

**The
University of
Chicago
School
Mathematics
Project**

**Transition
Mathematics**

**Correlated to
Pennsylvania Mathematics
Assessment Anchors and
Eligible Content**

Grade 7



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Pennsylvania Assessment Anchors and Eligible Content	<i>Wright Group/McGraw-Hill Transition Mathematics</i>
ASSESSMENT ANCHOR	
M7.A.1 Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers, and number systems.	
M7.A.1.1 Express numbers in equivalent forms.	
M7.A.1.1.1 Convert between fractions, decimals and/or percents (e.g., $20\% = 0.2 = 1/5$) (terminating decimals only).	PE: 19, 23, 29, 30, 32, 38, 45, 48, 56, 161–166, 167–173, 174–179, 514, 515, 555 TE: 20, 30, 161–166, 167–173, 174–179, 584, 585 LM: 3-5A, 3-5B, 3-6A, 3-6B, 3-7A, 3-7B RM: 9, 11, 12, 13, 14, 16, 43, 44, 45, 46, 47, 48, 49, 50 AR: 26–33
M7.A.1.2 Compare quantities and/or magnitudes of numbers.	
M7.A.1.2.1 Compare and/or order integers, mixed numbers, fractions and decimals (fractions and decimals may be mixed – no more than 5 numbers in a set to be ordered).	PE: 7, 12, 14, 22, 27, 32, 33, 38, 49, 82, 133–134, 136, 139, 141–142, 145, 151, 152, 165, 173, 193, 211, 265, 290, 291, 312 TE: 6–7, 12, 13, 14, 49, 76, 134, 141 LM: 1-2A, 1-2B, 1-5A, 3-1A, 3-1B, 3-2A, 3-2B, 3-5A, 3-5B RM: 10, 24, 33, 36, 38 AR: 3–10, 26–33
M7.A.1.2.2 Locate/identify decimals, fractions, mixed numbers and/or integers on a number line (a mix of these number forms may be on the same number line).	PE: 10, 12, 13–16, 21, 22, 33, 38, 83, 115–119, 132–134, 137, 138, 179 TE: 12, 13, 115–119, 133, 211–212 LM: 1-2A, 1-2B, 3-1A, 3-1B RM: 10, 34, 35 AR: 3–10, 13–20, 26–33
ASSESSMENT ANCHOR	
M7.A.2 Understand the meanings of operations, use operations and understand how they relate to each other.	
M7.A.2.1 Complete calculations by applying the order of operations.	
M7.A.2.1.1 Use the order of operations to simplify numerical expressions (may use parentheses, brackets, +, -, x, ÷, squares up to 10^2 and cubes up to 4^3 ; whole numbers only).	PE: 34–38, 39–44, 49, 81, 83–85, 102, 214, 442, 449, 454, 489–491, 499, 537, 570, 571 TE: 34–38, 39–44, 83, 488 LM: 1-6A, 1-6B, 1-7A, 1-7B, 4-2A, 4-2B, 8-1A, 8-1B RM: 17, 18, 40, 56, 77, 107 AR: 3–10
M7.A.2.2 Solve problems using ratios, proportions,	

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percents and/or rates.	
M7.A.2.2.1 Write ratios to compare quantities (e.g., ratio of boys to girls).	PE: 18, 21, 28, 38, 145 TE: 18, 21 LM: 1-3A, 1-3B RM: 12 AR: 3–10
M7.A.2.2.2 Solve for a variable in a given proportion.	PE: 553, 589–595, 596–600, 608 TE: 552–553, 589–595, 596–600, 608 LM: 9-7A, 9-7B, 9-8A, 9-8B RM: 131, 132, 133, 134 AR: 116–121
M7.A.2.2.3 Use proportions to determine if two quantities are equivalent (e.g., similar figures, prices of different sized items, etc).	PE: 590, 601–606 TE: 590, 601–606 LM: 9-9A, 9-9B RM: 135, 136 AR: 116–121
M7.A.2.2.4 Calculate and/or apply unit rates or unit prices (terminating decimals through the hundredth place only).	PE: 17, 20, 21, 22, 27, 38, 493–499, 500–506, 517, 544, 545, 561, 562–566, 567–571, 572–577, 608 TE: 17, 18, 493–499, 500–506, 545, 562–566, 567–571, 572–577, 608 LM: 1-3A, 1-3B, 8-2A, 8-2B, 8-3A, 8-3B, 9-2A, 9-2B, 9-3A, 9-3B, 9-4A, 9-4B RM: 11, 108, 109, 110, 123, 124, 125, 126, 127, 128 AR: 105–110, 116–121
M7.A.2.2.5 Select and/or use ratios or proportions to solve problems.	PE: 552–553, 583–588, 589–595, 596–600, 601–606, 607–608 TE: 552–553, 583–588, 589–595, 596–600, 601–606, 607, 608 LM: 9-6A, 9-6B, 9-7A, 9-7B, 9-8A, 9-8B, 9-9A, 9-9B RM: 12, 130, 131, 132, 133, 134, 135, 136 AR: 116–121
M7.A.2.2.6 Use proportions to find the missing length of a side in similar figures.	PE: 601–606, 608, 665 TE: 601–606, 608 LM: 9-9A, 9-9B RM: 135, 136 AR: 116–121

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ASSESSMENT ANCHOR	
M7.A.3 Compute accurately and fluently and make reasonable estimates.	
M7.A.3.1 Apply estimation strategies to a variety of problems.	
M7.A.3.1.1 Estimate answers to problems involving whole numbers, decimals, fractions or mixed numbers.	PE: 29, 42, 58, 83, 114, 153–160, 166, 596–600 TE: 153–160, 596–600 LM: 3-4A, 3-4B, 9-8A, 9-8B RM: 41, 42, 49, 133, 134 AR: 26–33, 116–121
M7.A.3.2.1 Solve problems involving operations (+, -, x, ÷) of whole numbers, decimals, fractions, or mixed numbers (straight computation or word problems).	PE: 23–28, 29–33, 34–38, 39–44, 45–49, 56, 60, 75, 81, 82, 102, 103–109, 114, 139, 147–152, 161–166, 167–173, 174–179, 186, 278–284, 293, 294–299, 300–305, 430–437, 438–443, 444–449, 455, 486–492, 507–512, 513–518, 554–561, 566, 567–571, 572–577 TE: 23–28, 29–33, 34–38, 39–44, 45–49, 60, 103–109, 147–152, 161–166, 167–173, 174–179, 278–284, 294–299, 300–305, 430–437, 438–443, 444–449, 486–492, 507–512, 513–518, 554–561, 567–571, 572–577 LM: 1-4A, 1-4B, 1-5A, 1-5B, 1-6A, 1-6B, 1-7A, 1-7B, 1-8A, 1-8B, 2-6A, 2-6B, 3-3A, 3-3B, 3-5A, 3-5B, 3-6A, 3-6B, 3-7A, 3-7B, 5-1A, 5-1B, 5-3A, 5-3B, 5-4A, 5-4B, 7-1A, 7-1B, 7-2A, 7-2B, 7-3A, 7-3B, 8-1A, 8-1B, 8-4A, 8-4B, 8-5A, 8-5B, 9-1A, 9-1B, 9-3A, 9-3B, 9-4A, 9-4B RM: 13, 14, 15, 16, 17, 18, 19, 30, 31, 33, 40, 43–45, 46–48, 49, 50, 73, 77, 78, 79, 99, 100, 101, 102, 107, 111, 112, 113, 114, 121, 122, 125, 126, 127, 128 AR: 3–10, 13–20, 26–33, 56–63, 91–98, 105–110, 116–121
M7.A.3.2.2 Solve problems involving addition and subtraction of integers.	PE: 11–16, 21, 27, 49, 51, 186, 259, 260–265, 285–293, 462, 492 TE: 11–16, 260–265, 285–293 LM: 1-2A, 1-2B, 4-9A, 4-9B, 5-2A, 5-2B RM: 10, 34, 70–72, 74–76 AR: 3–10, 43–50, 56–63

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ASSESSMENT ANCHOR	
M7.B.2 Apply appropriate techniques, tools and formulas to determine measurements.	
M7.B.2.1 Develop, use and/or describe strategies to find the measure of length, perimeter, circumference, area or volume.	
M7.B.2.1.1 Develop and/or use strategies to find the perimeter and/or area of compound figures (compound figures should only include quadrilaterals and triangles). Area formulas provided on the reference sheet.	PE: 84, 86, 91–94, 108, 430–437, 444, 456–462, 477, 492, 600 TE: 90, 92, 106, 430–437, 456–462, 477 LM: 2-4A, 2-4B, 7-1A, 7-1B, 7-5A, 7-5B RM: 28, 29, 31, 33, 99, 100, 104 AR: 91–98
M7.B.2.1.2 Find the circumference and/or area of circles (formulas provided on the reference sheet).	PE: 463–469, 476 TE: 463–469 LM: 2-4A, 2-4B RM: 105 AR: 91–98
M7.B.2.1.3 Find the area of triangles and/or all types of parallelograms (formulas provided on the reference sheet).	PE: 432–437, 450–455, 456–462, 476, 498 TE: 90, 95, 432–437, 450–455, 456–462, 476 LM: 2-4A, 2-4B, 7-1A, 7-1B, 7-4A, 7-4B RM: 99, 100, 103, 104 AR: 91–98
M7.B.2.2 Construct, interpret and/or use scale drawings to solve real-world problems.	
M7.B.2.2.1 Interpret and/or apply scales shown on maps, blueprints, models, etc.	PE: 477, 599 TE: 472, 477
M7.B.2.2.2 Determine and/or apply an appropriate scale for reduction or enlargement.	PE: 470–476, 503, 505, 523, 530, 560, 561, 594, 603–606, 719–724 TE: 470–476, 503, 603–606, 719–724 LM: 7-7A, 7-7B, 9-9A, 9-9B, 11-9A, 11-9B RM: 106, 135, 136, 166, 167 AR: 91–98, 116–121, 147–154
ASSESSMENT ANCHOR	
M7.C.1 Analyze characteristics and properties of two- and three- dimensional geometric shapes and demonstrate understanding of geometric relationships.	
M7.C.1.1 Define and/or apply basic properties of two- and three-dimensional geometric shapes.	
M7.C.1.1.1 Identify, describe and/or define diameter, radius, chord and/or circumference in	PE: 239, 463–469, 476 TE: 463–469

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circles.	LM: 2-4A, 2-4B RM: 105 AR: 91-98
M7.C.1.1.2 Solve problems involving the relationship between the radius and diameter of the same circle.	PE: 94, 463-469, 476 TE: 463-469 LM: 2-4A, 2-4B RM: 105 AR: 91-98
M7.C.1.1.3 Identify parallel, perpendicular and/or skew line segments within three-dimensional figures.	PE: 233, 236, 393-400, 402-404, 674-679, 682-683 TE: 393-400, 402-403, 674-679, 682 LM: 6-6A, 6-6B, 11-1A, 11-1B RM: 94, 95, 154, 155 AR: 71-80, 147-154
M7.C.1.2 Identify congruence and/or similarity in polygons.	
M7.C.1.2.1 Identify and/or use polygons that are similar and/or congruent, given either measurements or tic and angle marks.	PE: 84, 241-243, 360, 601-606 TE: 241-243, 601-606 LM: 9-9A, 9-9B RM: 135, 136 AR: 116-121
M7.C.1.2.2 Identify corresponding sides and/or angles of congruent or similar polygons.	PE: 601-606 TE: 601-606 LM: 9-9A, 9-9B RM: 135, 136 AR: 116-12
ASSESSMENT ANCHOR	
M7.C.2 Identify and/or apply concepts of transformations or symmetry.	
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ASSESSMENT ANCHOR	
M7.C.3 Locate points or describe relationships using the coordinate plane.	
M7.C.3.1 Locate, plot and/or describe points on a coordinate plane.	
M7.C.3.1.1 Plot and/or identify ordered pairs on a coordinate plane (all four quadrants).	PE: 50–56, 60, 88, 95, 135, 137, 138, 146, 160 TE: 50–56, 135 LM: 1-9A, 1-9B, 3-1A, 3-1B RM: 20, 36, 82 AR: 3–10, 26–33
M7.C.3.1.2 Identify Quadrants I, II, III, IV, the x- & y-axes and the origin on a coordinate plane.	PE: 52–53, 55, 56, 60, 75 TE: 52, 55, 135 LM: 1-9A, 1-9B AR: 3–10
ASSESSMENT ANCHOR	
M7.D.1 Demonstrate an understanding of patterns, relations and functions.	
M7.D.1.1 Recognize, reproduce, extend and/or describe patterns.	
M7.D.1.1.1 Describe, extend or find a missing element of a pattern (show 3 repetitions of the pattern) <ul style="list-style-type: none"> • fractions or decimals - may use only one operation from +, - or \times • whole numbers – may use only one operation from +, -, \times, \div or squares 	PE: 27, 30, 62, 70–75, 81, 87, 88, 114, 119, 139, 186, 292, 443 TE: 27, 40, 62, 70–75 LM: 2-1A, 2-1B RM: 22, 23, 26 AR: 13–20

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ASSESSMENT ANCHOR	
M7.D.2 Represent and/or analyze mathematical situations using numbers, symbols, words, tables and/or graphs.	
M7.D.2.1 Select and/or use appropriate strategies to solve or represent equations or expressions.	
M7.D.2.1.1 Select and/or use appropriate strategies to solve one-step equations (no negative numbers).	PE: 76–82, 83–88, 89–95, 102, 109, 110–114, 159, 306–312, 519–523, 578–582 TE: 76–82, 83–88, 89–95, 110–114, 306–312, 519–523, 578–582 LM: 2-2A, 2-2B, 2-3A, 2-3B, 2-4A, 2-4B, 2-7A, 2-7B, 5-5A, 5-5B, 8-6A, 8-6B, 9-5A, 9-5B RM: 17, 18, 22, 23, 24, 25, 26, 27, 28, 32, 33, 80, 115, 129 AR: 13–20, 56–63, 105–110, 116–121
M7.D.2.1.2 Use substitution of one and/or two variables to simplify expressions (whole numbers only – use order of operations).	PE: 32, 37, 83–88, 89, 90, 102, 109, 110, 114, 119, 214, 294, 304, 505, 520, 521, 526 TE: 83–88, 500, 520, 526 LM: 1-6A, 1-6B, 2-3A, 2-3B, 4-2A, 4-2B RM: 17, 26, 38, 74, 77, 109 AR: 13–20
M7.D.2.2 Create and/or interpret expressions, equations or inequalities that model problem situations.	
M7.D.2.2.1 Identify expressions, equations or inequalities that model mathematical situations (using whole numbers or decimals, no more than two operations and one variable).	PE: 37, 173, 324
ASSESSMENT ANCHOR	
M7.D.3 Analyze change in various contexts.	
M7.D.3.1 Describe the relationship between two variables (e.g., time, temperature).	
M7.D.3.1.1 Solve problems involving a constant rate of change (e.g., word problems, graphs or data tables).	PE: 320–326, 524–531, 532–537, 616–622, 778–783 TE: 320–326, 524–531, 532–537, 616–622, 778–783 LM: 5-7A, 5-7B, 8-7A, 8-7B, 8-8A, 8-8B, 10-1A, 10-1B, 12-7A, 12-7B RM: 82, 116, 117, 118, 119, 136–138, 179 AR: 56–63, 105–110, 132–139, 161–168
M7.D.3.1.2 Describe and/or use the relationship of	PE: 324, 616–622

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data displayed on a rate of change graph (e.g., how does the x-axis data relate to the y-axis data).	TE: 616–622 LM: 10-1A, 10-1B RM: 136–138 AR: 132–139
ASSESSMENT ANCHOR	
M7.D.4 Describe or use models to represent quantitative relationships.	
Not assessed at Grade 7.	
ASSESSMENT ANCHOR	
M7.E.1 Formulate or answer questions that can be addressed with data and/or organize, display, interpret or analyze data.	
M7.E.1.1 Interpret data shown in complex data displays.	
M7.E.1.1.1 Analyze data and/or answer questions pertaining to data represented in histograms, double bar graphs, multiple line graphs or stem-and-leaf plots.	PE: 740–744, 745–751, 756, 778–783, 784 TE: 740–744, 745–751, 778–783, 784 LM: 12-1A, 12-1B, 12-2A, 12-2B, 12-7A, 12-7B RM: 170, 171, 172, 179 AR: 161–168
ASSESSMENT ANCHOR	
M7.E.2 Select and/or use appropriate statistical methods to analyze data.	
M7.E.2.1 Describe, compare and/or contrast data using measures of mean, median, mode or range.	
M7.E.2.1.1 Identify/calculate the mean (average), median, mode or range of a set of data.	PE: 40, 43, 44, 748, 749, 752–757, 758–752, 763–771, 784 TE: 44, 748, 749, 752–757, 758–762, 763–771, 784 LM: 12-3A, 12-3B, 12-4A, 12-4B, 12-5A, 12-5B RM: 173, 174, 175–177 AR: 161–168
M7.E.2.1.2 Decide/choose which measure of central tendency (mean, median, mode or range) would be most appropriate for a given situation.	PE: 784 TE: 784

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ASSESSMENT ANCHOR	
M7.E.3 Understand and/or apply basic concepts of probability or outcomes.	
M7.E.3.1 Determine theoretical or experimental probability.	
M7.E.3.1.1 Find the theoretical probability of a simple and/or compound event (answer written as a fraction in lowest terms – any compound events should be independent).	PE: 187–193, 210, 215, 327–334, 347, 507–512, 517, 545, 560, 763 TE: 187–193, 327–334, 347, 507–512, 545 LM: 3-9A, 3-9B, 5-8A, 5-8B, 8-4A, 8-4B RM: 52–54, 83, 84, 111, 112 AR: 26–33, 56–63, 105–110
M7.E.3.1.2 Find the theoretical probability of an event not occurring (e.g., what is the probability of not rolling a 1 on a number cube).	PE: 188, 215, 518
M7.E.3.1.3 Use data displayed in charts, graphs or tallies to find experimental probability.	PE: 187–193, 210, 215 TE: 187–193 LM: 3-9A, 3-9B RM: 53, 54, 83, 84 AR: 26–33
ASSESSMENT ANCHOR	
M7.E.4 Develop and/or evaluate inferences and predictions or draw conclusions based on data or data displays.	
M7.E.4.1 Draw conclusions and/or make predictions based on data displays.	
M7.E.4.1.1 Formulate predictions and/or draw conclusions based on data displays (bar graphs, circle graphs or line graphs) or probability.	PE: 779–783 TE: 60, 779–783 LM: 12-7A, 12-7B RM: 179 AR: 161–168

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