



# Math Teachers Press, Inc.

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## DISTRICT OF COLUMBIA EARNING STANDARDS CORRELATED TO MOVING WITH MATH® MIDDLE/HIGH (MH) GRADE 7

	MH1 <i>Number Sense, Reasoning &amp; Data</i> Student Book Skill Builders (SB)	MH2 <i>Fractions &amp; Decimals</i> Student Book Skill Builders (SB)	MH3 <i>Percent &amp; Probability</i> Student Book Skill Builders (SB)	MH4 <i>Geometry &amp; Measurement</i> Student Book Skill Builders (SB)	MH5 <i>Algebra</i> Student Book Skill Builders (SB)
<b>NUMBER SENSE AND OPERATIONS</b>					
<b>Number Sense</b>					
<b>7.NSO-N.1.</b> Compare, order, estimate, and translate among integers, fractions, mixed numbers (i.e., rational numbers), decimals, and percents.	3-5, 8	4, 9, 11, 44, 46, 47, 77 SB: 11-2	4, 7-20, 28, 30 SB: 18-1, 20-1, 25-1 to 25-5, 27-3, 44-2	SB: 18-1, 20-1, 20-2, 25-1, 25-2	SB: 18-1, 20-1, 25-1
<b>7.NSO-N.2.</b> Know that in decimal form, rational numbers either terminate or eventually repeat; locate rational numbers on the number line; convert between common repeating decimals and fractions.		4, 43, 53, 54 SB: 11-4, 20-2, 20-3	4		27 SB: 25-1

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<b>7.NSO-N.3.</b>	Know the concept of absolute value.					9, 10 SB: 48-4
<b>7.NSO-N.4.</b>	Represent numbers in scientific notation (positive powers of 10 only), and use that notation in problem situations.	28, 29 SB: 57-1	SB: 57-1	SB: 57-1		SB: 57-1
<b>7.NSO-N.5.</b>	Differentiate between rational and irrational numbers (i.e., know that irrational numbers cannot be expressed as the quotient of two integers and cannot be represented by terminating or repeating decimals).		55 SB: 65-1	SB: 65-1		
<b>7.NSO-N.6.</b>	Interpret positive whole-number powers as repeated multiplication and negative powers as repeated division or multiplication by the multiplicative inverse. Simplify and evaluate expressions that include exponents.	22, 25, 26, 30 SB: 6-1		SB: 6-1		70-73 SB: 61-1, 61-2

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<b>7.NSO-N.7.</b> Apply number theory concepts, including prime factorization and relatively prime numbers, to the solution of problems (e.g., find the prime factorization of whole numbers, and write the results using exponents: $24 = 2 \times 2 \times 2 \times 3 = 2^3 \times 3$ ).	21, 27 SB: 3-2, 3-3	SB: 3-1	SB: 3-1	SB: 3-1	SB: 3-1
<b>7.NSO-N.8.</b> Express ratios in several ways (e.g., 3 cups to 5 people; 3:5; $3/5$ ); recognize and find equivalent ratios.		37, 38 SB: 46-2	21-23 SB: 26-1	26	
<b>7.NSO-N.9.</b> Know the meaning of a square root of a number and its connection to the square whose area is the number.	23 SB: 54-1			33 SB: 54-1	74 SB: 61-4
<b>Computation and Operations</b>					

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7.NSO-C.10.	Compute with fractions (including simplification of fractions), integers, decimals, and percentages (including those greater than 100 and less than 1) using the four operations and combinations of the four operations.	13-20, 24-33, 36, 56-66, 70, 73 SB: 12-3 to 12-6, 13-1 to 13-4, 14-1, 14-2, 15-1, 15-2, 16-1, 17-1 to 17-3, 21-1 to 21-3, 22-1, 22-2, 23-1 to 23-3, 24-1, 43-1	3, 5, 27-56, 60 SB: 12-1, 13-1, 14-1, 14-2, 15-1, 17-1, 21-1, 22-1, 23-1, 24-1, 27-1 to 27-5, 28-1 to 28-8, 43-1 to 43-4, 51-1 to 51-3	SB: 11-1, 12-1, 13-1, 14-1, 15-1, 16-1, 17-1, 21-1, 22-1, 23-1, 24-1, 27-1, 27-2, 28-1, 51-1	13-25, 28-31 SB: 12-1, 13-1, 14-1, 15-1, 16-1, 17-1, 21-1, 22-1, 23-1, 24-1, 27-1, 58-9, 58-10
7.NSO-C.11.	Demonstrate an understanding of the properties of arithmetic operations on rational numbers (integers, fractions, and terminating decimals); convert terminating decimals into reduced fractions.	14, 24, 30, 50 SB: 2-1, 20-1	4, 6-14, 18-20 SB: 2-1, 20-1, 25-1 to 25-4	SB: 2-1, 20-1, 25-1	
7.NSO-C.12.	Select and use appropriate operations - addition, subtraction, multiplication, division - to solve problems with rational numbers and negative integers.	33, 36, 73, 74 SB: 17-1	34, 44 SB: 43-1, 43-2	SB: 43-1, 43-2, 44-1	25 SB: 58-9

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<b>7.NSO-C.13.</b> Calculate the percentage increase and decrease of a quantity.			50, 51 <b>SB:</b> 28-5		
<b>7.NSO-C.14.</b> Use ratios and proportions in the solution of problems involving unit rates, scale drawings, and reading of maps.		37, 38, 67-69 <b>SB:</b> 46-1	22, 26	31, 32 <b>SB:</b> 46-3	<b>SB:</b> 46-1
<b>7.NSOC.15.</b> Take positive and negative rational numbers to positive whole number powers.					
<b>7.NSO-C.16.</b> Apply the laws of exponents to multiply whole number positive and negative powers of whole numbers; divide whole number powers with like bases; explain the inverse relationship between negative and positive exponents.	26, 27 <b>SB:</b> 69-1				70-73 <b>SB:</b> 61-1, 61-2

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7.NSO-C.17.	Use the inverse relationships of addition/subtraction and multiplication/division to simplify computations and solve problems (e.g., multiplying by $1/2$ or $0.5$ is the same as dividing by $2$ ).		28, 30, 31, 33, 34 SB: 27-4	SB: 27-2	
7.NSO-C.18.	Use the associative, commutative, and distributive properties; properties of the identity and inverse elements (e.g., $-7 + 7 = 0$ ; $3/4 \times 4/3 = 1$ ).	SB: 2-1	SB: 2-1	SB: 2-1	SB: 2-1
7.NSO-C.19.	Know and apply the order of operations rules to expressions involving powers and roots.				51, 52 SB: 59-1, 59-2
7.NSO-E.20.	<b>Estimation</b> Estimate results of computations with rational numbers; determine estimates to a certain stated accuracy.	21-23, 34, 35, 71, 72, 74 SB: 43-2, 44-1	31-34 SB: 44-3	SB: 5-1, 27-1, 43-1, 44-1	

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	<b>PATTERNS, RELATIONS, AND ALGEBRA</b>					
<b>7.PRA.1.</b>	Extend, represent, analyze, and generalize a variety of patterns with tables, graphs, words, and when possible, symbolic expressions. Include arithmetic and geometric progressions (e.g., compounding).	31-34, 70 SB: 42-1 to 42-5	SB: 42-1	SB: 42-1	SB: 42-1	SB: 42-1
<b>7.PRA.2.</b>	Evaluate simple algebraic expressions for given variable values (e.g., $3a^2 - b$ for $a = 3$ and $b = 7$ ).					58, 59 SB: 59-2
<b>7.PRA.3.</b>	use the correct order of operations to evaluate expressions (e.g., $3(2x + 5)$ ).					50 SB: 59-5, 59-6
<b>7.PRA.4.</b>	Create and use symbolic expressions for linear relationships, and relate them to verbal and graphical representations.	70				60-62, 64 SB: 60-1, 60-6

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<b>7.PRA.5.</b>	use variables and appropriate operations to write an expression, equation, or inequality that represents a verbal description (e.g. 3 less than a number, $1/2$ as large as area A).	17, 18 SB: 59-3, 59-4				32-35 SB: 1-1, 50-1
<b>7.PRA.6.</b>	Write and solve two-step linear equations and check he answers.					35, 46-48 SB: 50-1, 50-4
<b>7.PRA.7.</b>	Identify, describe, and analyze linear relationships between two variables. Compare positive rate of change (e.g., $y = 3x + 1$ ) to negative rate of change (e.g., $y = 3x + 1$ ) to negative rate of change (e.g., $y = -3 + 1$ ).					77
<b>7.PRA.8.</b>	Use linear equations to model and analyze problems involving proportional relationships.					62-64 SB: 60-1, 60-6



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<b>7.PRA.9.</b>	Simplify numerical expressions by applying properties of rational numbers (e.g., identity, inverse) and operations of rational numbers (distributive, associative, commutative); justify the process used.	12, 13 SB: 2-1, 2-2		SB: 2-1		SB: 2-1
<b>7.PRA.10.</b>	Use algebraic terminology including but not limited to, variable, equation, term, coefficient, inequality, expression, and constant.	17, 18				32, 35-37, 53
<b>7.PRA.11.</b>	Plot the values of quantities whose ratios are always the same (e.g., cost to the number of an item, feet to inches, circumference to diameter of a circle). Fit a line to the plot and understand that the slope of the line equals the quantities.					68
	<b>GEOMETRY</b>					

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<b>7.G.1.</b>	Identify three-dimensional figures (e.g., prisms, pyramids) by their physical appearance, distinguishing attributes, and spatial relationships such as parallel faces.			36, 37, 73 SB: 29-3	
<b>7.G.2.</b>	Demonstrate an understanding of conditions that indicate two geometrical figures are congruent and what congruence means about the relationships between the sides and angles of the two figures.			12, 13 SB: 32-2, 32-3	SB: 32-1
<b>7.G.3.</b>	Classify figures in terms of congruence and similarity, and apply these relationships to the solution of problems.			12, 13, 24, 25 SB: 32-2, 32-3, 53-1	SB: 32-1, 53-1

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<b>7.G.4.</b>	Know and understand the Pythagorean theorem and its converse. Apply the theorem to the solution of problems, including using it to find the length of the missing side of a right triangle, and perimeter, area, and				34, 35 <b>SB:</b> 54-2, 54-3	
<b>7.G.5.</b>	Use compass, straightedge, and protractor to perform basic geometric constructions to draw polygons and circles				13 <b>SB:</b> 32-3, 32-5	
<b>7.G.6.</b>	Understand and use coordinate graphs to plot simple figures, determine lengths and areas related to them; and determine their image under translations, reflections, and rotations (e.g., predict how tessellations transform under translations, reflections, and rotations).				14, 69 <b>SB:</b> 49-1, 53-3	
	<b>MEASUREMENT</b>					

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<b>7.M.1.</b>	Select, convert (between systems of measurement), and use appropriate units of measurement or scale.				42, 45, 46, 48, 54, 55 <b>SB:</b> 34-3	<b>SB:</b> 36-1, 59-2
<b>7.M.2.</b>	Demonstrate an understanding of the concepts and apply formulas and procedures for determining measures, including those of area and perimeter/circumference of parallelograms, trapezoids, and circles. Given the formulas, determine the surface area and volume of rectangular prisms and cylinders.				49-52, 60-76 <b>SB:</b> 36-2, 36-3, 38-1, 39-1, 40-1, 40-2, 41-1, 41-2, 55-1, 55-2, 56-1, 62-2, 63-1	<b>SB:</b> 38-1, 39-1, 40-1, 41-1, 55-1, 56-1

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<b>7.M.3.</b>	Demonstrate an understanding that rate is a measure of one quantity per unit value of another quantity; use models, graphs, and formulas to solve simple problems involving rates (e.g., velocity and density); check the units of the solutions; use dimensional analysis to check the reasonableness of the answer.		67-69 SB: 46-1	22		
<b>7.M.4.</b>	Construct and read drawings and models made to scale.				31, 32 SB: 46-2, 46-3	
<b>7.M.5.</b>	Use ratio and proportion, including scale factors, in the solution of problems.		37, 38	21-26 SB: 26-1	27-32 SB: 46-1 to 46-3, 52-3, 53-3	SB: 46-1, 53-1
	<b>DATA ANALYSIS, STATISTICS, AND PROBABILITY</b>					

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<b>7.DASP.1.</b>	Find, describe, and interpret appropriate measures of central tendency (mean, median, and mode) and spread (range) that represent a set of data.	55-60 <b>SB:</b> 45-3 to 45-6	<b>SB:</b> 45-1	<b>SB:</b> 45-1	<b>SB:</b> 45-1	<b>SB:</b> 45-1
<b>7.DASP.2.</b>	Select, create, interpret, and use various tabular and graphical representations of data (e.g., circle graphs, Venn diagrams, stem-and-leaf plots, histograms, tables, and charts).	61-68, 70-74 <b>SB:</b> 67-1 to 67-3, 68-1 to 68-6	<b>SB:</b> 43-1	55-59, 78 <b>SB:</b> 68-1 to 68-3		
<b>7.DASP.3.</b>	Describe the characteristics and limitations of a data sample. Identify different ways of selecting a sample (e.g., convenience sampling, responses to a survey, random sampling).	77 <b>SB:</b> 68-7				

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<b>7.DASP.4.</b>	Use tree diagrams, tables, organized lists, and area models to compute probabilities for simple compound events (e.g., multiple coin tosses or rolls of dice).			66, 69-71, 75 <b>SB:</b> 66-1, 66-2		
<b>7.DASP.5.</b>	Understand that the probability of either of two disjoint events occurring is the sum of the two individual probabilities and that the probability of one event following another, in independent trials, is the product of the two probabilities.			68, 71, 72 <b>SB:</b> 47-1 to 47-5		