GRAPEVINE COLLEYVILLE INDEPENDENT SCHOOL DISTRICT

ASPIRE FIRST GRADE MATH COURSE OVERVIEW

For students to become fluent in mathematics, students must develop a robust sense of number. The National Research Council's report, "Adding It Up," defines procedural fluency as "skill in carrying out procedures flexibly, accurately, efficiently, and appropriately." As students develop procedural fluency, they must also realize that true problem solving may take time, effort, and perseverance. Students in Grade 1 are expected to perform their work without the use of calculators. The primary focal areas in Grade 1 are understanding and applying place value, solving problems involving addition and subtraction, and composing and decomposing two-dimensional shapes and three-dimensional solids. Students use relationships within the numeration system to understand the sequential order of the counting numbers and their relative magnitude. Students extend their use of addition and subtraction beyond the actions of joining and separating to include comparing and combining. Students use properties of operations and the relationship between addition and subtraction to solve problems. By comparing a variety of solution strategies, students use efficient, accurate, and generalizable methods to perform operations. Students use basic shapes and spatial reasoning to model objects in their environment and construct more complex shapes. Students are able to identify, name, and describe basic two-dimensional shapes and three-dimensional solids.

The ASPIRE Academy is committed to serving the unique needs of highly gifted students by providing a culture where learners engage in rigorous and meaningful learning experiences that empower them to take risks, pursue passions, and make a positive impact on the world. Teachers accomplish this by utilizing a variety of research-based best practices for gifted students, such as curriculum compacting, the Depth & Complexity Framework, content imperatives, and project-based learning. *The units listed below will continue to be modified and updated throughout the year.

1st 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	1.1A, 1.1B, 1.1C, 1.1D, 1.1E, 1.1F, 1.1G

	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.	
3 Weeks	**Unit 1: Establish Classroom Routines in Mathematics/ Data Analysis** This unit includes an overview and guidance on establishing classroom routines in mathematics. This unit also explores the understanding that data representations display the counts (frequencies) or measures of data values in an organized, visual format so that the data can be interpreted efficiently. Organizing, representing, and interpreting data using picture graphs and bar-type graphs with data values up to 50 leads to organizing, representing, and interpreting data picture graphs and bar-type graphs with larger data values later in Grade 1. Therefore, the concepts of data, collection, representations, and interpretation are the focus of this unit. ASPIRE students in first grade will need foundational concepts in many aspects of mathematics, but they can typically move more quickly through the required TEKS which provides additional time for enrichment and extension of the foundational concepts in first grade math. For many ASPIRE students, executive functioning skills are not well-developed, so practicing routines and procedures is a critical function in the early days of school.	1.8A, 1.8B, 1.8C
4 Weeks	**Unit 2: Number Sense to 50** This unit explores the understanding of the base-10 place value system, which allows for working efficiently and flexibly with numbers in order to communicate and reason about the value of very large and very small numbers. Using place value to represent numbers up to 50 using objects, pictures, and expanded and standard forms, generate a number that is greater than or less than a given number, and compare and order numbers leads to extending understandings of the base-10 place value system to include numbers up to 99 later in Grade 1. Therefore, the concepts of the base-10 place value system, number representations, and compare and order are the focus of this unit. ASPIRE students in first grade will need foundational concepts in many aspects of mathematics, but they can typically move more quickly through the required TEKS which provides additional time for enrichment and extension of the foundational concepts in first grade math, including moving to a value of 100.	1.2A, 1.2B, 1.2C, 1.2D, 1.2E, 1.2F, 1.4C, 1.5A, 1.5B, 1.5C
5 Weeks	**Unit 3: Problem Solving Using Addition & Subtraction** This unit explores the understanding of recognizing and understanding operational relationships in a variety of problem situations, which leads to efficient, accurate, and flexible representations and solution strategies. Exploring addition and subtraction within 20, including composing 20 with two or more addends, applying basic facts to add and subtract, understanding the meaning of the equal sign, representing and solving addition and subtraction problems, and recognizing instantly quantities of structured arrangements, leads to developing an understanding of addition and subtraction up to 20 later in Grade 1. Therefore, the concepts of operations, relationships, representations, and solution strategies are the focus of this unit. ASPIRE students are adding and subtracting to 20 and higher and can comprehend multi- steps problems. They are able to show different strategies to solve problems. Larger numbers for students who have demonstrated mastery of concepts.	1.3B, 1.3C, 1.3D, 1.3E, 1.3F, 1.5D, 1.5E, 1.5F, 1.5G

3 Weeks	**Unit 4: Geometry and Fractions** This unit explores the understanding of illustrating and analyzing geometric relationships in models and diagrams, which aid in representing and describing the attributes of geometric figures in order to generalize geometric relationships and solve problem situations. Classifying, sorting, and identifying two-dimensional figures, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, pentagons, hexagons, and octagons, leads to classifying, sorting, and identifying polygons with 12 or fewer sides in Grade 2. In addition, identifying three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes), triangular prisms, rectangular pyramids, and square (rectangular) pyramids is a focus. Therefore, the concepts of geometric attributes and properties are the focus of this unit. Partitioning two-dimensional figures to identify halves and fourths leads to identifying and counting halves, fourths, and eighths in Grade 2. ASPIRE students are typically familiar with the basic two-dimensional and three-dimensional shapes and can explore more complex figures. They can also move into fractions involving fifth, sixths and eighths.	1.6A, 1.6B, 1.6C, 1.6D, 1.6E, 1.6F, 1.6G, 1.6H, 1.8A, 1.8B, 1.8C
3 Weeks	**Unit 5: Financial Literacy, Money and Data Analysis** This unit explores understandings of personal financial literacy that help one make informed financial management decisions, which promote a more secure financial future. Understanding income, spending, saving, and charitable giving supports the ability to make informed financial management decisions. Identifying and representing the values of U.S. coins, and determining the value of a collection of pennies, nickels, and dimes leads to determining the value of a collection of pennies, nickels, dimes, and quarters in Grade 2. This unit explores the understanding that data representations display the counts (frequencies) or measures of data values in an organized, visual format so that the data can be interpreted efficiently. Organizing, representing, and interpreting data using picture graphs and bar-type graphs with data values up to 20 leads to organizing, representing, and interpreting data picture graphs and bar-type graphs with larger data values are also included in this unit. ASPIRE students can connect financial literacy to real world situations. They will also move into counting mixed coins. Those that show mastery with counting coins will incorporate counting money with dollar bills. In graphing, the ASPIRE students will continue to interpret graphs and move onto analyzing, comparing data and creating graphs of their choice on paper and digitally.	1.4A, 1.4B, 1.8A, 1.8B, 1.8C, 1.9A, 1.9B, 1.9C, 1.9D
3 Weeks	**Unit 6: Number Sense** This unit explores the understanding of the base-10 place value system, which allows for working efficiently and flexibly with numbers in order to communicate and reason about the value of very large and very small numbers. Using place value to represent numbers up to 99 using objects, pictures, and expanded and standard forms, generate a number that is greater than or less than a given number, and compare and order numbers leads to extending understandings of the base-10 place value system to include numbers up to 120 later in Grade 1. Therefore, the concepts of the base-10 place value system, number representations, and compare and order are the focus of this unit. ASPIRE students in first grade will need foundational concepts in many aspects of mathematics, but they can typically move more quickly through the required TEKS which provides additional time for enrichment and extension of the foundational concepts in first grade math. In this unit students can move into larger 3-digit numbers if they have mastered number sense up to 120.	1.2A, 1.2B, 1.2C, 1.2D, 1.2E, 1.2F, 1.2G, 1.4C, 1.5A, 1.5B, 1.5C
	Unit 7: Problem Solving Using Addition and Subtraction This unit explores the understanding of recognizing and understanding	1.3A, 1.3B, 1.3C, 1.3D, 1.3E, 1.3F,

5 Weeks	operational relationships in a variety of problem situations, which leads to efficient, accurate, and flexible representations and solution strategies. Exploring addition and subtraction up to 20, including applying basic facts to add and subtract, understanding the meaning of the equal sign, representing and solving addition and subtraction problems with the unknown in any position, and applying properties of operations to add or subtract two or three numbers, leads to applying addition and subtraction up to 20 in a variety of problem situations later in Grade 1. Therefore, the concepts of operations, relationships, representations, and solution strategies are the focus of this unit. ASPIRE students in first grade will need foundational concepts in many aspects of mathematics, but they can typically move more quickly through the required TEKS which provides additional time for enrichment and extension of the foundational concepts in first grade math. At this point, ASPIRE students are comforfortable solving multi-steps problems and are able to show different strategies to solve problems. Larger numbers for students who have demonstrated mastery of concepts to 50 are available to even include regrouping.	1.5D, 1.5E, 1.5F, 1.5G
4 Weeks	**Unit 8: Measurement and Time** This unit explores the understanding that objects have unique measurable attributes that can be defined and described in order to make sense of their relationship to other objects in the world. Measuring length using non-standard tools leads to measuring length using tools that represent standard units, including concrete models and rulers in Grade 2. This unit also explores the understanding that events have unique measurable attributes that can be defined and described in order to make sense of their relationship to other events in the world. Telling time to the hour and half hour using analog and digital clocks leads to telling time to the hour and half hour in Grade 1. ASPIRE students typically have the basics of non-standard measurement and quickly onto measuring inches and centimeters using rulers. ASPIRE students explore the uses of time in the real world and after mastering telling time to the hour and half hour move to the quarter and to the nearest five minutes.	1.7A, 1.7B, 1.7C, 1.7D, 1.7E
5 Weeks	**Unit 9: Number Sense/ Step up to 2nd Grade** This unit explores the understanding of the base-10 place value system, which allows for working efficiently and flexibly with numbers in order to communicate and reason about the value of very large and very small numbers. Using place value to represent numbers up to 120 using objects, pictures, and expanded and standard forms, generate a number that is greater than or less than a given number, and compare and order numbers leads to extending understandings of the base-10 place value system to include numbers beyond 120 in Grade 2. Therefore, the concepts of the base-10 place value system, number representations, and compare and order are the focus of this unit. ASPIRE students can move into number sense in all areas using large three digit numbers after mastering number sense to 999 at an accelerated pace.	1.2B, 1.2C, 1.2D, 1.2E, 1.2F, 1.2G, 1.4C, 1.5A, 1.5B, 1.5C