Math Curriculum

Saint Gerard Majella School

Updated July 2019

SUBJECT: Math
GRADE: K

GOALS: Students will…

1. Distinguish positional terms (top, middle, and bottom).
2. Identify, sort, and classify objects by color, shape, size, and kind.
3. Identify, describe, extend and create a repeating pattern.
4. Make the connection between numbers and the number line.
5. Count, recognize, represent, and order numbers (up to 50).
6. Estimate the number of objects in a group and verify the results.
7. Recognize patterns from counting by number groups by 5's and 10's to 100.
8. Identify ordinal positions of objects in a set (first through tenth).
9. Compare sets of at least 10 objects.
10. Describe ways to sort and/or group given sets of objects or data.
11. Collect, record, and compare information using tallies, picture graphs, and bar graphs.
12. Solve simple addition and subtraction problems through 10.
13. Create and solve word problems.
14. Compare and contrast the size and shape of plane and solid figures.
15. Identify time to the hour on a digital and analog clock.
16. Identify coins and their value (penny, nickel, dime, and quarter).
17. Identify instruments used to measure the following: length, time, and capacity.
18. Recognize and compare the attributes of length, weight, and capacity (Non-standard).
19. Use correct math vocabulary terms consistent among all grade levels.

CONTENT TOPICS:

1. Positions and Patterns
2. Sorting
3. Counting Numbers and Numerals
4. Graphs
5. Estimation
6. Geometry
7. Computation
8. Problem Solving
9. Money
10. Time
11. Measurement
12. Math Vocabulary

SUBJECT: Math
GRADE: 1

GOALS: Students will…

1. Recognize, count, write, order, and compare numbers and sets through 120.
2. Utilize strategies to find sums to 20 or to subtract from 20.
3. Use related facts, fact families, and missing addends to solve addition and subtraction facts.
4. Identify, describe, classify, compare and sort plane and solid shapes.
5. Use positional words and grids to describe and locate objects.
6. Identify transformations (slides, flips and turns) and symmetry of shapes.
7. Identify, create, and extend picture and number patterns.
8. Identify and name ½, ⅓, and ¼ of a region or set.
9. Count and regroup tens and ones.
10. Identify place value through 99.
11. Skip count by 2's, 5's, and 10's to 100.
12. Identify odd and even numbers.
13. Tell time to the hour and half-hour using analog and digital clocks.
14. Compare time, order events and determine elapsed times.
15. Distinguish the value of quarter, dime, nickel and penny and count money to $1.00.
16. Add three single digit numbers.
17. Estimate and measure length using non- standard as well as inches and centimeters.
18. Compare and order objects using pounds and kilograms.
19. Compare and order capacity of cups, pints, quarts, liters
20. Add and subtract 2-digit numbers, including money amounts with and without regrouping.
21. Create and solve word problems using clue words for determining operations.
22. Use correct vocabulary terms consistent among all grade levels.

CONTENT TOPICS:

1. Number Patterns
2. Place Value
3. Geometry
4. Graphs
5. Money
6. Measurement
7. Time
8. Problem Solving
9. Math Vocabulary
10. Computation

SUBJECT: Math
GRADE: 2

GOALS: Students will…

1. Memorize addition and subtraction facts to 20.
2. Tell time to 5 minute intervals and calculate elapsed time.
3. Regrouping tens as ones in addition and subtraction.
4. Use all coins and $1 to make change and count money through $2.00.
5. Measure in inches and centimeters. Estimate meters and feet. Determine area and perimeter.
6. Read a Fahrenheit and a Celsius thermometer.
7. Identify and compare simple fractions, both as parts of a whole and a group.
8. Identify and compare plane and solid geometric shapes.
9. Add and subtract 2-digit numbers, both with and without regrouping of tens and ones.
10. Use a variety of strategies to read and solve word problems.
11. Identify and measure cups, pints, quarts, liters, gallons
12. Round to the nearest 10.
13. Read coordinates and graphs: bar, line, pictographs, and tallies.
14. Identify place value up to thousands.
15. Use correct math vocabulary terms consistent among all grade levels.
16. Recognize, count, write, order, and compare numbers and sets through 200.

CONTENT TOPICS:

1. Computation
2. Numbers Patterns
3. Time
4. Graphs
5. Money
6. Measurement
7. Problem Solving
8. Geometry
9. Number Sense
10. Fractions
11. Place Value
12. Math Vocabulary
13. Estimation

SUBJECT: Math
GRADE: 3

GOALS: Students will…

1. Compute multiplication facts 0-12.
2. Compute division facts 0-12.
3. Compute all four operations with accuracy.
4. Relate understanding of place value to solve multi-digit addition and subtraction problems.
5. Add and subtract up to 3-digit numbers, both with and without regrouping.
6. Count and compare coins and bills.
7. Demonstrate algebraic concepts and applications.
8. Develop understanding of fractions as numbers.
   a. Comparing
   b. Equivalent fractions
9. Compare and explain different ways to solve one problem.
10. Identify shapes and their attributes.
11. Use various graphs to represent and interpret data.
12. Apply number sense in solving word problems.
13. Use correct math vocabulary terms consistent among all grade levels.

CONTENT TOPICS:

1. Computation
2. Place Value
3. Number Sense
4. Problem Solving
5. Fractions
6. Graphs
7. Geometry
8. Math Vocabulary

SUBJECT: Math
GRADE: 4

GOALS: Students will…

1. Compute all four operations with whole numbers through the thousands.
2. Demonstrate a knowledge of fraction concepts (GCF, LCM).
3. Solve addition, subtraction, and multiplication of fractions and mixed numbers with like denominators.
4. Illustrate a knowledge of customary and metric measurement-weight, volume, length.
5. Compute addition, subtraction, and multiplication of decimals through the hundredths, compare decimals and fractions.
6. Identify types of angles, triangles, and quadrilaterals.
7. Measure and identify angles with a protractor.
8. Find area and perimeter of rectangles.
9. Interpret bar graphs, circle graphs, and line graphs for further understanding and questioning.
10. Compute all four operations with speed and accuracy.
11. Use correct math vocabulary terms consistent among all grade levels.

CONTENT TOPICS:

1. Place Value
2. Computation
3. Whole Numbers
4. Decimals
5. Money
6. Graphs
7. Data and Statistics
8. Measurement
9. Fractions
10. Geometry
11. Problem Solving
12. Number Sense
13. Math Vocabulary

SUBJECT: Math
GRADE: 5

GOALS: Students will…

1. Read, write, compare, estimate and compute all four operations with whole numbers through the hundred thousands.
   ◆ Use divisibility rules to aid in division.
2. Read, write, compare, estimate and compute all four operations with decimals through the thousandths.
3. Read, write, compare, estimate and compute all four operations with fractions, improper fractions, and mixed numbers.
4. Use order of operations to solve numerical expressions.
5. Graph ordered pairs in the first quadrant.
6. Derive information from double line and double bar graphs.
7. Calculate the mean (averages) of a set of numbers.
8. Measure and convert units of customary measurement. (length, weight, capacity)
9. Convert units of metric measurement (kilo-, centi-, milli-, and base).
10. Demonstrate an understanding of prime factorization.
11. Develop Geometric vocabulary of: polygons, perimeter, area, volume
12. Name and classify polygons.
13. Incorporate problem-solving strategies of: finding a pattern, make a table, and relevant information.
14. Use correct math vocabulary terms consistent among all grade levels.

CONTENT TOPICS:

1. Place Value
2. Computation
2. Whole Numbers
3. Decimals
4. Fractions
5. Graphs
6. Data & Statistics
7. Measurement
8. Prime Factorization
9. Geometry
10. Problem Solving
11. Math Vocabulary
12. Number Sense

SUBJECT: Math
GRADE: 6

GOALS: Students will…

1. Use correct math vocabulary terms consistent among all grade levels.
2. Evaluate powers and use order of operations to evaluate numerical and variable expressions.
3. Solve one- and two-step equations and algebraic proportions with whole numbers.
4. Use customary and metric measurements to estimate, measure and convert length, weight and capacity.
5. Use geometric formulas to find perimeter, area, surface area, and volume.
6. Create and interpret frequency tables, line plots, histograms, box-and-whisker, and stem-and-leaf plot.
7. Calculate mean, median, mode, and range for a data set and be able to choose a best average.
   a. Use outliers and additional data to adjust measure of central tendency.
8. Read, write, compare, estimate and compute all four operations with decimals beyond the thousandths.
9. Apply the commutative, associative, identity, and distributive properties to aid in mental math.
10. Use GCF and LCM to write equivalent fractions, convert among mixed and improper, and decimals.
11. Compare and compute all four operations with fractions.***what makes it different?
12. Find equivalent ratios, rates, and calculate and use unit rates.
13. Convert between fractions, decimals, and percents.
14. Complete proportions using the percent ratio.
15. Name and classify triangles, quadrilaterals, and polygons.
16. Apply integers to graphing in the coordinate plane.
17. Compute and compare all four operations with integers.
18. Find the probability of an event and use tree diagrams for possible outcomes.

CONTENT TOPICS:

1. Number Sense, Patterns and Algebraic Thinking
2. Computation
3. Decimals
4. Fractions
5. Measurement: Customary and Metric
6. Data and Statistics
7. Graphs
8. Rates and Ratios
9. Geometry
10. Percents
11. Integers
12. Algebra
13. Probability
14. Problem Solving
15. Math Vocabulary

SUBJECT: Math
GRADE: 7

GOALS: Students will…

1. Use correct math vocabulary terms consistent among all grade levels.
2. Describe patterns and use them to solve problems.
3. Apply the order of operations to solve problems and one-, two-step equations and inequalities with integers, fractions, decimals.
4. Use formulas to find perimeter, area, surface area, volume as well as missing measurements.
   a. parallelograms, triangles, trapezoids, circles, and 3D figures
5. Find the mean, median, mode and range and use graphs to display and interpret values in a data set.
6. Compare, order and convert between fractions, decimals, and percents.
7. Compare, order and perform operations with integers.
8. Graph points in the coordinate plane.
9. Use equations, tables, and graphs to represent linear functions.
10. Use ratios, rates and proportions to solve problems.
11. Display the relationship between rate and the slope of a line.
12. Apply percents to real-world problem solving.
    a. Tip, sales tax, percent change, commission
13. Use correct vocabulary to classify geometric figures.
    a. Ray, line, line segment, plane, point, skew, parallel, perpendicular, congruent, similar,
14. Interpret angle relationships.
    a. Supplementary, complementary, vertical, adjacent, alternate exterior and interior angles, corresponding
15. Compute interior and exterior angle measures of polygons using formulas.
16. Construct and measure angles using a protractor.
17. Use the counting principle to find permutations and combinations.
18. Calculate probability, dependent and independent, permutations, and combinations.

CONTENT TOPICS:

1. Number Sense, Patterns and Algebraic Thinking
2. Computation
3. Decimals
4. Fractions
5. Measurement: Customary and Metric
6. Data and Statistics
7. Graphs
8. Rates and Ratios
9. Geometry
10. Percents
11. Integers
12. Algebra
13. Probability
14. Problem Solving
15. Math Vocabulary

SUBJECT: Math
GRADE: 8-PreAlgebra

GOALS: Students will…

1. Use correct math vocabulary terms consistent among all grade levels.
2. Understand the difference between a rational number and an irrational number.
3. Find the GCF and the LCM using prime factorization.
4. Use the commutative and associative properties as well as the distributive property.
5. Graph points on the coordinate plane.
6. Create a scatterplot and understand what it tells us about the relationship between two variables.
7. Identify a square root and find square roots.
8. Use rules of exponents to evaluate numeric and algebraic expressions.
9. Apply scientific notation to problems.
10. Identify the absolute value and opposite of a number.
11. Apply the order of operations to solve problems and one-, two-, and multi-step equations and inequalities with integers, fractions, decimals.
12. Differentiate between independent and dependent variables in a function.
13. Differentiate ratio and proportion and be able to apply them to real-world problems.
14. Explain probability and be able to solve basic probability problems.
15. Apply the Pythagorean theorem.
16. Introduce graphing linear equations and inequalities.

CONTENT TOPICS:

1. Whole Numbers
2. Decimals
3. Integers
4. Computation
5. Rational and Irrational Numbers
6. Number Sense, Patterns and Algebraic Thinking
7. Data and Statistics

8. Graphs
9. Algebra
10. Geometry
11. Probability
12. Rates and Ratios
13. Problem Solving
14. Math Vocabulary

SUBJECT: Math
GRADE: 8-Algebra

GOALS: Students will…

1. Use correct math vocabulary terms consistent among all grade levels.
2. Read grade level math textbook accurately for comprehension.
3. Understand the connection between numbers and the number line.
4. Be proficient in addition, subtraction, multiplication, and division of integers, fractions and decimals.
5. Understand the difference between a rational number and an irrational number.
6. Find the GCF and the LCM using prime factorization.
7. Use the commutative and associative properties as well as the distributive property.
8. Graph points on the coordinate plane.
9. Create a scatterplot and understand what it tells us about the relationship between two variables.
10. Identify a square root and find square roots.
11. Demonstrate the definition of exponent and be able to find powers of integers, fractions and decimals.
12. Identify scientific notation and be able to apply it.
13. Identify absolute value and be able to find the absolute value of a number.
14. Understand the concept of a variable and be able to apply it.
15. Solve simple linear equations and inequalities.
16. Differentiate between independent and dependent variables in a function.
17. Know and apply basic area and volume formulas.
18. Differentiate ratio and proportion and be able to apply them to real-world problems.
19. Explain probability and be able to solve basic probability problems.
20. Compute the mean, median and mode and understand what they tell us about a data set.
21. Create a bar graph and interpret it in the context of a set of data.
22. Estimate and approximate quantities.
23. Apply the Pythagorean theorem.
24. Apply math to solve problems and to see mathematical applications in everyday life.
25. Introduce graphing linear equations and inequalities.

CONTENT TOPICS:

1. Whole Numbers
2. Decimals
3. Integers
4. Computation
5. Rational and Irrational Numbers
6. Number Sense, Patterns and Algebraic Thinking
7. Data and Statistics
8. Graphs
9. Algebra
10. Geometry
11. Probability
12. Rates and Ratios
13. Problem Solving
14. Math Vocabulary