Archdiocese of New York Grade 1 Mathematics Parent Matrix

This parent matrix is intended to be a tool for you as a parent to help support your child's learning. The table below contains all of the Grade 1 Mathematics learning standards. Learning standards describe the knowledge and skills that students should master by the end of Grade 1. Each standard has a specific code. For example, 1.OA.1 stands for "Grade 1 Operations and Algebraic Thinking Standard 1." You will often see these standards referenced on your child's quizzes, worksheets, tests, etc.

You should access the recommended resources in the right hand "Resources" column electronically by clicking on the hyperlinks provided. **However, we suggest that you also download and print this matrix.** You will notice that the column all the way to the left is marked "Parent Notes." You can use this column to take notes on your child's progress. You may wish to check off each standard after you have worked on it with your child.

In Grade 1 Mathematics, there are four main domains of standards. These include Operations & Algebraic Thinking, Number & Operations in Base Ten, Measurement & Data, and Geometry. Each category is highlighted in a different color. **Your child's teacher will be able to tell you which standards you should focus on with your child throughout the year.**

We hope that this parent matrix is a valuable resource for you. If you find that you would like additional practice materials to work on you can use the standard codes provided below to search for additional resources.

Operations & Algebraic Thinking	Number & Operations – Base Ten	Measurement & Data	Geometry
These standards focus on relationships among numbers and quantities – including patterns, functions, and operations (addition, subtraction, etc).	These standards pertain to representations of numbers and the relationships between them. They focus on place value and number systems (the way we name and represent numbers).	These standards pertain to students' ability to use different strategies and mathematical tools such as rulers and clocks to measure lengths and time and interpret and represent data in different ways (e.g. on a number line, bar graph, picture graph, etc).	These standards require students to examine, describe, and produce both 2-D and 3-D geometric shapes (e.g. circles, triangles, rectangles).

OPERATIONS AND ALGEBRAIC THINKING					
Parent Notes	**Standard Code**	**Standard**	**What does this standard mean?**	**What can I do at home?**	**Resources**
	Operations and Algebraic Thinking Grade 1 Standard 1 (1.OA.1)	Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together	Students are able to solve word problems using numbers and symbols to model the problem.	Ask your child to take apart and put together items to show adding and subtracting. For example, if you have 20 blocks and you take away 6, the equation is 20-6=14.	http://www.ixl.com/math/grade-1 https://www.youtube.com/watch?v=wZmIDfRekpU&feature=player_embedded%23! https://www.youtube.com/watch?v=me3ZARSdDcs
	Operations and Algebraic Thinking Grade 1 Standard 2 (1.OA.2)	Solve word problems that call for addition of three whole numbers whose sum is less than 20, e.g. by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	Students can take three different numbers and add them together (as opposed to only two numbers added together)	Ask your child to use blocks or coins to show how they can add three numbers together, and what the equation would look like. For example, 5+3+2=10	https://www.youtube.com/watch?v=2_Yk8uBc0Mo
	Operations and Algebraic Thinking Grade 1 Standard 3 (1.OA.3)	Apply properties of operations as strategies to add and subtract.	For example, if 8+3=11 is known, the 3+8=11 is also known. This is the commutative property of addition

For example, if you want to add 2+6+4=2+10=12, this is the associative property of addition. | Ask your child to switch the order of numbers around in an addition problem and find the same answer. Also, show them that finding numbers that add up to 10 makes addition easier. | https://www.youtube.com/watch?v=xNguqdgHLk4 https://www.youtube.com/watch?v=QS8GQjZ9DFA |

	Operations and Algebraic Thinking Grade 1 Standard 4 (1.OA.4)	Understand subtraction as an unknown addend problem	For example, subtract 10-8 by finding the number that makes 10 when added to 8. Add and subtract within 20.	Ask your child to show you that to answer the problem 10-8, they need to find the number to add to 8 in order to arrive at 10.	https://www.youtube.com/watch?v=jiF43mac-ik
	Operations and Algebraic Thinking Grade 1 Standard 5 (1.OA.5)	Relate counting to addition and subtraction (e.g. by counting on 2 to add 2)	Addition is just counting on (or counting up 2 is adding 2)	Ask your child to count on a number to another number to arrive at the answer, which is called the sum. For example, counting up 4 is adding 4, and subtracting 4 is counting down 4	https://www.youtube.com/watch?v=ZKxfCV6HDLk
	Operations and Algebraic Thinking Grade 1 Standard 6 (1.OA.6)	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten; decomposing a number leading to a ten (e.g. 13-4=13-3-1=10-1=9) using the relationship between addition and subtraction (e.g. knowing that 8+4=12, one knows 12-8=4) and creating equivalent but easier or known sums (e.g. adding 6+7 by creating the known equivalent	Fluency means speed and accuracy when doing the addition and subtraction. Students need a variety of strategies for solving addition and subtraction problems through 20. Students also need to be fluent with any sums or differences within 10. These strategies will provide students with a variety of choices when deciding the best way to solve problems. This standard brings together all of the previous strategies and operations to apply in any given addition or subtraction situation. Fluency within 10 allows	Ask your child to add or subtract two numbers that you give them orally and/or on paper. See if they can better their score the next time. Have them use different strategies such as counting on, or making ten. Different strategies are just different ways to get the same answer. You can help your child by also reviewing "doubles" and their sums 1+1, 2+2, 4+4, 5+5, etc.	https://www.youtube.com/watch?v=xAtC-7_Ijqg

		6+6+1=12+1=13	sums and differences within 20 to be solved quickly, as students can decompose larger numbers as needed. For example, 13 – 4 can be thought of as 13 – 3 – 1 = 10 – 1 = 9.		
	Operations and Algebraic Thinking Grade 1 Standard 7 (1.OA.7)	Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false	The equal sign indicates more than just an answer to a math operations problem. The equal sign represents equality in equations. Clarification about the equal sign's true meaning and use will prevent confusion when students work through equations with unknown quantities. Students should be introduced to the terminology of the equal sign by interchanging the word "equals" with the phrase "is the same as." For example, 6 + 2 = 8 would be read, "six plus two is the same as eight." This will help students to recognize the concept that the quantity 6+2 has the same value as the number 8. In addition,	Ask your child which of the following equations are true and which are false? 6=6, 7=8-1 5+2=2+5, 4+1=5+2	https://www.youtube.com/watch?v=2cJbQHYTJjM

			students need to understand that the value for the entire expression on one side of the equal sign must be the same as the value for the entire expression on the other side of the equal sign. For example, in the equation 6 + 2 = 5 + ?, the missing number would be 3, because 6 + 2 = 8, so 5 + ? must also equal 8. Further understanding can be developed using equations that relate two sums on each side. For example, 2 + 6 = 3 + 5, which is a true equation.		
	Operations and Algebraic Thinking Grade 1 Standard 8 (1.OA.8)	Determine the unknown whole number in an addition or subtraction equation relating three whole numbers	Students are expected to solve for an unknown portion in an equation, regardless of its position in that equation. Additionally, students are to be familiar with that unknown portion being represented as a symbol, empty space, question mark, or shape. The students' previous understanding of the equal sign will enhance their ability to demonstrate an understanding of this missing portion.	Ask your child to determine the unknown number that makes the equation true in each of the equations 8+ ?=11, 5= ? -3 6 +6= ?	https://www.youtube.com/watch?v=nwOzgMGw9uw

		NUMBER AND OPERATIONS IN BASE TEN			
Parent Notes	**Standard Code**	**Standard**	**What does this standard mean?**	**What can I do at home?**	**Resources**
	Number and Operations in Base Ten Grade 1 Standard 1 (1.NBT.1)	Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral	This particular standard expands on students' previous knowledge of basic counting skills. Students should recognize, read, and write numerals within 120 as well as count on in a variety of sequencing patterns starting anywhere in that range. Students should represent a given number of objects with a numeral within the 120 range.	Ask your child to count forward from 1 to 120 and to match numbers with objects.	https://www.youtube.com/watch?v=uBAbchIm7zY
	Number and Operations in Base Ten Grade 1 Standard 2 (1.NBT.2)	Understand that two digits of a two-digit number represent amounts of tens and ones.	10s can be thought of as bundles of ten ones-called a "ten". Numbers from 11 to 19 are composed of a ten and one, two, three…nine ones. The numbers 10,20,30…90 refer to one, two, three…nine tens (and 0 ones)	Ask your child to represent a number as tens and ones. For example, the number 75 is 7 tens and 5 ones.	https://www.youtube.com/watch?v=XHGbkjnQuBg
	Number and Operations in Base Ten Grade 1 Standard 3 (1.NBT.3)	Compare two two-digit numbers based on meanings of the tens and ones Digits, recording the comparisons with the	The symbol < means less than. The symbol > means greater than . (the open part of the symbol is on the side of the larger number).	Ask your child to compare different numbers using the <,>, and = sign. For example, which symbol would be used to compare 20 to	https://www.youtube.com/watch?v=Sjiiyn0dynk

		symbols, <,>,=	So 5<6 6<7 9>8	30? 20<30 or 30>20 are both correct answers.	
	Number and Operations in Base Ten Grade 1 Standard 4 (1.NBT.4)	Add within 100, including adding a two-digit number and a one digit number, and adding a two digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.	Although this standard focuses on addition, showing students that addition and subtraction are closely related will help them "see" the reasoning in what they are doing. Once students have demonstrated a firm understanding of the place value of two-digit numbers, they are ready to add a two-digit number and a one-digit number, and two two-digit numbers (one of which is a multiple of ten (which avoids the process or regrouping) . Further, students understand that in addition digits in the ones place are added; digits in the tens place are added; and sometimes composing a ten is necessary. Further, students understand that in addition and subtraction, digits in the ones place are added and subtracted; and,	Ask your child to add two digit numbers and one digit numbers. Help them to see the place value of the numbers – ones or tens, that they add together the ones and tens get added to tens. Sometimes it is necessary to convert ones to a ten and ones when adding numbers.	https://www.youtube.com/watch?v=sfYdVJU2s2A

			digits in the tens place are added and subtracted. This fluency with addition and subtraction should be done through a variety of operation strategies. Additionally, students can explain their reasoning through verbal communication as well as a variety of representations including pictures, drawings and models.		
	Number and Operations in Base Ten Grade 1 Standard 5 (1.NBT.5)	Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	This standard asks students to compute (quickly and easily) throughout the range of numbers using the strategy of mental mathematics. Students' knowledge of the structure of tens will aid in their reasoning and demonstration of mentally adding and subtracting 10. Given a two-digit number, students should recognize that, when adding or subtracting 10, the only digit that is affected is the digit in the tens place. Further, their original	Ask your child to practice adding 10 to numbers and subtracting 10 from numbers in their head, explaining how it changes the number in the tens column by one.	https://www.youtube.com/watch?v=U21ihG8kLq4

			understanding that addition means to "add on" will help them to identify that by adding 10, there will be an increase in the number of tens, but the number of ones will stay the same. Additionally, students must understand that subtraction means to "take away" and therefore, when subtracting 10, there will be a decrease in the number of tens in a two-digit number while the number of ones will stay the same.		
	Number and Operations in Base Ten Grade 1 Standard 6 (1.NBT.6)	Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90(positive or 0 difference), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method	This standard asks students to compute fluently throughout the range of 10-90 by subtracting multiples of 10 (while maintaining positive or zero answers). Students' knowledge of the structure of tens will aid in their demonstration to subtract multiples of 10. Given multiples of ten in the range 10-90 (or in general, a two-digit number), students should recognize that,	Ask your child to practice subtracting multiples of 10 from different numbers that are also multiples of 10. Help them to notice the patterns. For example, adding 10 to 20 changes the 2 to 3, and subtracting 10 from 20 changes the 2 to 1.	https://www.youtube.com/watch?v=CuGpBHq8cHw https://www.youtube.com/watch?v=4i4_VHtHzP8

		and explain the reasoning used.	when subtracting multiples of 10 (in the range 10-90), the only digit that is effected is the digit in the tens place. Further, their original understanding that subtraction means to "take away" will be beneficial to students as they recognize that when subtracting a multiple of 10, there will be a decrease in the number of tens in a two-digit number while the number of ones will stay the same. Students will further use concrete models and drawings in reasoning through and explaining their chosen method in written form.		

MEASUREMENT AND DATA					
Parent Notes	**Standard Code**	**Standard**	**What does this standard mean?**	**What can I do at home?**	**Resources**
	Measurement and Data Grade 1 Standard 1 (1MD.1)	Order three objects by length; compare the lengths of two objects indirectly by using a third object.	This standard emphasizes a student's ability to sort and order three objects according to their lengths. For example, a student might compare the height of a desk on one side of a room with the height of a table on the other side of the room by finding a rod and comparing each of the first two heights to the length of the rod.	Ask your child to arrange and order objects by their length. Compare objects by using another object to measure them. For example, your child might use their shoe or string to measure objects, seeing which object is larger by how much space it takes on the shoe or string.	https://www.youtube.com/watch?v=5LImyAx7qcI
	Measurement and Data Grade 1 Standard 2 (1.MD.2)	Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned	This standard focuses on the student's ability to understand the concept of measuring the length of an object from end to end using objects. The student will measure lengths, which are a whole number of length units, where the length unit is some shorter object (e.g., using paper clips, unifix cubes, chain links, etc). Students need to have a wide variety of experiences with hands-on activities that allow them to	Ask your child to measure how many lengths an object is by using another object. For example, use a rectangle block to measure how many lengths the table or sofa are.	https://www.youtube.com/watch?v=3hlkRcTmFxY&feature=related

		by a whole number of length units with no gaps or overlaps.	manipulate the objects being measured.		
	Measurement and Data Grade 1 Standard 3 (1.MD.3)	Tell and write time in hours and half-hours using analog and digital clocks.	Students should know how to read an analog and digital clock, to the hour and half-hour. Students should also know how to write the time for both hour and half-hour.	Ask your child to tell you what time it is using an analog(hour and minute hands move) and a digital clock. Have them tell you when it is 11 o'clock or 11:30.	https://www.youtube.com/watch?v=TEMYxdm9PAM https://www.youtube.com/watch?v=eE2bqYAhieg

| | Measurement and Data Grade 1 Standard 4 (1.MD.4) | Organize, represent, and interpret data with up to three categories, ask and answer questions about the total number of data points, how many in each category, and how many more or less than in one category than in another. | This standard focuses on the student's ability to read and interpret sets of data that they have collected and displayed in an organized and categorical manner (i.e., bar graph or a pictograph, table, list of numbers), and that the data being "read" is data collected by the students themselves, and then put into a graphic representation themselves. Such a skill also incorporates a student's ability to collect data, generalize information, count data sets on a graph, and perform simple computation operations that will yield a greater variety of information about the data. | Ask your child to organize data (information) by helping them to make a graph of the data. For example, how many different color blocks they have, the number of dogs and cats, or what the weather is like each day for a week. | https://www.youtube.com/watch?v=6GYMKWpiQ8A https://grade1commoncore math.wikispaces.hcpss.org/1.MD.4 https://www.illustrativemat hematics.org/content-standards/tasks/506 |

					GEOMETRY		
Parent Notes	**Standard Code**	**Standard**	**What does this standard mean?**	**What can I do at home?**	**Resources**
	Geometry Grade 1 Standard 1 (1.G.1)	Distinguish between defining attributes (e.g. triangles are closed and three sided) verses non-defining- attributes (such as color, orientation, overall size). Build and draw shapes to possess defining attributes.	Early introductions to geometry include a basic understanding and ability to name shapes including triangles, squares, circles, and rectangles. In first grade, students need a more sophisticated vocabulary and understanding of the attributes of shapes. They should encounter a variety of shapes, which means that there should also be a variety of orientations, using different colors and sizes. Attention should be given to unfamiliar variants of shapes (i.e., obtuse triangles, rotated squares, etc.).	Ask your child to find different shapes in your living room or kitchen. When you are out shopping allow them to point out a special shape And to find objects that fit the category. Count the sides of a triangle (always has three sides), sides of a square (always have four). Show the child that the shape does not change when its color, orientation, or overall size changes.	http://www.readtennessee. org/sites/www/Uploads/1G 1.pdf https://www.youtube.com/ watch?v=AVUy058_JNE
	Geometry Grade 1 Standard 2 (1.G.2)	Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half circles and quarter circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones	As students gain knowledge in the identification of geometric attributes, they are then introduced to other shapes such as trapezoids, half-circles and quarter-circles. With this introduction,	Ask your child to play with shapes (use blocks or paper shapes from construction paper). Help them to put the shapes together to make new shapes.	http://gpb.pbslearningmedi a.org/resource/7b8d6ebf-1541-4b33-86d3-e2eb7e9caced/7b8d6ebf-1541-4b33-86d3-e2eb7e9caced/ http://gpb.pbslearningmedi a.org/resource/8515dbf4-

		and cylinders) to create a composite shape, and compose new shapes from the composite shape.	students can begin to conclude that shapes may be put together to form new shapes or bigger shapes can be taken apart to show the smaller shapes that compose them. Additionally, students should have practice in creating these shapes through such methods as drawings, tracings and fashioning manipulatives together.		4ddb-449a-a6db-7ea9b1ac354b/8515dbf4-4ddb-449a-a6db-7ea9b1ac354b/
	Geometry Grade 1 Standard 3 (1.G.3)	Partition circles and rectangles into tow and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of or four of shapes. Understand for these examples that decomposing into more equal shares creates smaller shares.	Students will recognize the "part-whole" relationship in representations of basic fractions such as 1⁄2 and 1⁄4 and be able to match the spoken, written, concrete, and pictorial representations of whole numbers, one- half, and one-fourth. Hexagons (and other easily partitioned shapes) provide a wonderful opportunity to introduce such fractional concepts. Mastery of this skill later prepares them for more sophisticated explorations with fractions.	Ask your child to partition circles and rectangles into 2, 3 or 4 equal sizes. Help them to understand that if an item is partitioned into two equal sections they are called halves; 3 equal sections are called thirds, four equal sections are called fourths. Two halves make a whole, three thirds make a whole, and four fourths make a whole. Allow them to see that you can have half of one item and half of another different item and they may not be the same size.	http://www.instructorweb.com/docs/pdf/dividingshapeswks.pdf https://www.youtube.com/watch?v=aZOh_Urf62M http://www.mathworksheetsland.com/1/partcirrect/