be written and used to solve problems. You will apply these relationships to solve percent problems.</p> <p>The standard algorithm used to multiply and divide whole numbers can be applied to operations with decimals. You will multiply and divide multi-digit decimals.</p> | | <p><u>Essential/Guiding Question:</u></p> <p>At the end of the Unit, students should be able to answer</p> <p>How do you use equivalent rates in the real world?</p> <p>When is it better to use a fraction, a decimal, or a percent?</p> <p>How can estimating be useful?</p> |
| <p><u>Content:</u></p> <p>Ratios and rates</p> <p>Converting fractions, decimals, percents</p> | | <p><u>Skills(Objectives):</u></p> <p>Write a ratio in simplest form</p> <p>Find a unit rate and unit price</p> <p>Compare ratios</p> <p>Use unit rates and equivalent fractions</p> <p>Solve ratio and rate problems</p> <p>Compare fractions, decimals, and percents</p> <p>Convert fractions, decimals and percents.</p> |
| <p><u>Interdisciplinary Connections:</u></p> <p>Interdisciplinary connections are integrated in each unit with ELA, Science, Social Studies, Art and Music to the mathematical practices where applicable.</p> | | |
| <p>Stage 2: Assessment Evidence</p> | | |
| <p><u>Performance Task(s):</u></p> <p>IXL skill plan</p> <p>Small group activities</p> <p>Ticket Booth</p> | | <p><u>Other Evidence:</u></p> <p>Online Assignments</p> <p>IXL Diagnostic test</p> |

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Stage 3: Learning Plan

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| <p><u>Learning Opportunities/Strategies:</u></p> <p>Ratios - Give examples of ratios as fractions and use ratios to compare quantities</p> <p>Rates - Give examples of rates and write rates as unit rates</p> <p>Ratio Tables - Use tables to solve problems involving ratios and rates</p> <p>Equivalent Ratios - Find equivalent ratios and rates by using unit rates and equivalent fractions</p> <p>Decimals and Fractions - Write decimals as fractions or mixed numbers and vice versa</p> <p>Percents and Fractions - Write percents as fractions and vice versa</p> <p>Percents and Decimals - Write percents as decimals and vice versa</p> <p>Compare and Order Fractions, Decimals, and Percents - Compare and order fractions, decimals, and percents</p> <p>Percent of a Number - Find the percent of a number</p> <p>Solve Percent Problems - Solve percent problems to find the whole</p> <p>Think, Pair, Share</p> <p>Small group instruction</p> <p><u>Teach Like a Champion Strategies</u></p> | <p><u>Resources:</u></p> <p>IXL</p> <p>Kahoot</p> <p>Khan Academy</p> <p>Lesson Presentations</p> <p>Google Forms and Sheets</p> <p>Virtual Manipulatives App</p> <p>Google apps for education</p> <p>Brain Pop</p> <p>Edulastic</p> <p>LGBT and Disabilities Resources:</p> <ul style="list-style-type: none">• <u>LGBTQ-Inclusive Lesson & Resources by Garden State Equality and Make it Better for Youth</u>• <u>LGBTQ+ Books</u>• <u>Inclusive Math Class</u> <p>DEI Resources:</p> <ul style="list-style-type: none">• <u>Learning for Justice</u>• <u>GLSEN Educator Resources</u>• <u>Supporting LGBTQIA Youth Resource List</u>• <u>Respect Ability: Fighting Stigmas, Advancing Opportunities</u>• <u>NJDOE Diversity, Equity & Inclusion Educational Resources</u>• <u>Diversity Calendar</u> | | |
| <p><u>Differentiation</u></p> <p>*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</p> | | | |
| 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 | Tutoring Tables Graphic organizers Differentiation of learning strategies: visual, auditory, kinetic and cooperative Technology connection Practice | Provide a highly structured, predictable learning environment Provide organizers/study guides Lessons designed to the style of learning that matches the student | 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 |

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| <p>learning strategies: visual, auditory, kinetic and cooperative Enrichment and extension Technology connection Practice assignments Puzzle time activities</p> | <p>Assignments Puzzle time activities Differentiating the lesson activities Lesson tutorials</p> | <p>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</p> | <p>group instruction for reading/writing</p> <p>ELL supports should include, but are not limited to, the following::</p> <p>Extended time Provide visual aids Repeated directions Differentiate based on proficiency Provide word banks Allow for translators, dictionaries</p> <p>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</p> |
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Academic Prep Math 6

Unit Title: Unit 2: The Number System & Expressions and Equations

Stage 1: Desired Results

Standards & Indicators:

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.3. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

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.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.

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, |

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| | | analyzing, and presenting information, while other types of digital tools are appropriate for creating text, visualizations, models, and communicating with others. |
| <u>Central Idea/Enduring Understanding:</u> The standard algorithm used to multiply and divide whole numbers can be applied to operations with decimals. You will multiply and divide multi-digit decimals. Models and equations can be used to represent real-world situations involving operations with fractions. You will multiply and divide fractions by whole numbers and fractions. Integers, terminating decimals, and repeating decimals are rational numbers. You will compare and order rational numbers and graph points in four quadrants of the coordinate plane. Numerical and algebraic expressions can be used to represent and solve real-world problems. You will write and evaluate expressions and apply the properties of operations to generate equivalent expressions. | | <u>Essential/Guiding Question:</u> At the end of the Unit, students should be able to answer the Essential Questions: How can estimating be useful? What does it mean to multiply and divide fractions? How are integers and absolute value used in real-world situations? How is it helpful to write numbers in different ways? |
| <u>Content:</u> Divide Multi-Digit Numbers Estimate Quotients Divide Decimals by Whole Numbers and Decimals Estimate Products of Fractions Multiply Fractions and Whole Numbers Multiply Fractions Multiply Mixed Numbers Divide Whole Numbers by Fractions Divide Fractions and mixed numbers Integers and Graphing Absolute Value Compare and Order Integers Powers and Exponents | | <u>Skills(Objectives):</u> Divide three-digit and four-digit dividends Divide a decimal by a 1-digit and two-digit number Divide by decimals Multiply whole numbers and fractions Multiply fractions and simplify before multiplying Multiply fractions and mixed numbers Find reciprocals |

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| Numerical and Variable Expressions | <div>Divide fractions and whole numbers</div> <div>Divide mixed numbers and fractions</div> <div>Use integers to represent data</div> <div>Graph integers</div> <div>Find opposites and evaluate absolute value</div> <div>Compare and Order Integers</div> <div>Write rational numbers</div> <div>Compare and order decimals, fractions and rational numbers</div> <div>Identify points and ordered pairs</div> <div>Write products as powers and powers as products</div> <div>Use order of operations to find the value of an expression</div> <div>Evaluate one-step and multi-step expressions</div> |
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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
[Video Game Credit](#)
[Rectangle Perimeter](#)

Other Evidence:

Online Assignments
 IXL Diagnostic test

Stage 3: Learning Plan

Learning Opportunities/Strategies:

Divide Multi-Digit Numbers - Find quotients of problems involving multi-digit numbers
 Integers and Graphing - Use integers to represent real-world situations
 Absolute Value - Find the absolute value of an integer

Resources:

IXL
 Kahoot
 Khan Academy
 Lesson Presentations
 Google Forms and Sheets
 Virtual Manipulatives App

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| <p>Terminating and Repeating Decimals - Write positive and negative fractions as decimals</p> <p>The Coordinate Plane - Graph ordered pairs on the coordinate plane</p> <p>Powers and Exponents - Represent numbers using exponents</p> <p>Numerical Expressions - Find the value of expressions using order of operations</p> <p>Think, Pair, Share</p> <p>Small group instruction</p> <p>Teach Like a Champion Strategies</p> | <p>Google apps for education</p> <p>Brain Pop</p> <p>EduLastic</p> <p>LGBT and Disabilities Resources:</p> <ul style="list-style-type: none"> • LGBTQ-Inclusive Lesson & Resources by Garden State Equality and Make it Better for Youth • LGBTQ+ Books • Inclusive Math Class <p>DEI Resources:</p> <ul style="list-style-type: none"> • 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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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 |
|--|---|--|---|
| <p>Khan Academy</p> <p>Project based learning</p> <p>Tablets</p> <p>Challenging problems with higher degree of difficulty</p> <p>Higher order thinking questions</p> <p>Differentiation of pacing and activities</p> <p>Differentiation of learning strategies: visual, auditory, kinetic and cooperative</p> <p>Enrichment and extension</p> <p>Technology connection</p> <p>Practice assignments</p> <p>Puzzle time activities</p> | <p>Tutoring</p> <p>Tables</p> <p>Graphic organizers</p> <p>Differentiation of learning strategies: visual, auditory, kinetic and cooperative</p> <p>Technology connection</p> <p>Practice</p> <p>Assignments</p> <p>Puzzle time activities</p> <p>Differentiating the lesson activities</p> <p>Lesson tutorials</p> | <p>Provide a highly structured, predictable learning environment</p> <p>Provide organizers/study guides</p> <p>Lessons designed to the style of learning that matches the student</p> <p>Cooperative Learning</p> <p>Positive reinforcement</p> <p>Announce test with adequate prep time</p> <p>Lessons presentation available on google classroom</p> | <p>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</p> <p>ELL supports should include, but are not limited to, the following::</p> <p>Extended time</p> <p>Provide visual aids</p> <p>Repeated directions</p> <p>Differentiate based on proficiency</p> <p>Provide word banks</p> <p>Allow for translators, dictionaries</p> |

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| | | <p>Frequent check for understanding</p> <p>Break down task into manageable units</p> <p>One-on-one instruction</p> <p>Tutoring</p> <p>Pair student with a high achieving student</p> | <p>Frequent check for understanding</p> <p>Preferential seating</p> <p>Modify tests, quizzes, homework assignments</p> <p>Read directions allowed</p> <p>Provide copy of notes</p> <p>Stand in proximity to student to focus attention</p> <p>Extended time to complete assignments, tests, quizzes</p> <p>Allow use of calculator</p> <p>One-on-one instruction as needed</p> <p>Assign peer buddies</p> <p>Graphic organizers</p> <p>Lesson presentation available on google classroom</p> <p>Lessons designed to the style of learning that matches the student</p> |
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Academic Prep Math 6

Unit Title: Unit 3: Expressions and Equations

Stage 1: Desired Results

Standards & Indicators:

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.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.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 problems. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

Mathematical Practices:

MP.1 Make sense of problems and persevere in solving them

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MP 4. Model with mathematics

MP 5. Use appropriate tools strategically

MP 6. Attend to precision

MP 7. Look for and make use of structure

MP 8. Look for and express regularity in repeated reasoning

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, |

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| | | 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. |
| <p><u>Central Idea/Enduring Understanding:</u></p> <p>Variables are used to represent an unknown number in an expression or equation. You will write and solve one-variable addition, subtraction, multiplication, and division equations.</p> <p>Functions can be represented using words, equations, tables, and graphs. You will represent and analyze the relationship between two variables using functions. You will also write, graph, and solve one-variable inequalities.</p> | | <p><u>Essential/Guiding Question:</u></p> <p>At the end of the Unit, students should be able to answer the Essential Questions:</p> <p>How do you determine if two numbers or expressions are equal?</p> <p>How are symbols, such as $<$, $>$, and $=$, useful?</p> <p>How does measurement help you solve problems in everyday life?</p> |
| <p><u>Content:</u></p> <p>Write equivalent expressions</p> <p>Properties of Math</p> <p>The Distributive Property</p> <p>Solve and write equations using operations</p> <p>Function tables & rules</p> <p>Write and Graph Inequalities</p> <p>Solve One-Step Inequalities</p> | | <p><u>Skills(Objectives):</u></p> <p>Use properties to compare expressions and solve problems</p> <p>Use the distributive property</p> <p>Simplify expressions with one and two variables</p> <p>Solve addition, subtraction, multiplication, and division equations mentally</p> <p>Solve an equation by adding, subtracting, multiplying or dividing</p> <p>Use the Subtraction Property of Equality</p> <p>Use the Addition Property of Equality</p> |

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| | <p>Use the Division Property of Equality</p> <p>Use the Multiplication Property of Equality</p> <p>Find the output and input for a function table</p> <p>Find a rule for function tables</p> <p>Write an equation to represent a function</p> <p>Graph linear functions</p> <p>Represent functions using words and equations and tables and graphs</p> <p>Write and graph inequalities</p> |
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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
[Equivalent Expressions](#)

Other Evidence:

Online Assignments
IXL Diagnostic test

Stage 3: Learning Plan

Learning Opportunities/Strategies:

Properties - Use properties to simplify expressions
Equivalent Expressions - Use properties to simplify expressions
Equations - Solve equations by using mental math and the guess, check, and revise strategy
Function Tables - Complete function tables for given function rules
Function Rules - Extend and describe sequences using algebraic expressions
Functions and Equations - Construct and analyze different verbal, tabular, graphical, and algebraic representations of functions.
Multiple Representations of Functions - Construct and analyze different verbal, tabular,

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](#)

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| graphical, and algebraic representations of functions Inequalities - Solve inequalities by using mental math and the guess, check, and revise strategy Think, Pair, Share Small group instruction Teach Like a Champion Strategies | <ul style="list-style-type: none">• GLSEN Educator Resources• Supporting LGBTQIA Youth Resource List• Respect Ability: Fighting Stigmas, Advancing Opportunities• NJDOE Diversity, Equity & Inclusion Educational Resources• Diversity Calendar | | |
| <u>Differentiation</u> *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 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 | Tutoring Tables Graphic organizers Differentiation of learning strategies: visual, auditory, kinetic and cooperative Technology connection Practice Assignments Puzzle time activities Differentiating the lesson activities Lesson tutorials | 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 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 | 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:: 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 |

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| | | Pair student with a high achieving student | 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 |
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Academic Prep Math 6

Unit Title: Unit 4: Geometry & Statistics and Probability

Stage 1: Desired Results

Standards & Indicators:

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.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 $V = l w h$ and $V = B h$ to find volumes of right rectangular prisms with fractional edge lengths 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. Apply these techniques in the context of solving real-world and mathematical problems.

6.G.A.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.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.B.4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

6.SP.B.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.

Mathematical Practices:

MP.1 Make sense of problems and persevere in solving them

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MP 6. Attend to precision

MP 7. Look for and make use of structure

MP 8. Look for and express regularity in repeated reasoning

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| Career Readiness, Life Literacies and Key Skills | | |
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| 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. |
| <p><u>Central Idea/Enduring Understanding:</u></p> <p>A composite figure can be decomposed to triangles and other shapes. You will find the areas of triangles, quadrilaterals, and composite figures.</p> <p>Prisms and pyramids are examples of three-dimensional figures. You will find the volume and surface area of three-dimensional figures in the context of solving real-world and mathematical problems.</p> <p>Statistical data has a distribution that can be described by its center or by its spread. You will find and use measures of center and measures of variation to describe sets of data.</p> <p>Statistical data can be represented in a variety of ways. You will represent and analyze data using line plots, histograms, and box plots.</p> | | <p><u>Essential/Guiding Question:</u></p> <p>At the end of the Unit, students should be able to answer the Essential Questions:</p> <p>How can you use different measurements to solve real-life problems?</p> <p>How does measurement help you solve problems in everyday life?</p> <p>How is shape important when measuring a figure?</p> <p>How are the mean, median, and mode helpful in describing data?</p> |
| <p><u>Content:</u></p> <p>Polygons on the Coordinate Plane</p> | | <p><u>Skills(Objectives):</u></p> <p>Find perimeter and area</p> |

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| <p>Volume of Prisms</p> <p>Surface Area of Prisms</p> <p>Surface Area of Pyramids</p> <p>Mean, Median and Mode</p> <p>Measure of Variation</p> <p>Line Plots, Histograms, Box plots, Line graphs</p> | <p>Find the volume of a rectangular prism</p> <p>Find the volume of a triangular prism and its missing dimension</p> <p>Find the surface area of a rectangular and triangular prism</p> <p>Find the surface area of a pyramid and of pyramids with triangular bases</p> <p>Find the mean, median, mode, outliers</p> <p>Use appropriate measures</p> <p>Make and analyze line plots</p> <p>Interpret data and construct a histogram and box plot</p> <p>Make and analyze line graphs</p> <p>Choose the appropriate statistical display</p> |
| <p><u>Interdisciplinary Connections:</u></p> <p>Interdisciplinary connections are integrated in each unit with ELA, Science, Social Studies, Art and Music to the mathematical practices where applicable.</p> | |
| <p>Stage 2: Assessment Evidence</p> | |
| <p><u>Performance Task(s):</u></p> <p>IXL skill plan</p> <p>Small group activities</p> <p><u>Average Number of Siblings</u></p> | <p><u>Other Evidence:</u></p> <p>Online Assignments</p> <p>IXL Diagnostic test</p> |
| <p>Stage 3: Learning Plan</p> | |
| <p><u>Learning Opportunities/Strategies:</u></p> <p>Polygons on the Coordinate Plane - Draw polygons in the coordinate plane and use coordinates to find length</p> <p>Volume of Rectangular Prisms - Find the volume of cereal box.</p> <p>Surface Area of Rectangular Prisms - Find the surface areas of cereal box.</p> | <p><u>Resources:</u></p> <p>IXL</p> <p>Kahoot</p> <p>Khan Academy</p> <p>Lesson Presentations</p> <p>Google Forms and Sheets</p> <p>Virtual Manipulatives App</p> <p>Google apps for education</p> <p>Brain Pop</p> |

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| Surface Area of Triangular Prisms - Find the surface area of triangular prisms Surface Area of Pyramids - Find the surface area of pyramids Mean, Median and Mode - Summarize numerical data using the mean. Find and interpret the median and mode of a set of data Line Plots - Construct and analyze line plots Histograms - Construct and analyze histograms Box Plots - Display and interpret data in box plots Interpret Line Graphs Think, Pair, Share Small group instruction Teach Like a Champion Strategies | Edulastic LGBT and Disabilities Resources: <ul style="list-style-type: none">• LGBTQ-Inclusive Lesson & Resources by Garden State Equality and Make it Better for Youth• LGBTQ+ Books• Inclusive Math Class DEI Resources: <ul style="list-style-type: none">• 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 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 | Tutoring Tables Graphic organizers Differentiation of learning strategies: visual, auditory, kinetic and cooperative Technology connection Practice Assignments Puzzle time activities Differentiating the lesson activities Lesson tutorials | 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 Announce test with adequate prep time Lessons presentation available on google classroom | 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:: Extended time Provide visual aids Repeated directions Differentiate based on proficiency Provide word banks Allow for translators, dictionaries |

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| | | <p>Frequent check for understanding</p> <p>Break down task into manageable units</p> <p>One-on-one instruction</p> <p>Tutoring</p> <p>Pair student with a high achieving student</p> | <p>Frequent check for understanding</p> <p>Preferential seating</p> <p>Modify tests, quizzes, homework assignments</p> <p>Read directions allowed</p> <p>Provide copy of notes</p> <p>Stand in proximity to student to focus attention</p> <p>Extended time to complete assignments, tests, quizzes</p> <p>Allow use of calculator</p> <p>One-on-one instruction as needed</p> <p>Assign peer buddies</p> <p>Graphic organizers</p> <p>Lesson presentation available on google classroom</p> <p>Lessons designed to the style of learning that matches the student</p> |
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Pacing Guide

| Academic Prep Math 6 | Resource - IXL | Standards |
|---|---|--|
| MP 1 | | |
| UNIT 1 Ratios & Proportional Relationships (25 Days) | IXL Skill Plan IXL Diagnostic Assessment | 6.RP.1 6.RP.2 6.RP.3 6.RP.3c |
| MP 2 | | |
| UNIT 2 The Number System (25 Days) | IXL Skill Plan IXL Diagnostic Assessment | 6.NS.1 6.NS.B.3 6.NS.C.5 6.EE.1 6.EE.2 |
| MP 3 | | |
| UNIT 3 Expressions & Equations (25 Days) | IXL Skill Plan IXL Diagnostic Assessment | 6.EE.3 6.EE.4 6.EE.B 5 6.EE.B 6 6.EE.B7 6.EE.B8 |
| MP 4 | | |
| UNIT 4 Geometry & Statistics and Probability (25 Days) | IXL Skill Plan IXL Diagnostic Assessment | 6.G.A.1 6.G.A.2 6.G.A.3 6.G.A.4 6.SP.A.2 6.SP.B.4 6.SP.B.5 |