

Wilson Area School District Planned Course Guide

Title of planned course: 6th Grade Pre-Algebra

Subject Area: Mathematics

Grade Level: 6

Course Description: This course is designed to extend a student's knowledge of mathematics within the areas of the 6th and 7th grade mathematics rating categories which include: number system, ratios and proportional relationships, expressions and equations, geometry, and statistics and probability. Students will gain an opportunity to cultivate positive mathematical practices including problem-solving skills and the ability to reason through the implementation of lessons, instruction, and assessments aligned with the Pennsylvania Common Core Standards. Real-world applications and the integration of technology are included.

Time/Credit for this Course: One Full Academic Year

Curriculum Writing Committee: Amy Hertzog

Wilson Area School District Planned Course Materials

Course Title: 6th Grade Pre-Algebra

Textbook: HMH into Math Grade 7
Houghton Mifflin Harcourt Publishing Company © 2020

Supplemental Books: HMH into Math Grade 6
Houghton Mifflin Harcourt Publishing Company © 2020

Pre-Algebra
Larson/Houghton Mifflin © 2012

enVisionMATH Grade 6
Pearson Education, Inc. © 2012

Teacher Resources:

- Textbooks (see above)
- Packets for Guided Notes
- Worksheets (textbook and teacher created)
- Khan Academy, Study Island, MobyMax, First in Math
- Common Core Coach Mathematics 6 Workbook
- Common Core Coach Mathematics 7 Workbook

Wilson Area School District Curriculum Map

Aug/Sept: Statistics

- Create and describe data distributions (line plots, histograms, box and whisker plots)
- Calculate and interpret measures of central tendency and measures of variability

Oct/Nov: Variables, Expressions, and Integers

- Write and evaluate numerical expressions using whole number exponents
- Write and evaluate numerical and algebraic expressions
- Represent quantities in real-world contexts using integers
- Identify opposites and absolute value of integers
- Compute with integers
- Locate and plot integers on a coordinate plane

Nov/Dec: Writing Equivalent Expressions and Solving Equations

- Identify parts of an expression
- Write equivalent expressions
- Solve one-step equations
- Compute with decimals (all 4 operations, no calculator)
- Express relationships between independent and dependent variables

January: Multi-Step Equations and Inequalities

- Solve two-step and multi-step equations
- Solve one, two, and multi-step inequalities and graph their solutions

February: Factors, Fractions, Rational Numbers

- Identify factors and multiples including GCF and LCM
- Convert between fractions and decimals
- Compute with fractions (all 4 operations, no calculator)

March: Ratio, Proportion, and Percent

- Convert between fractions, decimals, and percentages
- Solve for all three variables in the percent equation
- Solve applications of percentages (simple interest, tax, tip, commission, percent increase/decrease)

April: Geometry (Perimeter, Area, Surface Area, Volume)

- Calculate perimeter of polygons
- Calculate area of squares, rectangles, parallelograms, triangles, trapezoids
- Identify nets of 3-D solids
- Calculate surface area of rectangular and triangular prisms
- Calculate volume of rectangular prisms

May/June: Geometry (Angle and Triangle Relationships, Circumference, Area, Surface Area, and Volume)

- Identify and use properties of complementary, supplementary, adjacent, and vertical angles
- Identify and use properties of angles formed when parallel lines are cut by a transversal
- Identify and describe properties of triangles
- Calculate circumference, area, surface area, and volume of figures

- Solve problems involving scale drawings

Curriculum Scope & Sequence

Planned Course: 6th Grade Pre-Algebra

Unit 1: Statistics

Time frame: 6 weeks

State Standards:

- CC.2.4.6.B.1 Demonstrate an understanding of statistical variability by displaying, analyzing, and summarizing distributions
- CC.2.4.7.B.1 Draw inferences about populations based on random sampling concepts
- CC.2.4.7.B.2 Draw informal comparative inferences about two populations

Anchor(s) or adopted anchor: M06.D-S.1.1.1-4; M07.D-S.1.1.1-2; M07.D-S.2.1.1

Essential content/objectives: At end of the unit, students will be able to:

- Display numerical data in plots on a number line, including line plots, histograms, and box and whisker plots
- Determine quantitative measures of center (e.g., median, mean, mode) and variability (e.g., range, interquartile range, mean absolute deviation)
- Describe any overall pattern and any deviations from the overall pattern with reference to the context in which the data were gathered
- Relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered
- Determine whether a sample is a random sample given a real-world situation
- Use data from a random sample to draw inferences about a population with an unknown characteristic of interest
- Compare two numerical data distributions using measures of center and variability

Core Activities: Students will complete/participate in the following:

- Complete daily warm-up as spiral review
- Define key vocabulary in Google Slides Unit 1 math dictionary using Frayer model
- Engage in Unit 1 direct instruction and note-taking via guided and independent practice using corresponding textbook modules/lessons and/or teacher generated note packet
- Complete Unit 1 digital centers/stations/activities/games via Google Docs, Google Slides, Google Sheets, Nearpod, Edpuzzle, Classkick
 - 5th grade math review escape room
 - Statistical questions sort
 - How Many? Histograms Activity
 - Best Measure of Center Quizizz
 - Name Line Plot Activity
 - Center Activity 19-3 A Calculating Mean and Center Activity 19-3 B Calculating Missing Number Games
 - Build a Funny Face
 - Data Analysis Escape Room

- Complete Unit 1 projects
 - Know Me Through Numbers Project
 - Statistics Choice Board Project
- Complete corresponding Khan Academy Lessons for Unit 1
 - 6th Grade Data and Statistics Unit
 - 7th Grade Statistics and Probability Unit
- Complete Unit 1 HW using More Practice/HW pages from textbook

Extensions:

- Unit 1 textbook Challenge worksheets
- Online enrichment (i.e. further exploration using Mobymax, Study Island, First in Math)
- Early finisher activities (logic and rebus puzzles, puzzle of the week, solvemoji puzzles, cryptograms, sudoku, art graphs, riddles, magic squares, equatio puzzles, Qbitz, online daily set puzzle, online str8ts puzzle, etc...)

Remediation:

- Unit 1 Reteach worksheets
- Additional small group instruction
- Peer tutoring
- Online remediation

Instructional Methods:

- Small and large group direct instruction with guided notes
- Discovery learning if/when applicable
- Modeling and scaffolding
- Individual, pair, and small group practice
- Higher order thinking questions in small and whole group discussions/math talks
- Incorporation of manipulatives if/when applicable

Materials & Resources:

- Daily warm-ups/bellringers
- Textbook and/or guided note packets
 - HMH into Math Grade 6
 - Module 14, Lessons 1-3
 - Module 15, Lessons 1-3
 - Module 16, Lessons 1-5
 - HMH into Math Grade 7
 - Module 12, Lessons 1-3
 - Module 13, Lessons 1-3
- Convertible laptop and projector
- Reteach, practice, and challenge worksheets
- TI-34 MultiView Scientific Calculator
- Individual whiteboards
- Manipulatives
- Center/stations/activities/games/project supplies
- Websites (Khan Academy, MobyMax, Study Island, First in Math)

Assessments:

- Formative
 - Warm-ups/bellringers
 - Pre-test
 - Classwork
 - Homework
 - Lesson quick checks
 - 2 unit quizzes
 - Teacher informal observation of student work with use of questioning techniques
- Summative
 - Unit test
 - Unit projects
 - Study Island benchmark

Curriculum Scope & Sequence

Planned Course: 6th Grade Pre-Algebra

Unit 2: Variables, Expressions, and Integers

Time frame: 5 weeks

State Standards:

- CC.2.1.6.E.4 Apply and extend previous understandings of numbers to the system of rational numbers
- CC.2.2.6.B.1 Apply and extend previous understandings of arithmetic to algebraic expressions
- CC.2.2.6.B.2 Understand the process of solving a one-variable equation or inequality and apply to real-world and mathematical problems
- CC.2.1.7.E.1 Apply and extend previous understandings of operations with fractions to operations with rational numbers

Anchor(s) or adopted anchor: M06.A-N.3.1.1-3; M06.A-N.3.2.1-3; M06.B-E.1.1.1,2,4; M06.B-E.2.1.2; M07.A-N.1.1.1-3

Essential content/objectives: At end of the unit, students will be able to:

- Represent quantities in real-world contexts using positive and negative numbers, explaining the meaning of 0 in each situation
- Determine the opposite of a number and recognize that the opposite of the opposite of a number is the number itself
- Locate and plot integers and other rational numbers on a horizontal or vertical number line; locate and plot pairs of integers and other rational numbers on a coordinate plane
- Write, interpret, and explain statements of order for rational numbers in real-world contexts.
- Interpret the absolute value of a rational number as its distance from 0 on the number line and as a magnitude for a positive or negative quantity in a real-world situation
- Solve real-world and mathematical problems by plotting 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
- Write and evaluate numerical expressions involving whole-number exponents
- Write algebraic expressions from verbal descriptions
- Evaluate expressions at specific values of their variables, including expressions that arise from formulas used in real-world problems
- Write algebraic expressions to represent real-world or mathematical problems
- Apply properties of operations to add and subtract rational numbers, including real-world contexts
- Represent addition and subtraction on a horizontal or vertical number line
- Apply properties of operations to multiply and divide rational numbers, including real-world contexts

Core Activities: Students will complete/participate in the following:

- Complete daily warm-up as spiral review
- Define key vocabulary in Google Slides Unit 2 math dictionary using Frayer model

- Engage in Unit 2 direct instruction and note-taking via guided and independent practice using corresponding textbook modules/lessons and/or teacher generated note packet
 - read *One Grain of Rice* by Demi
 - read *Sir Cumference and the Viking's Map* by Cindy Neuschwander
- Complete Unit 2 digital centers/stations/activities/games via Google Docs, Google Slides, Google Sheets, Nearpod, Edpuzzle, Classkick
 - Otter Exponents Online Game
 - PEMDAS Exhibit Online Game
 - Adding, Subtracting, Multiplying, and Dividing Integers Face-Off Games
 - Desmos Battle Boats Online Activity
 - Integers and Absolute Value Pixel Art
 - Adding Integers Dot Box Game
 - Real World Integers Heart Coloring Activity
 - Coordinate Plane Super Bowl Activity
 - Whodunnit - Write Variable Expressions
- Complete Unit 2 projects
 - Order of Operations Poster Project
 - Integer Brochure Project
 - Name Graphing Project
- Complete corresponding Khan Academy Lessons for Unit 2
 - 6th Grade Exponents and Order of Operations Unit
 - 6th Grade Negative Numbers Unit
 - 6th Grade Variables and Expressions Unit
 - 6th Grade Coordinate Plane Unit
 - 7th Grade Negative Numbers Addition and Subtraction Unit
 - 7th Grade Negative Numbers Multiplication and Division Unit
 - 7th Grade Expressions, Equations, and Inequalities Unit
- Complete Unit 2 HW using More Practice/HW pages from textbook

Extensions:

- Unit 2 textbook Challenge worksheets
- Online enrichment (i.e. further exploration using Mobymax, Study Island, First in Math)
- Early finisher activities (logic and rebus puzzles, puzzle of the week, solvemoji puzzles, cryptograms, sudoku, art graphs, riddles, magic squares, equation puzzles, Qbitz, online daily set puzzle, online str8ts puzzle, etc...)

Remediation:

- Unit 2 Reteach worksheets
- Additional small group instruction
- Peer tutoring
- Online remediation

Instructional Methods:

- Small and large group direct instruction with guided notes
- Discovery learning if/when applicable
- Modeling and scaffolding
- Individual, pair, and small group practice
- Higher order thinking questions in small and whole group discussions/math talks

- Incorporation of manipulatives if/when applicable

Materials & Resources:

- Daily warm-ups/bellringers
- Textbook and/or guided note packets
 - HMH into Math Grade 6
 - Module 8, Lessons 1-4
 - Module 1, Lessons 1-3
 - Module 11, Lessons 1-3
 - HMH into Math Grade 7
 - Module 3, Lessons 1-3
- Convertible laptop and projector
- Reteach, practice, and challenge worksheets
- TI-34 MultiView Scientific Calculator
- Individual whiteboards
- Manipulatives
- Center/stations/activities/games/project supplies
- Websites (Khan Academy, MobyMax, Study Island, First in Math)

Assessments:

- Formative
 - Warm-ups/bellringers
 - Pre-test
 - Classwork
 - Homework
 - Lesson quick checks
 - 2 unit quizzes
 - Teacher informal observation of student work with use of questioning techniques
- Summative
 - Unit test
 - Unit Projects
 - Study Island benchmark

Curriculum Scope & Sequence

Planned Course: 6th Grade Pre-Algebra

Unit 3: Writing Equivalent Expressions and Solving Equations

Time frame: 5 weeks

State Standards:

- CC.2.1.6.E.2 Identify and choose appropriate processes to compute fluently with multi-digit numbers
- CC.2.1.6.E.3 Develop and/or apply number theory concepts to find common factors and multiples
- CC.2.2.6.B.1 Apply and extend previous understandings of arithmetic to algebraic expressions
- CC.2.2.6.B.2 Understand the process of solving a one-variable equation or inequality and apply to real-world and mathematical problems
- CC.2.2.6.B.3 Represent and analyze quantitative relationships between dependent and independent variables
- CC.2.1.7.E.1 Apply and extend previous understandings of operations with fractions to operations with rational numbers
- CC.2.2.7.B.1 Apply properties of operations to generate equivalent expressions
- CC.2.2.7.B.3 Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations

Anchor(s) or adopted anchor: M06.A-N.2.1.1--2; M06.A-N.2.2.2; M06.B-E.1.1.3,5; M06.B-E.2.1.1,3; M06.B-E.3.1.1-2; M07.A-N.1.1.1,3; M07.A-N.1.1.3; M07.B-E.1.1.1, M07.B-E.2.1.1

Essential content/objectives: At end of the unit, students will be able to:

- Solve problems involving operations (+, −, ×, and ÷) with whole numbers, decimals (through thousandths), straight computation, or word problems
- Apply the distributive property to express a sum of two whole numbers, 1 through 100, with a common factor as a multiple of a sum of two whole numbers with no common factor
- Identify parts of an expression using mathematical terms (e.g., sum, term, product, factor, quotient, coefficient, quantity)
- Apply the properties of operations to generate equivalent expressions
- Use substitution to determine whether a given number in a specified set makes an equation or inequality true
- 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 non-negative rational numbers.
- Write an equation to express the relationship between the dependent and independent variables
- Analyze the relationship between the dependent and independent variables using graphs and tables and/or relate these to an equation
- Apply properties of operations to add and subtract rational numbers, including real-world contexts
- Apply properties of operations to multiply and divide rational numbers, including real-world contexts; demonstrate that the decimal form of a rational number terminates or eventually repeats

- Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients
- Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate

Core Activities: Students will complete/participate in the following:

- Complete daily warm-up as spiral review
- Define key vocabulary in Google Slides Unit 3 math dictionary using Frayer model
- Engage in Unit 3 direct instruction and note-taking via guided and independent practice using corresponding textbook modules/lessons and/or teacher generated note packet
- Complete Unit 3 digital centers/stations/activities/games via Google Docs, Google Slides, Google Sheets, Nearpod, Edpuzzle, Classkick
 - You're on My Property Game
 - Math Stacks One-Step Algebra Game
 - Unit 3 Stations
 - Combining Like Terms Trees
 - Create Your Own Distributive Property Problem
 - Independent and Dependent Variables Card Sort
 - Input/Output Tables
 - What's My Rule Game
 - One-Step Equations Connect 4 Game
 - Center Activity 3-6 Dividing Decimals
- Complete corresponding Khan Academy Lessons for Unit 3
 - 6th Grade Variables and Expressions Unit
 - 6th Grade Arithmetic with Rational Numbers Unit
 - 6th Grade Equations and Inequalities Unit
 - 7th Grade Negative Numbers Addition and Subtraction Unit
 - 7th Grade Negative Numbers Multiplication and Division Unit
 - 7th Grade Expressions, Equations, and Inequalities Unit
- Complete Unit 3 HW using More Practice/HW pages from textbook

Extensions:

- Unit 3 textbook Challenge worksheets
- Online enrichment (i.e. further exploration using Mobymax, Study Island, First in Math)
- Early finisher activities (logic and rebus puzzles, puzzle of the week, solvemoji puzzles, cryptograms, sudoku, art graphs, riddles, magic squares, equatio puzzles, Qbitz, online daily set puzzle, online str8ts puzzle, etc...)

Remediation:

- Unit 3 Reteach worksheets (see materials and resources for corresponding textbook sections)
- Additional small group instruction
- Peer tutoring
- Online remediation

Instructional Methods:

- Small and large group direct instruction with guided notes
- Discovery learning if/when applicable
- Modeling and scaffolding

- Individual, pair, and small group practice
- Higher order thinking questions in small and whole group discussions/math talks
- Incorporation of manipulatives if/when applicable

Materials & Resources:

- Daily warm-ups/bellringers
- Textbook and/or guided note packets
 - HMH into Math Grade 6
 - Module 8, Lesson 5
 - Module 9, Lessons 1-4
 - Module 10, Lessons 1-3
 - Module 4, Lessons 1-5
 - HMH into Math Grade 7
 - Module 7, Lessons 1-2
- Convertible laptop and projector
- Reteach, practice, and challenge worksheets
- TI-34 MultiView Scientific Calculator
- Individual whiteboards
- Manipulatives
- Center/stations/activities/games/project supplies
- Websites (Khan Academy, MobyMax, Study Island, First in Math)

Assessments:

- Formative
 - Warm-ups/bellringers
 - Pre-test
 - Classwork
 - Homework
 - Lesson quick checks
 - 2 unit quizzes
 - Teacher informal observation of student work with use of questioning techniques
- Summative
 - Unit test
 - Study Island benchmark

Curriculum Scope & Sequence

Planned Course: 6th Grade Pre-Algebra

Unit 4: Solving Multi-Step Equations and Inequalities

Time frame: 5 weeks

State Standards:

- CC.2.2.6.B.2 Understand the process of solving a one-variable equation or inequality and apply to real-world and mathematical problems
- CC.2.2.7.B.3 Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations

Anchor(s) or adopted anchor: M06.B-E.2.1.1; M06.B-E.2.1.4; M07.B-E.2.2.1; M07.B-E.2.2.2

Essential content/objectives: At end of the unit, students will be able to:

- Use substitution to determine whether a given number in a specified set makes an equation or inequality true
- Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem and/or represent solutions of such inequalities on number lines
- Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers
- Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers, and graph the solution set of the inequality

Core Activities: Students will complete/participate in the following:

- Complete daily warm-up as spiral review
- Define key vocabulary in Google Slides Unit 4 math dictionary using Frayer model
- Engage in Unit 4 direct instruction and note-taking via guided and independent practice using corresponding textbook modules/lessons and/or teacher generated note packet
- Complete Unit 4 digital centers/stations/activities/games via Google Docs, Google Slides, Google Sheets, Nearpod, Edpuzzle, Classkick
 - Inequalities Find My Mistakes Activity
 - To Flip or Not to Flip Game
 - Inequalities Group Logic Puzzle
- Complete Unit 4 Project
 - Headline Story Project
- Complete corresponding Khan Academy Lessons for Unit 4
 - 7th Grade Expressions, Equations, and Inequalities Unit
- Complete Unit 4 HW using More Practice/HW pages from textbook (see materials and resources for corresponding textbook sections)

Extensions:

- Unit 4 textbook Challenge worksheets
- Online enrichment (i.e. further exploration using Mobymax, Study Island, First in Math)

- Early finisher activities (logic and rebus puzzles, puzzle of the week, solvemoji puzzles, cryptograms, sudoku, art graphs, riddles, magic squares, equatio puzzles, Qbitz, online daily set puzzle, online str8ts puzzle, etc...)

Remediation:

- Unit 4 Reteach worksheets
- Additional small group instruction
- Peer tutoring
- Online remediation

Instructional Methods:

- Small and large group direct instruction with guided notes
- Discovery learning if/when applicable
- Modeling and scaffolding
- Individual, pair, and small group practice
- Higher order thinking questions in small and whole group discussions/math talks
- Incorporation of manipulatives if/when applicable

Materials & Resources:

- Daily warm-ups/bellringers
- Textbook and/or guided note packets
 - HMH into Math Grade 6
 - Module 9, Lesson 5
 - HMH into Math Grade 7
 - Module 7, Lessons 3-5
 - Module 8, Lessons 1-3
- Convertible laptop and projector
- Reteach, practice, and challenge worksheets
- TI-34 MultiView Scientific Calculator
- Individual whiteboards
- Manipulatives
- Center/stations/activities/games/project supplies
- Websites (Khan Academy, MobyMax, Study Island, First in Math)

Assessments:

- Formative
 - Warm-ups/bellringers
 - Pre-test
 - Classwork
 - Homework
 - Lesson quick checks
 - 2 unit quizzes
 - Teacher informal observation of student work with use of questioning techniques
- Summative
 - Unit test
 - Unit Project
 - Study Island benchmark

Curriculum Scope & Sequence

Planned Course: 6th Grade Pre-Algebra

Unit 5: Factors, Fractions, and Rational Numbers

Time frame: 3 weeks

State Standards:

- CC.2.1.6.E.1 Apply and extend previous understandings of multiplication and division to divide fractions by fractions
- CC.2.1.6.E.3 Develop and/or apply number theory concepts to find common factors and multiples
- CC.2.1.7.E.1 Apply and extend previous understandings of operations with fractions to operations with rational numbers

Anchor(s) or adopted anchor: M06.A-N.1.1.1; M06.A-N.2.2.1-2; M07.A-N.1.1.1,3

Essential content/objectives: At end of the unit, students will be able to:

- Interpret and compute quotients of fractions (including mixed numbers), and solve word problems involving division of fractions by fractions
- 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
- Apply the distributive property to express a sum of two whole numbers, 1 through 100, with a common factor as a multiple of a sum of two whole numbers with no common factor
- Apply properties of operations to add and subtract rational numbers, including real-world contexts
- Apply properties of operations to multiply and divide rational numbers, including real-world contexts; demonstrate that the decimal form of a rational number terminates or eventually repeats

Core Activities: Students will complete/participate in the following:

- Complete daily warm-up as spiral review
- Define key vocabulary in Google Slides Unit 5 math dictionary using Frayer model
- Engage in Unit 5 direct instruction and note-taking via guided and independent practice using corresponding textbook modules/lessons and/or teacher generated note packet
 - read *Multiplying Menace The Revenge of Rumpelstiltskin* by Pam Calvert
 - read *The Multiplying Menace Divides* by Pam Calvert
- Complete Unit 5 digital centers/stations/activities/games via Google Docs, Google Slides, Google Sheets, Nearpod, Edpuzzle, Classkick
 - Graphing Rational Numbers on a Number Line Pixel Art
 - Rational Numbers Tower Game
- Complete corresponding Khan Academy Lessons for Unit 5
 - 6th Grade Arithmetic with Rational Numbers Unit
 - 6th Grade Variables and Expressions Unit
 - 7th Grade Fractions, Decimals, and Percentages Unit
- Complete Unit 5 HW using More Practice/HW pages from textbook

Extensions:

- Unit 5 textbook Challenge worksheets
- Online enrichment (i.e. further exploration using Mobymax, Study Island, First in Math)
- Early finisher activities (logic and rebus puzzles, puzzle of the week, solvemoji puzzles, cryptograms, sudoku, art graphs, riddles, magic squares, equatio puzzles, Qbitz, online daily set puzzle, online str8ts puzzle, etc...)

Remediation:

- Unit 5 Reteach worksheets
- Additional small group instruction
- Peer tutoring
- Online remediation

Instructional Methods:

- Small and large group direct instruction with guided notes
- Discovery learning if/when applicable
- Modeling and scaffolding
- Individual, pair, and small group practice
- Higher order thinking questions in small and whole group discussions/math talks
- Incorporation of manipulatives if/when applicable

Materials & Resources:

- Daily warm-ups/bellringers
- Textbook and/or guided note packets
 - HMH into Math Grade 6
 - Module 2, Lessons 1-4
 - Module 3, Lessons 1-5
 - HMH into Math Grade 7
 - Module 4, Lessons 1-4
 - Module 5, Lessons 1-4
 - Module 6, Lessons 1-3
- Convertible laptop and projector
- Reteach, practice, and challenge worksheets
- TI-34 MultiView Scientific Calculator
- Individual whiteboards
- Manipulatives
- Center/stations/activities/games/project supplies
- Websites (Khan Academy, MobyMax, Study Island, First in Math)

Assessments:

- Formative
 - Warm-ups/bellringers
 - Pre-test
 - Classwork
 - Homework
 - Lesson quick checks
 - 2 unit quizzes
 - Teacher informal observation of student work with use of questioning techniques

- Summative
 - Unit test
 - Study Island benchmark

Curriculum Scope & Sequence

Planned Course: 6th Grade Pre-Algebra

Unit 6: Ratio, Proportion, and Percent

Time frame: 4 weeks

State Standards:

- CC.2.1.6.D.1 Understand ratio concepts and use ratio reasoning to solve problems
- CC.2.1.7.D.1 Analyze proportional relationships and use them to model and solve real-world and mathematical problems

Anchor(s) or adopted anchor: M06.A-R.1.1.1-5; M07.A-R.1.1.1-6

Essential content/objectives: At end of the unit, students will be able to:

- Use ratio language and notation (such as 3 to 4, 3:4, $\frac{3}{4}$) to describe a ratio relationship between two quantities
- Find the unit rate $\frac{a}{b}$ associated with a ratio $a:b$ (with $b \neq 0$) and use rate language in the context of a ratio relationship
- Construct tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and/or plot the pairs of values on the coordinate plane. Use tables to compare ratios
- Solve unit rate problems including those involving unit pricing and constant speed
- Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $\frac{30}{100}$ times the quantity); solve problems involving finding the whole, given a part and the percentage
- Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units
- Determine whether two quantities are proportionally related (e.g., by testing for equivalent ratios in a table, graphing on a coordinate plane and observing whether the graph is a straight line through the origin)
- Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships
- Represent proportional relationships by equations
- Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$, where r is the unit rate
- Use proportional relationships to solve multi-step ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease

Core Activities: Students will complete/participate in the following:

- Complete daily warm-up as spiral review
- Define key vocabulary in Google Slides Unit 6 math dictionary using Frayer model
- Engage in Unit 6 direct instruction and note-taking via guided and independent practice using corresponding textbook modules/lessons and/or teacher generated note packet
- Complete Unit 6 digital centers/stations/activities/games via Google Docs, Google Slides, Google Sheets, Nearpod, Edpuzzle, Classkick
 - Percents with Real World Problems Pixel Art
 - Ratio and Proportion Online Games

- Ratios and Proportions Group Puzzle Challenge
- Turtle Percent of Number Cut and Paste
- Complete Unit 6 Project
 - McDonald's Ratios and Proportions Nutrition Project
- Complete corresponding Khan Academy Lessons for Unit 6
 - 6th Grade Ratios Unit
 - 6th Grade Rates and Percents Unit
 - 7th Grade Fractions, Decimals, and Percentages Unit
 - 7th Grade Rates and Proportional Relationships Unit
- Complete Unit 6 HW using More Practice/HW pages from textbook

Extensions:

- Unit 6 textbook Challenge worksheets
- Online enrichment (i.e. further exploration using Mobymax, Study Island, First in Math)
- Early finisher activities (logic and rebus puzzles, puzzle of the week, solvemoji puzzles, cryptograms, sudoku, art graphs, riddles, magic squares, equatio puzzles, Qbitz, online daily set puzzle, online str8ts puzzle, etc...)

Remediation:

- Unit 6 Reteach worksheets
- Additional small group instruction
- Peer tutoring
- Online remediation

Instructional Methods:

- Small and large group direct instruction with guided notes
- Discovery learning if/when applicable
- Modeling and scaffolding
- Individual, pair, and small group practice
- Higher order thinking questions in small and whole group discussions/math talks
- Incorporation of manipulatives if/when applicable

Materials & Resources:

- Daily warm-ups/bellringers
- Textbook and/or guided note packets
 - HMH into Math Grade 6
 - Module 5, Lessons 1-5
 - Module 6, Lessons 1-3
 - Module 7, Lessons 1-3
 - HMH into Math Grade 7
 - Module 1, Lessons 1-6
 - Module 2, Lessons 1-5
- Convertible laptop and projector
- Reteach, practice, and challenge worksheets
- TI-34 MultiView Scientific Calculator
- Individual whiteboards
- Manipulatives
- Center/stations/activities/games/project supplies
- Websites (Khan Academy, MobyMax, Study Island, First in Math)

Assessments:

- Formative
 - Warm-ups/bellringers
 - Pre-test
 - Classwork
 - Homework
 - Lesson quick checks
 - 2 unit quizzes
 - Teacher informal observation of student work with use of questioning techniques
- Summative
 - Unit test
 - Unit Project
 - Study Island benchmark

Curriculum Scope & Sequence

Planned Course: 6th Grade Pre-Algebra

Unit 7: Geometry (Perimeter, Area, Surface Area, Volume)

Time frame: 4 weeks

State Standards: CC.2.3.6.A.1 Apply appropriate tools to solve real-world and mathematical problems involving area, surface area, and volume

Anchor(s) or adopted anchor: M06.C-G.1.1.1-6

Essential content/objectives: At end of the unit, students will be able to:

- Determine the area of triangles and special quadrilaterals (i.e., square, rectangle, parallelogram, rhombus, and trapezoid). Formulas will be provided
- Determine the area of irregular or compound polygons. Example: Find the area of a room in the shape of an irregular polygon by composing and/or decomposing
- Determine the volume of right rectangular prisms with fractional edge lengths. Formulas will be provided
- Given coordinates for the vertices of a polygon in the plane, use the coordinates to find side lengths and area of the polygon (limited to triangles and special quadrilaterals). Formulas will be provided
- Represent three-dimensional figures using nets made of rectangles and triangles
- Determine the surface area of triangular and rectangular prisms (including cubes). Formulas will be provided
- Determine the surface area of triangular and rectangular prisms (including cubes). Formulas will be provided

Core Activities: Students will complete/participate in the following:

- Complete daily warm-up as spiral review
- Define key vocabulary in Google Slides Unit 7 math dictionary using Frayer model
- Engage in Unit 7 direct instruction and note-taking via guided and independent practice using corresponding textbook modules/lessons and/or teacher generated note packet
- Complete Unit 7 digital centers/stations/activities/games via Google Docs, Google Slides, Google Sheets, Nearpod, Edpuzzle, Classkick
 - Area Scavenger Hunt
 - Nets of 3D Figures Memory Game
 - Whodunnit - Nets Activity
 - Nets and Surface Area Maze
 - Surface Area of Cubes and Rectangular Prisms Pixel Art
 - Surface Area of Triangular Prisms Pixel Art
 - Spot's Space Game
- Complete Unit 7 Project
 - Polygon Monster Project with Narrative
- Complete corresponding Khan Academy Lessons for Unit 7
 - 6th Grade Plane Figures Unit
 - 6th Grade Coordinate Plane Unit

- 6th Grade 3D Figures Unit
- Complete Unit 7 HW using More Practice/HW pages from textbook

Extensions:

- Unit 7 textbook Challenge worksheets
- Online enrichment (i.e. further exploration using Mobymax, Study Island, First in Math)
- Early finisher activities (logic and rebus puzzles, puzzle of the week, solvemoji puzzles, cryptograms, sudoku, art graphs, riddles, magic squares, equatio puzzles, Qbitz, online daily set puzzle, online str8ts puzzle, etc...)

Remediation:

- Unit 7 Reteach worksheets
- Additional small group instruction
- Peer tutoring
- Online remediation

Instructional Methods:

- Small and large group direct instruction with guided notes
- Discovery learning if/when applicable
- Modeling and scaffolding
- Individual, pair, and small group practice
- Higher order thinking questions in small and whole group discussions/math talks
- Incorporation of manipulatives if/when applicable

Materials & Resources:

- Daily warm-ups/bellringers
- Textbook and/or guided note packets
 - HMH into Math Grade 6
 - Module 11, Lesson 4
 - Module 12, Lessons 1-4
 - Module 13, Lessons 1-3
- Convertible laptop and projector
- Reteach, practice, and challenge worksheets
- TI-34 MultiView Scientific Calculator
- Individual whiteboards
- Manipulatives
- Center/stations/activities/games/project supplies
- Websites (Khan Academy, MobyMax, Study Island, First in Math)

Assessments:

- Formative
 - Warm-ups/bellringers
 - Pre-test
 - Classwork
 - Homework
 - Lesson quick checks
 - 2 unit quizzes
 - Teacher informal observation of student work with use of questioning techniques

- Summative
 - Unit test
 - Unit Project
 - Study Island benchmark

Curriculum Scope & Sequence

Planned Course: 6th Grade Pre-Algebra

Unit 8: Geometry (Angle and Triangle Relationships, Circumference, Area, Surface Area, and Volume)

Time frame: 4 weeks

State Standards:

- CC.2.3.7.A.2 Visualize and represent geometric figures and describe the relationships between them
- CC.2.3.7.A.1 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume

Anchor(s) or adopted anchor: M07.C-G.1.1.1-4; M07.C-G.2.1.1-2; M07.C-G.2.2.1-2

Essential content/objectives: At end of the unit, students will be able to:

- Solve problems involving scale drawings of geometric figures, including finding length and area
- Identify or describe the properties of all types of triangles based on angle and side measures
- Use and apply the triangle inequality theorem
- Describe the two-dimensional figures that result from slicing three-dimensional figures
- Identify and use properties of supplementary, complementary, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure
- Identify and use properties of angles formed when two parallel lines are cut by a transversal (e.g., angles may include alternate interior, alternate exterior, vertical, corresponding)
- Find the area and circumference of a circle. Solve problems involving area and circumference of a circle(s). Formulas will be provided
- Solve real-world and mathematical problems involving area, volume, and surface area of two and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. Formulas will be provided

Core Activities: Students will complete/participate in the following:

- Complete daily warm-up as spiral review
- Define key vocabulary in Google Slides Unit 8 math dictionary using Frayer model
- Engage in Unit 8 direct instruction and note-taking via guided and independent practice using corresponding textbook modules/lessons and/or teacher generated note packet
- Complete Unit 8 digital centers/stations/activities/games via Google Docs, Google Slides, Google Sheets, Nearpod, Edpuzzle, Classkick
 - Angle Memory Game
 - Rosemary's Circle
 - Missing Angles Escape Room
- Complete Unit 8 Project
 - Candy Wrapper Scale Model Project
- Complete corresponding Khan Academy Lessons for Unit 8
 - 7th Grade Geometry Unit
- Complete Unit 8 HW using More Practice/HW pages from textbook

Extensions:

- Unit 8 textbook Challenge worksheets
- Online enrichment (i.e. further exploration using Mobymax, Study Island, First in Math)
- Early finisher activities (logic and rebus puzzles, puzzle of the week, solvemoji puzzles, cryptograms, sudoku, art graphs, riddles, magic squares, equatio puzzles, Qbitz, online daily set puzzle, online str8ts puzzle, etc...)

Remediation:

- Unit 8 Reteach worksheets
- Additional small group instruction
- Peer tutoring
- Online remediation

Instructional Methods:

- Small and large group direct instruction with guided notes
- Discovery learning if/when applicable
- Modeling and scaffolding
- Individual, pair, and small group practice
- Higher order thinking questions in small and whole group discussions/math talks
- Incorporation of manipulatives if/when applicable

Materials & Resources:

- Daily warm-ups/bellringers
- Textbook and/or guided note packets
 - HMH into Math Grade 7
 - Module 9, Lessons 1-4
 - Module 10, Lessons 1-4
 - Module 11, Lessons 1-4
- Convertible laptop and projector
- Reteach, practice, and challenge worksheets
- TI-34 MultiView Scientific Calculator
- Individual whiteboards
- Manipulatives
- Center/stations/activities/games/project supplies
- Websites (Khan Academy, MobyMax, Study Island, First in Math)

Assessments:

Formative

- Warm-ups/bellringers
- Pre-test
- Classwork
- Homework
- Lesson quick checks
- 2 unit quizzes
- Teacher informal observation of student work with use of questioning techniques

Summative

- Unit test

- Unit project
- Study Island benchmark