SPRING GROVE AREA SCHOOL DISTRICT

PLANNED COURSE OVERVIEW

Course Title: Mathematics	**Length of Course:** 30 Cycles
Grade Level(s): 3	**Periods Per Cycle:** 6
Units of Credit: N/A	**Length of Period:** 60 Minutes
Classification: Required	**Total Instructional Time:** 180 Hours

Course Description

This course is designed to present developmentally appropriate basic number facts and computational skills. It covers a variety of fundamental mathematical skills that include: Numbers and Operations, Algebraic Concepts, Geometry, Measurement, Data and Probability.

Instructional Strategies, Learning Practices, Activities, and Experiences

- Anchor Charts
- Anticipatory Sets
- Assessments (Chapter, Unit, Teacher-Created)
- Bell Ringers
- Calculators
- Class Discussions
- Closure
- Critical Thinking
- Fact Fluency
- Flexible Groups
- Graphic Organizers
- Guided Practice
- Higher-Level Questioning
- Homework
- Interaction Sequence
- Journals
- Manipulatives
- Posted Objectives
- Practice Exercises
- Presentations
- Projects
- PSSA Preparation
- Small Group Interventions
- Teacher Demonstrations
- Teacher Observations
- Technology Integration
- Videos/DVDs
- Vocabulary (Cards, Strategies, and Lists)
- Wait Time
- Wait Time Extended

Assessments

- Assessments (Chapter, Unit Tests, Teacher-Created)
- Closure
- Fact Fluency
- Higher-Level Questioning
- Presentations
- Projects
- Teacher Observations

Materials/Resources

- Anchor Charts
- Calculators
- Graphic Organizers
- Houghton Mifflin 2007
- Internet Resources
- Journals
- Manipulatives
- Resource Books
- Math in Practice
- Trade Books and Picture Books
- Vocabulary (Cards, Strategies, and Lists)

Adopted: 1/27/88
Revised: 9/3/91; 9/16/98; 9/17/03; 8/17/09; 5/20/13; 5/20/2019

Unit 1: Numbers and Operations: Base Ten	
The Standards of Mathematical 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 make use of structure.**	**Reason abstractly and quantitatively.** **Model with mathematics.** **Attend to precision.** **Look for and express regularity in repeated reasoning.**
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
2.1 Numbers and Operations – Base Ten • Place value through ten thousands	**M03.A-T.1.1.1** - Round two- and three-digit whole numbers to the nearest ten or hundred, respectively.
• Compare and order numbers	**M03.B-0.3.1.7** - Identify the missing symbol (+, -, x, ÷, <, >, =) and numbers. **M03.A-T.1.1.4** - Order a set of whole numbers from least to greatest or greatest to least (up through 9,999; limit sets to no more than four numbers).
• Round numbers	
• Properties of addition	**M03.B-0.3.1.5** - Identify arithmetic patterns (including patterns in the addition table or multiplication table) and/or explain those using properties of operations.
• Estimate sums: Reasonableness	**M03.B-0.3.1.3** - Assess the reasonableness of answers. Limit problems posed with whole numbers and having whole number answers.
• Add with regrouping and regrouping through thousands	**M03.A-T.1.1.2** - Add two- and three- digit whole numbers (limit sums from 100 through 1,000).

Unit 1: Numbers and Operations: Base Ten - continued	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
2.1 Numbers and Operations – Base Ten • Subtraction - regroup through hundreds and regroup across zeros • Problem solve – addition and subtraction	**M03.B-0.3.1.3** - Assess the reasonableness of answers. Limit problems posed with whole numbers and having whole number answers. **M03.A-T.1.1.2** - Subtract two-digit and three-digit numbers from three-digit whole numbers. **M03.B-0.3.1.7** - Identify the missing symbol (+, -, x, ÷, <, >, =) and numbers.

Unit 2: Geometry	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
2.3 Geometry • Characteristics of Polygons	**M03.C-G1.1.1** - Explain that shapes in different categories may share attributes and that shared attributes can define a larger category. **M03.C-G.1.1.2** - Recognize rhombi, rectangles, and squares as examples of quadrilaterals and/or draw examples of quadrilaterals that do not belong to any of these subcategories. **M03.C-G.1.1.3** - Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.

Unit 3: Operations and Algebraic Thinking	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
2.2 Algebraic Concepts • Introduction to multiplication: *Arrays* *Repeated addition* *Equal groups* *Number line*	**M03.B-0.1.1.1** - Interpret and/or describe products of whole numbers (up to and including 10 x 10).
• Multiply digits 0-10	**M03.A-T.1.1.3** - Multiply one-digit whole numbers by two-digit multiples of 10 (from 10 through 90). **M03.B-0.1.2.1** - Use multiplication (up to and including 10 x 10) and/or division (limit dividends through 50, and limit divisors and quotients through 10) to solve word problems in situations involving equal groups, arrays, and/or measurement quantities.
• Use a multiplication table	**M03.B-0.3.1.5** - Identify arithmetic patterns (including patterns in the addition table or multiplication table) and/or explain patterns using properties of operations.
• Properties of multiplication	**M03.B-O.2.1.1** - Apply the commutative property of multiplication (not identification or definition of the property). **M03.B-0.2.1.2** - Apply the associative property of multiplication (not identification or definition of the property).
• Problem solve *Multi-step problems* *Order of operations* *Patterns* *Number sentence*	**MO3.B-O.3.1.1** - Solve two-step word problems using the four operations (expressions are not explicitly stated). Limit to problems with whole numbers and having whole-number answers. **M03.B-03.1.2** - Represent two-step word problems using equations with a symbol standing for the unknown quantity. Limit to problems with whole numbers and having whole-numbers answers. **M03.B-0.3.1.4** - Solve two-step equations using order of operations (equation is explicitly stated with no grouping symbols). **M03.B-0.3.1.5** - Identify arithmetic patterns (including patterns in the addition table or multiplication table) and/or explain patterns using properties of operations. **M03.B-0.3.1.7** - Identify the missing symbol (+, -, x, ÷, <, >, =) that makes a number sentence true. **M03.B-0.1.2.2** - Determine the unknown whole number in a multiplication (up to and including 10 x 10) or division (limits dividends through 50 and limit divisors and quotients through 10) equation relating three whole numbers.

Unit 3: Operations and Algebraic Thinking - continued	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
• Introduction to division *Repeated subtraction* *Relate to multiplication* *Number line*	**M03.B-0.1.1.2** - Interpret and/or describe whole-number quotients of whole numbers (limit dividends through 50, and limit divisors and quotients through 10).
• Divide digits 0-10	**M03.B-0.1.2.1** - Use multiplication (up to and including 10 x 10) and/or division (limit dividends through 50, and limit divisors and quotients through 10) to solve word problems in situations involving equal groups, arrays, and/or measurement quantities.
• Divide using a table	**M03.B-0.2.2.1** - Interpret and/or model division as a multiplication equation with an unknown factor. **M03.B-0.3.1.5** - Identify arithmetic patterns (including patterns in the addition table or multiplication table) and/or explain patterns using properties of operations.
• Problem solve *Multi-step problems* *Patterns* *Number sentences* *Order of operations*	**M03.B-0.1.2.1** - Use multiplication (up to and including 10 x 10) and/or division (limit dividends through 50, and limit divisors and quotients through 10) to solve word problems in situations involving equal groups, arrays, and/or measurement quantities. **M03.B-0.1.2.2** - Determine the unknown whole number in a multiplication (up to and including 10 x 10) or division (limits dividends through 50 and limit divisors and quotients through 10) equation relating three whole numbers. **M03.B-0.3.1.4** - Solve two-step equations using order of operations (equation is explicitly stated with no grouping symbols).

Unit 4: Numbers and Operations - Fractions	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
2.1 Numbers and Operations – Fractions • Represent fractions	**M03.A-F.1.1.1** - Demonstrate that when a whole or set is partitioned into y equal parts, the fraction 1/y represents 1 part of the whole and/or the fraction x-y represents x equal parts of the whole (limit denominators to 2, 3, 4, 6, and 8; limit numerators to whole numbers less than the denominator; and no simplification necessary). **M03.A-F.1.1.2** - Represent fractions on a number line (limit denominators to 2, 3, 4, 6, and 8; limit numerators to whole numbers less than the denominator; and no simplification necessary).
• Equivalent fractions *Whole numbers as fractions*	**M03.A-F.1.1.3** - Recognize and generate simple equivalent fractions (limit the denominators to 1, 2, 3, 4, 6, and 8 and limit numerators to whole numbers less than the denominator). **M03.A-F.1.1.4** - Express whole numbers as fractions, and/or generate fractions that are equivalent to whole numbers (limit denominators to 1, 2, 3, 4, 6, and 8).
• Compare fractions	**M03.A-F.1.1.5** - Compare two fractions with the same denominator (limit denominators to 1, 2, 3, 4, 6, and 8), using the symbols >, =, or <, and/or justify the conclusions.

Unit 5: Measurement and Data - Measurement, Data, and Perimeter	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
2.4 Measurement and Data • Attributes of liquid volume, mass, and length of objects	**M03.D-M.1.2.3** - Use a ruler to measure lengths to the nearest quarter inch or centimeter. **M03.D-M.1.2.1** - Measure and estimate liquid volumes and masses of objects using standards units (cups [c], pints [pt], quarts [qt], gallons [gal], ounces [oz], and pounds [lb]) and metric units (liters [l], grams [g], and kilograms [kg]). **M03. D-M.1.2.2** - Add, subtract, multiply, and divide to solve one-step word problems involving masses or liquid volumes that are given in the same units.
• Perimeter and area	**M03.D-M.3.1.1** - Measure areas by counting unit squares (square cm, square m, square in., square ft., and non-standard square units). **M03.D-M.3.1.2** - Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems, and represent whole number products as rectangular areas in mathematical reasoning. **M03.D-M.4.1.1** - Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, exhibiting rectangles with the same perimeter and different areas, and exhibiting rectangles with the same area and different perimeters. Use the same units throughout the problem.

Unit 6: Measurement and Data - Time, Money, and Graphs	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
2.4 Measurement and Data • Make change (up to $5.00)	**M03.D-M.1.3.2** - Make change for an amount up to $5.00 with no more than $2.00 change given (penny, nickel, dime, quarter, and dollar).
• Compare money	**M03.D-M1.3.1** - Compare total values of combinations of coins (penny, nickel, dime, quarter) and/or dollar bills less than $5.00.
• Round money	**M03.D-M.1.3.3** - Round amount of money to the nearest dollar.
• Tell time to the minute	**M03.D-M.1.1.1** - Tell, show, and/or write time (analog) to the nearest minute.
• Understand elapsed time	**M03.D-M.1.1.2** - Calculate elapsed time to the minute in a given situation (total elapsed time limited to 60 minutes or less).
• Collect and organize data	**M03.D-M.2.1.1** - Complete a scaled pictograph and a scaled bar graph to represent a data set with several categories (scales limited to 1, 2, 5, and 10).
• Pictographs	**M03.D-M.2.1.2** - Solve one- and two-step problems using information to interpret data presented in scaled pictographs and scaled bar graphs (scales limited to 1, 2, 5, and 10).
• Bar graphs	**M03.D-M.2.1.4** - Translate information from one type of display to another. Limit to pictographs, tally charts, bar graphs, and tables.
• Line plots	**M03.D-M.2.1.3** - Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Display the data by making a line plot, where the horizontal scale is marked in appropriate units - whole numbers, halves, or quarters.