SPRING GROVE AREA SCHOOL DISTRICT

PLANNED COURSE OVERVIEW

Course Title: Mathematics	**Length of Course:** 30 Cycles
Grade Level(s): Kindergarten	**Periods Per Cycle:** 6
Units of Credit: N/A	**Length of Period:** 45 Minutes
Classification: Required	**Total Instructional Time:** 135 Hours

Course Description

This course is designed to present developmentally appropriate basic number facts and computation 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
- 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
- Small Group Interventions
- Teacher Demonstrations
- Teacher Observations
- Technology Integration
- Vocabulary (Cards, Strategies, and Lists)
- Wait Time
- Wait Time Extended

Assessments

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

Materials/Resources

- Anchor Charts
- Graphic Organizers
- Houghton Mifflin 2007
- Internet Resources
- Journals
- Manipulatives
- Resource Books
- Math In Practice
- Trade Books, Picture Books, Big 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
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Unit 1: Numbers and Operations – Base Ten (0-12)	
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**
A.1 Counting and Cardinality – Cardinality • Name numerals 0-12 • Represent a number of objects with a written numeral 0-12 • Recognize that a number represents a specific quantity • Connect the quantity to a written symbol • Continually check work by asking questions (e.g. "Does this make sense?") • Count to 100 (Secure by end-of-the year) • Count forward beginning from a given number within a known sequence (instead of having to begin at 1)	**2.1.K.A.1** - Know number names and write and recite the count sequence.
A.2 Counting and Cardinality – Counting • Use one-to-one correspondence when counting to 12 • State the total number of objects counted, demonstrating understanding that last number named tells the number of objects counted • Understand each successive number name refers to a quantity that is one larger when added to the given number • Recognize that a number represents a specific quantity • Continually check work by asking questions (e.g. "Does this make sense?")	**2.1.K.A.2** - Apply one-to-one correspondence to count the number of objects.

Unit 1: Numbers and Operations – Base Ten (0-12) - continued	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
A.3 Counting and Cardinality – Comparing • Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (e.g. using matching and counting strategies) • Compare two numbers between 1 and 12 presented as written numerals • Develop mathematical communication skills • Use clear and precise language and discussions to justify own reasoning	**2.1.K.A.3** - Apply the concept of magnitude to compare numbers and quantities.
B.1 Numbers and Operations in Base Ten • Compose and decompose numbers up to 12 into ten and ones by using objects or drawings *Record each composition or decomposition by a drawing or equation • Continually check work by asking questions (e.g. "Does this make sense?") • Begin to discern a pattern or structure that exists in teen numbers (11-12)	**2.1.K.B.1** - Use place value to compose and decompose numbers up to 12.

Unit 2: Geometry	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
A.1 Geometry - Identification • Identify shapes as two-dimensional or three-dimensional • Name shapes regardless of their orientations or overall size • Use simple shapes to compose larger shapes • Compare two representations side-by-side and explain their connections • Use clear and precise language in discussions with others and in own reasoning	**2.3.K.A.1** - Identify and describe two- and three-dimensional shapes.
A.2 Geometry - Application • Describe objects in the environment using names of shapes • Describe the relative positions of objects using appropriate terms (e.g. above, below, beside, in front, behind, next to) • Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts, and other attributes • Model shapes in the world by building shapes • Construct arguments using concrete referents (e.g. objects, pictures, drawing, and actions) • Develop mathematical communication skills as they participate in mathematical discussions	**2.3.K.A.2** - Analyze, compare, create, and compose two- and three-dimensional shapes.

Unit 3: Numbers and Operations – Base Ten (13-20)	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
A.1 Counting and Cardinality – Cardinality • Name numerals 0-20 • Represent a number of objects with a written numeral 0-20 • Recognize that a number represents a specific quantity • Connect the quantity to a written symbol • Continually check work by asking questions (e.g. "Does this make sense?") • Count to 100 (Secure by end-of-the year) • Count forward beginning from a given number within a known sequence (instead of having to begin at 1) A.2 Counting and Cardinality – Counting • Use one-to-one correspondence when counting to 20 • State the total number of objects counted, demonstrating understanding that last number named tells the number of objects counted • Understand each successive number name refers to a quantity that is one larger when added to the given number • Recognize that a number represents a specific quantity • Continually check work by asking questions (e.g. "Does this make sense?")	**2.1.K.A.1** - Know number names and write and recite the count sequence. **2.1.K.A.2** - Apply one-to-one correspondence to count the number of objects.

Unit 3: Numbers and Operations – Base Ten (13-20) - continued	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
A.3 Counting and Cardinality – Comparing • Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group (e.g. using matching and counting strategies) • Compare two numbers between 1 and 20 presented as written numerals • Develop mathematical communication skills • Use clear and precise language and discussions to justify own reasoning	**2.1.K.A.3** - Apply the concept of magnitude to compare numbers and quantities.
B.1 Numbers and Operations in Base Ten • Compose and decompose numbers up to 20 into ten and ones by using objects or drawings *Record each composition or decomposition by a drawing or equation • Continually check work by asking questions (e.g. "Does this make sense?") • Begin to discern a pattern or structure that exists in numbers (13-20)	**2.1.K.B.1** - Use place value to compose and decompose numbers within 19.

Unit 4: Operations and Algebraic Thinking	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
A. <u>Operations and Algebraic Thinking</u> • Represent addition and subtraction (e.g. with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations) • Decompose numbers less than or equal to 10 into pairs in more than one way, by using objects or drawings *Record each decomposition through a drawing or equation • Find the number that makes 10, for any number from 1 to 9, when added to the given number • Solve addition and subtraction word problems, and add and subtract within 10, by using objects, drawings, or equations • Begin to discern a pattern or structure in equations of addition and subtraction • Experiment with representing problem situations in multiple ways including numbers, words (e.g. mathematical language), drawing pictures, using objects, acting out, making a chart or list, creating equations, etc. • Connect the different representations and explain the connections.	**2.2.K.A.1** - Extend the concepts of putting together and taking apart to add and subtract within 10.

Unit 5: Measurement and Data	
CONTENT/KEY CONCEPTS	**OBJECTIVES/STANDARDS**
A.1 Measurement and Data – Measurement • Describe measurable attributes of objects (e.g. length, weight, area, or capacity) • Describe several measurable attributes of a single object • Compare two objects with a measureable attribute in common • Consider the available tools (including estimation) when solving a mathematical problem • Decide when certain tools might be helpful	**2.4.K.A.1** - Describe and compare attributes of length, area, weight, and capacity of objects.
A.4 Measurement and Data – Data • Classify up to 20 objects into categories using one attribute *Display the number of objects in each category *Count and compare the quantities of each category *Describe the difference • Construct arguments using concrete objects to classify items (e.g. ask "Why is this true?" "Does this make sense?") • Connect the different representations and explain the connections.	**2.4.K.A.4** - Classify objects and count the number of objects in each category.