STUART
COUNTRY DAY SCHOOL OF THE SACRED HEART

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LOWER SCHOOL CURRICULUM SUMMARIES

MATH

Our math program is built on the idea that children are problem solvers by nature. Our math materials honor what students can figure out, perhaps influenced by their backgrounds, ideas, or intuitive problem solving abilities. Teachers guide students to make sense of problems, develop strong problem solving skills, and persevere through complex real world applications. Through conceptual understanding and math discussions, students become efficient and flexible problem solvers. We encourage students to make connections between topics and to "read" the mathematics in a problem by determining the known from the unknown. We emphasize computational fluency in addition to conceptual understanding because both are absolutely essential for future success in mathematics. The Lower School ThinkMath! lessons follow a prescriptive program which creates an environment for students to feel comfortable in taking risks. Along with manipulatives and supporting materials, a highlight of the program is that it encourages students to approach problem solving using various forms of critical thinking. Mental math is quick, fast-paced, and fun for the girls. The program is designed for heterogeneous groupings and thereby allows for frequent partner work and collaborative problem solving. The curriculum is differentiated to meet the needs of the students and their individual learning goals.

Kindergarten

The Kindergarten program reinforces concepts over facts: i.e. 3 pairs of socks = how many socks? The Think Math! program features counting, addition, subtraction, attributes and sorting, money, greater than and less than, measurement, capacity and three dimensional shapes, graphing, analog and digital clocks, tally marks and building the foundation of multiplication and division concepts. Individual math projects, centers and game days insure practical application, ongoing collaborative practice, and self paced and individually developed projects.
Units of Study Include:
*Counting & Cardinality
-count to 100 by 1s & 10s
-count on from a number
-write numbers 0-20 & represents a number of objects with a numeral
-understand the relationship between numbers & quantities
-when counting objects, say the number names in the standard order, pairing each object with one and only one number name & each number with one and only one object
-understand that the last number name said tells the number of object counted. The number of objects is the same regardless of their arrangement of the order in
-understand that each successive number name refers to a quantity that is one larger
-count up to 20 organized objects or 10 scattered objects
-compare numbers
-identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group

-compare two numbers between 1 and 10 presented as written numerals
*Addition & Subtraction (Operations & Algebraic Thinking)
-understand addition as putting together/adding to, and subtraction as taking away/taking from
-represent adding & subtracting (models, drawing, acting)
-solving addition & subtraction word problems, and add & subtract within 10
-decompose numbers less than or equal to 10 into pairs in more than one way
-for any number from 1 to 9, finds the number that makes 10 when added to the given number (with models or drawing)
-fluently add and subtract within 5
*Place Value & Base 10
-compose & decompose numbers from 11-19 into 10s and 1s
*Geometry
-describe objects in the environment using names of shapes, & describes the relative positions of these objects using terms such as above, below, beside, in front
-correctly name shapes regardless of their orientations or overall size
-identify shapes as two-dimensional or three-dimensional
-analyze, compare, create, & compose shapes
-analyze & compare two and three-dimensional shapes, in different sizes & orientations, using informal language to describe their similarities
-model shapes in the world by building shapes from components (sticks, clay balls)
-compose simple shapes to form larger shapes

First Grade

The first grade program focuses on understanding and comparing numbers, adding and subtracting with mathematical models and continued practice with place value understanding. Basic probability, skip-counting, two-dimensional and three-dimensional geometry, doubling and halving numbers, and understanding basic fractions are covered as well. In addition, collecting data, measurement, and making and interpreting graphs are introduced and explored through projects and in STEM class.
Units of Study Include:
*Counting & Cardinality
-count to 120 (read, write)
*Addition & Subtraction (Operations & Algebraic Thinking)
-understand subtraction as an unknown-addend problem
-represent & solve problems involving addition & subtraction
-use addition & subtraction within 20 to solve word problems
-solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20
-add & subtract within 20, shows fluency for addition & subtraction within 10
-add & subtract within 20
-apply properties of operations as strategies to add & subtract
-determine the unknown whole number in an addition or subtraction equation
*Time
-tell & write time to the nearest hour & half hour
*Place Value & Base 10
-Understand the numbers from 11 to 19 are composed of a ten and one, two, three, or nine ones
-Understand that 10 can be thought of as a bundle of ten ones - call a “ten”

-understand the two digits of a 2-digit number represent amounts of tens & ones
-Knows the numbers 10, 20, 30... refer to one, two, three tens
-compare two two-digit numbers by using >, =, and < symbols
-compare two two-digit numbers based on meanings of the tens and ones digits
-add within 100, including adding a two-digit number and a one-digit number
-mentally finds 10 more or 10 less than the number given; explains the reasoning
-subtract multiples of 10 in the range 10-90 from multiples of 10 in range 10-90

*Geometry

-Can distinguish between defining attributes versus non-defining attributes
-compose two or three-dimensional shapes to create a composite shape

-partition circles & rectangles into two & four equal shares, describes the shares using the word halves, fourths, and quarters. Describes the whole as two of, or four of the shares.

Second Grade

The second grade program focuses on understanding place value and using this understanding to add and subtract multi-digit numbers through composing and decomposing numbers. The program also focuses on fluency with addition and subtraction facts to 20s, skip-counting, two-dimensional and three-dimensional geometry, telling time and fractions. Measurement and data are covered through projects and in STEM class.

Units of Study Include:

*Count within 1,000 (by 2s, 5s,10s)

*Addition & Subtraction

Add & subtract within 100 to solve one & two-step word problems
Fluently add & subtract within 100
Add and subtract within 1000 using strategies based on place value and properties of operations
Add up to four two-digit numbers using strategies based on place value & properties of operations
Explain why addition & subtraction strategies work, using place value and properties of operation

*Place Value & Base 10

100 can be thought of as a bundle of ten tens
Understand that the 3 digits of a 3-digit number represents amounts of hundreds, tens, and ones
Understand the numbers 100, 200, 300... refer to one, two, three hundreds
Compare two three-digit numbers using >, =, and < symbol
Mentally add 10 or 100 to a given number 100-900, and mentally subtracts 10 or 100 from a given number 100-900
Read & write numbers to 1,000 (standard & expanded form)

*Time

Tell & write time to the nearest five minutes
Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies

*Geometry

Recognizes & draws shapes having specified attributes; identifies triangles, quadrilaterals, pentagons, hexagons, and cubes
Partition a rectangle into rows & columns of same-size squares
Partitions circles & rectangles into two, three, or four equal shares, describes the shares using the word halves, thirds, half of, a third of, etc. & describes the whole as two halves, three thirds, four fourths

Third Grade

The third grade program focuses on fluently adding and subtracting within 1,000 and understanding multiplication and division. Single-digit multiplication and division fact fluency is taught and the distributive property is explored. Additionally, the program incorporates problem solving, using tables to organize information and draw conclusions, estimating, algebraic thinking, understanding and comparing fractions, time, money, and patterns.

Units of Study Include:

*Numbers & Operations

-fluently adds & subtracts within 1-1,1000

-fluency with multiplication & division facts up to 100

-uses commutative, associative, & distributive properties to solve multiplication & division problems up to 100

-understands & uses the array/area model to solve multiplication & division problems up to 100

-measure area through multiplication

*Place Value & Base 10

-rounds numbers to the nearest 10 or 100

-can multiply any one-digit whole number by 10

*Fractions

-understands that fractions are equal part of a whole

-can explain equivalent fractions (1/2, 1/4 and 1/3)

-compares fractions

-recognizes whole numbers as fractions

*Measurement & Data

-tell & write time to nearest minute

-measure liquids & solids with liters, grams, & kilograms

-creates picture & bar graphs and solves problems based on the graphs

-creates line plots

*Geometry

-recognizes & draws quadrilaterals (rhombuses, rectangles, squares, etc.)

-categorizes shapes based on attributes

-understands perimeter of shapes

Fourth Grade

The fourth grade program focuses on mastery of addition and subtraction and continued work in multi-digit multiplication and division. In addition, area and perimeter, fractions, place value, decimals, graphing on coordinate grids, classifying angles and shapes, including symmetry and congruence are studied. Measurement including length, capacity, time, weight and temperature are integrated into STEM class.

Units of Study Include:

*Numbers & Operations

-fluently adds & subtracts multi-digits using the US algorithm

-uses commutative, associative, & distributive properties to solve multiplication & division problems (2-digit x 2-digit & up to 4x1)

-fluent with the area model/arrays (illustrates & explains)

*Place Value & Base 10

-rounds to the nearest 1,000, 10,000 or millionth
-can multiply any number by 100
-recognizes patterns when multiplying by powers of 10
-compares & orders decimals to 100ths
-relates decimals to fractions (0.62 = 62/100)

*Fractions
-extends their understanding of equivalent fractions
-compares & orders fractions (also with models)

-adds & subtracts fractions with like denominators (including mixed numbers) with models & numbers
-decomposes & composes a fraction with the same denominator in more than one way

*Measurement & Data
-computes with time & money
-measures & computes changes in temperature
-uses customary & metric units to measure length, capacity, & weight
-converts between units

-collects, organizes, graphs, & analyzes data (including comparison between different sets of data/graphs)
-line plots

*Geometry
-classifies 2-D figures (quadrilateral & triangles) based on angle measure & side lengths
-draws points, lines, line segments, rays, angles (right, acute, obtuse), & perpendicular and parallel lines. Identifies these in two-dimensional figures
-classifies two-dimensional figures based on parallel or perpendicular lines & angles. Recognizes right triangles as a category, and identify right triangles
-recognizes a line of symmetry for a two-dimensional figure as a line across the figure
-able to find area & perimeter of quadrilaterals
-nets of 3-D shapes
-sorts & identifies 3-D figures based on its attributes