

Ark Community Charter School Math Curriculum Framework –Kindergarten

<u>Units</u>	<u>Suggested Pacing</u>	<u>New York State Content Standards</u>	<u>New York State Skills Standards</u>	<u>New York State Performance Indicators</u>	<u>Assessments (Formal/ including state assessments and Informal)</u>
What are your unit titles	When and in what order will the standards be taught and assessed?	What should students know? (Indicate which content is a benchmark standard that will be assessed at this grade level. Optional: You can also identify essential questions based on the content standards.)	What should students be able to do?	Indices of quality – What is the nature of the evidence required to demonstrate the standard has been met and the quality of the performance that will be deemed acceptable? Bolded Performance Indicators: Done in chapter <i>Italicized Performance Indicators :</i> <i>Done daily/weekly</i> All Key Ideas are (I) and (P) and (A) are marked in bold	What specific tools will be used to assess which content standard or skills standard at this grade level?
The italicized performance indicators are done on a daily, or at least once a week basis throughout the year (every chapter)		Problem Solving Strand	<i>Students will build new mathematical knowledge through problem solving.</i>	<i>K.PS.1 Explore, examine, and make observations about a social problem or mathematical situation</i> <i>K.PS.2 Interpret information correctly, identify the problem, and generate possible solutions</i>	Teacher observations, one on one, or small group consultations. Student practice book, teacher checklist and NYS Scott Foresman Chapter benchmark test
			<i>Students will solve problems that arise in</i>	<i>K.PS.3 Act out or model with manipulatives activities involving mathematical content from</i>	

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			<i>mathematics and in other contexts.</i>	<i>literature and/or story telling k.PS.4 Formulate problems and solutions from everyday situations (e.g., counting the number of children in the class, using the calendar to teach counting)</i>	
			<i>Students will apply and adapt a variety of appropriate strategies to solve problems.</i>	<i>K.PS.5 Use informal counting strategies to find solutions K.PS.6 Experience teacher-directed questioning process to understand problems K.PS.7 Compare and discuss ideas for solving a problem with teacher and/or students to justify their thinking K.PS.8 Use manipulatives (e.g., tiles, blocks) to model the action in problems K.PS.9 Use drawings/pictures to model the action in problems</i>	
			<i>Students will monitor and reflect on the process of mathematical problem solving.</i>	<i>K.PS.10 Explain to others how a problem was solved, giving strategies</i>	
The italicized performance		Reasoning and Proof	<i>Students will</i>	<i>K.RP.1 Understand that mathematical statements can be</i>	Teacher observations, one on one, or small

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indicators are done on a daily, or at least once a week basis throughout the year (every chapter)		Strand	<i>recognize reasoning and proof as fundamental aspects of mathematics.</i>	<i>true or false</i>	group consultations. Student practice book, teacher checklist and NYS Scott Foresman Chapter benchmark test
			<i>Students will make and investigate mathematical conjectures.</i>	<i>K.RP.2 Investigate the use of knowledgeable guessing as a mathematical tool</i> <i>K.RP.3 Explore guesses, using a variety of objects and manipulatives</i>	
			<i>Students will develop and evaluate mathematical arguments and proofs.</i>	<i>k.RP.4 Listen to claims other students make</i>	
The italicized performance indicators are done on a daily, or at least once a week basis throughout the year (every chapter)		Communication Strand	<i>Students will organize and consolidate their mathematical thinking through communication.</i>	<i>K.CM.1 Understand how to organize their thought processes with teacher guidance</i> <i>K.CM.2 Share mathematical ideas through the manipulation of objects, drawings, pictures, and verbal explanations</i> <i>teacher guidance</i>	Teacher observations, one on one, or small group consultations. Student practice book, teacher checklist and NYS Scott Foresman Chapter benchmark test
			<i>Students will communicate</i>	<i>K.CM.2 Share mathematical ideas through the manipulation of</i>	

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			<i>their mathematical thinking coherently and clearly to peers, teachers, and others.</i>	<i>objects, drawings, pictures, and verbal explanations</i>	
			<i>Students will analyze and evaluate the mathematical thinking and strategies of others.</i>	<i>K.CM.3 Listen to solutions shared by other students K.CM.4 Formulate mathematically relevant questions with teacher guidance</i>	
			<i>Students will use the language of mathematics to express mathematical ideas precisely</i>	<i>K.CM.5 Use appropriate mathematical terms, vocabulary, and language</i>	
The italicized performance indicators are done on a daily, or at least once a week basis throughout the year (every chapter)		Connections Strand	<i>Students will recognize and apply mathematics in contexts outside of mathematics.</i>	<i>K.CN.1 Recognize the presence of mathematics in their daily lives K.CN.2 Use counting strategies to solve problems in their daily lives K.CN.3 Recognize and apply mathematics to objects and pictures</i>	Teacher observations, one on one, or small group consultations. Student practice book, teacher checklist and NYS Scott Foresman Chapter benchmark test
		Representatio	<i>Students will</i>	<i>K.R.1 Use multiple</i>	

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		n Strand	<i>create and use representations to organize, record, and communicate mathematical ideas.</i>	<p><i>representations, including verbal language, acting out or modeling a situation, and drawing pictures as representations</i></p> <p><i>K.R.2 Use standard and nonstandard representations</i></p>	
			<i>Students will use representations to model and interpret physical, social, and mathematical phenomena.</i>	<p>K.R.3 Use objects to show and understand physical phenomena (e.g., guess the number of cookies in a package)</p> <p>K.R.4 Use objects to show and understand social phenomena (e.g., count and represent sharing cookies between friends)</p> <p><i>K.R.5 Use objects to show and understand mathematical phenomena (e.g., draw pictures to show a story problem, show number values using fingers on your hand)</i></p>	
		Number Sense and Operations Strand	<i>Students will understand numbers, multiple ways of</i>	K.N.1 Count the items in a collection and know the last counting word tells how many items are in the collection (1 to 10)	

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			<p><i>representing numbers, relationships among numbers, and number systems.</i></p>	<p>K.N.2 Count out (produce) a collection of a specified size 1 to 10</p> <p>K.N.3 Numerically label a data set of 1 to 5</p> <p>K.N.4 Verbally count by 1's to 20</p> <p>K.N.5 Verbally count backwards from 10</p> <p>K.N.6 Represent collections with a finger pattern up to 10</p> <p>K.N.7 Draw pictures or other informal symbols to represent a spoken number up to 10</p> <p>K.N.8 Draw pictures or other informal symbols to represent how many in a collection up to 10</p> <p>K.N.9 Write numbers 1-10 to represent a collection</p> <p>K.N.10 Visually determine how many more or less, and then using the verbal counting sequence, match and count 1-10</p>	

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				K.N.11 Use and understand verbal ordinal terms, first to tenth	
			<i>Students will understand meanings of operations and procedures, and how they relate to one another.</i>	K.N.12 Solve and create addition and subtraction verbal word problems (use counting-based strategies, such as counting on and to ten) K.N.13 Determine sums and differences by various means	
		Algebra Strand	<i>Students will recognize, use, and represent algebraically patterns, relations, and functions.</i>	K.A.1 Use a variety of manipulatives to create patterns using attributes of color, size, or shape K.A.2 Recognize, describe, extend, and create patterns that repeat (e.g., ABABAB or ABAABAAAB)	
		Geometry Strand	<i>Students will use visualization and spatial reasoning to analyze characteristics and properties of geometric shapes.</i>	K.G.1 Describe characteristics and relationships of geometric objects	
			<i>Students will identify and justify</i>	K.G.2 Sort groups of objects by size and size order (increasing	

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			<i>geometric relationships, formally and informally.</i>	and decreasing)	
			<i>Students will apply transformations and symmetry to analyze problem solving situations.</i>	K.G.3 Explore vertical and horizontal orientation of objects Geometry K.G.4 Manipulate two- and three-dimensional shapes to explore symmetry	
			<i>Students will apply coordinate geometry to analyze problem solving situations.</i>	K.G.5 Understand and use ideas such as over, under, above, below, on, beside, next to, and between	
		Measurement Strand	<i>Students will determine what can be measured and how, using appropriate methods and formulas.</i>	K.M.1 Name, discuss, and compare attributes of length (longer than, shorter than) k.M.2 Compare the length of two objects by representing each length with string or a paper strip K.M.3 Relate specific times such as morning, noon, afternoon, and evening to activities and absence or presence of daylight	
		Statistics and Probability	<i>Students will collect, organize,</i>	K.S.1 Gather data in response to questions posed by the teacher and	

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		Strand	<i>display, and analyze data.</i>	students K.S.2 Help to make simple pictographs for quantities up to 10, where one picture represents 1 K.S.3 Sort and organize objects by two attributes (e.g., color, size, or shape) K.S.4 Represent data using manipulatives K.S.5 Identify more, less, and same amounts from pictographs or concrete models	
Chapter 1	14 days			K.G.5 Understand and use ideas such as over, under, above, below, on, beside, next to, and between K.G.2 Sort groups of objects by size and size order (increasing and decreasing) K.S.3 Sort and organize objects by two attributes (e.g., color, size, or shape)	Teacher observation checklist/worksheets for skills Scott Foresman Program NYS Benchmark Chapter test
Chapter 2	16 days			K.S.1 Gather data in response to questions posed by the teacher and	Teacher observation checklist/worksheets for skills

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				<p>students</p> <p>K.S.2 Help to make simple pictographs for quantities up to 10, where one picture represents 1</p> <p>K.S.4 Represent data using manipulatives</p> <p>K.S.5 Identify more, less, and same amounts from pictographs or concrete models</p> <p>K.A.1 Use a variety of manipulatives to create patterns using attributes of color, size, or shape</p> <p>K.A.2 Recognize, describe, extend, and create patterns that repeat (e.g., ABABAB or ABAABAAAB)</p>	<p>Scott Foresman Program NYS Benchmark Chapter test</p>
Chapter 3	14 days			<p>K.N.1 Count the items in a collection and know the last counting word tells how many items are in the collection (1 to 10)</p> <p>K.N.2 Count out (produce) a collection of a specified size 1 to 10</p> <p>K.N.3 Numerically label a data set of 1 to 5</p>	<p>Teacher observation checklist/worksheets for skills</p> <p>Scott Foresman Program NYS Benchmark Chapter test</p>

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				<p>K.N.4 Verbally count by 1's to 20</p> <p>K.N.7 Draw pictures or other informal symbols to represent a spoken number up to 10</p> <p>K.N.8 Draw pictures or other informal symbols to represent how many in a collection up to 10</p> <p>K.N.9 Write numbers 1-10 to represent a collection</p> <p>K.N.10 Visually determine how many more or less, and then using the verbal counting sequence, match and count 1-10</p> <p>K.N.11 Use and understand verbal ordinal terms, first to tenth</p> <p>K.N.6 Represent collections with a finger pattern up to 10</p> <p>K.S.2 Help to make simple pictographs for quantities up to 10, where one picture represents 1</p>	
Chapter 4	16 days			K.N.1 Count the items in a collection and know the last counting word tells how many	Benchmark Chapter Test

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				<p>items are in the collection (1 to 10)</p> <p>K.N.2 Count out (produce) a collection of a specified size 1 to 10</p> <p>K.N.4 Verbally count by 1's to 20</p> <p>K.N.5 Verbally count backwards from 10</p> <p>K.N.7 Draw pictures or other informal symbols to represent a spoken number up to 10</p> <p>K.N.8 Draw pictures or other informal symbols to represent how many in a collection up to 10</p> <p>K.N.9 Write numbers 1-10 to represent a collection</p> <p>K.N.10 Visually determine how many more or less, and then using the verbal counting sequence, match and count 1-10</p> <p>K.N.11 Use and understand verbal ordinal terms, first to tenth</p>	

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Chapter 5	17 days			K.N.4 Verbally count by 1's to 20	Benchmark unit 5 test
Chapter 6	18 days			K.G.2 Sort groups of objects by size and size order (increasing and decreasing) K.M.1 Name, discuss, and compare attributes of length (longer than, shorter than) k.M.2 Compare the length of two objects by representing each length with string or a paper strip	Benchmark unit 6 test