

## St. Ann's Academy - Mathematics

Students at St. Ann's Academy will be able to reason abstractly and quantitatively. Students will define, explain, and understand different types of word problems (simple to complex). Students will use different tools to solve mathematical problems. Students will use a variety of problem solving skills and strategies to master mathematical concepts and develop a deep understanding of numbers and operations.

Number Sense and Numeration	PK	K	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
Counts by whole integers								
Counts backward								
Recites, relates, and communicates an understanding of multiples of a number								
Counts by $\frac{1}{2}$ and $\frac{1}{4}$								
Counts by large numbers								
Matches sets and numbers								
Counts and groups numbers								
Writes digits 0-9								
Reads and writes one-digit whole numbers								
Reads and writes two-digit numbers								
Reads and writes decimals								
Reads and writes three-digit and larger numbers								
Reads and writes whole numbers in expanded form								
Reads and writes numbers in scientific notation								
Identifies numbers before, after, & between								
Identifies numbers on a 100 chart								
Compares and orders whole numbers								
Uses a number line (integers, fractions, etc.)								
Rounds whole numbers								
Rounds numbers to tenth, hundredth, etc.								
Identifies place value for whole numbers								
Identifies place value for decimals through thousandth								
Identifies and describes equivalent sets								
Estimates and counts collections of objects								
Represents equivalent forms of the same number								
Compares numbers and sets with more, fewer, and the same (using greatest and least)								
Identifies multiples of a number (and least common multiple)								
Identifies factors of a number (and greatest common factor)								

Identifies and simplifies expressions with and without exponents								
Identifies square numbers and perfect squares								
Understands and identifies even and odd numbers								
Identifies ordinal position								
Identifies and creates pairs								
Reads and writes Roman Numerals								
Identifies approximate value of $\pi$								
Understands and uses divisibility rules								
<b>Concepts of Whole Number Operations</b>	PK	K	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
Understands and uses mathematical language (addend, sum, difference, etc.)								
Understands and shows meaning of addition using manipulatives, pictures, words, and numbers								
Writes number sentences to show addition								
Identifies addend, sum, and difference								
Identifies and uses the commutative and associative properties of addition								
Understands and shows meaning of subtraction using manipulatives, pictures, words, and numbers								
Writes number sentences to show subtraction								
Writes, identifies, and applies number sentences to show addition and subtraction								
Understands and uses the inverse relationship between subtraction and addition								
Writes addition and subtraction fact families								
Understands and shows meaning of multiplication using manipulatives, pictures, words, and numbers								
Writes number sentences to show multiplication								
Identifies and factor and product								
Constructs, labels, and writes number sentences for an array								
Identifies the commutative and associative properties of multiplication								
Understands and shows meaning of division using manipulatives, pictures, words, and numbers								
Writes, understands, and applies number sentences to show multiplication and division								
Identifies the properties of 0 or 1 in multiplication and/or division								
Uses the inverse relationship between division and multiplication to check answers								
Writes multiplication and division fact families								
Identifies quotients, dividends, and/or divisors								
<b>Whole Number Computation</b>	PK	K	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
<b>Addition and Subtraction</b>	PK	K	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>

Uses concrete objects or pictures to model and solve addition and subtraction problems								
Identifies "one more" and "one less" than a number								
Identifies "ten more" and "ten less" than a number								
Identifies missing addends								
Estimates a sum and difference								
Adds and subtracts using mental computation								
Adds three or more single digit numbers								
Adds and subtracts 2- and 3-digit (and higher) numbers with and without regrouping								
Adds and subtracts 3-digit numbers decimals (money)								
Adds 3 or more multi-digit numbers								
Use inverse operation to check addition and subtraction answers								
Use estimation to check reasonableness of calculations								
Solves addition and subtraction word problems								
Writes story problems for addition and subtraction number sentences								
Masters subtraction facts up to 20								
<b>Multiplication and Division</b>	PK	K	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
Doubles a number								
Masters multiplication and division facts								
Understands the relationship between multiplication and repeated addition								
Estimates products and quotients								
Understands multiplying by multiples of 10, 100, 1000								
Multiplies and divides using mental math strategies								
Multiplies 2-digit by 1-digit numbers								
Multiplies a 3-digit (or larger) number by 1-digit number								
Multiplies 2-digit by 2-digit (or larger) numbers								
Multiplies using the algorithm								
Solves multiplication and division word problems								
Divides objects into equal groups								
Divides by 2								
Divides a 2-, 3-, and 4-digit number by a 1-digit divisor								
Use inverse operation to check multiplication and division answers								
Divides using the division algorithm								
Finds the prime factorization of whole numbers								
Understands and uses exponents								
Estimates and finds square roots								
<b>Fractions, Decimals, and Percents</b>	PK	K	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>









Identifies faces, vertices, and edges of a geometric solid								
Identifies and draws a line of symmetry and/or creates symmetrical designs								
Explores, identifies, and/or shows transformations – translations, rotations, and reflections								
Graphs reflections across the horizontal or vertical axes								
Classifies quadrilaterals								
Understands and identifies congruence and similarity								
Identifies parts of a circle								
Finds the perimeter of circles and complex figures								
Draws three-dimensional figures								
<b>Patterns and Sequences</b>	PK	K	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
Identifies, reads, and extends patterns in shapes, colors, designs, and/or numbers								
Identifies the missing shape or design in a repeating pattern								
Identifies the missing number in a sequence								
Identifies the missing item(s) in an array or matrix								
Makes, labels, and writes number sentences for an array								
Recognize and extend patterns in multiplication								
Analyzes a pattern or sequence to name a rule								
Uses, describes, and extends arithmetic sequences								
Completes input/output tables								
Analyzes a pattern to verbalize a rule								
<b>Algebra</b>	PK	K	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>
Constructs a number line and/or locates points on a number line								
Locates and graphs points (ordered pairs) on a coordinate graph								
Graphs linear functions on a coordinate plane								
Simplifies expressions using order of operations								
Writes and solves number sentences for problems involving addition, subtraction, multiplication, and/or division								
Writes and solves equations to solve word problems								
Creates problems for addition, subtraction, multiplication, and/or division number sentences								
Uses comparison symbols ( $<$ , $>$ , $=$ , $\leq$ , $\geq$ , $\neq$ )								
Represents an unknown using a symbol								
Identifies, writes, and uses a function rule								
Solves addition, subtraction, multiplication, and division equations using concrete and pictorial models								
Solves one- and two-step equations with whole numbers								



KEY		
Material is Introduced	Material is Reinforced	Material is Mastered