

# **GOMath!**

## **Kindergarten**



### **Curriculum**

**Lower Township Elementary Schools  
2015**

## Course Description:

In Kindergarten, instructional time should focus on two critical areas: representing, relating, and operating on whole numbers, initially with sets of objects; and describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.

Kindergarten students will use a variety of activities, instructional strategies and experiences to count orally forward by 1's, 5's and 10's and backward beyond 10 using songs, movement activities, and games; using one-to-one correspondence to count objects in the context of everyday experiences and games; reading and writing numerals; comparing numbers through daily routines, and games; exploring concepts of quantity, more, and less using concrete materials; exploring different ways to represent numbers using manipulatives and beginning to recognize numerals and understanding the many uses of numbers.

Kindergarten students will explore addition and subtraction concepts through one more/ one less songs, number stories, concrete activities and games; develop and share multiple strategies for solving addition and subtraction problems including counting and using fingers or other objects, using the =, +, and - symbols to write number models for number stories. Students will identify, describe and extend sound, movement and visual patterns; identifying, comparing and describing attributes of objects and sorting objects by attributes. Students will explore number patterns on the Growing Number Line and Class Number Grid.

Students will organize their work as they explore the relationships among blocks, drawings, sticks, clips and other manipulatives to determine how these groups can be used to represent numbers 11 -19 into ten ones and some further ones.

Students will work together to collect, organize, display and analyze classroom data through the daily weather, temperature, and survey routines as well as through games and activities; working with data and graphing activities such as graphing dice rolls, exploring probability through games and describing the likelihood of events as definite, impossible or possible. Students will make direct comparisons of length, weight, and capacity using language to describe the sizes of objects and size comparisons. Students will begin to explore measurement through non-standard/ standard units; having experiences with standard measuring tools; sequencing familiar events in time. Students will begin learning coins and their values and develop an understanding of time measures (day, week, month) and temperature measures through daily routines (calendar, daily schedule and temperature).

Kindergarten students describe their physical world using geometric ideas and vocabulary. Students explore 2 and 3 dimensional shapes, tactile and sensory experiences, with manipulatives such as pattern blocks, attributes blocks, and building blocks, exploring line symmetry, developing an understanding of position and spatial relations, concepts and vocabulary.

## Course Goals:

- A. Counting and Cardinality- K.CC
  - Know number names and the count sequence
  - Count to tell the number of objects
  - Compare numbers
- B. Operations and Algebraic Thinking - K.OA
  - Understanding addition as putting together and adding to, and understand subtraction as taking apart and taking them
- C. Numbers and Operations in Base Ten - K.NBT
  - Work with numbers 11-19 to gain foundation for place value
- D. Measurement and Data - K. MD
  - Describe and compare Measurable Attributes
  - Classify Objects and Count the Number of Objects in Each Category
- E. Geometry - K.G
  - Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres)
  - Analyze, compare, create, and compose shapes

## Course Enduring Understandings:

Ideas that have lasting value beyond the classroom. Consider, “what do we want students to understand and be able to use several years from now, after they have forgotten the details?”

- A. Counting and Cardinality – K.CC
  - Numbers have names and we can use them to count
  - Everything can be counted. Number names tell us how many objects are in groups and allow us to count in order and compare groups of objects.
- B. Operations and Algebraic Thinking - K.OA

- Adding is putting groups together and making more; subtracting is taking groups apart and making less.

C. Number and Operations in Base Ten - K.NBT

- We can break numbers apart by groups of tens and ones to help us understand larger numbers. Knowing the value of numbers in each place will help us add and subtract.

D. Measurement and Data – K.MD

- When measuring you start at the beginning of the object and finish at the end of the object.
- When comparing two lengths, one end of each length must match.
- The size of an object does not always tell you its weight; for example, larger does not always mean heavier.
- We can describe all objects by their attributes.
- We can sort all objects by their attributes.

E. Geometry – K.G

- Geometric shapes are named by their attributes.
- Circles and rectangles can be broken apart into halves, thirds, and fourths/quarters.

# Common Core State Standards:

## Grade K Overview

### Counting and Cardinality

- Know number names and the count sequence.
- Count to tell the number of objects.
- Compare numbers.

### Operations and Algebraic Thinking

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

### Number and Operations in Base Ten

- Work with numbers 11–19 to gain foundations for place value.

### Measurement and Data

- Describe and compare measurable attributes.
- Classify objects and count the number of objects in categories.

### Geometry

- Identify and describe shapes.
- Analyze, compare, create, and compose shapes.

### Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

**Know number names and the count sequence.**

1. Count to 100 by ones and by tens.
2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

**Count to tell the number of objects.**

4. Understand the relationship between numbers and quantities; connect counting to cardinality.
  - a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
  - b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
  - c. Understand that each successive number name refers to a quantity that is one larger.
5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.

**Compare numbers.**

6. 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., by using matching and counting strategies.<sup>1</sup>
7. Compare two numbers between 1 and 10 presented as written numerals.

**Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.**

1. Represent addition and subtraction with objects, fingers, mental images, drawings<sup>2</sup>, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g.,  $5 = 2 + 3$  and  $5 = 4 + 1$ ).
4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.
5. Fluently add and subtract within 5.

## Number and Operations in Base Ten

K.NBT

### Work with numbers 11–19 to gain foundations for place value.

1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g.,  $18 = 10 + 8$ ); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.

## Measurement and Data

K.MD

### Describe and compare measurable attributes.

1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
2. Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

### Classify objects and count the number of objects in each category.

3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.<sup>3</sup>

## Geometry

K.G

### Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above, below, beside, in front of, behind, and next to*.
2. Correctly name shapes regardless of their orientations or overall size.
3. Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).

### Analyze, compare, create, and compose shapes.

4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length).
5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
6. Compose simple shapes to form larger shapes. *For example, “Can you join these two triangles with full sides touching to make a rectangle?”*

<b>21<sup>st</sup> Century Career Ready Practices</b>	
1. Act as a responsible and contributing citizen and employee.	<b>X</b>
2. Apply appropriate academic and technical skills	<b>X</b>
3. Attend to personal health and financial well-being.	<b>X</b>
4. Communicate clearly and effectively and with reason.	<b>X</b>
5. Consider the environmental, social and economic impacts of decisions	<b>X</b>
6. Demonstrate creativity and innovation.	<b>X</b>
7. Employ valid and reliable research strategies.	<b>X</b>
8. Utilize critical thinking to make sense of problems and persevere in solving them.	<b>X</b>
9. Model integrity, ethical leadership and effective management.	<b>X</b>
10. Plan education and career paths aligned to personal goals.	<b>X</b>
11. Use technology to enhance productivity.	<b>X</b>
12. Work productively in teams while using cultural global competence.	<b>X</b>

## **Unit Names:**

Counting and Cardinality
Operations and Algebraic Thinking
Numbers and Operations in Base Ten
Measurement and Data
Geometry

## Materials :

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## Infusion of Technology:

Technology Standards- Grade K-2

Standard    Indicator

8.1.P.A.1    Use an input device to select an item and navigate the screen

8.1.P.A.2    Navigate the basic functions of a browser.

8.1.P.A.3    Use digital devices to create stories with pictures, numbers, letters and words.

8.1.P.A.4    Use basic technology terms in the proper context in conversation with peers and teachers (e.g., camera, tablet, Internet, mouse, keyboard, and printer).

8.1.P.A.5    Demonstrate the ability to access and use resources on a computing device.

8.1.2.A.4    Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).

8.1.P.C.1    Collaborate with peers by participating in interactive digital games or activities.

8.1.2.C.1    Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.

8.1.P.E.1    Use the Internet to explore and investigate questions with a teacher's support.

8.1.2.E.1    Use digital tools and online resources to explore a problem or issue.

**Course**

**Assessments:**

**Formative Assessments:**

Classwork

Classroom observations

Questioning

Discussion

Individual whiteboards

**Summative Assessments:**

Chapter Assessments

End-of-year Assessment

Performance Assessment

<b>Content Area:</b>	<b>Mathematics</b>	<b>Grade(s)</b>	<b>Kindergarten</b>
<b>Unit Plan Title:</b>	<b>Counting and Cardinality</b>		
<b>Anchor Standard (ELA) or Domain (Math)</b>			
<b>Counting and Cardinality- K.CC</b> <b>-Know number names and the count sequence</b> <b>-Count to tell the number of objects</b> <b>-Compare numbers</b>			
<b>Overview/Rationale</b>			
<p>Kindergarten students will use a variety of activities, instructional strategies and experiences to count orally forward by 1's, 5's and 10's and backward beyond 10 using songs, movement activities, and games; using one-to-one correspondence to count objects in the context of everyday experiences and games; reading and writing numerals; comparing numbers through daily routines, and games; exploring concepts of quantity, more, and less using concrete materials; exploring different ways to represent numbers using manipulatives and beginning to recognize numerals and understanding the many uses of numbers.</p>			
<b>Standard(s)</b>			
<ul style="list-style-type: none"> <li>• K.CC.1 Count to 100 by ones and by tens.</li> <li>• K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1)</li> <li>• K.CC.3 Write numbers from 0-20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects)</li> <li>• K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality.</li> <li>• K.CC.4a When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.</li> <li>• K.CC.4b Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.</li> <li>• K.CC.4c Understand that each successive number name refers to a quantity that is one larger.</li> <li>• K.CC.5 Count to answer the "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.</li> <li>• K.CC.6 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., by using matching and counting strategies.</li> <li>• K.CC.7 Compare two numbers between 1 and 10 presented as written numerals.</li> </ul>			
<b>Technology Standard(s)</b>			
<b>8.1.P.A.1</b> Use the mouse to negotiate a simple menu on the screen (e.g., to print a picture) <b>8.1. P.A.2</b> Use electronic devices (e.g., computer) to type name and to create stories with pictures and letters/words. <b>8.1. P.A.4</b> Recognize that the number keys are in a row on the top of the keyboard.			

**8.1. P.B.1** Use a digital camera to take pictures.

**8.1. P.C.1** Operate frequently used, high-quality, interactive games or activities in either screen or toy-based formats.

**8.1. P.E.1** Use the Internet to explore and investigate questions with a teacher's support.

**8.1.2. E.1** Use digital tools and online resources to explore a problem or issue affecting children, and discuss possible solutions.

**8.2.2. D.1** Collect and post the results of a digital classroom survey about a problem or issue and use data to suggest solutions.

### **Standards for Mathematical Practice(s)**

**SMP1** Make sense of problems and persevere in solving them.

**SMP2** Reason abstractly and quantitatively.

**SMP3** Construct viable arguments and critique the reasoning of others.

**SMP4** Model with mathematics.

**SMP5** Use appropriate tools strategically.

**SMP6** Attend to precision.

**SMP7** Look for and make use of structure.

**SMP8** Look for and express regularity in repeated reasoning.

### **Essential Question(s)**

- How can you show and count 1 and 2 with objects?
- How can you count and write 1 and 2 with words and numbers?
- How can you show and count 3 and 4 with objects?
- How can you count and write 3 and 4 with words and numbers?
- How can you show and count up to 5 objects?
- How can you count and write up to 5 with words and numbers?
- How can you use two sets of objects to show 5 in more than one way?
- How do you know that the order of numbers is the same as a set of objects that is one larger?
- How can you solve problems using the strategy make a model?
- How can you identify and write 0 with words and numbers?
- How can you use matching and counting to compare sets with the same number of objects?
- How can you compare sets when the number of objects in one set is greater than the number of objects in the other set?
- How can you compare sets when the number of objects in one set is less than the number of objects in the other set?
- How can you make a model to solve problems using a matching strategy?
- How can you use a counting strategy to compare sets of objects?
- How can you show and count 6 objects.
- How can you count and write up to 6 with words and numbers?
- How can you show and count 7 objects?
- How can you count and write up to 7 with words and numbers?
- How can you show and count 8 objects?
- How can you count and write up to 8 with words and numbers?
- How can you show and count 9 objects?

- How can you count and write up to 9 with words and numbers?
- How can you solve problems using the strategy draw a picture?
- How can you show and count 10 objects?
- How can you count and write up to 10 with words and numbers?
- How can you use a drawing to make 10 from a given number?
- How can you count forward to 10 from a given number?
- How can you solve problems using the strategy make a model?
- How can you use counting strategies to compare sets of objects?
- How can you compare numbers between 1 and 10?
- How can you show and count 20 objects?
- How can you count and write up to 20 words and numbers?
- How can you count forward to 20 from a given number?
- How does the order of numbers help you to count to 50 by ones?
- How does the order of numbers help you to count to 100 by ones?
- How can you count to 100 by tens on a hundred chart?
- How can you use sets of tens to count to 100?
- How can you solve problems using the strategy draw a picture?

#### **Enduring Understandings**

- Numbers have names and we can use them to count
- Everything can be counted. Number names tell us how many objects are in groups and allow us to count in order and compare groups of objects.

**In this unit plan, the following 21<sup>st</sup> Century Career Ready Practices are addressed.**

<b>Career Ready Practices</b>	
1. Act as a responsible and contributing citizen and employee.	<b>X</b>
2. Apply appropriate academic and technical skills	<b>X</b>
3. Attend to personal health and financial well-being.	<b>X</b>
4. Communicate clearly and effectively and with reason.	<b>X</b>
5. Consider the environmental, social and economic impacts of decisions	<b>X</b>
6. Demonstrate creativity and innovation.	<b>X</b>
7. Employ valid and reliable research strategies.	<b>X</b>
8. Utilize critical thinking to make sense of problems and persevere in solving them.	<b>X</b>
9. Model integrity, ethical leadership and effective management.	<b>X</b>
10. Plan education and career paths aligned to personal goals.	<b>X</b>
11. Use technology to enhance productivity.	<b>X</b>
12. Work productively in teams while using cultural global competence.	<b>X</b>

**Student Learning Targets/Objectives**

**Know number names and the count sequence by;**

- Count objects, sounds, and taps.
- Find ways to sort objects using a variety of attributes; Identify attributes.
- Compare volumes and develop awareness of relative size.
- Construct a bar graph and a moveable graph.
- Make comparisons and answer simple questions based on data from the graphs.
- Create and extend patterns with sounds and motions.
- Identify coin features and differences among coins.
- Sort coins according to various attributes.
- Count numbers in sequence.
- Represent numbers with claps or taps.
- Make a pictorial representation of class data.
- Compare heights of objects.
- Count up to 10 objects
- Practice reading numerals through 10

- Recognize numbers as “5 and some more”
- Find and sort shapes
- Identify and name shapes
- Describe attributes of shapes
- Practice oral counting forward by ones.
- Identify numbers.
- Develop stroke formation skills to prepare for writing numbers.
- Compare numbers of coins.
- Consider the likelihood of outcomes on a toss of a money cube.
- Recognize and match pictures of coins with actual coins.
- Identify coin features and begin to use coin names
- Count objects using one-to-one correspondence.
- Represent numbers with concrete materials.
- Discover that the digits 0-9 can be used to write any number.
- Recognize a visual pattern of numbers.
- Count orally from 10 through 19.
- Recognize teen numbers.
- Sequence numbers from 10 through 19.
- Identify the numbers 0-19.
- Use concrete materials to represent the numbers 10-19.
- Recognize each teen number as 10 + a digit.
- Use concrete materials and pictures to represent and solve addition and subtraction stories.
- Begin to distinguish between joining (addition) and take-away (subtraction) stories.
- Draw the correct quantity of items to represent numbers.
- Practice writing numerals.
- Discuss and reinforce the concept of zero.
- Count dots on a single die.
- Read and write numbers 1-6.
- Create a simple graph of dice rolls.
- Make predictions about dice throws and discuss results.
- Investigate the use of the pan balance and weighing techniques.
- Use a pan balance to compare and describe the weights of various objects.
- Count numbers of dots on dominoes.
- Match numbers of dots to written numerals.
- Become aware of equivalent name for numbers.
- Measure items using objects of uniform length.
- Compare lengths and arrange items by length.
- Practice oral counting.
- Practice one-to-one counting (objects and claps).
- Recognize numerals and represent numbers with objects.
- Compare and order numbers.
- Use clay and a pan balance to experiment with adding and removing weight.
- Balance objects with lumps of clay.
- Count orally by 1s and 10s.
- Begin to recognize patterns of 10 when counting.
- Count by 1s through at least 50 using different starting points.
- Model and solve subtraction stories using manipulatives.

- Make up subtraction number stories.
- Recognize “take away” situations as subtraction.
- Learn about the (-) symbol.
- Practice one -to- one counting.
- Recognize and write numbers.
- Compare and order numbers.
- Identify circles, squares, triangles, and rectangles.
- Explore attributes blocks.
- Sort blocks according to different attributes.
- Use concrete materials and pictures to represent and solve addition and subtraction stories.
- Represent 2-digit numbers with manipulatives.
- Represent 2-digit numbers as groups of tens and ones.
- Use multiple attributes to find and describe objects.
- Use calculators to count up and back.
- Identify +, -, +=, and ON/C or AC keys on the calculator.
- Measure with standard and nonstandard units.
- Understand the need for standard measurement units.
- Practice measuring with standard and nonstandard units of measurement.
- Compare and discuss measurements using standard and nonstandard units.
- Understand the need for standard units of measurement.
- Make graphs using survey information/.
- Answer questions based on graphs.
- Skip count by 10s.
- Make exchanges with pennies, nickels and dimes.
- Explore the characteristics of the dime.
- Learn about the value of the dime
- Use calculators to skip count by 2s, 5s, and 10s.
- Use the symbols + and - .
- Practice counting by groups.
- Count objects in a collection.
- Read and write 2- and 3- digit numbers,
- Record and display data.
- Count on from various numbers.
- Count backward form various numbers.
- Count beyond 100.
- Read numbers.
- Count by 10s and 1s.
- Estimate the number of items in a collection.
- Represent numbers with manipulatives as 10s and 1s.
- Write 1-, 2- and 3-digit numbers.
- Notice number patterns.
- Manipulate digits in numbers.
- Use mental math strategies.
- Represent numbers using manipulatives.
- Generate equivalent names for numbers.
- Represent numbers with simple addition and subtraction number sentences.
- Count the number of nonstandard units used to weigh an object.

- Compare the weight of two or more objects using nonstandard units.
- Use nonstandard units to weigh objects on a pan balance.
- Count to tell the number of objects by;
- Identify and describe shapes.
- Use pattern blocks.
- Count objects, sounds, and taps.
- Count backwards by ones.
- Recognize and understand zero as a number for “none”
- Represent numbers with concrete objects.
- Use one-to-one correspondence to count objects.
- Recognize and represent numbers with groups of objects.
- Find ways to sort objects using a variety of attributes; Identify attributes.
- Compare volumes and develop awareness of relative size.
- Construct a bar graph and a moveable graph.
- Make comparisons and answer simple questions based on data from the graphs.
- Create and extend patterns with sounds and motions.
- Create and extend color patterns; Describe patterns.
- Identify coin features and differences among coins.
- Sort coins according to various attributes.
- Count numbers in sequence.
- Represent numbers with claps or taps.
- Make a pictorial representation of class data.
- Compare heights of objects.
- Count up to 10 objects
- Practice reading numerals through 10
- Recognize numbers as “5 and some more”
- Practice oral counting forward by ones.
- Identify numbers.
- Develop stroke formation skills to prepare for writing numbers.
- Compare numbers of coins.
- Consider the likelihood of outcomes on a toss of a money cube.
- Recognize and match pictures of coins with actual coins.
- Identify coin features and begin to use coin names
- Count objects using one-to-one correspondence.
- Represent numbers with concrete materials.
- Discover that the digits 0-9 can be used to write any number.
- Recognize a visual pattern of numbers.
- Orally count by ones through 19.
- Use one-to-one correspondence to count movements.
- Recognize numerals 10-19.
- Sequence numerals 10-19.
- Identify the numbers 0-19.
- Use concrete materials to represent the numbers 10-19.
- Recognize each teen number as 10 + a digit.
- Count dots on a single die.
- Read and write numbers 1-6.
- Create a simple graph of dice rolls.

- Make predictions about dice throws and discuss results.
- Count numbers of dots on dominoes.
- Match numbers of dots to written numerals.
- Become aware of equivalent name for numbers.
- Develop and use strategies for solving addition and subtraction problems using concrete objects.
- Begin to understand the meanings of addition and subtraction.
- Practice oral counting.
- Practice one-to-one counting (objects and claps).
- Recognize numerals and represent numbers with objects.
- Compare and order numbers.
- Count objects using one-to-one correspondence.
- Add and subtract using a collection of objects.
- Distinguish between addition and subtraction.
- Construct a class bar graph.
- Discuss information presented in a bar graph and answer questions.
- Count up to 20 objects.
- Recognize teen numbers.
- Represent teen numbers as “10 and some more”
- Compare numbers 11-20
- Count by 1s through at least 50 using different starting points.
- Read and display numbers on a calculator.
- Develop and use strategies to find the sum of two dice rolls.
- Create a graph of dice rolls.
- Compare the probability of various outcomes from rolling two dice.
- Practice one -to- one counting.
- Recognize and write numbers.
- Compare and order numbers.
- Use ordinal numbers to describe a sequence of events.
- Sequence daily events and describe when events occur.
- Skip count by 5s.
- Use fingers to represent groups of 5.
- Find patterns in counts by 5.
- Construct a bar graph.
- Draw conclusions and answer questions based on a graph.
- Identify 2-dimensional and 3-dimensional shapes.
- Describe 2-dimensional and 3-dimensional shapes.
- Count and compare numbers in groups.
- Divide a group of objects in half.
- Practice counting by groups.
- Count objects in a collection.
- Read and write 2- and 3- digit numbers,
- Record and display data.
- Make exchanges with pennies, dimes and quarters.
- Explore the characteristics of the quarter.
- Learn about the value of the quarter.
- Count on from various numbers.
- Count backward from various numbers.

- Count beyond 100.
- Read numbers.
- Add and subtract items from a game board.
- Explore the difference between addition and subtraction.
- Recognize and use the + and - symbols.
- Count by 10s and 1s.
- Use craft sticks to exchange 1s for 10s and 10s for 100s.
- Recognize numbers as combinations of 100s, 10s, and 1s.
- Apply addition - and subtraction-based function rules.
- Use function rules to generate pairs of numbers.
- Find ways to sort objects using a variety of attributes; Identify attributes.
- Construct a bar graph and a moveable graph.
- Make comparisons and answer simple questions based on data from the graphs.
- Identify coin features and differences among coins.
- Sort coins according to various attributes.
- Count up to 10 objects
- Practice reading numerals through 10
- Recognize numbers as “5 and some more”
- Practice oral counting forward by ones.
- Identify numbers.
- Develop stroke formation skills to prepare for writing numbers.
- Compare numbers of coins.
- Consider the likelihood of outcomes on a toss of a money cube.
- Recognize and match pictures of coins with actual coins.
- Identify coin features and begin to use coin names
- Count objects using one-to-one correspondence.
- Represent numbers with concrete materials.
- Discover that the digits 0-9 can be used to write any number.
- Recognize a visual pattern of numbers.
- Count orally from 10 through 19.
- Recognize teen numbers.
- Sequence numbers from 10 through 19.
- Explore symmetry by using paint and folded paper.
- Begin to define the concept of symmetry.
- Look for symmetry in nature.
- Describe symmetrical objects.
- Read numbers.
- Compare and order numbers.
- Construct a class bar graph.
- Discuss information presented in a bar graph and answer questions.
- Count up to 20 objects.
- Recognize teen numbers.
- Represent teen numbers as “10 and some more”
- Compare numbers 11-20
- Read and display numbers on a calculator.
- Use calculators to count up and back.
- Identify +, -, +=, and ON/C or AC keys on the calculator.

- Measure with nonstandard “feet.”
- Practice measuring techniques.
- Identify 2-dimensional and 3-dimensional shapes.
- Describe 2-dimensional and 3-dimensional shapes.
- Count and compare numbers in groups.
- Divide a group of objects in half.
- Use multiple attributes to describe objects.
- Uses rules based on attributes to select an object from a collection.
- Read 2-digit numbers and represent them with manipulatives.
- Recognize 2-digit numbers as combinations of 10s and 1s.
- Compare numbers.
- Read numbers.
- Put nonconsecutive numbers in ascending or descending order.
- Use objects to represent equivalent names for numbers.
- Use drawings to record equivalent names.
- Compare numbers to decide which is greatest.
- Use “counting on” as strategy to add numbers from dice throws.

### Assessments

- Pre and Formative
  - Prerequisite Assessment
  - Lesson Quick Check
  - Mid-Chapter Checkpoint
  - Digital Personal Math Trainer
  - Math on the Spot Video
- Summative
  - Chapter 1 Test
  - Chapter 2 Test
  - Chapter 3 Test
  - Chapter 8 Test
- Other assessment measures
  - Show What You Know
  - Diagnostic Interview Task
  - Digital Personal Math Trainer
  - Performance Assessment Task
- Chapter Review Test

### Teaching and Learning Actions

<p><i>Instructional Strategies</i></p> <p><b>D</b></p>	<p><b>Researched Based Math Instructional Strategies</b></p> <p><b>Instructional Strategies</b></p> <p>Differentiation strategies</p> <p>Breaking down the task</p> <p>Providing step-by-step prompts</p> <p>Daily testing</p> <p>Repeated practice</p> <p>Sequenced Review</p> <p>Directed Questioning and Responses</p>
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	<p>Sequence Tasks from Easy to Difficult  Individual/Small-Group/Whole Class Instruction  Think Aloud  Peer Tutoring  Think-Pair-Share  Active Participation  Warm-Up Activities  Meaningful Real Life Connections  Modeling - Teachers demonstrates, student uses models to problem solve  Centers  Manipulatives – Concrete Experiences  Goal Setting  Mental Math  Pencil &amp; Paper Skills  Calculator Use/Technology  Graphic Organizers  Make Predictions/Estimation  Writing Explanations  Scaffolding  <b>Strategies for Basic Math Facts</b></p> <p>Counting on  Doubles  Doubles + 1  Making a 10  Counting Back  Counting Up  Five Frame  Ten Frame  Breaking down the task  Providing step-by-step prompts  Think Aloud  Peer Tutoring  Think-Pair-Share  Manipulatives – Concrete Experiences  Calculator Use/Technology  Graphic Organizers</p>
<p><i>D</i></p> <p><i>Activities</i></p>	<p>1.2, explore pattern blocks  1.3, children work with a partner and take turns tapping and counting.  1.5, read “Emily’s First One Hundred Days of School”, make a poster using a featured number (math masters p. 3)  1.6, sorting by attributes  1.12, playing give the next number game  1.14, reviewing numbers 0-10 and counting 0-10 (math masters 92-97)  2.6, playing counting games, follow the leader, count and sit.  2.7, writing tactile number strokes (math masters p. 8, 9)  2.8, play the matching coin game (math masters p. 104 and 10)</p>

	<p>2.9, building a number board and introduce the word digits (math masts p. 11)</p> <p>2.11, counting 1-19 using movement and number cards</p> <p>2.12, teen partners representing teen numbers</p> <p>3.1, writing numbers (0-10) (math masters p. 13-24)</p> <p>3.3, Roll and record graphing dice rolls (math masters p. 26-27)</p> <p>3.6, play monster squeeze (math master 126-127)</p> <p>3.8, solving pocket problems using objects to solve addition and subtraction</p> <p>3.9, number card games, sequencing numbers 0-20 (math masters p. 105-107)</p> <p>3.13, play growing train game</p> <p>3.15, count by 10's using fingers</p> <p>3.16, play the teen frame game (masters p.137-139)</p> <p>4.2, play top it game (math masters 105-107)</p> <p>4.6, counting by's ones through at least 50 using different staring points</p> <p>4.12, using slates to count and write numbers</p> <p>5.3, playing find the block, describing the attributes of the blocks</p> <p>5.4, play guess my number (math master p. 38)</p> <p>6.6, play I spy with shapes</p> <p>7.2, collecting objects and count and record on chart</p> <p>7.7, count forward and backward from higher numbers</p> <p>7.8, bundling sticks and count by 10's and 1's (my first math book pg. 18)</p> <p>7.10, making number scrolls (math masters p. 111)</p> <p>7.13, comparing two digit numbers</p> <p>7.14, ordering numbers in sequence (math masters p. 54)</p> <p>8.1, ones, tens, hundreds, game (math masters p. 30)</p> <p>8.4, play high roller to practice counting on</p> <p>8.5, introduce the function machine (math masters p.57)</p> <p>8.6, playing number gymnastics using mental math strategies to identify numbers</p> <p>Five frame/ ten frame activities (see supplemental packet)</p>
<p><i>D</i></p> <p><i>Experiences</i></p>	<p>Everyday Mathematics: Resources for the Kindergarten Classroom</p> <p>Theme 1: A Working World</p> <p>At the post office, building, at the doctor's office, setting up shop, bakery math, in a restaurant, sorting work tool, when I grow up graph, math at work.</p> <p>Theme 2: All About Me</p> <p>Making handprints, measuring height, body tracing, measuring and comparing shadows, matching birth weights, graphing features, favorites, and other data, making "MY Day" books, making birthday cards, playing I have one, I have two, making "All About Me" books and timelines</p> <p>Theme 3: Animals All Around</p> <p>Favorite animal graph, sorting animals, animal patterns, What animal am</p>

I?, comparing animal sizes, animal shape pictures, crazy 3-d creatures

Theme 4: Dinosaurs

Sorting dinosaurs, pattern block dinosaurs, what fits in a dinosaur footprint, How many teeth long, favorite dinosaur graph, dinosaur puzzles, save the plant eater game, how long were the dinosaurs, dinosaur, dinosaur where's your egg?

Theme 5: Fairy Tales

Sorting characters in stories, making story timelines, making maps from stories, finding and sorting buried treasure, making props, voting for favorites, constructing a building, treasure squeeze make a fairy tale game

Theme 6: Families at Home

Family graphs, brother and sister chart, skip counting family features, A Day at home books or timelines, family sorting cards, building homes, Where do I live,

Theme 7: Growing things

Measuring plants, planting seeds, sorting flowers and seeds, estimating seeds, seed collages, How many seeds, busy bee game,

Theme 8: Seasons

Seasons calendar, temperature and the seasons, seasonal collections, seasonal graphs, puzzle prints, measuring rain and snow, exploring raindrops, exploring snow, paper snowflakes

Resources

**K.CC.A.1**

GoMath! Grade K:

- Lessons: 8.5-8.8

**K.CC.A.2**

GoMath! Grade K:

- Lessons: 4.4, 8.3

**K.CC.A.3**

GoMath! Grade K:

- Lessons: 1.2, 1.4 , 1.6, 1.9, 1.10, 3.2, 3.4, 3.6, 3.8, 4.2, 7.6, 8.2

**K.CC.B.4a**

GoMath! Grade K:

- Lessons: 1.1, 1.3, 1.5

**K.CC.B.4b**

GoMath! Grade K:

- Lessons: 1.7

**K.CC.B.4c**

GoMath! Grade K:

- Lessons: 1.8

**K.CC.B.5**

GoMath! Grade K:

- Lessons: 3.1, 3.3, 3.5, 3.7, 4.1, 8.1

**K.CC.C.6**

GoMath! Grade K:

- Lessons: 2.1-2.5, 3.9, 4.5, 4.6, 8.4

**K.CC.C.7**

GoMath! Grade K:

- Lessons: 4.7

**Think Central**

**Personal Math Trainer**

**GoMath! Academy**

Suggested Time Frame:

64 days

<b>Content Area:</b>	<b>Mathematics</b>	<b>Grade(s)</b>	<b>Kindergarten</b>																								
<b>Unit Plan Title:</b>	<b>Operations and Algebraic Thinking</b>																										
<b>Anchor Standard (ELA) or Domain (Math)</b>																											
<b>Operations and Algebraic Thinking K.OA</b> <ul style="list-style-type: none"> <li>Understanding addition as putting together and adding to, and understand subtraction as taking apart and taking them.</li> </ul>																											
<b>Overview/Rationale</b>																											
<p>Kindergarten students will explore addition and subtraction concepts through one more/ one less songs, number stories, concrete activities and games; develop and share multiple strategies for solving addition and subtraction problems including counting and using fingers or other objects, using the =, -, and = symbols to write number models for number stories. Students will identify, describe and extend sound, movement and visual patterns; identifying, comparing and describing attributes of objects and sorting objects by attributes. Students will explore number patterns on the Growing Number Line and Class Number Grid.</p>																											
<b>Standard(s)</b>																											
<ul style="list-style-type: none"> <li>K.OA.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.</li> <li>K.OA.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.</li> <li>K.OA.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g. by using objects or drawings, and record each decomposition by a drawing or equation (e.g., <math>5 = 2 + 3</math> and <math>5 = 4 + 1</math>).</li> <li>K.OA.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.</li> <li>K.OA.5 Fluently add or subtract within 5</li> </ul>																											
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### Standards for Mathematical Practice(s)

- SMP 1: Make sense of problems and persevere in solving them.
- SMP 2: Reason abstractly and quantitatively.
- SMP 3: Construct viable arguments and critique the reasoning of others.
- SMP 4: Model with mathematics.
- SMP 5: Use appropriate tools strategically.
- SMP 6: Attend to precision.
- SMP 7: Look for and make use of structure.
- SMP 8: Look for and express regularity in repeated reasoning.

### Essential Question(s)

- How can you use a drawing to make 10 from a given number?
- How can you show addition as adding to?
- How can you show subtraction as putting together?
- How can you solve problems using the strategy act it out?
- How can you use objects and drawings to solve addition word problems?
- How can you use a drawing to find the number that makes a 10 from a given number?
- How can you solve addition word problems and complete the addition sentence?
- How can you model and write addition sentences for number pairs for sums to 5?
- How can you model and write addition sentences for number pairs for each sum of 6 and 7?
- How can you model and write addition sentences for number pairs for sums of 8?
- How can you model and write addition sentences for number pairs for sums of 9?
- How can you model and write addition sentences for number pairs for sums of 10?
- How can you show subtraction as taking from?
- How can you show subtraction as taking apart?
- How can you solve problems using the strategy act it out?
- How can you use objects and drawings to solve subtraction word problems?
- How can you solve subtraction word problems and complete the equation?
- How can you solve word problems using addition and subtraction?

### Enduring Understandings

- Adding is putting groups together and making more; subtracting is taking groups apart and making less.

In this unit plan, the following 21<sup>st</sup> Century Career Ready Practices are addressed.

Career Ready Practices	
1. Act as a responsible and contributing citizen and employee.	X
2. Apply appropriate academic and technical skills	X
3. Attend to personal health and financial well-being.	X
4. Communicate clearly and effectively and with reason.	X
5. Consider the environmental, social and economic impacts of decisions	X
6. Demonstrate creativity and innovation.	X
7. Employ valid and reliable research strategies.	X
8. Utilize critical thinking to make sense of problems and persevere in solving them.	X
9. Model integrity, ethical leadership and effective management.	X
10. Plan education and career paths aligned to personal goals.	X
11. Use technology to enhance productivity.	X
12. Work productively in teams while using cultural global competence.	X

**Student Learning Targets/Objectives**

- Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from by
  - Using correspondences, recognizing and representing numbers, making comparisons, creating and extending patterns, distinguish between joining and take-away, develop strategies for solving, using a number line, model and solve number stories, using tally marks, make exchanges with coins, and using pictures.

**Assessments**

- Pre and Formative
  - Prerequisite Assessment
  - Lesson Quick Check
  - Mid-Chapter Checkpoint
  - Digital Personal Math Trainer
  - Math on the Spot Video
- Summative

- Chapter 4 Test
- Chapter 5 Test
- Other assessment measures
  - Show What You Know
  - Diagnostic Interview Task
  - Digital Personal Math Trainer
  - Performance Assessment Task
- Chapter Review Test

*Teaching and Learning Actions*

*Instructional Strategies*  
D

**Instructional Strategies:**

- Differentiation strategies
- Breaking down the task
- Providing step-by-step prompts
- Daily testing
- Repeated practice
- Sequenced Review
- Directed Questioning and Responses
- Sequence Tasks from Easy to Difficult
- Individual/Small-Group/Whole Class Instruction
- Think Aloud
- Peer Tutoring
- Think-Pair-Share
- Active Participation
- Warm-Up Activities
- Meaningful Real Life Connections
- Modeling - Teachers demonstrates, student uses models to problem solve
- Centers
- Manipulatives – Concrete Experiences
- Goal Setting
- Mental Math
- Pencil & Paper Skills
- Calculator Use/Technology
- Graphic Organizers
- Make Predictions/Estimation
- Writing Explanations
- Scaffolding
- Strategies for Basic Math Facts:**
- Counting on
- Doubles
- Doubles + 1
- Making a 10
- Counting Back
- Counting Up
- Five Frame
- Ten Frame
- Breaking down the task
- Providing step-by-step prompts

	<p>Think Aloud Peer Tutoring Think-Pair-Share Manipulatives – Concrete Experiences Calculator Use/Technology Graphic Organizers</p>
<p><i>D</i>      <i>Activities</i></p>	<p>1.5 Use one-to-one correspondences with objects 2.8 Recognize and Match Pictures or Coins 2.14 Using Materials and Pictures 3.8 Playing with Pockets and Counters &amp; Graphing 3.13 Train Games &amp; Playing Spy Patterns 4.1 Playing Go Forward, Back-up 4.4 Creating Pattern Strips 4.8 Feeling Shapes, Rolling &amp; Recording with Two Dice 4.11 Playing the Disappearing Train Game 4.15 Counting by 10's, Playing the Growing &amp; Disappearing Train Game 5.4 Play Guess My Number, Using a Pan Balance 5.8 Graphing Sums, Counting by 5's 6.9 Comparing number stories 7.3 Class Number Story Book 7.5 Graphing Sums of Dice Rolls 7.6 Dice Addition Games, Creating Number Stories, 7.9 Name Collections, Playing Guess My Number 7.11 Understanding of place value, play guess my number and counting backward 7.12play Plus or Minus game 7.15 Identify pattern Rules 7.16 Playing Monster Squeeze, Name collection Box 8.4 Play the High Roller Game, Fishing for Children 8.5 Practice with Function Machines 8.6 Play Number Gymnastics Game 8.9 Create Name Collection Posters 8.10 Identify Functions 8.11 Using a Pan Balance 8.13 Figuring out Missing Numbers in Equations Project 3</p>
<p><i>D</i>      <i>Experiences</i></p>	<p>Everyday Mathematics: Resources for the Kindergarten Classroom Theme 1: A Working World At the post office, building, at the doctor's office, setting up shop, bakery math, in a restaurant, sorting work tool, when I grow up graph, math at work. Theme 2: All About Me Making handprints, measuring height, body tracing, measuring and comparing shadows, matching birth weights, graphing features, favorites, and other data, making "MY Day" books, making birthday cards, playing I have</p>

one, I have two, making "All About Me" books and timelines

Theme 3: Animals All Around

Favorite animal graph, sorting animals, animal patterns, What animal am I?, comparing animal sizes, animal shape pictures, crazy 3-d creatures

Theme 4: Dinosaurs

Sorting dinosaurs, pattern block dinosaurs, what fits in a dinosaur footprint, How many teeth long, favorite dinosaur graph, dinosaur puzzles, save the plant eater game, how long were the dinosaurs, dinosaur, dinosaur where's your egg?

Theme 5: Fairy Tales

Sorting characters in stories, making story timelines, making maps from stories, finding and sorting buried treasure, making props, voting for favorites, constructing a building, treasure squeeze make a fairy tale game

Theme 6: Families at Home

Family graphs, brother and sister chart, skip counting family features, A Day at home books or timelines, family sorting cards, building homes, Where do I live,

Theme 7: Growing things

Measuring plants, planting seeds, sorting flowers and seeds, estimating seeds, seed collages, How many seeds, busy bee game,

Theme 8: Seasons

Seasons calendar, temperature and the seasons, seasonal collections, seasonal graphs, puzzle prints, measuring rain and snow, exploring raindrops, exploring snow, paper snowflakes

## Resources

K.OA.1

GoMath! Grade K:

- Lessons: 5.1-5.3, 6.1-6.3

K.OA.2

GoMath! Grade K:

- Lessons: 5.7, 6.6-6.7

K.OA.3

GoMath! Grade K:

- Lessons: 5.8-5.12

K.OA.4

GoMath! Grade K:

Lessons: 4.3, 5.5

K.OA.5

GoMath! Grade K:

Lessons: 5.4, 5.6, 6.4-6.5

**Think Central**

**Personal Math Trainer**

**GoMath! Academy**

Suggested Time Frame:

29 days

<b>Content Area:</b>	<b>Mathematics</b>	<b>Grade(s)</b>	<b>Kindergarten</b>
<b>Unit Plan Title:</b>	<b>Numbers and Operations in Base Ten</b>		
<b>Anchor Standard (ELA) or Domain (Math)</b>			
Numbers and Operations in Base Ten K.NBT -Work with numbers 11-19 to gain foundation for place value			
<b>Overview/Rationale</b>			
Students will organize their work as they explore the relationships among blocks, drawings, sticks, clips and other manipulatives to determine how these groups can be used to represent numbers 11 -19 into ten ones and some further ones.			
<b>Standard(s)</b>			
K.NBT.1 Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., $18 = 10 + 8$ ); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.			
<b>Technology Standard(s)</b>			
<b>Standard</b>	<b>Indicator</b>		
• 8.1.P.A.1	Use an input device to select an item and navigate the screen		
• 8.1.P.A.2	Navigate the basic functions of a browser.		
• 8.1.P.A.3	Use digital devices to create stories with pictures, numbers, letters and words.		
• 8.1.P.A.4	Use basic technology terms in the proper context in conversation with peers and teachers (e.g., camera, tablet, Internet, mouse, keyboard, and printer).		
• 8.1.P.A.5	Demonstrate the ability to access and use resources on a computing device.		
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• 8.1.P.E.1	Use the Internet to explore and investigate questions with a teacher's support.		
• 8.1.2.E.1	Use digital tools and online resources to explore a problem or issue.		
<b>Standards for Mathematical Practice(s)</b>			
<b>SMP1</b> Make sense of problems and persevere in solving them.			
<b>SMP2</b> Reason abstractly and quantitatively.			
<b>SMP3</b> Construct viable arguments and critique the reasoning of others.			
<b>SMP4</b> Model with mathematics.			
<b>SMP5</b> Use appropriate tools strategically.			
<b>SMP6</b> Attend to precision.			
<b>SMP7</b> Look for and make use of structure.			
<b>SMP8</b> Look for and express regularity in repeated reasoning.			

**Essential Question(s)**

- How can you use objects to show 11 and 12 as ten ones and some more ones?
- How can you count and write 11 and 12 with words and numbers?
- How can you use objects to show 13 and 14 as ten ones and some more ones?
- How can you count and write 13 and 14 with words and numbers?
- How can you use objects to show 15 as ten ones and some more ones and show 15 as a number?
- How can you solve problems using the strategy draw a picture?
- How can you use objects to show 16 and 17 as ten ones and some more ones?
- How can you count and write 16 and 17 with words and numbers?
- How can you use objects to show 17 and 19 as ten ones and some more ones?
- How can you count and write 18 and 19 with words and numbers?

**Enduring Understandings**

- We can break numbers apart by groups of tens and ones to help us understand larger numbers. Knowing the value of numbers in each place will help us add and subtract.

**In this unit plan, the following 21<sup>st</sup> Century Career Ready Practices are addressed.**

<b>Career Ready Practices</b>	
1. Act as a responsible and contributing citizen and employee.	<b>X</b>
2. Apply appropriate academic and technical skills	<b>X</b>
3. Attend to personal health and financial well-being.	<b>X</b>
4. Communicate clearly and effectively and with reason.	<b>X</b>
5. Consider the environmental, social and economic impacts of decisions	<b>X</b>
6. Demonstrate creativity and innovation.	<b>X</b>
7. Employ valid and reliable research strategies.	<b>X</b>
8. Utilize critical thinking to make sense of problems and persevere in solving them.	<b>X</b>
9. Model integrity, ethical leadership and effective management.	<b>X</b>
10. Plan education and career paths aligned to personal goals.	<b>X</b>
11. Use technology to enhance productivity.	<b>X</b>
12. Work productively in teams while using cultural global competence.	<b>X</b>

## Student Learning Targets/Objectives

### Work with numbers 11-19 to gain foundations for place value.;

- Identify the numbers 0-19.
- Use concrete materials to represent the numbers 10-19.
- Recognize each teen number as 10 + a digit.
- Count up to 20 objects.
- Recognize teen numbers.
- Represent teen numbers as “10 and some more”
- Compare numbers 11-20
- Read and display numbers on a calculator.
- Count and compare numbers in groups.
- Divide a group of objects in half.
- Count by 10s and 1s.
- Estimate the number of items in a collection.
- Represent numbers with manipulatives as 10s and 1s.

## Assessments

- Pre and Formative
  - Prerequisite Assessment
  - Lesson Quick Check
  - Mid-Chapter Checkpoint
  - Digital Personal Math Trainer
  - Math on the Spot Video
- Summative
  - Chapter 7 Test
- Other assessment measures
  - Show What You Know
  - Diagnostic Interview Task
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- Chapter Review Test

## Teaching and Learning Actions

### *Instructional Strategies*

D

### **Researched Based Math Instructional Strategies**

#### **Instructional Strategies**

Differentiation strategies  
Breaking down the task  
Providing step-by-step prompts  
Daily testing  
Repeated practice  
Sequenced Review  
Directed Questioning and Responses  
Sequence Tasks from Easy to Difficult  
Individual/Small-Group/Whole Class Instruction  
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Peer Tutoring  
Think-Pair-Share

	<p>Active Participation  Warm-Up Activities  Meaningful Real Life Connections  Modeling - Teachers demonstrates, student uses models to problem solve  Centers  Manipulatives – Concrete Experiences  Goal Setting  Mental Math  Pencil &amp; Paper Skills  Calculator Use/Technology  Graphic Organizers  Make Predictions/Estimation  Writing Explanations  Scaffolding  <b>Strategies for Basic Math Facts</b></p> <p>Counting on  Doubles  Doubles + 1  Making a 10  Counting Back  Counting Up  Five Frame  Ten Frame  Breaking down the task  Providing step-by-step prompts  Think Aloud  Peer Tutoring  Think-Pair-Share  Manipulatives – Concrete Experiences  Calculator Use/Technology  Graphic Organizers</p>
<p><i>D</i></p> <p><i>Activities</i></p>	<p>2.12, Representing teen numbers, what number comes next  3.16, Teen Frame game ( math masters p. 137)  4.7, Explore calculators  6.11, Dividing groups in halves(math masters p. 120)  7.8, bundling sticks</p>
<p><i>D</i></p> <p><i>Experiences</i></p>	<p>Everyday Mathematics: Resources for the Kindergarten Classroom  Theme 1: A Working World  At the post office, building, at the doctor’s office, setting up shop, bakery math, in a restaurant, sorting work tool, when I grow up graph, math at work.  Theme 2: All About Me  Making handprints, measuring height, body tracing, measuring and comparing shadows, matching birth weights, graphing features, favorites, and other data, making “MY Day” books, making birthday cards, playing I have one, I have two, making “All About Me” books and timelines</p>

	<p>Theme 3: Animals All Around  Favorite animal graph, sorting animals, animal patterns, What animal am I?, comparing animal sizes, animal shape pictures, crazy 3-d creatures</p> <p>Theme 4: Dinosaurs  Sorting dinosaurs, pattern block dinosaurs, what fits in a dinosaur footprint, How many teeth long, favorite dinosaur graph, dinosaur puzzles, save the plant eater game, how long were the dinosaurs, dinosaur, dinosaur where’s your egg?</p> <p>Theme 5: Fairy Tales  Sorting characters in stories, making story timelines, making maps from stories, finding and sorting buried treasure, making props, voting for favorites, constructing a building, treasure squeeze make a fairy tale game</p> <p>Theme 6: Families at Home  Family graphs, brother and sister chart, skip counting family features, A Day at home books or timelines, family sorting cards, building homes, Where do I live,</p> <p>Theme 7: Growing things  Measuring plants, planting seeds, sorting flowers and seeds, estimating seeds, seed collages, How many seeds, busy bee game,</p> <p>Theme 8: Seasons  Seasons calendar, temperature and the seasons, seasonal collections, seasonal graphs, puzzle prints, measuring rain and snow, exploring raindrops, exploring snow, paper snowflakes</p>
<b>Resources</b>	
<p><b>K.NBT.A.1</b>  GoMath! K:</p> <ul style="list-style-type: none"> <li>Lessons: 7.1-7.5, 7.7-7.10</li> </ul> <p><b>K.NBT.A.3</b>  GoMath! K:</p> <ul style="list-style-type: none"> <li>Lessons: 7.6</li> </ul>	
<b>Suggested Time Frame:</b>	15 days

<b>Content Area:</b>	<b>Mathematics</b>	<b>Grade(s)</b>	<b>Kindergarten</b>
<b>Unit Plan Title:</b>	<b>Numbers and Operations in Base Ten</b>		
<b>Anchor Standard (ELA) or Domain (Math)</b>			
<b>Measurement and Data K. MD</b> <b>-Describe and compare Measurable Attributes</b> <b>-Classify Objects and Count the Number of Objects in Each Category</b>			
<b>Overview/Rationale</b>			
<p>Students will work together to collect, organize, display and analyze classroom data through the daily weather, temperature, and survey routines as well as through games and activities; working with data and graphing activities such as graphing dice rolls, exploring probability through games and describing the likelihood of events as definite, impossible or possible. Students will make direct comparisons of length, weight, and capacity using language to describe the sizes of objects and size comparisons. Students will begin to explore measurement through non standard/ standard units; having experiences with standard measuring tools; sequencing familiar events in time. Students will begin learning coins and their values and develop an understanding of time measures (day, week, and month) and temperature measures through daily routines (calendar, daily schedule and temperature).</p>			
<b>Standard(s)</b>			
<ul style="list-style-type: none"> <li>• K.MD.1 Describe measurable attributes of objects such a length or weight. Describe several measurable attributes of a single object.</li> <li>• K. MD.2 Directly compare two objects with a measurable attribute in common, to see which object has” more of”/”less of” the attribute , and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.</li> <li>• K.MD.3</li> <li>• Classify objects into given categories; count the number of objects in each category and sort the categories by count.</li> </ul>			
<b>Technology Standards</b>			
8.1.P.A.1	Use an input device to select an item and navigate the screen		
8.1.P.A.2	Navigate the basic functions of a browser.		
8.1.P.A.3	Use digital devices to create stories with pictures, numbers, letters and words.		
8.1.P.A.4	Use basic technology terms in the proper context in conversation with peers and teachers (e.g., camera, tablet, Internet, mouse, keyboard, and printer).		
8.1.P.A.5	Demonstrate the ability to access and use resources on a computing device.		
8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).		
8.1.P.C.1	Collaborate with peers by participating in interactive digital games or activities.		
8.1.2.C.1	Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.		
8.1.P.E.1	Use the Internet to explore and investigate questions with a teacher’s support.		
8.1.2.E.1	Use digital tools and online resources to explore a problem or issue.		
<b>Standards for Mathematical Practice(s)</b>			
<b>SMP1</b> Make sense of problems and persevere in solving them.			
<b>SMP2</b> Reason abstractly and quantitatively.			
<b>SMP3</b> Construct viable arguments and critique the reasoning of others.			
<b>SMP4</b> Model with mathematics.			

**SMP5** Use appropriate tools strategically.

**SMP6** Attend to precision.

**SMP7** Look for and make use of structure.

**SMP8** Look for and express regularity in repeated reasoning.

### Essential Question(s)

- How can you compare the lengths of two objects?
- How can you compare the heights of two objects?
- How can you solve problems by using the strategy draw a picture?
- How can you compare the weights of two objects?
- How can you describe several ways to measure one object?
- How can you classify and count objects by color?
- How can you classify and count objects by shape?
- How can you classify and count objects by size?
- How can you make a graph to count objects that have been classified by categories?
- How can you read a graph to count objects that have been classified into categories?

### Enduring Understandings

- When measuring you start at the beginning of the object and finish at the end of the object.
- When comparing tow lengths, one end of each length must match.
- The size of an object does not always tell you it's weight; for example, larger does not always mean heavier.
- We can describe all objects by their attributes.
- We can sort all objects by their attributes.

In this unit plan, the following 21<sup>st</sup> Century themes and skills are addressed.

<b>Career Ready Practices</b>	
1. Act as a responsible and contributing citizen and employee.	<b>X</b>
2. Apply appropriate academic and technical skills	<b>X</b>
3. Attend to personal health and financial well-being.	<b>X</b>
4. Communicate clearly and effectively and with reason.	<b>X</b>
5. Consider the environmental, social and economic impacts of decisions	<b>X</b>
6. Demonstrate creativity and innovation.	<b>X</b>
7. Employ valid and reliable research strategies.	<b>X</b>
8. Utilize critical thinking to make sense of problems and persevere in solving them.	<b>X</b>
9. Model integrity, ethical leadership and effective management.	<b>X</b>
10. Plan education and career paths aligned to personal goals.	<b>X</b>
11. Use technology to enhance productivity.	<b>X</b>
12. Work productively in teams while using cultural global competence.	<b>X</b>

**Student Learning Targets/Objectives**

Describe and compare measurable attributes by

- Comparing, identifying attributes, making pictorial representations, describe attributes, using a pan balance and measuring.

Classify objects and count the number of objects in each category by

- Sorting objects, arranging objects, using bar graphs and making surveys.

**Assessments**

- Pre and Formative
  - Prerequisite Assessment
  - Lesson Quick Check
  - Mid-Chapter Checkpoint
  - Digital Personal Math Trainer
  - Math on the Spot Video
- Summative
  - Chapter 11 Test

- Chapter 12 Test
- Other assessment measures
  - Show What You Know
  - Diagnostic Interview Task
  - Digital Personal Math Trainer
  - Performance Assessment Task
- Chapter Review Test

*Teaching and Learning Actions*

*Instructional Strategies*

D

**Researched Based Math Instructional Strategies**

**Instructional Strategies**

- Differentiation strategies
- Breaking down the task
- Providing step-by-step prompts
- Daily testing
- Repeated practice
- Sequenced Review
- Directed Questioning and Responses
- Sequence Tasks from Easy to Difficult
- Individual/Small-Group/Whole Class Instruction
- Think Aloud
- Peer Tutoring
- Think-Pair-Share
- Active Participation
- Warm-Up Activities
- Meaningful Real Life Connections
- Modeling - Teachers demonstrates, student uses models to problem solve
- Centers
- Manipulatives – Concrete Experiences
- Goal Setting
- Mental Math
- Pencil & Paper Skills
- Calculator Use/Technology
- Graphic Organizers
- Make Predictions/Estimation
- Writing Explanations
- Scaffolding

**Strategies for Basic Math Facts**

- Counting on
- Doubles
- Doubles + 1
- Making a 10
- Counting Back
- Counting Up
- Five Frame
- Ten Frame

	<p>Breaking down the task          Providing step-by-step prompts          Think Aloud          Peer Tutoring          Think-Pair-Share          Manipulatives – Concrete Experiences          Calculator Use/Technology          Graphic Organizers</p>
<p><i>D</i></p> <p><i>Activities</i></p>	<p>1.1, partner match and measure strips of paper          1.6, sorting by attributes          1.8, graphing birthday’s and ages          1.11, sorting coins into “banks” (math masters p.5)          1.13, comparing body heights to objects          2.1, exploring shapes (math masters p. 6)          2.10, introduce the tricky teens (math masters 97-102 and p. 139)          2.15, making symmetrical painting          2.16, making a group symmetry collage          3.9, playing number card games(math masters 105-107)          3.14, graphing favorite colors          5.2, making craft stick patterns          5.7, reading and discussing how big is a foot? (math masters p. 39)          5.14, play attribute spinner game (math masters p.118)          6.3, making a shape museum          6.6, playing I Spy shapes          7.14, ordering numbers (math master p. 54)          8.2, marking hours (math masters p. 58)          8.5, Introducing the function machine (math masters p. 57)          8.15, weighing objects 9math masters p. 63)          project 5- activities supporting the 100<sup>th</sup> day of school</p>
<p><i>D</i></p> <p><i>Experiences</i></p>	<p>Everyday Mathematics: Resources for the Kindergarten Classroom          Theme 1: A Working World          At the post office, building, at the doctor’s office, setting up shop, bakery math, in a restaurant, sorting work tool, when I grow up graph, math at work.          Theme 2: All About Me          Making handprints, measuring height, body tracing, measuring and comparing shadows, matching birth weights, graphing features, favorites, and other data, making “MY Day” books, making birthday cards, playing I have one, I have two, making “All About Me” books and timelines          Theme 3: Animals All Around          Favorite animal graph, sorting animals, animal patterns, What animal am I?, comparing animal sizes, animal shape pictures, crazy 3-d creatures          Theme 4: Dinosaurs          Sorting dinosaurs, pattern block dinosaurs, what fits in a dinosaur footprint, How many teeth long, favorite dinosaur graph, dinosaur puzzles, save the plant eater</p>

	<p>game, how long were the dinosaurs, dinosaur, dinosaur where's your egg?</p> <p>Theme 5: Fairy Tales</p> <p>Sorting characters in stories, making story timelines, making maps from stories, finding and sorting buried treasure, making props, voting for favorites, constructing a building, treasure squeeze make a fairy tale game</p> <p>Theme 6: Families at Home</p> <p>Family graphs, brother and sister chart, skip counting family features, A Day at home books or timelines, family sorting cards, building homes, Where do I live,</p> <p>Theme 7: Growing things</p> <p>Measuring plants, planting seeds, sorting flowers and seeds, estimating seeds, seed collages, How many seeds, busy bee game,</p> <p>Theme 8: Seasons</p> <p>Seasons calendar, temperature and the seasons, seasonal collections, seasonal graphs, puzzle prints, measuring rain and snow, exploring raindrops, exploring snow, paper snowflakes</p>
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**Resources**

<p><b>K.MD.A.1</b> GoMath!-K Everyday Mathematics Kindergarten:</p> <ul style="list-style-type: none"> <li>• Lessons: 11.5</li> </ul> <p><b>K. MD.A.2</b> GoMath!-K</p> <ul style="list-style-type: none"> <li>• Lessons: 11.1-11.4</li> </ul> <p><b>K. MD.B.3</b> GoMath!-K</p> <ul style="list-style-type: none"> <li>• Lessons: 12.1-12.5</li> </ul> <p><b>Think Central</b> <b>Personal Math Trainer</b> <b>GoMath! Academy</b></p>	
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<b>Suggested Time Frame:</b>	26 days
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*D- Indicates differentiation at the Lesson Level.*

<b>Content Area:</b>	<b>Mathematics</b>	<b>Grade(s)</b>	<b>Kindergarten</b>
<b>Unit Plan Title:</b>	<b>Geometry</b>		
<b>Anchor Standard (ELA) or Domain (Math)</b>			
<b>Geometry K.G</b> -Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres) -Analyze, compare, create, and compose shapes.			
<b>Overview/Rationale</b>			
Kindergarten students describe their physical world using geometric ideas and vocabulary. Exploring 2 and 3 dimensional shapes, tactile and sensory experiences, with manipulatives such as pattern blocks, attributes blocks, and building blocks, exploring line symmetry, developing an understanding of position and spatial relations, concepts and vocabulary.			
<b>Standard(s)</b>			
<b>K.G.1.</b> Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as <i>above, below, beside, in front of, behind, and next to</i> . <b>K.G.2.</b> Correctly name shapes regardless of their orientations or overall size. <b>K.G. 3.</b> Identify shapes as two-dimensional (lying in a plane, “flat”) or three- dimensional (“solid”) <b>K.G.4.</b> Analyze and compare two- and three dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/ “corners”) and other attributes (e.g., having sides of equal lengths) <b>K.G.5.</b> Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. <b>K.G.6.</b> Compose simple shapes to form larger shapes. For example, Can you join these two triangles with full sides touching to make a rectangle?”			
<b>Technology Standard(s)</b>			
8.1.P.A.1	Use an input device to select an item and navigate the screen		
8.1.P.A.2	Navigate the basic functions of a browser.		
8.1.P.A.3	Use digital devices to create stories with pictures, numbers, letters and words.		
8.1.P.A.4	Use basic technology terms in the proper context in conversation with peers and teachers (e.g., camera, tablet, Internet, mouse, keyboard, and printer).		
8.1.P.A.5	Demonstrate the ability to access and use resources on a computing device.		
8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).		
8.1.P.C.1	Collaborate with peers by participating in interactive digital games or activities.		
8.1.2.C.1	Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.		
8.1.P.E.1	Use the Internet to explore and investigate questions with a teacher’s support.		
8.1.2.E.1	Use digital tools and online resources to explore a problem or issue.		
<b>Standards for Mathematical Practice(s)</b>			

**SMP1** Make sense of problems and persevere in solving them.

**SMP2** Reason abstractly and quantitatively.

**SMP3** Construct viable arguments and critique the reasoning of others.

**SMP4** Model with mathematics.

**SMP5** Use appropriate tools strategically.

**SMP6** Attend to precision.

**SMP7** Look for and make use of structure.

**SMP8** Look for and express regularity in repeated reasoning.

### Essential Question(s)

- How can you identify and name circles?
- How can you describe circles?
- How can you identify and name squares?
- How can you describe squares?
- How can you identify and name triangles?
- How can you describe triangles?
- How can you identify and name rectangles?
- How can you describe rectangles?
- How can you identify and name hexagons?
- How can you describe hexagons?
- How can you use the words alike and different to compare two-dimensional shapes?
- How can you show which shapes stack, roll, or slide?
- How can you identify, name, and describe spheres?
- How can you identify, name, and describe cubes?
- How can you identify, name, and describe cylinders?
- How can you identify, name, and describe cones?
- How can you solve problems using a strategy use logical reasoning?
- How can you model shapes in the real world?
- How can you use the terms above and below to describe shapes in the environment?
- How can you use the terms beside and next to describe shapes in the environment?
- How can you use the terms in front and behind to describe shapes in the environment?

### Enduring Understandings

- All objects have a shape with a specific name.
- Objects can be similar to others in one way and different in other ways.

In this unit plan, the following 21<sup>st</sup> Century themes and skills are addressed.

<b>Career Ready Practices</b>	
1. Act as a responsible and contributing citizen and employee.	<b>X</b>
2. Apply appropriate academic and technical skills	<b>X</b>
3. Attend to personal health and financial well-being.	<b>X</b>
4. Communicate clearly and effectively and with reason.	<b>X</b>
5. Consider the environmental, social and economic impacts of decisions	<b>X</b>
6. Demonstrate creativity and innovation.	<b>X</b>
7. Employ valid and reliable research strategies.	<b>X</b>
8. Utilize critical thinking to make sense of problems and persevere in solving them.	<b>X</b>
9. Model integrity, ethical leadership and effective management.	<b>X</b>
10. Plan education and career paths aligned to personal goals.	<b>X</b>
11. Use technology to enhance productivity.	<b>X</b>
12. Work productively in teams while using cultural global competence.	<b>X</b>

**Student Learning Targets/Objectives**

**Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders and spheres)by:**

- Identify and describe shapes.
- Use pattern blocks.
- Find and sort shapes
- Identify and name shapes
- Describe attributes of shapes
- Explore, recognize, and identify shapes by feel.
- Describe attributes of shapes.
- Use spatial vocabulary and concepts in everyday situations.
- Describe patterns in surroundings.
- Extend patterns.
- Practice oral counting forward by ones.
- Orally count by ones through 19.
- Use one-to-one correspondence to count movements.

- Recognize numerals 10-19.
- Sequence numerals 10-19.
- Explore symmetry by using paint and folded paper.
- Begin to define the concept of symmetry.
- Think of and categorize likely, unlikely, certain, and impossible events.
- Use the basic language of probability to describe single events.
- Use the basic language of probability to describe predictions.
- Use a number line to explore addition and subtraction concepts and strategies.
- Use the names of pattern-block shapes.
- Use the Pattern-Block Template to record patterns.
- Model and solve addition number stories using manipulatives.
- Make up addition number stories.
- Recognize “joining” situations.
- Learn about the + symbol.
- Develop and use strategies to find the sum of two dice rolls.
- Create a graph of dice rolls.
- Compare the probability of various outcomes from rolling two dice.
- Make circles, squares, rectangles and triangles using bodies and ropes.
- Identify and describe attributes of shapes.
- Compare shapes.
- Explore variations of size and angle measures of shapes.
- Realize that shapes remain the same even if their position is changed.
- Identify circles, squares, triangles, and rectangles.
- Explore attributes blocks.
- Sort blocks according to different attributes.
- Figure out and apply sorting rules.
- Use multiple attributes to find and describe objects.
- Apply sorting rules.
- Explore geometric properties of common objects.
- Compare 2-dimensional shapes and 3-dimensional shapes.
- Identify 2-dimensional and 3-dimensional shapes.
- Describe 2-dimensional and 3-dimensional shapes.
- Use pictures to represent and solve addition and subtraction stories.
- Identify addition and subtraction number stories.
- Use the +, -, and = symbols to write number models for number stories.
- Construct 2- and 3-dimensional shapes and explore their properties.
- Identify names of 2- and 3- dimensional shapes.
- To provide tactile and visual experiences that promotes patterning, eye-hand coordination and directionality.
- Make and use hour hand clock.
- Solve missing number problems using concrete objects.
- Identify addition and subtraction situations.
- Write number sentences.
- To provide practice with measurement, spatial relationships, and collecting and tracking data through a variety of outdoor activities.

**Analyze, compare, create, and compose shapes by:**

- Identify and describe shapes.
- Use pattern blocks.

- Find and sort shapes
- Identify and name shapes
- Describe attributes of shapes
- Explore, recognize, and identify shapes by feel.
- Describe attributes of shapes.
- Use spatial vocabulary and concepts in everyday situations.
- Describe patterns in surroundings.
- Extend patterns.
- Practice oral counting forward by ones.
- Orally count by ones through 19.
- Use one-to-one correspondence to count movements.
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- Begin to define the concept of symmetry.
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- Use the basic language of probability to describe single events.
- Use the basic language of probability to describe predictions.
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- Use the names of pattern-block shapes.
- Use the Pattern-Block Template to record patterns.
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- Compare the probability of various outcomes from rolling two dice.
- Make circles, squares, rectangles and triangles using bodies and ropes.
- Identify and describe attributes of shapes.
- Compare shapes.
- Explore variations of size and angle measures of shapes.
- Realize that shapes remain the same even if their position is changed.
- Figure out and apply sorting rules.
- Explore geometric properties of common objects.
- Compare 2-dimensional shapes and 3-dimensional shapes.
- Identify 2-dimensional and 3-dimensional shapes.
- Describe 2-dimensional and 3-dimensional shapes.
- Use pictures to represent and solve addition and subtraction stories.
- Identify addition and subtraction number stories.
- Use the +, -, and = symbols to write number models for number stories.
- Construct 2- and 3-dimensional shapes and explore their properties.
- Identify names of 2- and 3- dimensional shapes.
- Make and use hour hand clock.
- Solve missing number problems using concrete objects.
- Identify addition and subtraction situations.
- Write number sentences.

## Assessments

- Pre and Formative
    - Prerequisite Assessment
    - Lesson Quick Check
    - Mid-Chapter Checkpoint
    - Digital Personal Math Trainer
    - Math on the Spot Video
  - Summative
    - Chapter 9 Test
    - Chapter 10 Test
- Other assessment measures
- Show What You Know
  - Diagnostic Interview Task
  - Digital Personal Math Trainer
  - Performance Assessment Task
- Chapter Review Test

## Teaching and Learning Actions

### *Instructional Strategies*

D

### **Researched Based Math Instructional Strategies**

#### **Instructional Strategies**

Differentiation strategies  
Breaking down the task  
Providing step-by-step prompts  
Daily testing  
Repeated practice  
Sequenced Review  
Directed Questioning and Responses  
Sequence Tasks from Easy to Difficult  
Individual/Small-Group/Whole Class Instruction  
Think Aloud  
Peer Tutoring  
Think-Pair-Share  
Active Participation  
Warm-Up Activities  
Meaningful Real Life Connections  
Modeling - Teachers demonstrates, student uses models to problem solve  
Centers  
Manipulatives – Concrete Experiences  
Goal Setting  
Mental Math  
Pencil & Paper Skills  
Calculator Use/Technology  
Graphic Organizers  
Make Predictions/Estimation  
Writing Explanations  
Scaffolding

#### **Strategies for Basic Math Facts**

	<p>Counting on  Doubles  Doubles + 1  Making a 10  Counting Back  Counting Up  Five Frame  Ten Frame  Breaking down the task  Providing step-by-step prompts  Think Aloud  Peer Tutoring  Think-Pair-Share  Manipulatives – Concrete Experiences  Calculator Use/Technology  Graphic Organizers</p>
<p><i>D</i></p> <p><i>Activities</i></p>	<p>1.2 Introducing Pattern Blocks  2.1 Introducing Shapes  2.2 Understanding of shapes using the sense of touch  2.3 Using Spatial Vocab and Concepts, Adding to Shape Collages  2.5 Using Pattern Blocks  2.8 Playing Matching Coin Game  2.15 Introducing Symmetry  4.1 Exploring Pattern Blocks  4.3 Using the Pattern Block Template  4.9 Making Symmetrical Snowflakes, Using Body and Rope Shapes  4.10 Solidify Understanding of Shapes  5.14 Introduce a game to focus on multiple attributes of blocks  5.16 Understand Number Sequence and patterns  6.3 Play Stand up If..., Introduce 3D Shapes and Review 2D Shapes  6.6 Review Characteristics of 2D and 3D shapes  7.3 Playing the 3D Shape Game  7.4 Building Marshmallow and Stick Shapes and Dividing Groups in Half  8.3 Making Shapes and Structures  8.13 Playing/Spy: Shapes and Patterns</p>
<p><i>D</i></p> <p><i>Experiences</i></p>	<p>Everyday Mathematics: Resources for the Kindergarten Classroom  Theme 1: A Working World  At the post office, building, at the doctor’s office, setting up shop, bakery math, in a restaurant, sorting work tool, when I grow up graph, math at work.  Theme 2: All About Me  Making handprints, measuring height, body tracing, measuring and comparing shadows, matching birth weights, graphing features, favorites, and other data, making “MY Day” books, making birthday cards, playing I have one, I have two, making “All About Me” books and timelines  Theme 3: Animals All Around</p>

Favorite animal graph, sorting animals, animal patterns, What animal am I?, comparing animal sizes, animal shape pictures, crazy 3-d creatures

Theme 4: Dinosaurs

Sorting dinosaurs, pattern block dinosaurs, what fits in a dinosaur footprint, How many teeth long, favorite dinosaur graph, dinosaur puzzles, save the plant eater game, how long were the dinosaurs, dinosaur, dinosaur where's your egg?

Theme 5: Fairy Tales

Sorting characters in stories, making story timelines, making maps from stories, finding and sorting buried treasure, making props, voting for favorites, constructing a building, treasure squeeze make a fairy tale game

Theme 6: Families at Home

Family graphs, brother and sister chart, skip counting family features, A Day at home books or timelines, family sorting cards, building homes, Where do I live,

Theme 7: Growing things

Measuring plants, planting seeds, sorting flowers and seeds, estimating seeds, seed collages, How many seeds, busy bee game,

Theme 8: Seasons

Seasons calendar, temperature and the seasons, seasonal collections, seasonal graphs, puzzle prints, measuring rain and snow, exploring raindrops, exploring snow, paper snowflakes

## Resources

### **K.G.A.1**

GoMath!- K

- Lessons: 10.8-10.10

### **K.G.A.2**

GoMath!- K

- Lessons: 9.1, 9.3, 9.5, 9.7, 9.9, 10.2-10.5

### **K.G.A.3.**

GoMath!- K

Lessons: 10.6

### **K.G.B.4**

GoMath!- K

Lessons: 9.2, 9.4, 9.6, 9.8, 9.10, 9.11, 10.1

### **K.G.B.5**

GoMath!- K

- Lessons: 10.7

### **K.G.B.6**

GoMath!- K

- Lessons: 9.12

**Think Central**

**Personal Math Trainer**

**GoMath! Academy**

**Suggested Time Frame:**

**32 days**

*D- Indicates differentiation at the Lesson Level.*