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STANDARDS	PAGE REFERENCES
<p>Algebraic Reasoning: Patterns And Functions – Patterns and functional relationships can be represented and analyzed using a variety of strategies, tools and technologies.</p> <p>How do patterns and functions help us describe data and physical phenomena and solve a variety of problems?</p>	
<p>Students should...</p>	
<p>1.1 Understand and describe patterns and functional relationships.</p>	
<p>a. Identify trends and make predictions based upon patterns and data displayed in different formats.</p>	<p>Student Edition: 103-105, 149-151 <i>Explore</i> 666-667 <i>Problem Solving Strategy</i> 394-395, 401 #2, #4, 545 #7, 577 #11, 649 #2 <i>Study Guide and Review</i> 413 #35-#38</p> <p>Teacher Edition: HP 395; I 103, 149; SP 394; SQ 103, 149; T 394</p>

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<p>Continued from cell above.</p> <p>a. Identify trends and make predictions based upon patterns and data displayed in different formats.</p>	<p>Continued from cell above.</p> <p>Impact Mathematics Grade 5 Student Edition: 73-74 <i>Performance-Based Assessment</i> A26 Teacher Guide: A T74; I T73; R T74; TS A28</p>
<p>1.2 Represent and analyze quantitative relationships in a variety of ways.</p>	
<p>a. Recognize that a change in one variable may relate to a change in another variable.</p>	<p>Student Edition: 210-213, 260-262 <i>Explore</i> 208-209 <i>Extend</i> 214-215, 264-265 <i>Study Guide and Review</i> 271 #32-#33 Teacher Edition: AE 211, 261; R 210, 260; SP 210, 260; SQ 260 Impact Mathematics Grade 5 Student Edition: 11, 19-20 <i>Outside Your Classroom</i> 21 <i>Performance-Based Assessment</i> A5-A6 <i>Project</i> 22 Teacher Guide: A T20; I T19; MFM T22; OYC T21; TS A8</p>
<p>1.3 Use operations, properties and algebraic symbols to determine equivalence and solve problems.</p>	
<p>a. Describe the general relationship between two sets of data using an equation or inequality.</p>	<p>Student Edition: 260-262 <i>Study Guide and Review</i> 271 #32-#33 Teacher Edition: HP 262; R 260; SGO 260B; SP 260; SQ 260 Impact Mathematics Grade 5 Student Edition: 19-20 <i>Outside Your Classroom</i> 21 Teacher Guide: I T19</p>

STANDARDS	PAGE REFERENCES
<p align="center">Numerical and Proportional Reasoning – Quantitative relationships can be expressed numerically in multiple ways in order to make connections and simplify calculations using a variety of strategies, tools and technologies.</p> <p align="center">How are quantitative relationships represented by numbers?</p>	
<p align="center">Students should...</p>	
<p>2.1 Understand that a variety of numerical representations can be used to describe quantitative relation-ships.</p>	
<p>a. Extend whole number place value patterns, models and notations to include decimals, which are fractions that have denominators that are multiples of ten.</p>	<p>Student Edition: 17-19, 32-35 <i>Big Idea</i> 14 <i>Study Guide and Review</i> 51 #7-#13, 53 #28-#34 Teacher Edition: AE 18, 33; ATS 18; FA 35; FMB 32A; HP 19, 35; I 17, 32; SP 18, 32; SQ 17, 32 <i>Impact Mathematics Grade 5</i> Student Edition: 33, 45-46, 47-48, 49-50, 51-52 Teacher Guide: A T50; I T45. T47, T49, T51; R T46, T48, T50, T52</p>
<p>b. Classify numbers by their factors.</p>	<p>Student Edition: 373-375, 378-381 <i>Chapter Test</i> 415 #1-#5 <i>Explore</i> 376-377 <i>Mid-Chapter Check</i> 390 #1-#14 <i>Quick Check</i> 372 #1-#6 <i>Study Guide and Review</i> 411 #7-#15 Teacher Edition: A 381; AE 374, 379; HP 375, 381; I 376; IWO 373B; SGO 373B; SP 373, 378; T 373, 378</p>

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<p>c. Express numbers as equivalent fractions, decimals or percents.</p>	<p>Student Edition: 28-30, 382-384, 386-389, 391-393 <i>Explore</i> 26-27 <i>Mid-Chapter Check</i> 31 #12-#17, 390 #15-#24 <i>Study Guide and Review</i> 52 #21-#27, 411 #16-#19, 412</p> <p>Teacher Edition: A 384, 389; AE 29, 383, 387, 392; ATS 392; HP 30, 384, 393; IWO 391B; R 28, 391; SGO 391B; SP 28, 382, 386, 391; SQ 28, 386</p> <p>Impact Mathematics Grade 5</p> <p>Student Edition: 43, 45-46, 47-48, 49-50, 51-52, 55, 59-60, 61-62, 63-64</p> <p><i>Performance-Based Assessment</i> A17-A18</p> <p>Teacher Guide: A T46; I T45, T47, T49, T51, T61, T63; R T52</p>
<p>d. Represent ratios and proportions and solve problems using models and pictures.</p>	<p>Student Edition: <i>Looking Ahead</i> LA10-LA13, LA14-LA17</p> <p>Teacher Edition: A LA13 ; AE LA11, LA15; ATS LA12, LA15; SQ LA10</p> <p>Impact Mathematics Grade 5</p> <p>Student Edition: Proportions can be introduced when completing the <i>Performance-Based Assessment</i> on page A29-A30, when comparing mixed numbers on page 59-60, and when converting measurements on page 79-80.</p>

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<p>2.2 Use numbers and their properties to compute flexibly and fluently, and to reasonably estimate measures and quantities.</p>	
<p>a. Estimate and compute using models and pictures.</p>	<p>Student Edition: 64-67, 70-72, 80-82, 112-115, 122-124, 132-135, 152-155, 444-446, 448-451, 452-454 <i>Explore</i> 78-79, 156-157 <i>Study Guide and Review</i> 93 #15-#21</p> <p>Teacher Edition: A 67; AE 65, 133; IWO 64B; SGO 64B; SQ 64, 132</p> <p>Impact Mathematics Grade 5</p> <p>Student Edition: 25-26, 27-28, 29-30, 35-36, 37-38, 39-40, 63-64, 81-82, 83-84, 89-90, 91-92, 93-94, 99-100, 101-102, 103-104</p> <p><i>Performance-Based Assessment</i> A13-A14, A33-A34, A38</p> <p>Teacher Guide: I T35, T37, T39, T83, T91, T93, T99</p>
<p>Geometry and Measurement – Shapes and structures can be analyzed, visualized, measured and transformed using a variety of strategies, tools and technologies.</p> <p>How do geometric relationships and measurements help us to solve problems and make sense of our world?</p>	
<p>Students should...</p>	
<p>3.1 Use properties and characteristics of two- and three-dimensional shapes and geometric theorems to describe relationships, communicate ideas and solve problems.</p>	
<p>a. Use geometric relationships to describe polygons and solids.</p>	<p>Student Edition: 566-569, 570-574, 608-611, 624-627 <i>Mid-Chapter Check</i> 575 #6-#15</p> <p>Teacher Edition: AE 567; HP 569, 573; I 566, 570, 624; R 566, 570, 624; SP 566, 570, 624; SQ 566, 570, 608</p> <p>Impact Mathematics Grade 5</p> <p>Student Edition: 87, 89-90, 91-92, 93-94, 99-100, 101-102, 103-104 <i>Project</i> 106</p> <p>Teacher Guide: I T89, T91, T93, T99, T101</p>

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<p>b. Recognize that changes in the perimeter of a polygon may affect its area, and changes in area may affect the perimeter.</p>	<p>Student Edition: 609-611, 612-615, 616-617, 649 #6-#7</p> <p>Teacher Edition: A 619</p> <p><i>Impact Mathematics Grade 5</i></p> <p>Student Edition: 90</p> <p>Teacher Guide: R T90</p>
<p>3.2 Use spatial reasoning, location and geometric relationships to solve problems.</p>	
<p>a. Identify, describe and build nets for solid figures and objects.</p>	<p>Student Edition: 640</p> <p><i>Explore</i> 638-639</p> <p>Teacher Edition: ELL 624b</p> <p><i>Impact Mathematics Grade 5</i></p> <p>Student Edition: 87, 89-90, 91-92</p> <p><i>Related Figures</i> 94</p> <p>Teacher Guide: CE T25; I T89, T91; TS A36</p>
<p>b. Determine geometric relationships through spatial visualization.</p>	<p>Student Edition: 557-560, 556-569, 570-574, 578-581, 582-585, 586-590, 591-593, 608-611, 624-627</p> <p><i>Explore</i> 564-565</p> <p><i>Mid-Chapter Check</i> 575</p> <p>Teacher Edition: A 569; AE 558, 567, 571; HP 569, 573; SP 557, 566, 570; T 566</p> <p><i>Impact Mathematics Grade 5</i></p> <p>Student Edition: 87, 89-90, 91-92, 93-94, 99-100, 101-102, 103-104</p> <p><i>Performance-Based Assessment</i> A33-A34, A38</p> <p><i>Project</i> 96, 103</p> <p>Teacher Guide: CE T51; I T89, T91, T93, T99, T101, T103</p>

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<p>3.3 Develop and apply units, systems, formulas and appropriate tools to estimate and measure.</p>	
<p>a. Solve problems in the measure of time and in converting units of length in the customary and metric systems using specific ratios.</p>	<p>Student Edition: 477-480, 492-495, 500-503, 517-521 <i>Study Guide and Review</i> 505 #10-#15, 507 #28-#32, 508</p> <p>Teacher Edition: 5MC 482A; A 480, 495; AE 478, 493, 500, 518; HP 495; I 492, 500; R 477, 492, 500; SP 477, 492, 500, 518;</p> <p>Impact Mathematics Grade 5</p> <p>Student Edition: 51-52, 79-80, 83-84 <i>Project</i> 66</p> <p>Teacher Guide: I T51, T79, 783; R T52</p>
<p>Working with Data: Probability and Statistics – Data can be analyzed to make informed decisions using a variety of strategies, tools and technologies.</p> <p>How can collecting, organizing and displaying data help us analyze information and make reasonable predictions and informed decisions?</p>	
<p style="text-align: center;">Students should...</p>	
<p>4.1 Collect, organize and display data using appropriate statistical and graphical methods.</p>	
<p>a. Differentiate between numerical and categorical data and their appropriate representations.</p>	<p>Student Edition: 284-288, 289-292, 294-298, 299-303, 306-310, 312-317, 320-321 <i>Extend</i> 318-319 <i>Mid-Chapter Check</i> 293 #5-#7</p> <p>Teacher Edition: AE 285, 290, 295, 300, 307, 313-314; HP 287, 292, 303; R 284, 289, 306; SP 289, 294, 306</p> <p>Impact Mathematics Grade 5</p> <p>Student Edition: 71-72, 73-74 <i>In The News</i> 74 <i>Project</i> 76</p> <p>Teacher Guide: I T71, T73; R T72</p>

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<p>4.2 Analyze data sets to form hypotheses and make predictions.</p>	
<p>a. Examine different data collection methods and their effects.</p>	<p>Student Edition: 281 #16, 287 #18, 292 #18, 297 #20, 317 #14</p> <p>Teacher Edition: I 294, 306</p> <p>Impact Mathematics Grade 5</p> <p>Student Edition: <i>Design an Experiment</i> 70 <i>Project</i> 76 #3</p>
<p>4.3 Understand and apply basic concepts of probability.</p>	
<p>a. Relate the likelihood of an event to a numerical value.</p>	<p>Student Edition: 661-663, 668-672, 677-680 <i>Big Idea</i> 658 <i>Chapter Test</i> 687 #6, #8, #10-#15 <i>Explore</i> 666-667 <i>Extend</i> 673 <i>Quick Check</i> 660 <i>Study Guide and Review</i> 685 #10-#12, 688 #15-#16</p> <p>Teacher Edition: AE 669, 678; I 666; R 668; SGO 668B; SP 668, 678; SQ 668</p> <p>Impact Mathematics Grade 5</p> <p>Student Edition: 67, 69-70 <i>Outside Your Classroom</i> 75 <i>Performance-Based Assessment</i> A26</p> <p>Teacher Guide: D T68D; I T69</p>