BENCHMARKS WITH EXAMPLES REPORT
MATHEMATICS GRADE 3

ARCHDIOCESE CHICAGO CATHOLIC SCHOOLS

Key: **Status** = Benchmarks designated as "Focus" are aligned to the Terra Nova, third edition. Benchmarks designated "Supporting" are not.

OCS Code = The benchmark code. Consists of Grade (K-8), Domain (2-3 character alpha code), Strand (1-3 character alpha code), Standard (1-9), Benchmark Number (1 or 1-1 and up), and Complexity (a, b, c).

CCSS Code = Common Core State Standards, developed by National Governors Association Center for Best Practices, Council of Chief State School Officers (www.corestandards.org).

CRS Strand = ACT College Readiness Standards developed by ACT, Inc. (www.act.org).

The CRS Strands are: BOA = Basic Operations & Applications, PSD = Probability/Statistics/Data, NCP = Numbers/Concepts/Properties, XEI = Expression/Equation & Inequality, GRE = Graphical Representations, PPF = Properties of Plane Figures, MEA = Measurement, FUN = Functions.

DOMAIN: Standards for Mathematical Content

Status:	OCS Code:	Strand: *Operations and Algebraic Thinking (OA)*	Examples and Notes:	CCSS Code:	CRS Strand:
	3.SMC.OA.1	**Represent and solve problems involving multiplication and division.**			
Supporting	3.SMC.OA.1.1.a	Interpret products of whole numbers	e.g., Interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each; Describe a context in which a total number of objects can be expressed as 5 × 7	3.OA.A.1	BOA
Supporting	3.SMC.OA.1.2.a	Interpret whole-number quotients of whole numbers	e.g., Interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each; Describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8	3.OA.A.2	BOA
Focus	3.SMC.OA.1.3-1.b	Use multiplication and division with numbers up to 100 to solve word problems in situations involving equal groups	e.g., By using drawings and equations with a symbol for the unknown number to represent the problem	3.OA.A.3	BOA
Supporting	3.SMC.OA.1.3-2.b	Use multiplication and division with numbers up to 100 to solve word problems in situations involving arrays	e.g., By using drawings and equations with a symbol for the unknown number to represent the problem	3.OA.A.3	BOA
Supporting	3.SMC.OA.1.3-3.b	Use multiplication and division with numbers up to 100 to solve word problems in situations involving measurement quantities	e.g., By using drawings and equations with a symbol for the unknown number to represent the problem	3.OA.A.3	BOA
Focus	3.SMC.OA.1.4.b	Determine the unknown whole number in a multiplication or division equation relating three whole numbers	e.g., Determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = ? ÷ 3, 6 × 6 = ?	3.OA.A.4	BOA
	3.SMC.OA.2	**Understand properties of multiplication and the relationship between multiplication and division.**			
Supporting	3.SMC.OA.2.1.c	Multiply and divide using properties of operations	Note: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known (Commutative property of multiplication). 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30 (Associative property of multiplication). Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 =56 (Distributive property)	3.OA.B.5	BOA
Supporting	3.SMC.OA.2.2.b	Show that division is the multiplication of the dividend and divisor of a number	e.g., Find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8	3.OA.B.6	BOA
	3.SMC.OA.3	**Multiply and divide within 100.**			
Focus	3.SMC.OA.3.1.b	Multiply and divide numbers up to 100 fluently	Note: Use strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	3.OA.C.7	BOA
	3.SMC.OA.4	**Solve problems involving the four operations, and identify and explain patterns in arithmetic.**			
Focus	3.SMC.OA.4.1-1.c	Solve two-step word problems using the four operations		3.OA.D.8	BOA
Supporting	3.SMC.OA.4.1-2.c	Represent two-step word problems using equations with a letter standing for the unknown quantity		3.OA.D.8	XEI
Focus	3.SMC.OA.4.1-3.c	Assess the reasonableness of an answer after solving a two-step word problems using the four operations	e.g., Use mental computation and estimation strategies including rounding	3.OA.D.8	BOA
Focus	3.SMC.OA.4.2-1.c	Identify arithmetic patterns found in an addition or multiplication table	e.g., Observe that 4 times a number is always even	3.OA.D.9	NCP
Focus	3.SMC.OA.4.2-2.c	Explain arithmetic patterns found in an addition or multiplication table by using properties of operations	e.g., Explain why 4 times a number can be decomposed into two equal addends	3.OA.D.9	NCP
Status:	**OCS Code:**	**Strand: *Number and Operations in Base Ten (NBT)***	**Examples and Notes:**	**CCSS Code:**	**CRS Strand:**

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	3.SMC.NBT.1	**Use place value understanding and properties of operations to perform multi-digit arithmetic.**			
Focus	3.SMC.NBT.1.1.a	Use place value understanding to round whole numbers to the nearest 10 or 100		3.NBT.A.1	NCP
Focus	3.SMC.NBT.1.2.a	Use strategies and algorithms to fluently add and subtract numbers up to 1000	e.g., Strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction	3.NBT.A.2	BOA
Supporting	3.SMC.NBT.1.3.b	Use strategies based on place value and properties of operations to multiply one-digit whole numbers by multiples of 10 in the range 10-90	e.g., 9 × 80, 5 × 60	3.NBT.A.3	NCP
Status:	**OCS Code:**	**Strand: *Number and Operations - Fractions (NF)***	**Examples and Notes:**	**CCSS Code:**	**CRS Strand:**
	3.SMC.NF.1	**Develop understanding of fractions as numbers.**			
Focus	3.SMC.NF.1.1-1.a	Show that a fraction 1/b is equal to the quantity formed by 1 part when a whole is partitioned into b equal parts		3.NF.A.1	NCP
Supporting	3.SMC.NF.1.1-2.a	Show that a fraction a/b is equal to the quantity formed by a parts of size 1/b		3.NF.A.1	NCP
Focus	3.SMC.NF.1.2-1.b	Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts		3.NF.A.2a	GRE
Supporting	3.SMC.NF.1.2-2.b	Demonstrate that each part on a number line diagram has size 1/b and that the endpoint of the part based at 0 locates the number 1/b		3.NF.A.2a	GRE
Supporting	3.SMC.NF.1.2-3.b	Represent a fraction a/b on a number line diagram by marking off "a" lengths 1/b from 0		3.NF.A.2b	GRE
Supporting	3.SMC.NF.1.2-4.b	Explain that an interval on a number line diagram has size a/b and that its endpoint locates the number a/b on the number line		3.NF.A.2b	GRE
Supporting	3.SMC.NF.1.3-1.b	Identify two fractions as equivalent if they are the same size or the same point on a number line	e.g., 1/2 = 2/4, 4/6 = 2/3	3.NF.A.3a	GRE
Supporting	3.SMC.NF.1.3-2.c	Generate simple equivalent fractions	e.g., 1/2 = 2/4, 4/6 = 2/3	3.NF.A.3b	NCP
Focus	3.SMC.NF.1.3-3.c	Use a fraction model to explain why fractions are equivalent	e.g., By using a visual fraction model	3.NF.A.3b	NCP
Supporting	3.SMC.NF.1.3-4.b	Relate fractions to whole numbers	e.g., Express 3 in the form 3 = 3/1; Recognize that 6/1 = 6; Locate 4/4 and 1 at the same point of a number line diagram	3.NF.A.3c	NCP
Supporting	3.SMC.NF.1.3-5.c	Express whole numbers as fractions	e.g., Express 3 in the form 3 = 3/1; Recognize that 6/1 = 6; Locate 4/4 and 1 at the same point of a number line diagram	3.NF.A.3c	NCP
Supporting	3.SMC.NF.1.3-6.c	Compare the size of two fractions with the same numerator or denominator		3.NF.A.3d	NCP
Supporting	3.SMC.NF.1.3-7.c	Explain why comparisons are valid only when two fractions with the same numerator or denominator refer to the same whole		3.NF.A.3d	NCP
Supporting	3.SMC.NF.1.3-8.c	Record the results of comparisons of two fractions with the same numerator or denominator with the symbols >, =, and <		3.NF.A.3d	NCP
Supporting	3.SMC.NF.1.3-9.c	Use a fraction model to justify conclusions based on comparisons of fractions with the same numerator or denominator	e.g., By using a visual fraction model	3.NF.A.3d	NCP
Status:	**OCS Code:**	**Strand: *Measurement and Data (MD)***	**Examples and Notes:**	**CCSS Code:**	**CRS Strand:**
	3.SMC.MD.1	**Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.**			
Supporting	3.SMC.MD.1.1-1.a	Tell time to the nearest minute		3.MD.A.1	MEA
Supporting	3.SMC.MD.1.1-2.a	Write time to the nearest minute		3.MD.A.1	MEA
Supporting	3.SMC.MD.1.1-3.a	Measure time intervals in minutes		3.MD.A.1	MEA
Focus	3.SMC.MD.1.1-4.b	Solve word problems involving addition and subtraction of time intervals in minutes	e.g., By representing the problem on a number line diagram	3.MD.A.1	MEA
Supporting	3.SMC.MD.1.2-1.b	Measure liquid volumes and masses of objects using standard units	e.g., Grams (g), kilograms (kg), and liters (l)	3.MD.A.2	MEA

Supporting	3.SMC.MD.1.2-2.b	Estimate liquid volumes and masses of objects using standard units	e.g., Grams (g), kilograms (kg), and liters (l)	3.MD.A.2	MEA
Focus	3.SMC.MD.1.2-3.c	Solve one-step word problems involving masses or volumes that are given in the same units	e.g., By using drawings (such as a beaker with a measurement scale) to represent the problem	3.MD.A.2	MEA
	3.SMC.MD.2	**Represent and interpret data.**			
Focus	3.SMC.MD.2.1-1.c	Draw a scaled picture graph to represent a data set with several categories		3.MD.B.3	PSD
Supporting	3.SMC.MD.2.1-2.c	Draw a scaled bar graph to represent a data set with several categories		3.MD.B.3	PSD
Focus	3.SMC.MD.2.1-3.c	Solve one and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs	e.g., Draw a bar graph in which each square represents 5 pets	3.MD.B.3	PSD
Supporting	3.SMC.MD.2.2-1.a	Measure lengths using rulers marked with halves and fourths of an inch		3.MD.B.4	MEA
Supporting	3.SMC.MD.2.2-2.c	Make a line plot using lengths, measured by a ruler, where the horizontal scale is marked off in appropriate units	e.g., Units such as whole numbers, halves, or quarters	3.MD.B.4	PSD
	3.SMC.MD.3	**Geometric measurement: understand concepts of area and relate area to multiplication and to addition.**			
Supporting	3.SMC.MD.3.1-1.a	Relate area to attributes of plane figures	e.g., A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units	3.MD.C.5a	MEA
Supporting	3.SMC.MD.3.1-2.a	Identify concepts of area measurement	e.g., A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area	3.MD.C.5b	MEA
Supporting	3.SMC.MD.3.2.a	Measure areas by counting unit squares	e.g., Square cm, square m, square in, square ft, and improvised units	3.MD.C.6	MEA
Supporting	3.SMC.MD.3.3-1.a	Find the area of a rectangle with whole-number side lengths	e.g., Use whole-number side lengths by tiling it	3.MD.C.7a	MEA
Supporting	3.SMC.MD.3.3-2.b	Compare methods of finding the area of a rectangle	e.g., Tiling it and multiplying side lengths	3.MD.C.7a	MEA
Supporting	3.SMC.MD.3.3-3.b	Solve real world and mathematical problems by multiplying side lengths to find areas of rectangles with whole number side lengths		3.MD.C.7b	MEA
Supporting	3.SMC.MD.3.3-4.c	Show that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c	e.g., Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and b + c is the sum of a × b and a × c	3.MD.C.7c	MEA
Supporting	3.SMC.MD.3.3-5.c	Use models to represent the distributive property in finding the area of a rectangle with whole-number side lengths		3.MD.C.7c	MEA
Supporting	3.SMC.MD.3.3-6.c	Decompose the area of rectilinear figures into non-overlapping rectangles	e.g., Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts	3.MD.C.7d	MEA
Supporting	3.SMC.MD.3.3-7.c	Show that the area of rectangles is additive		3.MD.C.7d	MEA
Supporting	3.SMC.MD.3.3-8.c	Add the areas of non-overlapping rectangular parts		3.MD.C.7d	MEA
Focus	3.SMC.MD.3.3-9.c	Solve real world problems by adding the areas of non-overlapping rectangular parts		3.MD.C.7d	MEA
	3.SMC.MD.4	**Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.**			
Focus	3.SMC.MD.4.1-1.c	Solve real world and mathematical problems calculating perimeters of polygons	e.g., Finding the perimeter given the side lengths, finding an unknown side length	3.MD.D.8	MEA
Supporting	3.SMC.MD.4.1-2.c	Solve real world and mathematical problems by exhibiting rectangles with the same perimeter and different areas		3.MD.D.8	MEA
Supporting	3.SMC.MD.4.1-3.c	Solve real world and mathematical problems by exhibiting rectangles with the same area and different perimeters		3.MD.D.8	MEA
Status:	**OCS Code:**	**Strand: *Geometry (G)***	**Examples and Notes:**	**CCSS Code:**	**CRS Strand:**
	3.SMC.G.1	**Reason with shapes and their attributes.**			
Focus	3.SMC.G.1.1-1.b	Recognize that shapes in different categories may share attributes, and that the shared attributes can define a larger category	e.g., Rhombuses, rectangles, and others; e.g., having four sides; e.g., quadrilaterals	3.G.A.1	MEA
Focus	3.SMC.G.1.1-2.b	Identify examples of quadrilaterals including rhombuses, rectangles, and squares		3.G.A.1	MEA

Supporting	3.SMC.G.1.1-3.b	Draw examples of quadrilaterals that are not rhombuses, rectangles, and squares		3.G.A.1	MEA
Focus	3.SMC.G.1.2-1.c	Partition shapes into parts with equal areas	e.g., Partition a shape into 4 parts with equal area	3.G.A.2	MEA
Supporting	3.SMC.G.1.2-2.c	Express the area of equally partitioned parts as a unit fraction of the whole	e.g., Describe the area of a shape equally partitioned into 4 parts as 1/4 of the area of the shape	3.G.A.2	MEA
DOMAIN: Standards for Mathematical Practices					
Status:	**OCS Code:**	**Strand: *Solve Problems (MP1)***	**Examples and Notes:**	**CCSS Code:**	**CRS Strand:**
	3.SMP.1	**1. Make sense of problems and persevere in solving them.**			
Supporting	3.SMP.1.c	Make sense of problems and persevere in solving them		MP1	
Status:	**OCS Code:**	**Strand: *Reason (MP2)***	**Examples and Notes:**	**CCSS Code:**	**CRS Strand:**
	3.SMP.2	**2. Reason abstractly and quantitatively.**			
Focus	3.SMP.2.c	Reason abstractly and quantitatively		MP2	
Status:	**OCS Code:**	**Strand: *Construct Arguments (MP3)***	**Examples and Notes:**	**CCSS Code:**	**CRS Strand:**
	3.SMP.3	**3. Construct viable arguments and critique the reasoning of others.**			
Supporting	3.SMP.3.c	Construct viable arguments and critique the reasoning of others		MP3	
Status:	**OCS Code:**	**Strand: *Model (MP4)***	**Examples and Notes:**	**CCSS Code:**	**CRS Strand:**
	3.SMP.4	**4. Model with mathematics.**			
Supporting	3.SMP.4.c	Model with mathematics		MP4	
Status:	**OCS Code:**	**Strand: *Use Tools (MP5)***	**Examples and Notes:**	**CCSS Code:**	**CRS Strand:**
	3.SMP.5	**5. Use appropriate tools strategically.**			
Focus	3.SMP.5.c	Use appropriate tools strategically		MP5	
Status:	**OCS Code:**	**Strand: *Attend to Precision (MP6)***	**Examples and Notes:**	**CCSS Code:**	**CRS Strand:**
	3.SMP.6	**6. Attend to precision.**			
Focus	3.SMP.6.c	Attend to precision		MP6	
Status:	**OCS Code:**	**Strand: *Use Structure (MP7)***	**Examples and Notes:**	**CCSS Code:**	**CRS Strand:**
	3.SMP.7	**7. Look for and make use of structure.**			
Supporting	3.SMP.7.c	Look for and make use of structure		MP7	
Status:	**OCS Code:**	**Strand: *Express Regularity (MP8)***	**Examples and Notes:**	**CCSS Code:**	**CRS Strand:**
	3.SMP.8	**8. Look for and express regularity in repeated reasoning.**			
Supporting	3.SMP.8.c	Look for and express regularity in repeated reasoning		MP8	