

FIFTH GRADE MATH INSTRUCTIONAL PLAN

In Grade 5, instructional time will be focused on four areas: (1) adding and subtracting fractions and decimals with procedural fluency as well as developing an understanding of multiplication and division of fractions and decimals; (2) using expressions, equations, and formulas to represent various concepts; (3) extending geometric reasoning to include volume; and (4) organizing, representing, and interpreting sets of data.

TEXAS ESSENTIAL KNOWLEDGE AND SKILLS FOR MATHEMATICS

ESTIMATED TIMEFRAME	UNIT SUMMARY	TEKS
Ongoing	<p>Process Standards:</p> <p>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.</p>	5.1A, 5.1B, 5.1C, 5.1D, 5.1E, 5.1F, 5.1G
1 Week	<p>Unit 1: Personal Financial Literacy</p> <p>The Income, Taxes, and Payment Methods scope integrates financial literacy into the mathematics curriculum, teaching students about taxes, the difference between gross and net incomes, and the advantages and disadvantages of payment methods. The Balance a Budget scope concludes the Grade 5 curriculum by challenging students to develop a system for keeping and using financial records to create and follow a budget. Activities emphasize the importance of financial management, which helps prepare students for real-life financial decision-making such as increasing income or reducing or eliminating certain expenses to balance a budget when expenses exceed income. Students learn to be responsible citizens by managing their personal finances.</p>	5.10A, 5.10B, 5.10C, 5.10D, 5.10E, 5.10F
2 Weeks	<p>Unit 2: Place Value, Whole Numbers, and Decimals</p> <p>The Represent and Compare Decimals scope takes students deeper into the concept of place value and emphasizes the relationship between adjacent place values and representing multi-digit decimals in various forms. This understanding</p>	5.2A, 5.2B, 5.2C

	<p>is crucial for all subsequent scopes that present operations and reasoning with decimals. Through the activities in this scope, students develop a sense of magnitude and order and continue to use comparison symbols, which further promotes their mathematical communication skills. The Add and Subtract Decimals scope extends students' flexibility and efficiency with the addition and subtraction of decimals to the thousandths place. Through activities, students practice estimation and precision, which are skills critical for the problem-solving and mathematical reasoning required in the decimal scopes that follow.</p>	
2 Weeks	<p>Unit 3: Multiplication and Division of Whole Numbers Beginning with the Multiplication and Division Algorithms scope, students focus on efficient multiplication and division strategies with whole numbers, including the standard algorithm, now that they have a strong conceptual understanding of how to represent multiplication and division. This scope is critical for ensuring students can operate and reason with multi-digit whole numbers, and students refine their computational fluency through activities, which provides a strong foundation for problem-solving across various mathematical strands.</p>	5.3B, 5.3C, 5.4A
3 Weeks	<p>Unit 4: Multiplication and Division of Decimals The Multiply Decimals scope explores the multiplication of decimals through the use of area models and the standard algorithm. This scope is crucial for expanding students' ability to manipulate decimal quantities and understand their applications, such as in measurement conversions and numerical patterns. Students explore various strategies based on place value, properties of operations, and the relationship to the multiplication of whole numbers, which helps develop their conceptual understanding and computational fluency. The Divide Decimals scope complements the relationship between the multiplication and division of decimals by introducing similar concepts and strategies, including the standard algorithm. Students apply strategies learned with whole numbers to solve division of decimal dividends by whole number divisors.</p>	5.3D, 5.3E, 5.3F, 5.3G
7 Weeks	<p>Unit 5: Fraction Operations and Rational Numbers Operations and reasoning with fractions begins with the Add and Subtract Fractions scope in which students explore fraction addition and subtraction with different denominators. In this scope, students use their fluency with determining the factors of a whole number to identify whether a number is prime or composite; they then use this understanding as well as area models to find equivalent fractions to ensure the same denominators are added to and subtracted from the same denominators. Students develop their understanding of benchmark fractions and the magnitude of fractions to estimate and assess the reasonableness of their solutions. This is emphasized in this scope and the fraction scopes that follow to ensure students can conceptually and procedurally represent and solve mathematical and real-world problems that involve fractions and mixed numbers. Through various activities in this scope, students acquire flexibility when working with fractions and relate that same flexibility to decimals, which is an essential component of mathematical literacy. Using models to represent and solve real-world problems, the Multiply Fractions scope introduces the concept of multiplying whole numbers and fractions. Students interpret these models as addition expressions and relate them to a multiplication expression. The activities in this scope broaden students' ability to visualize and reason about the magnitude of products in relation to the factors. In the Divide Fractions scope, students explore and apply the patterns they discover when dividing unit fractions and whole numbers. Activities enhance students' prior knowledge that fractions are equal parts of a whole and that division is dividing numbers into equal parts. Fraction manipulatives and pictorial models, such as area models and number lines, set a solid foundation for algebraic thinking and problem solving.</p>	5.3H, 5.3I, 5.3J, 5.3L

3 Weeks	<p>Unit 6: Operations and Algebraic Reasoning</p> <p>The Problem Solve with the Four Operations scope emphasizes the importance of estimation and strategic thinking in problem solving, which encourages students to approach mathematical challenges methodically. To focus their thinking on part-total additive and multiplicative relationships, students algebraically reason using diagrams and equations with a letter standing for an unknown quantity. Activities foster critical thinking and adaptability, which are skills essential for mathematical reasoning and real-world applications. The Numerical Expressions scope explores the structure of numerical expressions, including the use of parentheses and brackets to indicate order of operations without exponents. Students learn to simplify expressions, which is a fundamental skill for algebra and beyond, emphasizing the importance of understanding and applying operational conventions.</p>	5.3A, 5.3K, 5.4E, 5.4F 5.4B, 5.4C, 5.4D
3 Weeks	<p>Unit 7: Graphing and Numeric Patterns</p> <p>The Graph in the First Quadrant scope introduces students to plane geometry and its connection to numerical relationships. Students describe key attributes of the coordinate plane and, working in the first quadrant, graph ordered pairs that arise from mathematical and real-world problems. Throughout activities, students generate numerical patterns when given a rule in the form $y = ax$ or $y = x + a$ and recognize the difference between additive and multiplicative patterns when given in tables or graphs. This scope is crucial in fostering an understanding of the coordinate system and its application to data representation. The Numerical Expressions scope explores the structure of numerical expressions, including the use of parentheses and brackets to indicate order of operations without exponents. Students learn to simplify expressions, which is a fundamental skill for algebra and beyond, emphasizing the importance of understanding and applying operational conventions.</p>	5.4C, 5.4D, 5.8A, 5.8B, 5.8C
3 Weeks	<p>Unit 8: Data Analysis</p> <p>In the Represent and Interpret Data scope, students solve multistep problems by collecting, organizing, displaying, and interpreting data. The activities involve the representation of categorical data with bar graphs or frequency tables, fractional and decimal measurement data with dot plots or stem-and-leaf plots, and discrete paired data with scatterplots. This scope emphasizes the critical role of data in understanding and communicating mathematical ideas and their implications, which prepares students for more advanced statistical and proportional reasoning.</p>	5.8A, 5.8B, 5.8C, 5.9A, 5.9B
7 Weeks	<p>Unit 9: Geometry and Measurement</p> <p>In the Classify Two-Dimensional Figures scope, students describe the attributes and properties of a two-dimensional figure to classify the figure in a hierarchy of sets and subsets. Students use graphic organizers to find relationships between two-dimensional figures and categorize them based on their number and length of sides and their number and size of angles. The Perimeter, Area, and Volume scope connects geometric concepts with measurement. In this scope, students apply their knowledge of solving problems related to the perimeter and area of rectangles to composite figures. Students learn what volume is, what a cubic unit is, and how a cubic unit is used to determine volume. They use familiar concrete objects and pictorial models to understand and develop formulas for the volume of various rectangular prisms. Students' algebraic reasoning with geometric contexts is enhanced through activities as they use equations to represent and solve problems related to perimeter and/or area and related to volume. In the Unit Conversions scope, students focus on solving problems that involve multistep conversions within a measurement system. They apply their understanding of multiplication and division, expanding their ability to navigate real-world contexts that involve metric and customary conversions with decimal and fractional measurements.</p>	5.4G, 5.4H, 5.5A, 5.6A, 5.6B, 5.7A