Math Curriculum

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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. Understand 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: 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 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 and 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 and hundreds as tens in addition and subtraction.
4. Use all coins and $1 to make change and count money through $4.99.
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 3-digit numbers, both with and without regrouping of tens and ones.
10. Introduce basic concept of multiplication and division.
12. Use a variety of strategies to read and solve word problems.
13. Identify and measure gallon, quart, pint and cup.
14. Round to the nearest 10.
15. Read coordinates and graphs: bar, line, picto, and tallies.
16. Identify place value up to thousands.
17. Use correct math vocabulary terms consistent among all grade levels.
18. 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. Introduce and master multiplication facts 0-12.
2. Demonstrate mastery in all four basic operations with speed and accuracy.
3. Relate understanding of place value to solve multi-digit addition and subtraction problems.
4. Calculate accurate answers to 3 and 4 digit addition and subtraction problems.
5. Count and compare coins and bills; make change up to $20.
6. Demonstrate algebraic concepts and applications.
7. Develop understanding of fractions as numbers.
8. Compare and explain different ways to solve one problem.
9. Reason with shapes and their attributes.
10. Use various graphs to represent and interpret data.
11. Apply number sense while persevering in problem solving.
12. Construct viable arguments and critique the reasoning of others.
13. Use correct math vocabulary terms consistent among all grade levels.
14. Read 3rd grade level math textbook accurately for comprehension.

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. Calculate all four operations with whole numbers through the thousands.
2. Demonstrate an understanding of fraction concepts (GCF, LCM).
3. Solve addition and subtraction of fractions and mixed numbers.
4. Illustrate a knowledge of customary and metric measurement.
5. Compute addition,subtraction, and multiplication of decimals through the hundredths.
6. Identify types of triangles and quadrilaterals.
7. Interpret bar graphs, circle graphs, and line graphs.
8. Automatically recall facts for all operations.
9. Use the problem-solving strategies of: guess-and-check, interpreting the remainder, too much or too little information, and estimation.
10. Use correct math vocabulary terms consistent among all grade levels.
11. Read 4th grade level math textbook accurately for comprehension.

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. Solve all operations with whole numbers, through the hundred thousands.
2. Calculate all operations with decimals through the thousandths.
3. Compute all operations with fractions and mixed numbers.
4. Derive information from histograms, double line, and double bar graphs.
5. Calculate the mean, median, mode, and range of a set of numbers.
6. Measure and convert units of customary measurement.
7. Convert units of metric measurement (kilo-, deci-, centi-, milli-, and base).
8. Demonstrate an understanding of prime factorization.
9. Develop Geometric vocabulary of: points, lines, rays, perimeter, area.
10. Incorporate problem-solving strategies of: finding a pattern, make a table, and relevant information.
11. Use correct math vocabulary terms consistent among all grade levels.
12. Read 5th grade level math textbook accurately for comprehension.

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. Read grade level math textbook accurately for comprehension.
3. Create and keep an organized Math Binder.
4. Evaluate powers and use order of operations to evaluate numerical and variable expressions.
5. Write verbal models and solve equations using mental math.
6. Solve real-world problems using a 4-step plan.
7. Use customary measurements to estimate, measure and convert length, weight and capacity.
8. Use geometric formulas to find perimeter and area.
9. Create frequency tables, line plots, bar graphs and circle graphs.
10. Calculate mean, median and mode for a data set and be able to choose a best average.
11. Read, write, order, estimate and perform operations with decimals.
12. Apply the commutative, associative and distributive properties.
13. Understand metric units and be able to convert between units.
14. Use divisibility rules to use prime factorization to help find GCF and LCM.
15. Use GCF and LCM to write equivalent fractions, convert among mixed and improper, and decimals.
16. Perform operations with fractions.
17. Find equivalent ratios, rates, and calculate and use unit rates.
18. Write fractions and decimals as percents and find a percent of a number.
19. Name and classify triangles, quadrilaterals, and polygons and identify lines of symmetry.
20. Develop and use formulas to find area and perimeter, and circumference.
21. Perform operations with integers.
22. Apply integers to graphing in the Coordinate Plane.
24. Write variable expressions and equations and use inverse operations to isolate the variable.
25. Find the probability of an event and use tree diagrams for possible outcomes.
26. Read and identify misleading graphs.
27. Create stem-and-leaf plots, box-and-whisker plots and choose appropriate displays for data.

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. Read grade level math textbook accurately for comprehension.
3. Create and keep an organized Math Binder.
4. Describe patterns and use them to solve problems.
5. Apply the order of operations to solve problems and equations.
6. Use formulas to find perimeter and area.
7. Perform operations with decimals, including comparing and rounding.
8. Apply and convert numbers to scientific notation form.
9. Use and convert metric measurements.
10. Find the mean, median and mode and use graphs to display and analyze values in a data set.
11. Find the GCF and LCM using prime factorization.
12. Compare, order and convert between fractions and mixed numbers.
13. Add, subtract, multiply and divide fractions and mixed numbers.
14. Understand, apply and do conversions with customary units of measure.
15. Compare, order and perform operations with integers.
16. Identify rational numbers.
17. Graph points in the coordinate plane.
18. Write and simplify algebraic expressions and equations.
19. Solve algebraic equations and inequalities using inverse operations.
20. Use equations, tables, and graphs to represent functions.
21. Use ratios, rates and proportions to solve problems.
22. Explore the relationship between rate and the slope of a line.
23. Use fractions and decimals to learn about percents, and apply this to real-world problem solving.
24. Learn about different geometric shapes as they investigate congruent and similar polygons.
25. Be able to find the square root of a number, and how it relates to the Pythagorean Theorem.
26. Learn and be able to apply the area formulas to parallelograms, triangles, trapezoids, and circles.
27. Classify and sketch 3-dimensional figures and use the formulas to find surface area and volume.
28. Learn how to use the counting principle, and find permutations and combinations.
29. Examine methods for calculating probability of events: dependent and independent.

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

GOALS: Students will…

1. Use correct math vocabulary terms consistent among all grade levels.
2. Read grade level math textbook accurately for comprehension.
3. Create and keep an organized Math Binder.
4. Understand the connection between numbers and the number line.
5. Be proficient in addition, subtraction, multiplication, and division of integers, fractions and decimals.
6. Understand the difference between a rational number and an irrational number.
7. Find the GCF and the LCM using prime factorization.
8. Use the commutative and associative properties as well as the distributive property.
9. Graph points on the coordinate plane.
10. Create a scatterplot and understand what it tells us about the relationship between two variables.
11. Understand what a square root is and be able to find square roots.
12. Understand the definition of exponent and be able to find powers of integers, fractions and decimals.
13. Understand scientific notation and be able to apply it.
14. Understand absolute value and be able to find the absolute value of a number.
15. Understand the concept of a variable and be able to apply it.
16. Solve simple linear equations and inequalities.
17. Understand the difference between independent and dependent variables in a function.
18. Know and apply basic area and volume formulas.
19. Understand ratio and proportion and be able to apply them to real-world problems.
20. Have a basic understanding of probability and be able to solve basic probability problems.
21. Compute the mean, median and mode and understand what they tell us about a data set.
22. Create a bar graph and interpret it in the context of a set of data.
23. Estimate and approximate quantities.
24. Apply the Pythagorean theorem.
25. Apply math to solve problems and to see mathematical applications in everyday life.
26. 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