

**Math Curriculum
Kindergarten**

Essential Question(s): How does counting help us in our everyday lives?					
21st Century Theme: Business					
21st Century Skills: Communication and Collaboration/ Integrating Technology					
Content: Counting and Cardinality					
Standards: K.CC					
A. Know number names and the count sequence.					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
1. Count to 100 by ones and by tens	Model counting using decod words with and without pictures. Counting with manipulatives Clapping out numbers Calendar	Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Timed Drills End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work	Number chats Calendar Problem of the day Counting Manipulatives Games Calculator SmartBoards/Tables Block Center Ten Frame Number Line	Music: Dr. Jean Songs Literature: Reese's Pieces Count by Tens by: Jerry Pallotta	Numbers More/Less Same/ Different Left/ Right
2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	Ask children to finish sequence when starting with a random number Calendar	Same as above	Number line Fingers Oral discussion Calendar	File folder Games Math Stories Center Activities	Sequence First, Second, Third... Before/ After

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<p>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).</p>	<p>Write numbers for a purpose (Such as taking the lunch count.) Students will write/form written numerals 0-20 Students illustrate objects based on that number Count to tell number of objects</p>	<p>Same as above</p>	<p>Manipulatives SmartBoards Small chalkboards or white boards</p>	<p>Songs & number writing poems- http://www.canteach.ca/elementary/songs/poems72.html Art Center activity- make a number book and illustrate Science-counting nature objects, pinecones, seeds, etc. Journal writing</p>	<p>Number Vocabulary</p>
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Essential Question(s):					
Content: Counting and Cardinality					
21st Century Theme:					
Standards: K.CC					
B. Count to tell the number of objects.					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary

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<p>4. Understand the relationship between numbers and quantities; connect counting to cardinality.</p> <p>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.</p> <p>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.</p> <p>Understand that each successive number name refers to a quantity that is one larger.</p>	<p>Connec counting to cardinality</p> <p>Pairing objects with number name</p> <p>Understanding each successive number name refers to a quantity that is one larger</p>	<p>Formative Assessment</p> <p>Open- ended Problem</p> <p>Self Assessment</p> <p>Teacher Observation</p> <p>Benchmark Assessment</p> <p>Homework Review</p> <p>Classwork Review</p> <p>Project-Based Assessment</p> <p>Timed Drills</p> <p>End of the Year Benchmark Assessment Math</p> <p>Software (ex. Study Island)</p> <p>Group & cooperative work</p>	<p>SmartBoard/ Table</p> <p>Counting Objects</p> <p>Manipulatives</p> <p>Abacus</p>	<p>Science Center:</p> <p>Collecting and counting leaves or other objects from nature</p> <p>Physical Education:</p> <p>Counting jumping jacks, sit ups, etc.</p>	<p>More/ less</p>
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<p>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.</p>	<p>Provide opportunities to look at a group of items to determine the quantity Classify/ sorting objects and then counting</p>	<p>Same as above</p>	<p>Dominoes Blocks Manipulatives Objects to count</p>	<p>World Languages: Saying numbers in different languages Science: Classifying and sorting objects from nature ex. Leaves, sea shell, etc.</p>	<p>How many</p>

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Essential Question(s):					
21st Century Theme:					
Content:		Counting and Cardinality			
Standards:		K.CC			
Compare Numbers					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
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.1	Graphing objects to compare numbers Sorting and comparing objects to determine the relationship between the two	Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Timed Drills End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work	Dominoes Blocks Manipulatives Objects to count	Science: comparing quantities of objects from nature	More/less Greater than Less than Most Same Least Fewer Equal to
7. Compare two numbers between 1 and 10 presented as written numerals.	Students use number lines to determine numerals and quantity	Same as above	Number line Number Cards SmartBoard		Numerals 1-10

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Essential Question(s): How can you use objects to solve joining and separating problems?					
21st Century Theme: Global Awareness					
21st Century Skills: Critical Thinking and Problem Solving					
Content: Operations and Algebraic Thinking					
Standards: K.OA					
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
1. Represent addition and subtraction with objects, fingers, mental images, drawings ¹ , sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	Parts to Whole: Take two groups and make them into one whether adding or subtracting by exploring the combinations of numbers	Formative Assessment Open- ended Problem Teacher Observation Homework Review Classwork Review Project-Based Assessment End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work	Counters Coins Students Connecting Cubes Beads on a pipe cleaner Poems Songs	Literature: Domino Addition by: Lynette Long Elevator Magic by: Stuart J. Murphy Language Arts: Write a sentence about the number sentence. Dramatic Play: Act out addition and subtraction problems	Total In all How Many Together Add Subtract Difference What's left Plus Minus Is equal to One more/less Take away What remains Have enough Still remaining
2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.	Model addition and subtraction stories using real objects, next play objects, then counters, and lastly numbers.	Same as above	Counters Coins Students Connecting Cubes Beads on a pipe cleaner Dice Dominos Spinners Flash Cards	Language Arts: Students write their own math story. Art: Students illustrate their math story	Same as above

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<p>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 $5 = 4 + 1$)</p>	<p>Whole to part: Recognize 2 groups of numbers that will equal 10. Provide students with a total of 10 objects to be broken into 2 groups.</p>	<p>Same as above</p>	<p>Flash Cards Manipulatives</p>	<p>Classify number groups of scientific items by their characteristics (eg. Group of bus into spiders and butterflies)</p>	<p>Same as above</p>
<p>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</p>	<p>Whole to part: Provide students with a number group of objects to be broken into 2 groups (# 2-10)</p>	<p>Same as above</p>	<p>Flash Cards Manipulatives</p>	<p>Make a flower fact family</p>	<p>Same as above</p>
<p>5. Fluently add and subtract within 5.</p>	<p>Frequently ask students questions throughout the day that foster addition and subtraction.</p>	<p>Same as above</p>		<p>Songs: Ex. 5 Little Monkeys Ask a question during each subject/period or classroom activity. (ex. John needs three pencils he only has two how many more does he still</p>	<p>Same as above</p>

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Essential Question(s): How can you show numbers 11 to 19 with objects?					
21st Century Theme: Global Awareness					
21st Century Skills:					
Content:		Number and Operations in Base Ten			
Standards:		K. NBT			
Work with numbers 11-19 to gain foundations for place value.					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
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 (such as $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.	Provide students with objects that represent ones and tens. Have students display numbers 11 to 19 using objects. Can use one blocks and ten frames as well.	Formative Assessment Open-ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment Timed Drills End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work	Bean sticks Base ten blocks Ten Frame	Chart the days in school and/or days in the month	Compose Decompose

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Essential Question(s): How do we explore our world through comparing and classifying?					
21st Century Theme: Civic Literacy					
21st Century Skills: Life and Career Skills					
Content:		Measurement & Data			
Standards:		K. MD			
A. Describe and compare measurable attributes.					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	Provide opportunities for children to measure objects ex. Using measuring cups, rulers, scales, etc. and non-standard units of measurement <u>Develop a background for measurement</u> by using standard and nonstandard units of measurement	Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment End of the Year Benchmark Assessment Math Software (ex. Study Island) Group &	Balance scale with buckets Measuring Cups Rulers Non-standard tools Unifix blocks Measuring spoons Tape measure Scales Trundle Wheel	Literature: Inchworm and a Half by: Elinor J. Pinczes How Big is a Foot by: Joan Sweeny	Long Short Heavy Light Tall Small Big Little
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.	Encourage children to measure and compare objects eg. Which container can hold more water for watering the plants in the classroom? Compare lengths and heights using non-standard units. Eg. Measure Hunt- Give students a piece of yarn cut to the length of an object in the classroom and students need to find the item in	Same as above	Objects around the classroom or in the environment	Literature: Three Little Bears Social Studies: Compare the sizes of cities or states on a map Science: Compare the heights of trees outside Social Studies: Walking tour outside to compare the size of buildings and cars	Heavier Shorter Taller Lighter Smaller than Taller than Bigger than Same size Different size
*We are using standard use of measurement to provide exposure to standard forms of measurement but children are not expected to master the skill of using					

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Essential Question(s): How do we explore our world through comparing and classifying?					
21st Century Theme:					
Content:		Measurement & Data			
Standards:		K.MD			
B. Classify objects and count the number of objects in each category.					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	Ask children to classify within the daily routine (e.g. child is responsible for creating a chart each day with different lunch options listed. Create a picture graph using results from data collected to record, count and compare columns. Sort and classify objects using 1 or 2 attributes	Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work	Manipulatives (ex. Buttons, jelly beans, pattern blocks) Graphing pocket chart Large Grid/ Graph Paper	Social Studies: Chart members of the family	Category Column Graph

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Essential Question(s): How do we describe and manipulate the shapes we find as we investigate our environment?					
21st Century Theme: Global Awareness					
21st Century Skills: Creativity & Innovation					
Content:		Geometry			
Standards:		K.G			
A. Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
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.	Walk and identify shapes in the school and the community Create a classroom map and ask the students to describe where items are in relation to other items Create obstacle course and have children crawl under, step over, walk on, etc.	Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work	Objects in the classroom	Literature: Shapes, Shapes, Shapes by: Tana Hoban Art: Construction Paper shapes Physical Education: Obstacle course Social Studies: Create a classroom map	Square Circle Triangle Hexagon Cubes Cones Cylenders Spheres Above Below Besides In front of Next to Corner Edge Sides
2. Correctly name shapes regardless of their orientations or overall size.	Take photos and let children explain the position and shape in photo Use pattern blocks and manuvier orientation	Same as above	Variety of shapes Pattern blocks Tangrams Add to centers: protactor & compass	Social Studies: Identify the shapes in the community	same as above

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3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid")	Make flat shape pictures (drawing) Build 3-dimensional art with recyclable shapes		2-dimensional shapes 3-dimensional shapes		2-dimensional shapes 3-dimensional shapes also words from
Essential Question(s):					
21st Century Theme:					
Content:		Geometry			
Standards:		K.G			
Analyze, compare, create, and compose shapes.					
Skills	Instructional Procedures	Assessment	Resources	Interdisciplinary Connections	Vocabulary
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).	Explore two & three dimensional shapes Using pictures and actual objects to question the dimensionality	Formative Assessment Open- ended Problem Self Assessment Teacher Observation Benchmark Assessment Homework Review Classwork Review Project-Based Assessment End of the Year Benchmark Assessment Math Software (ex. Study Island) Group & cooperative work	Shape Models SmartBoard Smart Table Manipulatives	Science: shapes around the us- students analyze the different shapes outside and indoors	corners rolls vertices slanted edges number of sides shape squares (cubes) circles (sphere) triangle rectangles (rectangular prism) hexagons cylinders slide roll stack
5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	Modeling the construction of shapes Use shapes to create a picture	same as above	Playdough Wiki Sticks Tangrams	Same as above	Same as above

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6. Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?"	Compose simple shapes to form larger shapes	Same as above	Tangrams Geoboards Lite-Brite Pattern blocks	Art-Use basic shapes to create larger shapes Literature: Not Enough Room! by: Joanne Rocklin	same as above
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