

Clinton-Glen Gardner School District



Curriculum Management System

Mathematics

Grade K

July 2011

*** For adoption by all regular education programs as specified and for adoption or adaptation by all Special Education Programs in accordance with Board of Education Policy #2200.**

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Acknowledgments

During the 2010-2011 school year, the Clinton-Glen Gardner School District developed a curriculum consortium with seven other North-Voorhees sending districts, including Bethlehem Township, Califon, Clinton Township, High Bridge, Lebanon Borough, Lebanon Township and Tewksbury Township. This consortium represents a collaborative effort that created an opportunity to bring together math expertise from each of the participating districts. The following individuals are acknowledged for their assistance in the preparation of this Curriculum Management System:

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Clinton-Glen Gardner School District

Mission

The mission of Clinton Public School is to inspire our students to become contributing members of society who are independent, innovative, life-time learners equipped with the necessary skills to meet the demands of our ever-changing world.

Philosophy

The economy in which graduates of our schools will seek employment is more competitive than ever and is rapidly changing in response to advances in technology. To compete in today's global, information-based economy, students must be able to solve real problems, reason effectively, and make logical connections. In this changing world those who have a good understanding of mathematics will have many opportunities and doors open to them throughout their lives. Today's workforce requires mathematical knowledge and skills in areas such as data analysis, problem-solving, pattern recognition, statistics and probability; therefore, our school's curriculum must prepare students for these expectations.

The Clinton-Glen Gardner School is committed to providing all students with the opportunity and the support necessary to learn significant mathematics with depth and understanding. To that end, students will engage in a wide variety of learning activities designed to develop their ability to reason and solve complex problems. Calculators, computers, manipulatives, technology, and the Internet will be used as tools to enhance learning and assist in problem solving. Group work, projects, literature, and interdisciplinary activities will make mathematics more meaningful and aid understanding. Classroom instruction will be designed to meet the learning needs of all children and will reflect a variety of learning styles.

The math curriculum fosters students who:

- Develop computational, conceptual, problem-solving and reasoning skills
- Demonstrate their understanding of mathematical concepts based on higher levels of mathematical thought
- Use technology and other tools as an integral part of solving mathematical problems

**New Jersey State Department of Education
Common Core State Standards**

A note about Common Core State Standards for Mathematics.

The Common Core State Standards for Mathematics were adopted in 2010. The standards referenced in this curriculum guide refer to the progress indicators in these newly adopted standards. A complete copy of the Common Core State Standards for Mathematics may be found at:

<http://www.corestandards.org/the-standards/mathematics> (by grade level)

<http://www.corestandards.org/the-standards> (in their entirety)

A note about 21st Century Life and Careers Standards and Cumulative Progress Indicators.

The New Jersey Core Curriculum Content Standards for 21st Century Life and Careers were revised in 2009. The Cumulative Progress Indicators (CPI's) referenced in this curriculum guide refer to these new standards. A complete copy of the new Core Curriculum Content Standards for 21st Century Life and Careers may be found at:

<http://www.state.nj.us/education/cccs/standards/9/>

Mathematics: Standards for Mathematical Practice Interpreted for Kindergarten Through Second Grade

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important “processes and proficiencies” with long standing importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation and connections. The second are the strands of mathematical proficiency specified in the National Research Council’s report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately) and productive disposition (habitual inclination to see mathematics as sensible, useful and worthwhile, coupled with a belief in diligence and one’s own efficacy).

The Standards for Mathematical Practice are:

1. **MAKE SENSE OF PROBLEMS AND PERSEVERE IN SOLVING THEM.**

As you look at or read a mathematical problem, think about what it means and what it is asking you to do. Also think about what would be a good way to start solving it. Ask yourself:

- What does the problem tell me?
 - What information is given?
 - What are the relationships among parts of the problem?
 - What is the goal of solving the problem?
 - Have I seen other problems similar to this one?
- What does the problem ask me to find out (solve)?
- How should I start solving the problem?
- Can pictures or a drawing help me to figure out how to solve the problem?
- Does how I’m answering the problem make sense with what the problem is asking?
- What are some other ways to solve the problem?
- Can I use another way to check if my answer is correct?
- Does my answer make sense?

2. **REASON ABSTRACTLY AND QUANTITATIVELY.**

Understand the relationship of numbers and number problems and represent them using pictures, drawings or symbols. Talk about the parts of number problems using pictures, drawings or symbols as well as how the pictures, drawings or symbols represent and help explain the problem. Show how using different numbers or operations in the same problem changes it.

3. **CONSTRUCT VIABLE ARGUMENTS AND CRITIQUE THE REASONING OF OTHERS.**

Use objects, drawings, diagrams or actions to construct arguments about math problems with understanding and using appropriate vocabulary to explain the reasoning process. Build a local argument, communicate it with others, justify your reasoning process and respond to the reasoning process someone else uses. Express agreement if both arguments are correct and explain why an argument is flawed if it is.

4. MODEL WITH MATHEMATICS.

Apply mathematical skills to everyday life, society, the workplace and other situations; identify important quantities in practical situations; write an equation to describe a situation; revise solutions; use tools such as diagrams, two-way tables, graphs, flowcharts and formulas to show relationships; analyze relationships to draw conclusions, interpret results in context and reflect on whether the results make sense.

5. USE APPROPRIATE TOOLS STRATEGICALLY.

Identify and make decisions regarding which tool, such as paper and pencil, models, rulers, spreadsheets, etc., to use to help solve mathematical problems as well as know when a tool is not the right one to use. Use technological and other tools to deepen understanding.

6. ATTEND TO PRECISION.

Communicate precisely when discussing math incorporating the following:

- Use clear definitions.
- Choose, use and explain symbols correctly, consistently and appropriately.
- Specify units of measure and labels correctly.
- Avoid careless errors.
- Follow formulas to explain thinking to others.

7. LOOK FOR AND MAKE USE OF STRUCTURE.

Look for and identify structure and patterns in mathematics (for example, three and seven more is the same amount as seven and three more, or sort shapes according to their number of sides) and see if the pattern or structure changes.

8. LOOK FOR AND EXPRESS REGULARITY IN REPEATED REASONING.

Look for repetition in calculations and numeric thinking, such as skip counting. Pay attention to the whole problem and the details and continuously evaluate the accuracy and reasonableness of both intermediate and final answers.

CONNECTING THE STANDARDS FOR MATHEMATICAL PRACTICE TO THE STANDARDS FOR MATHEMATICS CONTENT

The Standards for Mathematical Practice describe ways in which developing student practitioners of the discipline of mathematics increasingly ought to engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years. Designers of curricula, assessments and professional development should all attend to the need to connect the mathematical practices to mathematical content in mathematical instruction. The Standards for Mathematical Content are a balanced combination of procedure and understanding. Expectations that begin with the word “understand” are often especially good opportunities to connect the practices to the content. Students who lack understanding of a topic may rely on procedures too heavily. Without a flexible base from which to work, they may be less likely to consider analogous problems, represent problems coherently,

justify conclusions, apply the mathematics to practical situations, use technology mindfully to work with the mathematics, explain the mathematics accurately to other students, step back for an overview or deviate from a known procedure to find a shortcut. In short, a lack of understanding effectively prevents a student from engaging the mathematical practices. In this respect those content standards, which set an expectation of understanding are potential “points of intersection” between the Standards for Mathematical Content and the Standards for Mathematical Practice. These points of intersection are intended to be weighted toward central and generative concepts in the school mathematics curriculum that most merit time, resources, innovative energies and focus necessary to qualitatively improve the curriculum, instruction, assessment, professional development and student achievement in mathematics.

Kindergarten Mathematics

Scope and Sequence

<p>Topic: Counting and Cardinality</p> <p>I. Number Sense</p> <ul style="list-style-type: none"> a. Count by 1s from any given number b. Skip counting c. Identify and write numerals 1-20 d. Value of penny and dime e. Value of paper money f. Number patterns g. One-to-one correspondence <p>II. Number Comparisons</p>	<p>Topic: Operations and Algebraic Thinking</p> <p>III. Numerical Operations</p> <ul style="list-style-type: none"> a. Changing numbers (bigger/adding and smaller/subtracting) b. Addition c. Compliments of ten d. Subtraction e. Solving equations
<p>Topic: Number and Operations in Base Ten</p> <p>IV. Place Value</p> <ul style="list-style-type: none"> a. Compose double digit numbers b. Decompose double digit numbers 	<p>Topic: Measurement and Data</p> <p>V. Measurement</p> <ul style="list-style-type: none"> a. Length b. Weight c. Volume/capacity d. Time to the hour e. Tally marks f. Season, month, day <p>VI. Data</p> <ul style="list-style-type: none"> a. Classify items by attribute b. Compare items by attribute c. Graphs to represent data
<p>Topic: Geometry</p> <p>VII. Geometry</p> <ul style="list-style-type: none"> a. Positional words b. Two and three dimensional shapes <ul style="list-style-type: none"> i. Identification ii. Comparison iii. Composition and decomposition c. Symmetry 	

The Standards for Mathematical Practice stated below are to be developed with students, used by students when teaching the mathematical content here within and integrated into each of the following units.

Common Core State Standards for Mathematical Practice

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.

Suggested days of Instruction	Curriculum Management System	Topic: Number Sense	
	Subject/Grade Level: Kindergarten Mathematics	Goal 1: The student will be able to develop a sense of what numbers are and how they work.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
On-going	<p>1.1. Count by 1s from any given number to 100. (K.CC.1, K.CC.2)</p> <p>1.2. Count by 5s and 10s to 100. (K.CC.1)</p> <p>1.3. Identify numbers 1-20. (K.CC.3, K.CC.4)</p> <p>1.4. Write the numerals 1-20. (K.CC.3)</p> <p>1.5. Count out a given number of objects displaying one-to-one correspondence. (K.CC.4, K.CC.5)</p> <p>1.6. Identify a penny and its value.</p> <p>1.7. Identify a dime and its value.</p> <p>1.8. Identify the difference between a dollar bill and coin.</p> <p>1.9. Identify a 1, 5, 10 and 20</p>	<p>Essential Questions: What do the names of numbers mean? Why do we count? How can we accurately count and keep track of quantities up to 20 using money or other manipulatives? Why do we need to know the value of money? How do patterns help us describe and understand the order of numbers?</p> <p>Conceptual Understandings: Numerals represent numbers and have many uses. Number names describe the number of objects. The last number counted in a sequence represents the number of objectives in a set. Forming numbers correctly is useful in representing the quantity counted. A penny has the value of 1 cent. A dime has the value of 10 cents. The value of a dime is equivalent to 10 pennies. A pattern has a predictable, repeating part, the core, and</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Learning Activities: Calendar Activities: calendar, 100's chart/100 number line As children complete calendar activities, ask them to tell you a pattern they notice about the numbers in the 100's chart. Morning Activities: counting-up while passing an item Center Activities Counting games: "Sit on...", counting in line, Top It Skill sheets Assessment Models: Rote Counting: How far you count? (Child counts as far as he or she can go) *When reassessing at various times of the year (quarterly), have students begin counting from a given number instead of beginning with the number 1.</p> <p>Numeral Recognition: Place numeral cards in</p>

Suggested days of Instruction	Curriculum Management System	Topic: Number Sense	
	<u>Subject/Grade Level:</u> Kindergarten Mathematics	<u>Goal 1:</u> The student will be able to develop a sense of what numbers are and how they work.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>dollar bill.</p> <p>1.10. Identify number patterns using a number chart (counting by 5s/10s and identifying numbers of similarity using the one's place). (K.CC.1)</p> <p>1.11. Relate a numeral to a position of order (ordinal numbers - first, second, etc.). (K.CC.4)</p> <p>1.12. Apply critical thinking and problem-solving skills in classroom and family settings. (9.1.4.A.5)</p> <p>1.13. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in different settings (at home, in school, and during play). (9.1.4.C.1)</p> <p>1.14. Express needs, wants, and</p>	<p>can be extended by using the repetitions of the core.</p>	<p>random order. (Can you tell me the names of any of these numbers) – If child is reluctant can try “Show me a” (name of the numeral) or “What is” (Make note if wording makes a difference).</p> <p>Numeral Writing: 1. Students write numbers in sequence (1-20) 2. Students write numeral dictated by teacher.</p> <p>One to One Correspondence: Put out three groups of beans: a group of 8, a group of 12 and a group of 20. (Count a group of beans for me.)</p> <ol style="list-style-type: none"> a. Line b. Rectangular array or circle c. Scattered configuration <p>Using receptive and expressive language, students will identify the names and values of the coins: penny and dime. (Students will be asked to point to the penny and point to the dime. Students will be asked to name the penny and name the dime and their values).</p> <p>Using receptive and expressive language, students will identify the names and values of the bills: 1\$, 5\$, 10\$, 20\$. (Students will be asked to point to the bills: 1\$, 5\$, 10\$, and 20\$. Students will be asked to name the bills: 1\$, 5\$, 10\$, and 20\$ and their values).</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Number Sense	
	Subject/Grade Level: Kindergarten Mathematics	Goal 1: The student will be able to develop a sense of what numbers are and how they work.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>feelings appropriately in various situations. (9.1.4.D.2)</p> <p>1.15. Explain the importance of understanding and following rules in family, classroom, and community settings. (9.1.4.F.3)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Comparing Numbers	
	Subject/Grade Level: Kindergarten Mathematics	Goal 2: The student will be able to apply their understanding of number by explaining how two numbers are different than one another.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
On-going	<p>2.1. Compare two numbers between 1-10. (K.CC.6, K.CC.7)</p> <p>2.2. Compare two numbers between 0-20 (introduce and practice). (K.CC.6)</p> <p>2.3. Apply critical thinking and problem-solving skills in classroom and family settings. (9.1.4.A.5)</p> <p>2.4. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1)</p> <p>2.5. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in different settings (at home, in school, and during play). (9.1.4.C.1)</p>	<p>Essential Questions: Why should we compare numbers? How are groups of objects the same or different? How can we identify if one group is greater than, less than or equal?</p> <p>Conceptual Understandings: By counting and comparing quantities we can determine which is more, less or equal.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Learning Activities: Center Activities Measuring Tasks: balance, scale Skill sheets Number games: Monster Squeeze</p> <p>Assessment Models: <i>Performance:</i> Given two groups of objects students will identify which group is greater than, less than or equal by using matching or counting strategies.</p> <p><i>Written assessment:</i> Students identify the following by circling: a. Greater than of two numbers b. Less than of two numbers</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Comparing Numbers	
	Subject/Grade Level: Kindergarten Mathematics	Goal 2: The student will be able to apply their understanding of number by explaining how two numbers are different than one another.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>2.6. Use effective oral and written communication in face-to-face and online interactions and when presenting to an audience. (9.1.4.D.1)</p> <p>2.7. Express needs, wants, and feelings appropriately in various situations. (9.1.4.D.2)</p> <p>2.8. Explain the importance of understanding and following rules in family, classroom, and community settings. (9.1.4.F.3)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Numerical Operations	
	Subject/Grade Level: Kindergarten Mathematics	Goal 3: The student will be able to make a number bigger or smaller through the use of addition or subtraction.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
On-going	<p>3.1. Orally add and subtract without manipulatives and/or fingers with fluency (automatic) within 5. (K.OA.5)</p> <p>3.2. Add and subtract within 10 using manipulatives or drawing to represent the problem. (K.OA.1, K.OA.2, K.OA.3)</p> <p>3.3. Identify the number that makes ten when added to a given number 1-9. (K.OA.4)</p> <p>3.4. Solve addition equations with sums to 10 using objects or drawings. (K.OA.1, K.OA.3)</p> <p>3.5. Solve subtraction equations with sums to 10 using objects or drawings. (K.OA.1, K.OA.3)</p> <p>3.6. Recognize a problem and brainstorm ways to solve the problem individually or</p>	<p>Essential Questions: How can I make a number bigger or smaller number? How can I make a number change? How do I recognize what strategy to use for a specific problem? Why do we need mathematical operations? How do I know which mathematical operation to use? How can knowing the additional and subtraction facts help me?</p> <p>Conceptual Understandings: Addition and subtraction involve combining or separating small amounts. The ability to solve problems is the heart of mathematics. I can take apart and recombine numbers in a variety of ways.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Learning Activities: Calendar Activities: Calendar, 100's chart Center Activities Morning Activities: Word Problems Number Games: Around the World, Top It, Hide and Seek with items Skill Sheets</p> <p>Assessment Models: Students show a number story by using objects to represent a number story. Students draw a picture to represent number story given. Show the student an equation card and the student will represent the equation using manipulatives.</p>

Suggested days of Instruction	Curriculum Management System	Topic: Numerical Operations	
	Subject/Grade Level: Kindergarten Mathematics	Goal 3: The student will be able to make a number bigger or smaller through the use of addition or subtraction.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>collaboratively. (9.1.4.A.1)</p> <p>3.7. Apply critical thinking and problem-solving skills in classroom and family settings. (9.1.4.A.5)</p> <p>3.8. Participate in brainstorming sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1)</p> <p>3.9. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in different settings (at home, in school, and during play). (9.1.4.C.1)</p> <p>3.10. Express needs, wants, and feelings appropriately in various situations. (9.1.4.D.2)</p>		<p>The students will record a number sentence that is given then use objects/manipulatives to show the number sentence and answer.</p> <p>Provide the students with an “open” number sheet of 10 circles. Using two different objects or colors, students will create a number sentence through recording and answer with drawing or equation. (Students roll dice and color the number of circles in one color. Can use two-sides chips or beans. Students then color in the remainder of the circles in another color. Students record the number sentence to match.)</p> <p>Students complete math fact paper (adding/ subtracting to five).</p> <p>Students show two ways (drawing or equation) to make a given number (1-10).</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System Subject/Grade Level:	Topic: Place Value	
	Kindergarten Mathematics	Goal 4: The student will be able to break (decompose) a two-digit number into its expanded form and create (compose) a two-digit number from an expanded notation.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
On-going	<p>4.1. Compose a double-digit number up to 20 using tens and ones with the use of manipulatives. (K.NBT.1)</p> <p>4.2. Decompose a double-digit number up to 20 into tens and ones with the use of manipulatives. (K.NBT.1)</p> <p>4.3. Apply critical thinking and problem-solving skills in classroom and family settings. (9.1.4.A.5)</p> <p>4.4. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in different settings (at home, in school, and during play). (9.1.4.C.1)</p> <p>4.5. Express needs, wants, and feelings appropriately in various situations. (9.1.4.D.2)</p>	<p>Essential Questions: How do numbers connect to quantity? How can we organize a set of objects so they are easy to count and combine?</p> <p>Conceptual Understandings: Numbers connect to a quantity. Using groups to count is more effective than counting than counting by ones. The place value of teen numbers is made up of one group of ten and some number of ones.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Learning Activities: Calendar Activities: Calendar, 100's Chart Center Activities Morning Activities: Word Problems Number Games: Zurkle Skill Sheets</p> <p>Assessment Models: Compose a double-digit (less than 20) number using tens and ones (Composition: e.g., "Demonstrate 10 and 4 ones make 14."). Decompose a double-digit (less than 20) number into tens and ones (Decomposition: e.g., "What does $19=10 + 9$ mean, one group of 10 and 9 ones).</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Measurement	
	Subject/Grade Level: Kindergarten Mathematics	Goal 5: The student will be able to identify various forms of measurement and utilize them to describe an object's/situation's attributes and/or condition.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
On-going	<p>5.1. Identify length and weight as forms of measurement and determine when to use them in measuring an object (introduce and practice). (K.MD.1)</p> <p>5.2. Explore measuring a distance using length with non-standard and standard units (feet). (K.MD.1)</p> <p>5.3. Identify methods of measuring volume and capacity and that there are both standard and non-standard methods of measurement introduce and practice). (K.MD.1)</p> <p>5.4. Compare two objects with the same measureable attribute in common, determining which objects has "more of/less of" the attribute. (K.MD.2)</p>	<p>Essential Questions: How is measurement used in the real world? How can we use consistent units to measurement accurately? What happens when something is measured with smaller units versus larger units? Why do we get different counts when using different units to measure an object? How does time influence the events in our daily lives (hours, days, months, seasons)?</p> <p>Conceptual Understandings: Measurement can be described using words and numbers. Measuring identifies how long things are, how much they weigh and how much they hold. Temperature tells whether something is hot or cold. A clock is a tool that measures time. A calendar is a tool that shows days and months of the year. Events occur in sequence.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Learning Activities: Calendar Activities: Calendar, 100's Chart Center Activities: Rice/Sand table Morning Activities: Word Problems (comparing two objects) Measurement Games: Attribute Hunt, I-Spy, How Big is a Foot Skill Sheets</p> <p>Assessment Models: Students will compare/measure specific items (pre-determined) using non-standard units such as paper clips and Unifix cubes. Students will compare/measure specific items (pre-determined) using the standard unit of feet. Students will directly compare two objects (pre-determined) with a measurable attribute in common (length, width, weight, and capacity).</p>

Suggested days of Instruction	Curriculum Management System <u>Subject/Grade Level:</u> Kindergarten Mathematics	Topic: Measurement Goal 5: The student will be able to identify various forms of measurement and utilize them to describe an object's/situation's attributes and/or condition.		
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model	
	5.5. Describe the difference of a measureable attribute between two objects. (K.MD.2) 5.6. Tell and write time in hours using analog and digital clocks (introduce and practice). (1.MD.3) 5.7. Understand the concept of time related to morning, noon, afternoon and night. (K.MD.1) 5.8. Decide the order in which a sequence of events occurs. 5.9. Explore an object's weight by using heavier and lighter. (K.MD.1, K.MD.2) 5.10. Identify and correspond the term pounds with an object's weight. (K.MD.1) 5.11. Name the days of the week, months of the year and the		Using the classroom clock, students will identify and name time to the hour. Given three story pictures, students will arrange them in the correct sequence from beginning to last. Additional Resources:	

Suggested days of Instruction	Curriculum Management System <u>Subject/Grade Level:</u> Kindergarten Mathematics	Topic: Measurement	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>season (There are 7 days in a week; there are 12 months in a year; there are four seasons in a year.). (K.MD.1)</p> <p>5.12. Name the current month and day. (K.MD.1)</p> <p>5.13. Identify yesterday, today and tomorrow. (K.MD.1)</p> <p>5.14. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in different settings (at home, in school, and during play). (9.1.4.C.1)</p> <p>5.15. Explain the importance of understanding and following rules in family, classroom, and community settings. (9.1.4.F.3)</p>		

Suggested days of Instruction	Curriculum Management System	Topic: Data	
	Subject/Grade Level: Kindergarten Mathematics	Goal 6: The student will be able to construct, read and interpret information on a graph.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
On-going	<p>6.1. Sort items according to attributes. (K.MD.3)</p> <p>6.2. Count objects within their classification. (K.MD.3)</p> <p>6.3. Understand, read and interpret information on a bar graph and picture graph (introduce and practice). (K.MD.2)</p> <p>6.4. Construct a graph to represent a data set. (K.MD.2, K.MD.3)</p> <p>6.5. Explore the use of tally marks (introduce and practice). (K.MD.3)</p> <p>6.6. Evaluate available resources that can assist in solving problems. (9.1.4.A.2)</p> <p>6.7. Participate in brainstorming</p>	<p>Essential Questions: Which attributes should we consider in classifying objects? What are the many different stories that data can tell us? How do data and graphs help us understand information? Does data always lead to the truth? How can we organize and provide understanding of the data?</p> <p>Conceptual Understandings: Information can be sorted, organized, described to answer question(s). Information can be represented and presented in different ways. A graph is a way to show information in an organized, pictorial way. The data in a graph can be used to answer a question.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Learning Activities: Calendar Activities: Weather Center Activities: Sorting, Classifying, Graphing Morning Activities/Daily Routine: attendance, lunch count, Question of the Day, Clean-up Data Analysis Games: Sorting, Classifying, Graphing Skill Sheets</p> <p>Assessment Models: Students will sort (pre-determined) objects according to attribute(s). Students will count (pre-determined) objects within their classification. Students will complete a graph to represent their data (extension activity, optional 1.MD.4, 2.MD.10).</p>

Suggested days of Instruction	Curriculum Management System	Topic: Data	
	Subject/Grade Level: Kindergarten Mathematics	Goal 6: The student will be able to construct, read and interpret information on a graph.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>sessions to seek information, ideas, and strategies that foster creative thinking. (9.1.4.B.1)</p> <p>6.8. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in different settings (at home, in school, and during play). (9.1.4.C.1)</p> <p>6.9. Express needs, wants, and feelings appropriately in various situations. (9.1.4.D.2)</p> <p>6.10. Explain the importance of understanding and following rules in family, classroom, and community settings. (9.1.4.F.3)</p>		<p>Students will present and describe/explain the factual findings reported through their graph (extension activity, optional 1.MD.4, 2.MD.10).</p> <p>Additional Resources:</p>

Suggested days of Instruction	Curriculum Management System	Topic: Geometry	
	Subject/Grade Level: Kindergarten Mathematics	Goal 7: The student will be able to analyze, describe, create and compose shapes.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
On-going	<p>7.1. Use positional words to describe where objects are located in the environment. (K.G.1)</p> <p>7.2. Identify and name shapes in the environment regardless of their orientation or overall size. (K.G.2)</p> <p>7.3. Explore shapes in the environment, identifying them as two-dimensional or three-dimensional. (K.G.3)</p> <p>7.4. Describe similarities and differences of two-dimensional or three-dimensional shapes. (K.G.4)</p> <p>7.5. Create models of shapes in the world by constructing shapes from various components/tools. (K.G.5)</p> <p>7.6. Construct various shapes</p>	<p>Essential Questions: Why might seeing/visualizing objects in their simple form help us to understand them? Why is it helpful to use simple shapes to describe an object? How can we observe, describe, and compare shapes? How can knowing relative positions help us know where things are?</p> <p>Conceptual Understandings: Shapes are everywhere in our environment. Complex objects are made up of many simple shapes. Objects, like us, have positions in our environment.</p>	<p>NOTE: The assessment models provided in this document are suggestions for the teacher. If the teacher chooses to develop his/her own model, it must be of equal or better quality and at the same or higher cognitive levels.</p> <p>Depending upon the needs of the class, the assessment questions may be answered in the form of essays, quizzes, mobiles, PowerPoint, oral reports, booklets, or other formats of measurement used by the teacher.</p> <p>Learning Activities: Students will identify relative positions of an “object” using terms such as: above, below, beside, in front of, behind and next to by placing the object as directed. (Routine assessment/daily: ie, using an interactive bulletin board/calendar/morning message) Calendar Activities: Interactive Bulletin Board, following directions Center Activities: Sorting, matching, pattern blocks, Geometry Games: I-Spy shapes, “What’s My Rule”...fishing game, obstacle course, following directions Skill sheets</p> <p>Assessment Models: Show students a collection of pattern blocks and attribute blocks. Ask children to remove the shapes</p>

Suggested days of Instruction	Curriculum Management System Subject/Grade Level: Kindergarten Mathematics	Topic: Geometry	
		Goal 7: The student will be able to analyze, describe, create and compose shapes.	
	Objectives / Cluster Concepts / Cumulative Progress Indicators (CPI's) The student will be able to:	Essential Questions, Conceptual Understandings	Instructional Tools / Materials / Technology / Resources / Learning Activities / Interdisciplinary Activities / Assessment Model
	<p>using manipulatives (use simple shapes to form larger shapes). (K.G.6)</p> <p>7.7. Identify if an object is symmetrical (introduce and practice). (K.G.1, K.G.2, 4.G.3)</p> <p>7.8. Apply critical thinking and problem-solving skills in classroom and family settings. (9.1.4.A.5)</p> <p>7.9. Practice collaborative skills in groups, and explain how these skills assist in completing tasks in different settings (at home, in school, and during play). (9.1.4.C.1)</p> <p>7.10. Explain the importance of understanding and following rules in family, classroom, and community settings. (9.1.4.F.3)</p>		<p>you name from the tray.</p> <p>Students complete a naming and sorting activity of flat and solid shapes.</p> <p>Students choose two shapes and describe the similarities and differences between them using attributes (e.g. number of sides/vertices sides or having sides of equal length).</p> <p>Students identify 2D and 3D shapes by locating them in the classroom, from a magazine or draw them to show different shapes in our environment (squares, circles, triangles, rectangle, hexagons, cubes, cones, cylinders and spheres).</p> <p>Students will identify relative positions of an “object” using terms such as: above, below, beside, in front of, behind and next to by placing the object as directed. (Quarterly assessment) (Can use an interactive bulletin board.)</p> <p>Additional Resources:</p>