Parent Guide

Kindergarten Mathematics Curriculum

Diocese of Cleveland

Below is a list of skills your child will be taught in Kindergarten Mathematics.
As parents, you are encouraged to support the work of your child's teacher in helping your child acquire each of these skills.

Counting and Cardinality	
Know number names and the count sequence.	
	Count to 100 by ones and tens.
	Count forward and backward beginning from a given number within the sequence.
	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0 to 20.
	Explain rules of counting.
	Determine how many in groups of 10 or fewer objects.
Count to tell the number of objects.	
	Understand the relationship between numbers and quantities; connect counting to cardinality.
	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.
	Understand that the last number name said tells the number of objects counted and that the number of objects is the same regardless of their arrangement or the order in which they were counted.
	Understand that each successive number name refers to a quantity that is one larger.
	Count to answer "how many" questions about as many as 20.
Compare numbers.	
	Identify whether the number of objects in one group is greater than, less then, or equal to the number of objects in another group, e.g., by using matching and counting strategies.
	Compare two numbers between 1 and 10 presented as written numerals.
	Identify and state the value of a penny, nickel, and dime.
Operations and Algebraic Thinking	
Understand addition as putting together and add to, and understand subtraction as taking apart and taking from.	
	Represent addition and subtraction with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations.
	Solve addition and subtraction word problems, and add and subtract within 10.
	Decompose numbers less than or equal to 10 into pairs in more than one way and record each decomposition by writing a number sentence (equation) using the symbols +, –, and =.
	For any number from 1 to 9, find the number that makes 10 when added to the given number and record the answer with a drawing or an equation.
	Fluently add and subtract within 5.
	Skip count by 2's, by 5's, and by 10's to 100.
Number and Operations in Base Ten	
Work with numbers 11-19 to gain foundations for place value.	
	Compose and decompose numbers 11 to 19 into ten ones and some further ones and record each composition and decomposition by a drawing; understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones.
	Identify and state the value of a penny, nickel, and dime.

Measurement and Data	
Describe and compare measurable attributes.	
	Describe measurable attributes of objects, such as length or weight.
	Describe several measurable attributes of a single object.
	Directly compare two objects with a measurable attribute in common, to see which object has “more of ” or “less of ” the attribute, and describe the difference.
	Measure length and volume (capacity) using uniform objects in the environment.
	Compare and order objects of different lengths, areas, weights, capacities, and temperature using standard and non-standard measuring devices.
	Identify units of time (hour, day, week, month, season, year) and compare calendar elements using analog and digital calendars.
	Order events based on time, such as activities that take a long or short time; review what we do first, next, last; and recall what we did yesterday and plan to do today, or tomorrow.
Geometry	
Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).	
	Describe objects in the environment using names and shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
	Correctly name shapes regardless of their orientations or overall size.
	Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”).
Analyze, compare, create, and compose shapes.	
	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (number of sides and vertices/”corners”) and other attributes (e.g., having sides of equal length).
	Model shapes in the world by building shapes from components and drawing shapes.
	Compose simple shapes to form larger shapes. For example, joining two triangles to form a rectangle.
	Recognize and describe spatial relationships utilizing both spatial memory and visualization.
DOC: Numbers, Number Sense and Operations	
Numbers and Number Systems	
	Explain rules of counting, such as each object should be counted once, and that order does not change the number.
	Determine “how many” in sets (groups) of 10 or fewer objects.
	Relate, read, and write numerals 0-20, by modeling and sequencing within a group of objects.
	Identify and state the value of a penny, nickel, and dime.
Meaning of Operations	
	Model and represent addition as combining sets and as counting on; and subtraction as take-away and comparison.
	Create addition and subtraction sentences using the symbols +, –, and =.
	Combine and separate small sets of objects in contextual situations; e.g., add or subtract one, two, or another small amount.
	Count on (forward) and count back (backward) on a number line between 0 and 10.
	Skip count by 2’s to 20, by 5’s and 10’s to 50.
Computation and Estimation	
	Develop and use a personal method or a routine to solve number problems.
	Compute using a variety of methods and choose an appropriate method for the situation.
	Recognize whether numerical solutions are reasonable through use of estimation techniques.

DOC: Measurement	
Measurement Units	
	Identify units of time (hour, day, week, month, season, year) and compare calendar elements using analog and digital clocks and calendars.
Measurement Techniques and Tools	
	Compare and order objects of different lengths, areas, weights, capacities, and temperature using standard and non-standard measuring devices. (Use relative terms, such as longer, shorter, bigger, smaller, heavier, lighter, more, less, warmer and colder.)
	Measure length and volume (capacity) using uniform objects in the environment.
	Order events based on time, such as activities that take a long or short time; review what we do first, next, last; recall what we did or plan to do yesterday, today, or tomorrow.
DOC: Geometry and Spatial Sense	
Spatial Relationships	
	Recognize and describe spatial relationships utilizing both spatial memory and visualization.
DOC: Patterns, Functions and Algebra	
Patterns, Relations and Functions	
	Identify, create, extend, and copy sequences of sounds (such as musical notes), shapes (such as buttons, leaves, or blocks), motions (such as hops or skips), and numbers from 1 to 10.
	Describe orally the pattern of a given sequence and use repeating and growing patterns to make predictions.
OH: CCSS: Literacy: Reading: Informational Text	
Key Ideas and Details	
	With prompting and support, ask and answer questions about key details in a text.
	With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.
Integration of Knowledge and Ideas	
	With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts).
	With prompting and support, identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).
OH: CCSS: Literacy: Writing	
Text Types and Purposes	
	Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.
OH: CCSS: Literacy: Speaking and Listening	
Presentation of Knowledge and Ideas	
	Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.
	Speak audibly and express thoughts, feelings, and ideas clearly.

(Source: [1] National Governors Association Center for Best Practices, Council of Chief State School Officers. 2010. *Common Core State Standards for Mathematics*. Washington, D.C.: National Governors Association Center for Best Practices, Council of Chief State School Officers.[2] Office of Catholic Education. 2007. *Mathematics Curriculum*. Cleveland, Ohio: Office of Catholic Education.)