Elementary Academic Progression for MATHEMATICS

Pittsford Schools

	K	1	2	3	4	5
Math Practices	**• Make sense of problems and persevere in solving them • Construct viable arguments and critique the reasoning of others • Use appropriate tools strategically • Look for and express regularity in repeated reasoning**			**• Reason abstractly and quantitatively • Model with mathematics • Look for and make use of structure • Attend to precision**		
Counting and Cardinality	Compare groups of objects Compare two numerals Count out objects within 20					
Operations and Algebraic Thinking	Represent addition and subtraction Decompose numbers Make ten Solve addition and subtraction word problems Fluently add and subtract within five	Determine the unknown whole number in addition and subtraction equations (three whole numbers) Work with the commutative property of addition	Fluently add and subtract within 20	Understand the relationship between multiplication and division Determine unknown in a multiplication and division equations Solve two-step word problems using addition, subtraction, and multiplication Fluently multiply and divide within 100 Apply properties of operations (commutative, associative, distributive)	Perform addition, subtraction, multiplication and division operations with whole numbers (including multiplicative comparison and interpreting remainders in division) Gain familiarity with factors and multiples	Interpret numerical expressions Identify numerical relationships in patterns; form ordered pairs and graph on a coordinate plane

Number and Operations in Base Ten	Compose and decompose numbers from 11 to 19 into tens, ones	Add and subtract within 100 including multiples of 10 Understand Place Value; tens, ones	Fluently add and subtract within 100 and solve problems. Compare three-digit numbers by 100s, 10s and 1s Read and write numbers to 1,000	Fluently add and subtract within 1,000 and solve problems	Fluently add and subtract within 1,000,000 and solve problems Perform 4 digit by 1 digit and 2 digit by 2 digit multiplication; four digit by 1 digit division	Read, write, and compare decimals to thousandths Add, subtract, multiply and divide decimals to hundredths Perform 4 digit by 2 digit and 3 digit by 2 digit multiplication; 4 digit by 2 digit division
Measurement And Data	Describe measurable attributes of objects, such as length or weight. Classify objects	Compare the lengths of two objects, iterate length Tell and write time to half hour Know coins and their value Represent and interpret data	Measure and estimate lengths in standard units and solve problems Tell and write to the nearest five minutes using AM and PM Make a line plot, pictograph and bar graph; up to four categories	Measure and estimate liquid volumes and masses Tell and write time to the minute; solve word problems with time intervals Draw a scaled picture graph and bar graph Recognize and measure area; relate to multiplication and addition Solve perimeter problems	Convert measurement, (larger to smaller units) solve problems Make a line plot to display data sets w/fractional values Solve problems involving area and perimeter Measure angles using a protractor	Convert among different-sized measurement units within a given measurement system Recognize volume as an attribute of solid figures and understand concepts of volume measurement Relate volume to multiplication and addition and solve real-world volume problems

Geometry	Identify and describe shapes Analyze, compare, create, and compose shapes.	Describe defining attributes of shapes Partition circles and rectangles into 2 or 4 equal shares	Partition squares and rectangles into rows and columns or equal shares	Partition shapes into parts with equal areas	Classify shapes by the properties of their lines and angles	Classify 2D figures into categories based on their properties Graph points in the first quadrant of the coordinate plane and interpret coordinate values
Number and Operations-Fractions				Understand a fraction as a number; compare fractions and explain fraction equivalence,	Extend understanding of fraction equivalence; compare, order, and decompose fractions Add, subtract, and multiply fractions Use decimal notation for fractions, comparing decimals to the hundredths place	Add, subtract, multiply and divide fractions Use decimal notation to the thousandths place