

Special Services - Math - 6th Grade

Unit Title: Unit 1: Ratios and Proportional Relationships & The Number System

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.

6.NS.B.3 With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

6.NS.B.4. Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12.

Dynamic Learning Maps Essential Elements/New Jersey Student Learning Standards:

M.EE.6.RP.1 Demonstrate a simple ratio relationship

M.EE.6.NS.2 Apply the concept of fair share and equal shares to divide

M.EE.6.NS.3 Solve two factor multiplication problems with products up to 50 using concrete objects and/or a calculator

Career Readiness, Life Literacies and Key Skills

Standard	Performance Expectations	Core Ideas
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.
<u>Central Idea/Enduring Understanding:</u> Chapter 1		<u>Essential/Guiding Question:</u> At the end of the Unit, students should be able to answer the Essential Questions:

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A ratio is a comparison of two quantities. You will explore ratio concepts and use ratio reasoning to solve rate problems. Chapter 2 Equivalent forms of fractions, decimals, and percents can be written and used to solve problems. You will apply these relationships to solve percent problems. Chapter 3 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.	UNIT – How can you use mathematics to describe change and model real-world situations? UNIT – How can mathematical ideas be represented? Chapter 1 - How do you use equivalent rates in the real world? Chapter 2 – When is it better to use a fraction, a decimal, or a percent? Chapter 3 – How can estimating be useful?
<u>Content:</u> 1.2 Ratios 1.3 Rates 1.4 Ratio Tables 1.6 Equivalent Ratios 1.7 Ratio and Rate Problems 2.1 Decimals and Fractions 2.2 Percents and Fractions 2.3 Percents and Decimals 2.5 Compare and Order Fractions, Decimals, and Percents 2.7 Percent of a Number 3.1 Add and Subtract Decimals 3.3 Multiply Decimals by Whole Numbers 3.4 Multiply Decimals by Decimals	<u>Skills(Objectives):</u> Write a ratio in simplest form Use ratios to compare categorical data Find a unit rate and unit price Use unit rates and equivalent fractions Solve ratio and rate problems Write decimals as fractions Write fractions as decimals Write percents as fractions Write fractions as percents Write percents as decimals Write decimals as percents Write percents as decimals and fractions Compare fractions, decimals, and percents
<u>Interdisciplinary Connections:</u> Interdisciplinary connections are integrated in each unit with connections to the mathematical practices. Make sense of problems and persevere in solving them Reason abstractly and quantitatively Construct viable arguments and critique the reasoning of others Model with mathematics Use appropriate tools strategically Attend to precision Look for and make use of structure Look for and express regularity in repeated reasoning	

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Stage 2: Assessment Evidence

Performance Task(s):

Performance Task 1: Understanding ratios

- Students will identify ratios through visuals, as well as word problems based on real life problems
- Students will be able to express ratios in three ways (to, :, and /)

Performance Task 2: Understanding rates and unit rates

- Students will create rates based on real life problems
- Students will be able to differentiate between rates and unit rates
- Students will be able to use unit rates to compare prices of items

Performance Task 3: Converting decimals, fractions, and percents

- Students will use visuals to represent percentages
- Students will use real life examples to help familiarize themselves with decimals, fractions, and percents

Performance Task 4: Operations with Decimals

- Students will use visuals to help with operations with decimals.
- Students will use money to help with their understanding of decimals.

Unit 1 Activities/Videos:

6.RP.A.1 Games at Recess

<https://www.illustrativemathematics.org/content-standards/6/RP/A/1/tasks/76>

6.NS.B.4 Factors and Common Factors

<https://www.illustrativemathematics.org/content-standards/6/NS/B/4/tasks/255>

Other Evidence:

Teacher created materials
Written and online assignments
Glencoe Math Review Sheets
Exit Tickets
Cornell Notes
Teacher created quizzes/tests
Modified CFAs
Observations
Projects
Class Discussions

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Stage 3: Learning Plan

Learning Opportunities/Strategies:

Ratios:

- Students will create interactive notebooks with Google Slides to identify ratios based on visuals, as well as word problems
- Students will complete various foldables
- Students will review worksheets that focus on ratios (modified Glencoe Math worksheets/teacher created worksheets)
- Students can use hands-on activities with food to create ratios.

Rates and Unit Rates:

- Students will create an interactive notebook within Google Slides that identifies rates and unit rates.
- Students will complete various foldables
- Students will review worksheets focused on rates and unit rates
- Students will complete hands-on activities looking at packages of food products and find the unit rate of the item.

Converting Decimals, Fractions, and Percents:

- Students will create an interactive notebook within google slides to convert fraction, decimals, and percents
- Students will use manipulatives to visualize percentages.
- Students will use flow charts to help them convert between fraction, decimals, and percents. Examples will be provided for students to help them visualize the process
- Students will review with worksheets, as well as games to reinforce the topic.

Resources:

LGBT and Disabilities Law

[Inclusive Math Class](#)

[GLSEN Educator Resources](#)

Glencoe Math Course 1 Textbook (Chapters 1, 2, 3.1 – 3.4)

Aleks

Kahoot

Gimkit

Lesson Presentations

Google Forms and Sheets

Virtual Manipulatives App

Google apps for education

Desmos Graphing Calculator

Padlet

Mathplayground.com

Brain Pop

Classkick

Edulastic

Instructional Videos

TeachersPayTeachers

STEM activities

Teacher created materials

Khan Academy

EdPuzzle

Flocabulary

MathTV

IXL

Blooket

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<u>Operations with Decimals:</u> • Students will use review worksheets to practice operations with decimals. • Students will review borrowing and carrying first without decimals • Students will try problems independently without a calculator using graph paper (to provide students with columns), then check answers with a calculator.			
<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 Record and practice journal	Tutoring Tables Graphic organizers Differentiation of learning strategies: visual, auditory, kinetic and cooperative Technology connection Practice Assignments Puzzle time activities Record and practice journal Differentiating the lesson activities Lesson tutorials Skills review handbook	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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Unit Title: Unit 2: The Number System & Expressions and Equations

Stage 1: Desired Results

Standards & Indicators:

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.

6.NS.A.1. Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.

6.NS.B.2 With accuracy and efficiency, divide multi-digit numbers using the standard algorithm.

6.NS.B.3 With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation

6.NS.C.5. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

6.NS.C.7. Understand ordering and absolute value of rational numbers.

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.

Dynamic Learning Map Essential Elements/New Jersey Student Learning Standards:

M.EE.6.NS.1 Compare the relationships between two unit fractions

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M.EE.6.NS.2 Apply the concept of fair share and equal shares to divide M.EE.6.NS.3 Solve two factor multiplication problems with products up to 50 using concrete objects and/or a calculator M.EE.6.NS.5-8 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero) M.EE.6.EE.1-2 Identify equivalent number sentences		
Career Readiness, Life Literacies and Key Skills		
Standard	Performance Expectations	Core Ideas
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.
<u>Central Idea/Enduring Understanding:</u> Chapter 3 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. Chapter 4 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. Chapter 5 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. Chapter 6 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: UNIT – How can mathematical ideas be represented? UNIT – How can you communicate mathematical ideas effectively? Chapter 3 – How can estimating be useful? Chapter 4 – What does it mean to multiply and divide fractions? Chapter 5 – How are integers and absolute value used in real-world situations? Chapter 6 – How is it helpful to write numbers in different ways?

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<u>Content:</u> Chapters 3.5 – 3.8, 4, 5, 6.1 – 6.3 3.5 Divide Multi-Digit Numbers 3.7 Divide Decimals by Whole Numbers 3.8 Divide Decimals by Decimals 4.2 Multiply Fractions and Whole Numbers 4.3 Multiply Fractions 4.6 Divide Whole Numbers by Fractions 4.7 Divide Fractions 5.1 Integers 5.2 Absolute Value 5.4 Terminating and Repeating Decimals 5.6 The Coordinate Plane 5.7 Graph on the Coordinate Plane 6.1 Powers and Exponents 6.3 Algebra: Variables and Expressions	<u>Skills(Objectives):</u> Divide a decimal by a 1-digit and two-digit number Divide by decimals Multiply a whole number by a fraction Multiply a fraction by a whole number Multiply fractions Find reciprocals Divide by a fraction Divide a fraction by a whole number Use integers to represent data Find opposites and evaluate absolute value Write rational numbers Identify points and ordered pairs Write products as powers Write powers as products Evaluate one-step expressions
<u>Interdisciplinary Connections:</u> Interdisciplinary connections are integrated in each unit with connections to the mathematical practices. Make sense of problems and persevere in solving them Reason abstractly and quantitatively Construct viable arguments and critique the reasoning of others Model with mathematics Use appropriate tools strategically Attend to precision Look for and make use of structure Look for and express regularity in repeated reasoning	
Stage 2: Assessment Evidence	
<u>Performance Task(s):</u> <u>Performance Task 1: Divide Decimals</u> - Students will use a calculator to divide decimals. - Students will divide decimals using real life examples <u>Performance Task 2: Multiply and Divide Fractions</u> - Students will identify the reciprocal of a fraction.	<u>Other Evidence:</u> Teacher created materials Written and online assignments Glencoe Math Review Sheets Exit Tickets Cornell Notes Teacher created quizzes/tests Modified CFAs Observations Projects Class Discussions

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- Students will use real life examples to help familiarize themselves with fractions.
- Students will use a calculator to multiply and divide fractions

Performance Task 3: Identify and Graph Integers

- Students will distinguish between positive and negative integers on a number line.
- Students will be able to use a number line to determine the absolute value of a number.

Performance Task 4: Power and Exponents

- Students will identify all of the elements of a power and exponent
- Students will break down an exponent into exponential form and use that to help them solve problems
- Students will relate exponents to situations they see in the real world

Unit 2 Activities/Videos:

6.NS.B.1 Traffic Jam

<https://www.illustrativemathematics.org/content-standards/6/NS/A/1/tasks/464>

6.NS.C.5 It's Warmer in Miami

<https://www.illustrativemathematics.org/content-standards/6/NS/C/5/tasks/277>

6.NS.C.7a Fractions on the Number Line

<https://www.illustrativemathematics.org/content-standards/6/NS/C/7/tasks/284>

Stage 3: Learning Plan

Learning Opportunities/Strategies:

Dividing Decimals:

- Students will use flow charts to help with the process of division

Resources:

LGBT and Disabilities Law

[Inclusive Math Class](#)

[GLSEN Educator Resources](#)

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- Students will use calculators to divide decimals and review the topic through various worksheets/google apps. - Students will use real life problems, such as dividing a bill, to review the topic. <u>Multiplying and Dividing Fractions:</u> - Students will review identifying the numerator and denominator of a fraction - Students will use google apps to create interactive notebooks to review the process of multiplying and dividing fractions. (step by step flow charts) - Students will use calculators to help with multiplying and dividing fractions. <u>Identifying and Graphing Integers:</u> - Students will complete an interactive activity involving number lines. - Students will stand on a number line and identify integers and their opposites. - Students will use an interactive notebook on google classroom. - Students will complete foldables. - Students will complete and review worksheets. Students will play games involving integers. <u>Powers and Exponents:</u> - Students will watch a video song about exponents. - Students will do a hands on activity with cheez-its to represent the second power and cheese cubes to represent the third power. - Students will use a foldable to break down the key parts of an exponent. - Students will complete a google slides interactive notebook. - Students will complete and review worksheets from Glencoe Math.	Glencoe Math Course 1 Textbook (Chapters 3.5 – 3.8, 4, 5, 6.1 – 6.3) Aleks Kahoot Gimkit Lesson Presentations Google Forms and Sheets Virtual Manipulatives App Google apps for education Desmos Graphing Calculator Padlet Mathplayground.com Brain Pop Classkick EduLastic Instructional Videos TeachersPayTeachers STEM activities Teacher created materials Khan Academy EdPuzzle Flocabulary MathTV IXL Blooket
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<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 Record and practice journal	Tutoring Tables Graphic organizers Differentiation of learning strategies: visual, auditory, kinetic and cooperative Technology connection Practice Assignments Puzzle time activities Record and practice journal Differentiating the lesson activities Lesson tutorials Skills review handbook	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 Pair student with a high achieving 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 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

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Unit Title: Unit 3: The Number System & Expressions and Equations

Stage 1: Desired Results

Standards & Indicators:

- 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.EE.A.1. Write and evaluate numerical expressions involving whole-number exponents.
- 6.EE.A.2. Write, read, and evaluate expressions in which letters stand for numbers.
- 6.EE.A.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 problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
- 6.EE.C.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables and relate these to the equation.

Integration of Climate Change:

- 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.
Climate Change Example: Students may solve real-world problems by writing and solving one-variable equations related to deforestation and/or increasing livestock farming as contributors to climate change.
- 6.EE.C.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables and relate these to the equation. *For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.*
Climate Change Example: Students may analyze and use variables to represent the relationship between greenhouse emissions and livestock farming when representing relationships among contributors to climate change.

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<u>Dynamic Learning Map Essential Elements/New Jersey Student Learning Standards:</u> M.EE.6.EE.1-2 Identify equivalent number sentences M.EE.6.EE.3 Apply the properties of addition to identify equivalent numerical expressions M.EE.6.EE.5-7 Match an equation to a real-world problem in which variables are used to represent numbers		
Career Readiness, Life Literacies and Key Skills		
Standard	Performance Expectations	Core Ideas
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.
9.2.8.CAP.3	Explain how career choices, educational choices, skills, economic conditions, and personal behavior affect income.	An individual's strengths, lifestyle goals, choices, and interests affect employment and income.
9.1.8.PB.1	Predict future expenses or opportunities that should be included in the budget planning process.	A budget aligned with an individual's financial goals can help prepare for life events.
9.1.8.PB.2	Explain how different circumstances can affect one's personal budget.	
9.1.8.PB.3	Explain how to create budget that aligns with financial goals.	
9.1.8.PB.4	Construct a simple personal savings and spending plan based on various sources of income and different stages of life (e.g. teenager, young adult, family).	
9.1.8.PB.5	Identify factors that affect one's goals, including peers, culture, location, and past experiences.	
9.1.8.PB.6	Construct a budget to save for short-term, long term, and charitable goals.	Goals (e.g., higher education, autos, and homes, retirement), affect your finances.
9.1.8.PB.7	Brainstorm techniques that will help decrease expenses including comparison shopping, negotiating, and day-to-day expense management.	There are strategies to decrease and manage expenses.
9.1.8.FP.6	Compare and contrast advertising messages to understand what they are trying to accomplish.	Marketing techniques are designed to encourage individuals to purchase items they may not need or want.

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9.1.8.FI.2	Determine the most appropriate use of various financial products and services to borrow and access money for making purchases (e.g., ATM, debit cards, credit cards, check books, online/mobile banking).	There are a variety of factors that influence how well suited a financial institution and/or service will be in meeting an individual's financial needs.
9.1.8.EG.7	Explain the effect of the economy (e.g., inflation, unemployment) on personal income, individual and family security, and consumer decisions.	There are government agencies and policies that affect the financial industry and the broader economy.
9.1.8.CP.1	Compare prices for the same goods or services.	There are strategies to build and maintain a good credit history.
9.1.8.CP.2	Analyze how spending habits affect one's ability to save.	
9.1.8.CP.3	Explain the purpose of a credit score and credit record, the factors and impact of credit scores.	
9.1.8.CDM.1	Compare and contrast the use of credit cards and debit cards for specific purchases and the advantages and disadvantages of using each.	There are strategies to increase your savings and limit debt.

<u>Central Idea/Enduring Understanding:</u> Chapter 6 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. Chapter 7 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. 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. Chapter 9 A composite figure can be decomposed to triangles and other shapes. You will find the	<u>Essential/Guiding Question:</u> At the end of the Unit, students should be able to answer the Essential Questions: UNIT – How can you use different measurements to solve real-life problems? Chapter 6 – How is it helpful to write numbers in different ways? Chapter 7 – How do you determine if two numbers or expressions are equal? Chapter 8 – How are symbols, such as $<$, $>$, and $=$, useful? Chapter 9 – How does measurement help you solve problems in everyday life? Financial Literacy - How do you prepare to get a job? How does education affect your income? How can you be a responsible shopper?
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areas of triangles, quadrilaterals, and composite figures. Financial Literacy Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers.	What is the purpose of budgeting?
<u>Content:</u> Chapters 6.4 – 6.5, 7, 8, 9.1 – 9.3 6.4 Algebra: Write Expressions 6.5 Algebra: Properties 7.1 Equations 7.2 Solve and Write Addition Equations 7.3 Solve and Write Subtraction Equations 7.4 Solve and Write Multiplication Equations 7.5 Solve and Write Division Equations 8.1 Function Tables 8.2 Function Rules 8.5 Inequalities 8.7 Solve One-Step Inequalities Career & Education Choices Personal Economy Debit & Credit Savings plan Consumer decision making Disclosure of personal information Product Vs. Advertising Wants vs needs in purchasing decisions	<u>Skills(Objectives):</u> Write phrases as algebraic expressions Use properties to compare expressions and solve problems Simplify expressions with one and two variables Solve addition, subtraction, multiplication, and division equations Solve an equation by subtracting Solve an equation by adding Solve a multiplication equation Solve division equations Find the output and input for a function table Find a rule for function tables Represents functions using words and equations and tables and graphs Determine solutions to inequalities Determine personal wants and needs when making purchases. Compare and contrast product facts and their advertisements. Identify consequences of sharing personal financial information. Determine the factors of being a responsible consumer Determine how saving contributes to financial well being Compare and contrast debit and credit management. Construct a simple savings plan Distinguish among cash, check, credit card, and debit card. Relate how career choices, education choices, skills, entrepreneurship, and economic conditions affect income.
<u>Interdisciplinary Connections:</u> Interdisciplinary connections are integrated in each unit with connections to the mathematical practices. Make sense of problems and persevere in solving them Reason abstractly and quantitatively Construct viable arguments and critique the reasoning of others Model with mathematics Use appropriate tools strategically	

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Attend to precision Look for and make use of structure Look for and express regularity in repeated reasoning	
Stage 2: Assessment Evidence	
<u>Performance Task(s):</u> <u>Performance Task 1: Algebraic Expressions:</u> - Students will identify the key elements of an algebraic expression through the use of a word bank. - Students will highlight like terms in algebraic expressions. - Students will combine like terms in expressions <u>Performance Task 2: One-Step Equations:</u> - Students will identify opposite operations to help with solving equations - Students will evaluate a one-step equation. <u>Performance Task 3: Function Tables:</u> - Students will review finding the pattern used in different function tables. - Students will be able to use the pattern identified to help them complete function tables. <u>Performance Task 4: Personal Finance:</u> - Students will compare and contrast debit and credit cards and determine the appropriate situation to use both in real life problems - Students will compare and contrast a want versus a need and how that can impact their budget in real life. - Students will compare various jobs based on the schooling, as well as the salary. Unit 3 Activities/Videos: 6.EE.A.4 Equivalent Expressions	<u>Other Evidence:</u> Teacher created materials Written and online assignments Glencoe Math Review Sheets Exit Tickets Cornell Notes Teacher created quizzes/tests Modified CFAs Observations Projects Class Discussions

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https://www.illustrativemathematics.org/content-standards/6/EE/A/4/tasks/542 9.1.8.C.1 Debit & Credit Hands on Banking https://www.youtube.com/watch?v=nIBt9l5krgE	
Stage 3: Learning Plan	
<u>Learning Opportunities/Strategies:</u> <u>Algebraic Expressions:</u> - Students will use a google slides interactive notebook to identify key parts of an algebraic expression. - Students will solve problems using real life examples, such as going to a fast food place and combining orders of fries. <u>One-Step Equations:</u> - Students will also use google slides to balance equations. Students will be able to move manipulatives to each side of the balance to visually represent the equation. - Students will use a balance to bring together similar shapes on each side to create balance. - Students will use Glencoe Math review sheets to practice solving equations. <u>Function Tables:</u> - Students will complete a sorting activity about what is a function and what is not a function. - Students will complete tables using function rules, as well as find the pattern of completed tables on various google apps. - Students will review through modified Glencoe Math worksheets. <u>Personal Finance:</u>	<u>Resources:</u> LGBT and Disabilities Law Inclusive Math Class GLSEN Educator Resources Glencoe Math Course 1 Textbook (Chapters 6.4 – 6.7, 7, 8, 9.1 – 9.3) Aleks Kahoot Gimkit Lesson Presentations Google Forms and Sheets Virtual Manipulatives App Google apps for education Desmos Graphing Calculator Padlet Mathplayground.com Brain Pop Classkick Edulastic Instructional Videos TeachersPayTeachers STEM activities Teacher created materials Khan Academy EdPuzzle Flocabulary MathTV IXL Blooket

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- Students will complete a Venn Diagram to see what is the same and different between debit and credit cards - Students will complete a sort about when to use a debit card and when to use a credit card - Students will research various jobs that interest them to see how much schooling is required, as well as the salary. They will compare jobs.			
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 Record and practice journal	Tutoring Tables Graphic organizers Differentiation of learning strategies: visual, auditory, kinetic and cooperative Technology connection Practice Assignments Puzzle time activities Record and practice journal Differentiating the lesson activities Lesson tutorials Skills review handbook	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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Unit Title: Unit 4: Geometry & Statistics and Probability

Stage 1: Desired Results

Standards & Indicators:

6.NS.C.8. Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

6.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 (e.g., pyramid, triangular prism, rectangular prism) using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems

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.

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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.

Integration of Climate Change:

- 6.SP.B.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
Climate Change Example: Students may display numerical data related to deforestation and increasing livestock farming as contributors to climate change in plots on a number line, including dot plots, histograms, and box plots.

Dynamic Learning Map Essential Elements/New Jersey Student Learning Standards:

M.EE.6.G.1 Solve real-world and mathematical problems about area using unit squares

M.EE.6.G.2 Solve real-world and mathematical problems about volume using unit cubes

M.EE.6.SP.5 Summarize data distributions shown in graphs or tables

Career Readiness, Life Literacies and Key Skills

Standard	Performance Expectations	Core Ideas
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:

Chapter 9

A composite figure can be decomposed to triangles and other shapes. You will find the areas of triangles, quadrilaterals, and composite figures.

Chapter 10

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.

Chapter 11

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.

Essential/Guiding Question:

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

UNIT – How can you use different measurements to solve real-life problems?

Chapter 9 – How does measurement help you solve problems in everyday life?

Chapter 10 – How is shape important when measuring a figure?

Chapter 11 – How are the mean, median, and mode helpful in describing data?

Chapter 12 – Why is it important to carefully evaluate graphs?

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Chapter 12 Statistical data can be represented in a variety of ways. You will represent and analyze data using line plots, histograms, and box plots.	
<u>Content:</u> Chapters 10, 11, 12 10.1 Volume of Rectangular Prisms 10.2 Volume of Triangular Prisms 10.3 Surface Area of Rectangular Prisms 11.1 Mean 11.2 Median and Mode 12.1 Line Plots 12.2 Histograms 12.3 Box Plots 12.5 Interpret Line Graphs	<u>Skills(Objectives):</u> Find area of shapes using unit cubes Find the volume of a rectangular prism Find the volume of a triangular prism Find the surface area of a rectangular prism Find the mean, median, mode, outliers Make and analyze line plots Interpret data and construct a histogram Interpret data and construct a box plot Make and analyze line graphs Choose the appropriate statistical display
<u>Interdisciplinary Connections:</u> Interdisciplinary connections are integrated in each unit with connections to the mathematical practices. Make sense of problems and persevere in solving them Reason abstractly and quantitatively Construct viable arguments and critique the reasoning of others Model with mathematics Use appropriate tools strategically Attend to precision Look for and make use of structure Look for and express regularity in repeated reasoning	
Stage 2: Assessment Evidence	
<u>Performance Task(s):</u> <u>Performance Task 1: Volume and Surface Area of Prisms:</u> - Students will identify 3D shapes in everyday situations - Students will identify the length, width, and height of a shape, as well as the base of a shape. - Students will use the volume formulas to solve real life problems <u>Performance Task 2: Mean, Median, and Mode</u> - Students will define the mean, median, and mode of data sets.	<u>Other Evidence:</u> Teacher created materials Written and online assignments Glencoe Math Review Sheets Exit Tickets Cornell Notes Teacher created quizzes/tests Modified CFAs Observations Projects Class Discussions

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- Students will use real life problems to find and interpret the median and mode of data.
- Students will summarize numerical data using the mean.

Performance Task 3: Graphing Data:

- Students will identify populations and samples based on surveys and/or other data sets.
- Students will be able to pull information from data sets and display the information graphically.
- Students will analyze graphs and use the graphs to compare data sets.

Unit 4 Activities/Videos:

6.NS.C.8 Nome, Alaska

<https://www.illustrativemathematics.org/content-standards/6/NS/C/8/tasks/2221>

6.SP.A.2, 6.SP.B.4 Puppy Weights

<https://www.illustrativemathematics.org/content-standards/6/SP/B/4/tasks/1026>

6.SP.B.5c Average Number of Siblings

<https://www.illustrativemathematics.org/content-standards/6/SP/B/5/tasks/2043>

Stage 3: Learning Plan

Learning Opportunities/Strategies:

Volume and Surface Area of Prisms:

- Students will begin with a google slides interactive notebook. In the notebook will be guided notes on each 3D shape first breaking down its attributes. After that it will go into the specific formula for the volume of that particular shape. Finally will be step by step boxes of how to solve a volume problem.
- Students will find volume of 3D shapes in real life using unit cubes.

Resources:

LGBT and Disabilities Law

[Inclusive Math Class](#)

[GLSEN Educator Resources](#)

Glencoe Math Course 1 Textbook (Chapters 9.4 – 9.6, 10, 11, 12)

Aleks

Kahoot

Gimkit

Lesson Presentations

Google Forms and Sheets

Virtual Manipulatives App

Google apps for education

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- Students will look at prisms in the real world, such as a cereal box, tissue box, or pizza box. Students will find the volume of prisms in the real world. <u>Mean, Median, and Mode:</u> - Students will complete an interactive notebook on google slides that goes through the definition of the mean, median, and mode. It will also go through data where the students will have to identify the mean, median, and mode. - Students will create their own survey and collect data. From their data they will determine the mean, median, and mode. <u>Graphing Data:</u> - Students will identify the key terms used in surveys with foldables as well as graphic organizers. - Students will identify various types of graphs. A graphic organizer will be provided to guide students through how to find important information in different types of graphs. - Students will create their own survey. They will be surveying teachers and other students in the school. - After they complete their survey they will use the data to form various graphs of their information. A step by step guide will be provided to guide students through the project.	Desmos Graphing Calculator Padlet Mathplayground.com Brain Pop Classkick Edulastic Instructional Videos TeachersPayTeachers STEM activities Teacher created materials Khan Academy EdPuzzle Flocabulary MathTV IXL Blooket		
<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			
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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 Record and practice journal	kinetic and cooperative Technology connection Practice Assignments Puzzle time activities Record and practice journal Differentiating the lesson activities Lesson tutorials Skills review handbook	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 Pair student with a high achieving student	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 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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Pacing Guide

Course Name	Resource	Standards
MP 1		
UNIT 1 Ratios & Proportional Relationships (33 Days)	CHAPTERS: 1 (11 Days) 2 (12 Days) 3 – Sections 3.1 - 3.4 (6 Days) Unit 1 Project (2 Days) Unit Online Assessment: (2 Days)	Section 1.2-1.7 6.RP.1 6.RP.2 6.RP.3 Chapter 2 6.RP.3 6.RP.3c
MP 2		
UNIT 2 The Number System (39 Days)	CHAPTERS: 3 - Sections 3.5 – 3.8 (6 Days) 4 (13 Days) 5 (11 Days) 6 - Sections 6.1 –6.3 (5 Days) Unit 2 Project (2 Days) Unit Online Assessment: (2 Days)	Chapter 4 6.NS.1 6.RP.3 6.RP.3c Chapter 5 6.NS.5 6.NS.6 6.NS.7 Section 6.2-6.3 6.EE.1 6.EE.2
MP 3		
UNIT 3 Expressions & Equations (34 Days)	CHAPTERS: 6 - Sections 6.4 – 6.7 (5 Days) 7 (9 Days) 8 (11 Days) 9 - Sections 9.1 – 9.3 (5 Days) Unit 3 Project (2 Days) Unit Online Assessment: (2 Days)	Section 6.4-6.7 6.EE.1 6.EE.2 6.EE.3 6.EE.4 Chapter 7 6.EE.5 6.EE.7

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		6.RP.3 Chapter 8 6.EE.2 6.EE.5 6.EE.6 6.EE.8
MP 4		
UNIT 4 Geometry (36 Days)	CHAPTERS: 9 - Sections 9.4 –9.7 (5 Days) 10 (9 Days) 11 (8 Days) 12 (8 Days) Unit 4 & 5 Project (4 Days) Unit Online Assessment: (2 Days)	Section 9.7 6.NS.8