Parent Guide
Grade One Mathematics Curriculum
Diocese of Cleveland

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

Operations & Algebraic Thinking	
Represent and solve problems involving addition and subtraction.	
	Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
	Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
Understand and apply properties of operations and the relationship between addition and subtraction.	
	Apply properties of operations as strategies to add and subtract. Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)
	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.	
	Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); 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 6 + 6 + 1 = 12 + 1 = 13).
Work with addition and subtraction equations.	
	Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.
	Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = _ – 3, 6 + 6 = _.
Number and Operations in Base Ten	
Extend the counting sequence.	
	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.
Understand place value.	
	Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
	10 can be thought of as a bundle of ten ones — called a "ten."
	The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
	The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).
	Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

Number and Operations in Base Ten continued	
Use place value understanding and properties of operations to add and subtract.	
	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.
	Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
	Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), 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.
Measurement and Data	
Measure lengths indirectly and by iterating length units.	
	Order three objects by length; compare the lengths of two objects indirectly by using a third object.
	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 by a whole number of length units with no gaps or overlaps.
Tell and write time.	
	Tell and write time in hours and half-hours using analog and digital clocks.
Represent and interpret data.	
	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 are in one category than in another.
Geometry	
Reason with shapes and their attributes.	
	Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.
	Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.
	Partition circles and rectangles into two 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 the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.
DOC: Numbers, Number Sense and Operations	
Meaning of Operations	
	Develop and use strategies to solve word problems.
	Develop a logical sequence of steps.
	Choose the appropriate operation.
	Write number sentences to represent additon.
	Master addition facts to 12.
	Model, represent and explain subtraction as take- away and comparison.
	Model and explain subtraction using physical materials in contextual situations.
	Draw pictures to model subtraction.
	Write number sentences to represent subtraction.
	Master subtraction facts to 12.

Meaning of Operations continued	
	Skip count by 2's to 50, by 5's and 10's to 100.
Numbers and Number Systems	
	Identify and state the value of a penny, nickel, dime, quarter, and dollar.
	Determine the value of a small collection of coins (with a total value up to one dollar) using 1 or 2 different type coins, including pennies, nickels, dimes, and quarters.
	Show different combinations of coins that have the same value.
Computation and Estimation	
	Develop strategies for basic addition facts, such as:
	counting all.
	doubles.
	doubles plus or minus one.
	using ten frames.
	identity property (adding zero).
	Develop strategies for basic subtraction, such as:
	relating to addition.
	one less, two less.
	all but one (for example 8 – 7, 5 – 4).
	using ten frames.
	missing addends.
DOC: Patterns, Functions and Algebra	
Algebraic Representations	
	Model fact families.
	Recognize and understand the symbols +, –, =.
Tell and write time.	
	Tell and write time in hours and half-hours using analog and digital clocks.
Represent and interpret data.	
	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 are in one category than in another.
DOC: Measurement	
Measurement Units	
	Recognize and explain the need for fixed units and tools for measuring length, weight, mass, capacity, temperature, and time.
	Compare and order objects with respect to length, weight, mass, temperature, and capacity.
Techniques and Tools	
	Estimate and measure length, weight, mass, capacity, using non-standard and standard units.
DOC: Data Analysis and Probability	
Data Collection	
	Collect and organize data into tables and tally charts.
Geometry and Spatial Sense – Characteristics and Properties	
	Identify, compare and sort two-dimensional and three-dimensional shapes: square, circle, ellipse, triangle, rectangle, rhombus, trapezoid, parallelogram, pentagon, hexagon, cube, sphere, cylinder, cone, pyramid, and rectangular prism.

OH: CCSS: Literacy: Reading: Informational Text	
Craft and Structure	
	Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
	Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
Integration of Knowledge and Ideas	
	Use the illustrations and details in a text to describe its key ideas.
OH: CCSS: Literacy: Speaking and Listening	
Comprehension and Collaboration	
	Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
	Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
	Build on others' talk in conversations by responding to the comments of others through multiple exchanges.
	Ask questions to clear up any confusion about the topics and texts under discussion.
Presentation of Knowledge and Ideas	
	Produce complete sentences when appropriate to task and situation.

(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.)

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