BENCHMARK COMPLEXITY REPORT
MATHEMATICS GRADE 5

ARCHDIOCESE OF CHICAGO

Key: **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).
Benchmark = The wording of the benchmark.
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 Fugures, MEA = Measurement, FUN = Functions.

a. Low Complexity				b. Intermediate Complexity				c. High Complexity			
OCS Code	**Benchmark**	**CCSS Code**	**CRS Strand**	**OCS Code**	**Benchmark**	**CCSS Code**	**CRS Strand**	**OCS Code**	**Benchmark**	**CCSS Code**	**CRS Strand**
DOMAIN: Standards for Mathematical Content											
Operations and Algebraic Thinking											
5.SMC.OA.1.1-1.a	Use parentheses, brackets, or braces in numerical expressions	5.OA.A.1	BOA	5.SMC.OA.1.2-1.b	Write simple expressions that record calculations with numbers	5.OA.A.2	BOA	5.SMC.OA.2.1-1.c	Generate two numerical patterns using two given rules	5.OA.B.3	NCP
5.SMC.OA.1.1-2.a	Evaluate numerical expressions that use parentheses, brackets, or braces	5.OA.A.1	BOA	5.SMC.OA.1.2-2.b	Interpret simple numerical expressions that record calculations with numbers without evaluating them	5.OA.A.2	BOA	5.SMC.OA.2.1-2.c	Identify relationships that are evident between corresponding terms in two numerical patterns using two given rules	5.OA.B.3	NCP
								5.SMC.OA.2.1-3.c	Form ordered pairs consisting of corresponding terms in two numerical patterns using two given rules	5.OA.B.3	GRE
								5.SMC.OA.2.1-4.c	Graph on a coordinate plane the ordered pairs consisting of corresponding terms in two numerical patterns using two given rules	5.OA.B.3	GRE
Number and Operations in Base Ten											
5.SMC.NBT.1.1-1.a	Show that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right	5.NBT.A.1	NCP	5.SMC.NBT.1.2-1.b	Determine patterns in the number of zeros of the product when multiplying a number by powers of 10	5.NBT.A.2	NCP	5.SMC.NBT.2.3-1.c	Add, subtract, multiply, and divide decimals to hundredths	5.NBT.B.7	BOA
5.SMC.NBT.1.1-2.a	Show that in a multi-digit number, a digit in one place represents 1/10 of what it represents in the place to its left	5.NBT.A.1	NCP	5.SMC.NBT.1.2-2.b	Determine patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10	5.NBT.A.2	NCP	5.SMC.NBT.2.3-2.c	Relate the strategy for decimal computation to a written method	5.NBT.B.7	BOA
5.SMC.NBT.1.3-1.a	Read decimals to thousandths using base-ten numerals, number names, and expanded form	5.NBT.A.3a	NCP	5.SMC.NBT.1.2-3.b	Use whole-number exponents to denote powers of 10	5.NBT.A.2	NCP	5.SMC.NBT.2.3-3.c	Explain the reasoning for using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction for decimal computation	5.NBT.B.7	BOA
5.SMC.NBT.1.3-2.a	Write decimals to thousandths using base-ten numerals, number names, and expanded form	5.NBT.A.3a	NCP	5.SMC.NBT.1.3-3.b	Record the results of comparisons between two decimals to thousandths based on meanings of the digits in each place using the symbols >, =, and <	5.NBT.A.3b	NCP				
5.SMC.NBT.1.4.a	Round decimals to any place	5.NBT.A.4	NCP	5.SMC.NBT.2.2-1.b	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors	5.NBT.B.6	BOA				
5.SMC.NBT.2.1.a	Multiply multi-digit whole numbers fluently using the standard algorithm	5.NBT.B.5	BOA	5.SMC.NBT.2.2-2.b	Show the calculation of whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors	5.NBT.B.6	BOA				
Number and Operations - Fractions											
5.SMC.NF.2.2-3.a	Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths	5.NF.B.4b	MEA	5.SMC.NF.1.1.b	Add and subtract fractions with unlike denominators by replacing given fractions with equivalent fractions in order to produce an equivalent sum and difference of fractions with like denominators	5.NF.A.1	BOA	5.SMC.NF.1.2-1.c	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators	5.NF.A.2	BOA
5.SMC.NF.2.2-4.a	Compare the area of a rectangle found by tiling it with unit squares of the appropriate unit fraction side lengths to the area of a rectangle found by multiplying the side lengths	5.NF.B.4b	MEA	5.SMC.NF.2.2-1.b	Interpret the product (a/b) × q as "a" parts of a partition of q into b equal parts	5.NF.B.4a	NCP	5.SMC.NF.1.2-2.c	Assess the reasonableness of solutions to word problems arrived at by mentally adding and subtracting fractions referring to the same whole	5.NF.A.2	BOA
5.SMC.NF.2.3-1.a	Use scaling or resizing to compare the size of a product to the size of one factor on the basis of the size of the other factor	5.NF.B.5a	MEA	5.SMC.NF.2.2-2.b	Interpret the product (a/b) × q as the result of a sequence of operations a × q ÷ b	5.NF.B.4a	NCP	5.SMC.NF.2.1-1.c	Interpret a fraction as division of the numerator by the denominator	5.NF.B.3	NCP
				5.SMC.NF.2.2-5.b	Find the area of a rectangle by multiplying fractional side lengths	5.NF.B.4b	MEA	5.SMC.NF.2.1-2.c	Solve word problems involving division of whole numbers expressing answers in the form of fractions or mixed numbers	5.NF.B.3	BOA
				5.SMC.NF.2.2-6.b	Represent fraction products as rectangular areas	5.NF.B.4b	MEA	5.SMC.NF.2.4.c	Solve real world problems involving multiplication of fractions and mixed numbers	5.NF.B.6	BOA

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				5.SMC.NF.2.3-2.b	Use scaling or resizing to explain why multiplying a given number by a fraction greater than one results in a product greater than the given number	5.NF.B.5b	MEA	5.SMC.NF.2.5-3.c	Solve real world problems involving division of unit fractions by non-zero whole numbers	5.NF.B.7c	BOA
				5.SMC.NF.2.3-3.b	Use scaling or resizing to explain why multiplying a given number by a fraction less than one results in a product smaller than the given number	5.NF.B.5b	MEA	5.SMC.NF.2.5-4.c	Solve real world problems involving division of whole numbers by unit fractions	5.NF.B.7c	BOA
				5.SMC.NF.2.3-4.b	Use scaling or resizing to relate the principle of fraction equivalence to the effect of multiplication	5.NF.B.5b	MEA				
				5.SMC.NF.2.5-1.b	Compute quotients by dividing unit fractions by non-zero whole numbers	5.NF.B.7a	BOA				
				5.SMC.NF.2.5-2.b	Compute quotients by dividing whole numbers by unit fractions	5.NF.B.7b	BOA				
Measurement and Data											
5.SMC.MD.1.1-1.a	Convert different-sized standard measurement units within a given measurement system	5.MD.A.1	BOA	5.SMC.MD.2.1-1.b	Make a line plot to display a data set of measurements in fractions of a unit	5.MD.B.2	PSD	5.SMC.MD.3.3-4.c	Solve real world and mathematical problems by finding the volume of right rectangular prisms with whole number edge lengths using the formula V = l x w x h	5.MD.C.5b	MEA
5.SMC.MD.1.1-2.a	Solve multi-step, real world problems by converting different-sized standard measurement units within a given measurement system	5.MD.A.1	BOA	5.SMC.MD.2.1-2.b	Solve problems involving information presented in line plots by using operations on fractions	5.MD.B.2	PSD	5.SMC.MD.3.3-5.c	Solve real world and mathematical problems by finding the volume of right rectangular prisms with whole number edge lengths using the formula V = b x h	5.MD.C.5b	MEA
5.SMC.MD.3.1-1.a	Show that volume can be measured by one cubic unit with a side length 1 unit, called a "unit cube"	5.MD.C.3a	MEA	5.SMC.MD.3.1-2.b	Show that volume of n cubic units is made up of n unit cubes without gaps or overlaps	5.MD.C.3b	MEA	5.SMC.MD.3.3-6.c	Demonstrate that volume is additive by finding volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts	5.MD.C.5c	MEA
				5.SMC.MD.3.2.b	Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units	5.MD.C.4	MEA	5.SMC.MD.3.3-7.c	Solve real world problems by adding the volumes of non-overlapping parts to find the volume of a solid figure composed of two non-overlapping right rectangular prisms	5.MD.C.5c	MEA
				5.SMC.MD.3.3-1.b	Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes	5.MD.C.5a	MEA				
				5.SMC.MD.3.3-2.b	Compare the volume of a right rectangular prism with whole-number side lengths, found by packing it with unit cubes, to the volume found by multiplying the edge lengths, to the volume found by multiplying the height by the area of the base	5.MD.C.5a	MEA				
				5.SMC.MD.3.3-3.b	Represent threefold whole-number products as volumes	5.MD.C.5a	MEA				
Geometry											
5.SMC.G.1.1-1.a	Define a coordinate system using a pair of perpendicular number lines that intersect with the 0 and a given point located by using an ordered pair of numbers	5.G.A.1	GRE	5.SMC.G.1.2-1.b	Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane	5.G.A.2	GRE	5.SMC.G.2.1.c	Compare the attributes belonging to a category of two-dimensional figures to the attributes of all subcategories of that category	5.G.B.3	MEA
5.SMC.G.1.1-2.a	Identify that in an ordered pair of numbers located in a plane, the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis	5.G.A.1	GRE	5.SMC.G.1.2-2.b	Solve real world and mathematical problems by interpreting coordinate values of points in the first quadrant of the coordinate plane	5.G.A.2	GRE	5.SMC.G.2.2.c	Classify two-dimensional figures in a hierarchy based on properties	5.G.B.4	MEA
5.SMC.G.1.1-3.a	Identify that in an ordered pair of numbers located in a plane, the names of the two axes and the coordinates correspond	5.G.A.1	GRE								
DOMAIN: Standards for Mathematical Practices											
Solve Problems											

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								5.SMP.1.c	Make sense of problems and persevere in solving them	MP1	
Reason											
								5.SMP.2.c	Reason abstractly and quantitatively	MP2	
Construct Arguments											
								5.SMP.3.c	Construct viable arguments and critique the reasoning of others	MP3	
Model											
								5.SMP.4.c	Model with mathematics	MP4	
Use Tools											
								5.SMP.5.c	Use appropriate tools strategically	MP5	
Attend to Precision											
								5.SMP.6.c	Attend to precision	MP6	
Use Structure											
								5.SMP.7.c	Look for and make use of structure	MP7	
Express Regularity											
								5.SMP.8.c	Look for and express regularity in repeated reasoning	MP8	