Math K

Semester A Summary:

In this first semester course, mathematical thinking and problem solving are introduced. Students explore topics and apply mathematical practices outlined in the Common Core State Standards and other state standards. The first few units focus on counting and sorting. Then, lessons introduce addition and subtraction. Throughout the course, students engage in hands on and online activities to master basic skills.

Semester A Outline

1. **Let's Learn Math!**
   1. Learning Coach: Support Your Student in Math
   2. Welcome to Math!
2. **One to Five**
   1. Counting 1, 2, and 3
      - Use objects to represent and count the quantities 1, 2, and 3
   2. Counting 1, 2, and 3 in Different Arrangements
      - Identify whether a particular set includes 1, 2, or 3 objects, regardless of how the objects are arranged
   3. Reading and Writing 1, 2, and 3
      - Recognize and write the numerals that describe the quantities 1, 2, and 3
   4. Mid-Unit Review
      - Represent and count the quantities 1 to 3
      - Identify the total number of objects in a set
      - Identify the total number of objects in a set regardless of arrangement
      - Recognize and write the numerals 1 to 3
   5. Counting 4 and 5
      - Use objects to represent and count the quantities 4 and 5
   6. Counting 4 and 5 in Different Arrangements
      - Identify whether a particular set includes 4 or 5 objects
   7. Reading and Writing 4 and 5
      - Recognize and write numerals that describe the quantities 4 and 5
   8. Problem Solving: Use Objects
      - Solve problems by using objects
   9. Math Project – Social Studies
      - Observe surroundings to create a number book
   10. One to Five Unit Test
3. **Comparing and Ordering 0 to 5**
   1. More, Fewer, and Same As
      - Use one-to-one correspondence to compare objects and decide whether one group has more, fewer, or the same number as the other group
   2. 1 and 2 More
      - Recognize and identify a group of objects that has 1 more or 2 more than

another group
3. 1 and 2 Fewer
   - Recognize and identify a group of objects that has 1 fewer or 2 fewer from another group
4. The Number 0
   - Understand that zero means none
5. Reading and Writing 0
   - Recognize and write the numeral that describes the quantity of 0
6. As Many, More, and Fewer
   - Use one-to-one correspondence to compare two groups and determine whether one group has more, fewer, or as many as the other group
7. Mid-Unit Review
   - Recognize and compare groups of objects to identify which group has more, fewer, or the same number
   - Use zero to represent a set of objects when there are none
   - Recognize and write the numeral 0
   - Recognize and compare two groups of objects to determine if the number of objects is as many, more, or fewer
8. Ordering Numbers 0 to 5
   - Use objects to order numbers 0 to 5 in sequence
9. Ordinal Numbers Through Fifth
   - Use words first through fifth to identify ordinal positions
10. Problem Solving: Use Objects
    - Use objects to show the number in each group, order the number of objects in each group, and identify the group that has the most or fewer number objects
11. Comparing and Ordering 0 to 5 Unit Test

4. Six to Ten
1. Counting 6 and 7
   - Use objects to represent and count the quantities of 6 and 7
2. Reading and Writing 6 and 7
   - Recognize and write the numerals that describe the quantities 6 and 7
3. Counting 8 and 9
   - Use objects to represent and count the quantities of 8 and 9
4. Reading and Writing 8 and 9
   - Recognize and write numerals that describe the quantities 8 and 9
5. Mid-Unit Review
   - Represent and count the quantities 1 to 9
   - Identify the total number of objects in a set regardless of arrangement
   - Recognize and write the numerals 6 to 9
6. Counting 10
   - Use objects to represent and count the quantity 10
7. Reading and Writing 10
   - Recognize and write the numeral that describes the quantity of 10
8. Problem Solving: Looking for a Pattern
   - Solve problems by identifying growing patterns and predicting what comes next
   - Create and transfer repeating patterns
9. Math Project – Social Studies
   - Observe surroundings to create a number book
10. Six to Ten Unit Test

5. **Comparing and Ordering Numbers 0 to 10**
    1. Comparing Numbers through 10
        - Compare two numbers using sets of objects and one-to-one correspondence to determine which number is greater and which is less
    2. Comparing Numbers to 5
        - Given a number from 0–5, tell if the number is greater or less than 5
    3. Comparing Numbers to 10
        - Given a number or set from 0–12, decide if the number is greater or less than 10
    4. 1 More
        - Use counting to identify a number that is 1 more than another number
    5. 1 Fewer
        - Use counting to identify a number that is 1 fewer than another number
    6. Mid-Unit Review
        - Analyze two different sets of objects to determine which set is greater and which set is less
        - Apply 1 to 1 correspondence to determine quantity of a set of objects
        - Analyze a number 0 to 12 and identify if a number between 0 and 12 is greater or less than 5
        - Identify if a number between 0 and 12 is greater or less than 10
        - Identify numbers that are 1 more or 1 fewer than other numbers
    7. 2 More
        - Use counting to identify a number that is 2 more than another number
    8. 2 Fewer
        - Use counting to identify a number that is 2 fewer than another number
    9. Ordering Numbers through 10
        - Order numbers from 0 through 10 in sequence
    10. Ordering Numbers on a Number Line
        - Use a number line to count numbers 0 to 10 in order
        - Count backward by ones when given any number between 1 and 10
    11. Problem Solving: Use Objects
        - Solve problems by using counters to show 1 more and 2 more
    12. Comparing and Ordering Numbers 0 to 10 Unit Test
6. **Numbers to 20**
    1. Counting, Reading, and Writing 11 and 12
        - Recognize and write the numerals that describe the quantities 11 and 12
    2. Counting, Reading, and Writing 13, 14, and 15
        - Recognize and write the numerals that describe the quantities 13 to 15
    3. Mid-Unit Review
        - Recognize and represent with manipulatives the quantities 11 to 15
        - Recognize and write the numerals 11 to 15
    4. Counting, Reading, and Writing 16 and 17
        - Recognize and write the numerals that describe the quantities 16 and 17
    5. Counting, Reading, and Writing 18, 19, and 20
        - Recognize and write the numerals that describe the quantities 18, 19, and 20
    6. Problem Solving: Use Logical Reasoning
        - Solve problems by applying logical reasoning to identify missing numbers in a number sequence
    7. Numbers to 20 Unit Test
7. **Numbers to 100**
    1. Counting to 30

- Count to 30 objects
2. About How Many?
   - Use benchmarks to estimate quantities of groups
3. Counting to 100
   - Count and write numbers to 100 on the hundred chart
4. Mid-Unit Review
   - Recognize, count, write, and represent with manipulatives the quantities to 100
   - Analyze groups of objects to estimate quantities
   - Evaluate groups of 10 to encourage counting up to 100
5. Counting Groups of Ten
   - Count groups of 10, up to 10 tens, and write how many
6. Patterns on a Hundred Chart
   - Use a hundred chart to recognize patterns when counting by 2s and 10s
7. Problem Solving: Look for a Pattern
   - Solve problems by looking for a pattern
8. Numbers to 100 Unit Test

8. Understanding Addition
1. Stories About Joining
   - Act out numbers stories that involve joining two groups
2. More Joining
   - Interpret illustrations that show joining groups and write the corresponding numbers
3. Joining Groups
   - Determine how many there are altogether when two groups are joined
4. Using the Plus Sign
   - Use the plus sign (+) to represent joining groups when recording addition
5. Mid-Unit Review
   - Evaluate joining stories using manipulatives to help solve the problem
   - Evaluate and interpret images that depict joining stories
   - Write numbers that correspond to the joining stories
   - Apply the concept of altogether to joining stories
   - Recognize and use the plus sign when reading and recording joining stories
6. Finding Sums
   - Identify and use the equal sign (=); add and write the sum
7. Addition Sentences
   - Write and solve addition sentences to represent joining situations
8. Problem Solving: Draw a Picture
   - Solve problems by drawing pictures about joining two groups
9. Understanding Addition Unit Test

9. Understanding Subtraction
1. Stories About Separating
   - Act out number stories that involve separating two groups
2. Stories About Take Away
   - Determine how many are left when some objects in a group are taken away
3. Stories About Comparing
   - Compare two groups to find how many more or fewer
4. Using the Minus Sign
   - Use the minus sign (−) to represent "take away" situations when recording subtraction
5. Mid-Unit Review

- Interpret stories about separating to determine the number left
- Evaluate separating stories using manipulatives to help solve the problem
- Compare two groups of objects and determine which one is more and which one is fewer and by how much
- Recognize and use the minus sign when reading and recording separating stories
6. Finding Differences
- Use the equal sign (=), subtract, and write the difference
7. Subtraction Sentences
- Write and solve subtraction sentences to represent take-away situations
8. Problem Solving: Use Objects
- Solve problems by choosing addition or subtraction
9. Understanding Subtraction Unit Test

Semester B Summary:

In this second semester course, students continue to engage in mathematical thinking and problem solving. Students explore topics and apply mathematical practices outlined in the Common Core State Standards and other state standards. Students have opportunities to describe, sort, and compare objects and explore basic shapes. Stories and activities teach students about money, time, fractions, and measurement. Throughout the course, students engage in hands on and online activities to master basic skills.

Semester B Outline

1. **Composing and Decomposing Numbers to 10**
   1. Making 4 and 5
      - Use objects to show 4 and 5 in two parts
   2. Writing Number Sentences for 4 and 5
      - Write number sentences to describe the decomposition of 4 or 5 into two parts
   3. Making 6 and 7
      - Use objects to show 6 and 7 in two parts
   4. Writing Number Sentences for 6 and 7
      - Write number sentences to describe the decomposition of 6 or 7 into two parts
   5. Mid-Unit Review
      - Compose and decompose numbers 0 to 7
      - Use objects to show numbers 4 to 7 in two parts
      - Write number sentences that add up to numbers 4 to 7
   6. Making 8 and 9
      - Use objects to show 8 and 9 in two parts
   7. Writing Number Sentences for 8 and 9
      - Write number sentences that add up to 8 and 9
   8. Making 10
      - Use objects to show 10 in two parts
   9. Writing Number Sentences for 10
      - Write number sentences that show how two numbers can add to 10
   10. Problem Solving: Make a Graph
      - Construct graphs using real objects or pictures to answer questions
   11. Composing and Decomposing Numbers to 10 Unit Test

- Compose and decompose numbers 0–10
- Use objects to show numbers 4–10 in two parts
- Write number sentences that add up to numbers 4–10
- Construct a graph

2. Composing Numbers 11 to 19
1. Making 11, 12, and 13
   - Represent 11, 12, and 13 as the composition of 10 plus 1, 2, or 3
2. Making 14, 15, and 16
   - Represent 14, 15, and 16 as the composition of 10 plus 4, 5, and 6
3. Mid-Unit Review
   - Represent numbers 11 to 16 as the composition of 10 plus a number
4. Making 17, 18, and 19
   - Represent 17, 18, and 19 as the composition of 10 plus 7, 8, and 9
5. Look for a Pattern
   - Use drawings and number sentences to identify patterns on the first two rows of the hundreds chart
6. Review of Making 11-19
   - Compose numbers between 11 and 19
7. Composing Numbers 11–19 Unit Test

3. Decomposing Numbers 11 to 19
1. Creating Sets to 19
   - Use objects to create sets to 19
2. Parts of 11, 12, and 13
   - Represent the decomposition of 11, 12, and 13 as ten ones and additional ones
3. Parts of 14, 15, and 16
   - Represent the decomposition of 14, 15, and 16 as one ten and four, five, or six ones
4. Mid-Unit Review
   - Create sets of objects to 19
   - Represent the decomposition of 11 to 16 as ten ones and additional ones
5. Parts of 17, 18, and 19
   - Make drawings and write number sentences that represent the decomposition of 17, 18, and 19 into ten and 7, 8, or 9 ones
6. Problem Solving: Look for a Pattern
   - Identify patterns found in decomposing the teen numbers, including the constant of one ten and the variable number of ones
   - Make drawings and write number sentences for numbers 11 to 19
7. Decomposing Numbers 11–19 Unit Test

4. Measurement and Money
1. Money
   - Recognize the attributes of a penny, nickel, dime, and quarter
   - Identify the number of pennies equivalent to a nickel, a dime, and a quarter
2. Describing Objects by More than One Attribute
   - Recognize and describe the measurable attributes of objects
3. Comparing by Length
   - Directly compare objects by length
4. More Comparing Objects by Length
   - Compare and order objects by length
5. Problem Solving: Try, Check, and Revise
   - Solve problems by comparing lengths and revising their answers

6. Mid-Unit Review
- Describe an object by its attributes
- Compare objects by their length
7. Comparing by Height
- Compare objects by height
8. More Comparing Objects by Height
- Compare and order objects by height
9. Comparing Capacities
- Compare containers by their capacity
10. Comparing by Weight
- Compare objects by weight
11. Virtual Pan Balance Project
- Evaluate the weight of objects
12. Measurement Unit Test

5. Sort, Classify, Count, and Categorize Data
1. Same and Different
- Identify same and different by the attributes of color, shape, size, and kind
2. Sorting by One Attribute
- Sort objects by one attribute such as color, shape, size, or kind
3. Sorting the Same Set in Different Ways
- Sort the same set in different ways
4. Mid-Unit Review
- Sort objects based on their attributes
5. Sorting by More than One Attribute
- Use more than one attribute to sort a set of objects
6. Problem Solving: Use Logical Reasoning
- Solve problems by thinking logically
7. Real Graphs
- Make and read a real graph
8. Picture Graphs
- Make and read a picture graph
9. Sort, Classify, Count, and Categorize Data Test

6. Identifying and Describing Shapes
1. Rectangles
- Identify and describe rectangles
2. Squares
- Identify and describe squares
3. Circles
- Identify and describe circles
4. Triangles
- Identify and describe triangles
5. Hexagons
- Identify and describe hexagons
6. Mid-Unit Review
- Correctly name shapes regardless of their orientation or overall size
7. Solid Figures
- Identify cubes, cones, cylinders, and spheres and relate them to real-life objects
8. Flat Surfaces of Solid Figures
- Identify three-dimensional figures and describe the shape of flat surfaces
9. Problem Solving: Use Objects

- Solve problems by using objects
10. Math Project: Art
    - Examine the attributes of real-world objects
    - Identify and describe rectangles, squares, circles, triangles, and hexagons
    - Use rectangles, squares, circles, triangles, and hexagons to create a model of a real-world object
    - Describe measureable attributes of objects, such as length or height
    - Sort a set of objects based on their attributes
11. Identifying and Describing Shapes Unit Test

7. Position and Location of Shapes
1. Inside and Outside
    - Describe an object as inside or outside a given place
2. Above, Below, and On
    - Describe an object as above, below, or on another object
3. Mid-Unit Review
    - Describe one object in relation to another
4. In Front of and Behind
    - Describe an object as in front of or behind, next to or beside a given object
5. Left and Right
    - Describe an object as left or right of a given object
6. Position and Location of Shapes Unit Test

8. Geometry
1. Same Size, Same Shape
    - Identify and draw figures that are the same size and the same shape
2. Making Shapes from Other Shapes
    - Recognize that shapes can be combined to make other shapes
3. Comparing Solid Figures
    - Identify solid figures that roll, stack, and/or slide on a flat surface
4. Mid-Unit Review
    - Identify similarity in objects and use similar shapes to make other shapes
    - Describe how a solid figure can move across a flat surface
5. Building with Solid Figures
    - Make shapes by combining two solid figures
6. Problem Solving: Use Logical Reasoning
    - Use logical reasoning to solve problems
7. Real-World Objects
    - Examine the attributes of real-world objects
8. Geometry Unit Test