GRAPEVINE COLLEYVILLE INDEPENDENT SCHOOL DISTRICT

6th GRADE MATH/ADVANCED MATH INSTRUCTIONAL PLAN

Focal points in mathematics at grade 6 are using operations with integers and positive rational numbers to solve problems, understanding and applying ratios and rates and using equivalent ratios to represent proportional relationships, using expressions and equations to represent relationships in a variety of contexts, understanding data representation, and financial literacy. Use of mathematical processes to acquire and demonstrate mathematical understanding are emphasized. Students are expected to use these processes together with technology and other mathematical tools to develop conceptual understandings and solve problems.

6th Grade Math TEKS

ESTIMATED TIMEFRAME	UNIT SUMMARY	TEKS
On Going	**Process Standards** The process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, algorithms, paper and pencil, and technology and techniques such as mental math, estimation, number sense, and generalization and abstraction to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, computer programs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	1A, 1B, 1C, 1D, 1E, 1F, 1G
4.5 Weeks	**Unit 1: Integers** This unit explores understandings of operational relationships and generalizations to develop fluency with operations involving integers. Representing integer operations with concrete models and connecting the actions of the models to standardized algorithms develops fluency with integer operations and leads to generalizations about operations involving positive and negative rational numbers in Grade 7. Therefore, the concepts of operations and operational relationships and generalizations are the focus of the unit.	2B, 2C, 3C, 3D
5 Weeks	**Unit 2: Rational Numbers** This unit explores understandings of how two quantities vary together through the concept of equivalency and the magnitude of numbers to determine equality and inequality relations. Understanding the relationships that exist between sets and subsets of rational numbers is essential when classifying counting (natural) numbers, whole numbers, integers, and rational numbers.	2A, 2C, 2D, 2E, 3A, 3B, 3E, 4E, 4F, 4G, 5C

	Understanding fraction and decimal equivalence assists in comparing and ordering fractions, decimals, and integers. Therefore, the concepts of number set relations, equivalence, and compare and order are the focus of this unit. This unit also explores understandings of operational relationships and generalizations to develop fluency with operations involving positive rational numbers in a variety of problem situations that leads to efficient, accurate, and flexible representations and solution strategies. Using equivalent representations of numbers builds flexibility and fluency in multiplying and dividing positive fractions and decimals and leads to fluency with operations involving positive and negative rational numbers in Grade 7. Therefore, the concepts of operations and operational relationships and generalizations are the focus of the unit.	
3 Weeks	**Unit 3: Properties & Expressions** This unit extends prior understandings of prime and composite numbers to write numerical expressions using prime factorization. This unit will also extend prior understandings of the order of operations, including parentheses and brackets as grouping symbols, to simplifying numerical expressions that include rational numbers and whole number exponents. Additionally, this unit explores understanding properties of operations (inverse, identity, commutative, associative, and distributive) and using these to generate equivalent expressions.	7A, 7C, 7D
4 Weeks	**Unit 4: Equations & Inequalities** This unit explores the understanding of representing, modeling, and solving equations and inequalities using various methods to gain insight into the context of the situation and make critical judgments about algebraic relationships and efficient strategies. Understanding algebraic and operational relationships involving one-variable, one-step equations leads to an understanding of algebraic and operational relationships in one-variable, one-step inequalities in Grade 6 and one-variable, two-step equations in Grade 7. Therefore, the concepts of equivalence, expressions, equations, inequalities, and operational relationships are the focus of this unit.	7B, 9A, 9B, 9C, 10A, 10B
1.5 Weeks	**Unit 5: Financial Literacy** This unit explores understandings of personal financial literacy that help one make informed financial management decisions, which promotes a more secure financial future. Exploring decisions related to checking accounts, credit cards, debit cards, credit history, college savings and payment plans, and career choices supports the ability to make informed financial management decisions. Therefore, the concept of personal financial literacy is the focus of this unit.	14A, 14B, 14C, 14D, 14E, 14F, 14G, 14H
4 Weeks	**Unit 6: Proportions** This unit explores the understanding of how two quantities vary together (covariation) and can be reasoned up and down in situations involving invariant (constant) relationships builds flexible proportional reasoning in order to make predictions and critical judgements about the relationship. Applying qualitative and quantitative reasoning to solve prediction and comparison problems involving ratios and rates, and representing and solving problems involving ratios and rates using scale factors, tables, graphs, and proportions leads to an understanding of proportional reasoning, which is essential in Grade 7. Essential understandings of qualitative and quantitative reasoning to solve prediction and comparison problems involving ratios and rates are connected and solidified in preparation for Grade 7. Therefore, the concept of proportionality is the focus of this unit.	4B, 4C, 4D, 4H, 5A, 5B
3 Weeks	**Unit 7: Tables & Graphs**	4A, 6A, 6B, 6C,

	This unit explores the understanding of how two quantities vary together (covariation) in situations involving invariant (constant) relationships builds flexible proportional reasoning in order to make predictions and critical judgements about the relationship. Exploring additive and multiplicative relationships, writing equations that represent the relationship between independent and dependent quantities, and representing situations using verbal descriptions, tables, graphs, and equations in the form y = kx or y = x + b are essential to understanding linear relationships in Grade 7. Therefore, the concepts of additive and multiplicative relationships, independent and dependent quantities, and algebraic representations are the focus of this unit.	11A
3 Weeks	**Unit 8: Statistics & Graphing** This unit explores the understanding of describing and quantifying data using various methods in order to communicate and reason statistically about the entire data set. Exploring variability of numerical and categorical data using numerical and graphical summaries allows for communicating about the mean, median, range, interquartile range, mode, center, spread, and shape of the data distribution and leads to comparing and making inferences about two groups of numeric data in Grade 7. Therefore, the concepts of data representations, numerical and graphical summaries, and variability are the focus of this unit.	12A, 12B, 12C 12D, 13A, 13B
3 Weeks	**Unit 9: Geometry** This unit explores the understanding of how illustrating and analyzing geometric relationships in models and diagrams aid in representing attributes of geometric figures with quantifiable measures and equations. Using models and equations to represent problems involving area of rectangles, parallelograms, trapezoids, and triangles and volume of rectangular prisms leads to writing and solving equations involving circumference of circles, area of circles and composite figures, and volume and lateral and total surface area of rectangular and triangular prisms and pyramids in Grade 7. Therefore, the concepts of geometric representations, area, volume, and geometric relationships are the focus of this unit.	8A, 8B, 8C, 8D, 10A, 10B
2.5 Weeks	**STAAR Review & STAAR Test**	
3 Weeks	**Unit 10: Rational Operations Review** This unit extends and reinforces students' understanding of operations with rational numbers. These skills are essential for 7th grade, and thus, a focus in this unit.	5.3K, 6.3E