

# BENCHMARK SEQUENCE REPORT

## MATHEMATICS GRADE 7 BY TRIMESTER



This planning tool can be used to sequence the teaching and assessing of the OCS Benchmarks. Benchmarks should be assessed formatively in multiple ways and over multiple times to guide reteaching/relearning. Benchmarks that are assessed summatively should be sequenced throughout the school year to determine student mastery.

Trimester 1		Trimester 2		Trimester 3		OCS Benchmarks	
Taught	Assessed	Taught	Assessed	Taught	Assessed	OCS Codes	Benchmarks
<b>DOMAIN: Standards for Mathematical Content</b>							
<i>Strand: Ratios and Proportional Relationships (RP)</i>							
<b>7.SMC.RP.1 Analyze proportional relationships and use them to solve real-world and mathematical problems.</b>							
						7.SMC.RP.1.1.a	Compute unit rates associated with ratios of fractions
						7.SMC.RP.1.2-1.a	Determine the proportional relationship between two quantities
						7.SMC.RP.1.2-2.b	Identify the constant of proportionality or unit rate in a variety of contexts
						7.SMC.RP.1.2-3.b	Represent proportional relationships by writing an equation
						7.SMC.RP.1.2-4.c	Describe what a point (x, y) on the graph of a proportional relationship means in terms of the context
						7.SMC.RP.1.3.c	Use proportional relationships to solve multistep ratio and percent problems
<i>Strand: The Number System (NS)</i>							
<b>7.SMC.NS.1 Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.</b>							
						7.SMC.NS.1.1-1.a	Describe situations in which opposite quantities combine to make 0
						7.SMC.NS.1.1-2.b	Recognize $p + q$ as the number located a distance $ q $ from $p$
						7.SMC.NS.1.1-3.a	Show that a number and its opposite have a sum of zero
						7.SMC.NS.1.1-4.b	Interpret sums of rational numbers by describing real world contexts
						7.SMC.NS.1.1-5.b	Recognize subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$
						7.SMC.NS.1.1-6.b	Show that the distance between two rational numbers on a number line is the absolute value of their difference
						7.SMC.NS.1.1-7.c	Apply the principle of absolute value difference in real world contexts
						7.SMC.NS.1.1-8.c	Add and subtract rational numbers using properties of operations
						7.SMC.NS.1.2-1.b	Show that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations
						7.SMC.NS.1.2-2.c	Interpret products of rational numbers in real world contexts
						7.SMC.NS.1.2-3.b	Divide integers with non-zero divisors
						7.SMC.NS.1.2-4.b	Recognize that every quotient of integers with a non-zero divisor is a rational number
						7.SMC.NS.1.2-5.c	Interpret quotients of rational numbers in real world contexts
						7.SMC.NS.1.2-6.c	Multiply and divide rational numbers by applying properties of operations
						7.SMC.NS.1.2-7.b	Convert a rational number to a decimal using long division
						7.SMC.NS.1.2-8.b	Show that the decimal form of a rational number terminates in zeros or eventually repeats
						7.SMC.NS.1.3.c	Solve real world and mathematical problems using the four operations with rational numbers
<i>Strand: Expressions and Equations (EE)</i>							
<b>7.SMC.EE.1 Use properties of operations to generate equivalent expressions.</b>							

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						7.SMC.EE.1.1-1.b	Add and subtract linear expressions with rational coefficients using properties of operations
						7.SMC.EE.1.1-2.b	Factor linear expressions with rational coefficients using properties of operations
						7.SMC.EE.1.1-3.b	Expand linear expressions with rational coefficients using properties of operations
						7.SMC.EE.1.2.b	Solve problems by rewriting an expression in different forms
<b>7.SMC.EE.2 Solve real-life and mathematical problems using numerical and algebraic expressions and equations.</b>							
						7.SMC.EE.2.1-1.c	Solve multi-step real-life and mathematical problems using positive and negative rational numbers in any form, including whole numbers, fractions, and decimals
						7.SMC.EE.2.1-2.c	Calculate with positive and negative rational numbers in any form using properties of operations
						7.SMC.EE.2.1-3.c	Convert between numeric forms using properties of operations
						7.SMC.EE.2.1-4.c	Assess the reasonableness of solutions by mentally computing and estimating with positive and negative rational numbers
						7.SMC.EE.2.2-1.c	Solve word problems leading to equations of the form $px + q = r$ , where $p$ , $q$ , and $r$ are specific rational numbers
						7.SMC.EE.2.2-2.c	Solve word problems leading to equations of the form $p(x + q) = r$ , where $p$ , $q$ , and $r$ are specific rational numbers
						7.SMC.EE.2.2-3.c	Compare the algebraic and arithmetic solutions to word problems by showing the sequence of operations used in each approach
						7.SMC.EE.2.2-4.c	Solve word problems leading to inequalities of the form $px + q > r$ , where $p$ , $q$ , and $r$ are specific rational numbers
						7.SMC.EE.2.2-5.c	Solve word problems leading to inequalities of the form $px + q < r$ , where $p$ , $q$ , and $r$ are specific rational numbers
						7.SMC.EE.2.2-6.c	Solve word problems by graphing the solution set of an algebraic inequality
						7.SMC.EE.2.2-7.c	Interpret a graph showing the solution set of an algebraic inequality in the context of a word problem
<b>Strand: Geometry (G)</b>							
<b>7.SMC.G.1 Draw, construct, and describe geometrical figures and describe the relationships between them.</b>							
						7.SMC.G.1.1-1.a	Solve problems involving scale drawings of geometric figures
						7.SMC.G.1.1-2.a	Reproduce a scale drawing using a different scale
						7.SMC.G.1.2.b	Draw geometric shapes with given conditions
						7.SMC.G.1.3.c	Describe the two-dimensional figures that result from slicing three-dimensional figures
<b>7.SMC.G.2 Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.</b>							
						7.SMC.G.2.1-1.a	Memorize the formulas for the area and circumference of a circle
						7.SMC.G.2.1-2.a	Solve problems using the formulas for the area and circumference of a circle
						7.SMC.G.2.2-1.b	Write equations for an unknown angle in a figure in a multi-step problem
						7.SMC.G.2.2-2.b	Solve equations for an unknown angle in a figure using facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem
						7.SMC.G.2.3-1.c	Solve real world and mathematical problems involving area of two- and three-dimensional objects

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						7.SMC.G.2.3-2.c	Solve real world and mathematical problems involving volume of two- and three-dimensional objects
						7.SMC.G.2.3-3.c	Solve real world and mathematical problems involving surface area of two- and three-dimensional objects
<b>Strand: Statistics and Probability (SP)</b>							
<b>7.SMC.SP.1 Use random sampling to draw inferences about a population.</b>							
						7.SMC.SP.1.1-1.a	Compare the characteristics of a sample to a statistical population
						7.SMC.SP.1.1-2.a	Determine under which conditions a sample is representative of a population
						7.SMC.SP.1.1-3.a	Determine under which conditions information obtained from a sample can support valid inferences
						7.SMC.SP.1.2-1.b	Use data from a random sample to draw inferences about a population
						7.SMC.SP.1.2-2.b	Compare multiple or simulated samples of the same size to determine the variation in an estimate or prediction
<b>7.SMC.SP.2 Draw informal comparative inferences about two populations.</b>							
						7.SMC.SP.2.1-1.b	Compare the visual overlap of two numerical data distributions with similar variabilities
						7.SMC.SP.2.1-2.b	Measure the difference between the centers of two overlapping numerical data distributions by expressing the difference as a multiple of a measure of variability
						7.SMC.SP.2.2-1.b	Use measures of center and variability for numerical data from random samples to draw informal comparative inferences about two populations
						7.SMC.SP.2.2-2.b	Draw inferences from two populations by comparing measures of center and variability for numerical data from random samples
<b>7.SMC.SP.3 Investigate chance processes and develop, use, and evaluate probability models.</b>							
						7.SMC.SP.3.1.a	Show that the likelihood or probability of a chance event occurring is a number between 0 and 1
						7.SMC.SP.3.2-1.b	Approximate the probability of a chance event occurring by collecting data on the chance process that produces it
						7.SMC.SP.3.2-2.b	Approximate the probability of a chance event occurring by observing its long-run relative frequency
						7.SMC.SP.3.2-3.b	Predict the approximate relative frequency given the probability of a chance event
						7.SMC.SP.3.3-1.b	Develop a uniform probability model by assigning equal probability to all outcomes of an event
						7.SMC.SP.3.3-2.b	Use a uniform probability model to determine the probabilities of an event
						7.SMC.SP.3.3-3.b	Develop a non-uniform probability model by observing frequencies in data generated from a chance process
						7.SMC.SP.3.4-1.a	Show that the probability of a compound event is the fraction of outcomes in the sample space for which the event occurs
						7.SMC.SP.3.4-2.b	Create a list, table, or tree diagram to represent sample spaces for compound events
						7.SMC.SP.3.4-3.b	Describe the outcomes of a compound event in everyday language, by analyzing a sample space which composes an event

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						7.SMC.SP.3.4-4.c	Design a simulation to generate frequencies for compound events
						7.SMC.SP.3.4-5.c	Use a simulation to generate frequencies for compound events
<b>DOMAIN: Standards for Mathematical Practices</b>							
<i>Strand: Solve Problems (MP1)</i>							
7.SMP.1 1. Make sense of problems and persevere in solving them.							
						7.SMP.1.c	Make sense of problems and persevere in solving them
<i>Strand: Reason (MP2)</i>							
7.SMP.2 2. Reason abstractly and quantitatively.							
						7.SMP.2.c	Reason abstractly and quantitatively
<i>Strand: Construct Arguments (MP3)</i>							
7.SMP.3 3. Construct viable arguments and critique the reasoning of others.							
						7.SMP.3.c	Construct viable arguments and critique the reasoning of others
<i>Strand: Model (MP4)</i>							
7.SMP.4 4. Model with mathematics.							
						7.SMP.4.c	Model with mathematics
<i>Strand: Use Tools (MP5)</i>							
7.SMP.5 5. Use appropriate tools strategically.							
						7.SMP.5.c	Use appropriate tools strategically
<i>Strand: Attend to Precision (MP6)</i>							
7.SMP.6 6. Attend to precision.							
						7.SMP.6.c	Attend to precision
<i>Strand: Use Structure (MP7)</i>							
7.SMP.7 7. Look for and make use of structure.							
						7.SMP.7.c	Look for and make use of structure
<i>Strand: Express Regularity (MP8)</i>							
7.SMP.8 8. Look for and express regularity in repeated reasoning.							
						7.SMP.8.c	Look for and express regularity in repeated reasoning