



© 2009

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. Classify patterns as repeating or growing.</p>	<p>Student Edition: 6, 40, 118-119, 134, 144, 192, 204-206, 207, 208-211, 218, 221-223, 224, 227-230, 231, 237-239, 316-319, 360 #41, 366-267, 381, 386, 417</p> <p>Impact Mathematics Grade 4 Student Edition: 13, 14, 15-16, 17-18, 19-20, 21, 22, 38, A5-A6</p> <p>Teacher Guide: A T16, T18, T20; ACE A8; AL T21; DDDM A8; I T15, T17, T19; R T16, T18, T20; TSSTF A8</p>

STANDARDS	PAGE REFERENCES
<p>1.2 Represent and analyze quantitative relationships in a variety of ways.</p>	
<p>a. Demonstrate the equivalence of both sides of an equation.</p>	<p>Student Edition: 190, 196-197, 198-201, 202, 207, 208-211, 220-223, 225, 228-230, 231, 232-233 <i>Algebra Activity</i> 196-197 <i>Remember</i> 209</p> <p>Teacher Edition: AE 199, 209, 221; FA 201, 211, 223; SQ 198, 208, 220</p> <p>Impact Mathematics Grade 4</p> <p>Student Edition: 17-18, 19-20, 21, 22</p> <p>Teacher Guide: A T18, T20; CFMG T22; I T17, T19; R T18, T20; TSSTF A8</p>
<p>1.3 Use operations, properties and algebraic symbols to determine equivalence and solve problems.</p>	
<p>a. Represent possible values using symbols.</p>	<p>Student Edition: 31, 190, 193-195, 196-197, 198-201, 202-203, 207, 208-211, 214-216, 217, 220-223, 225, 228-230, 231 <i>Algebra Activity</i> 196-197</p> <p>Teacher Edition: 5MC 198A, 202A, 214A; AE 194, 199; ITC 196; SGO 220B; SQ 198</p> <p>Impact Mathematics Grade 4</p> <p>Student Edition: 13, 14, 15-16, 17-18, 19-20, 21, 22, A5-A6</p> <p>Teacher Guide: A T16, T18, T20; CFMG T22; I T15, T17, T19; OYC T21; R T16, T18, T20; TSSTF A8; UAG T13</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 relationships.</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: 574, 576, 577-578, 579-581, 582-585, 590-592, 593, 596-599, 607-610, 611 <i>Math Activity</i> 577-578</p> <p>Teacher Edition: AE 580, 583, 597; ATS 580, 583, 597; FA 581, 585, 599; SQ 579, 582, 596</p> <p>Impact Mathematics Grade 4</p> <p>Student Edition: 45, 46, 47-48, 49-50, 51-52, 53-54, 55, 56, A18</p> <p>Teacher Guide: A T48, T50, T52, T54; I T47, T49, T51, T53; R T48, T50, T52, T54; S T56; TSSTF A20</p>
<p>b. Use models and pictures to reveal patterns about equivalent fractions and ratios.</p>	<p>Student Edition: 546-547, 548-551, 552, 553, 555, 566, 569, 571, 596-599 <i>Math Activity</i> 546-547</p> <p>Teacher Edition: AE 549; ATS 549, 597; FA 547, 551, 599; ITC 546; NTM 551; SGO 548B; SQ 548, 596</p> <p>Impact Mathematics Grade 4</p> <p>Student Edition: 35-36, 37-38, 39-40, 43, 44, A14</p> <p>Teacher Guide: A T36, T38, T40; AL T43; I T35, T37, T39; PBA T34D; R T36, T38, T40; RSD T44; TSSTF A16</p>

STANDARDS	PAGE REFERENCES
c. Use fractions to represent a ratio or a division problem.	<p>Student Edition: 537-539, 540-543, 553, 567, R34, R76</p> <p>Teacher Edition: 5MC 540A, 544A; AE 538, 541; ATS 538, 540; CE 538; FA 539, 543; I 537, 540; SQ 537, 540</p> <p>Impact Mathematics Grade 4</p> <p>Student Edition: 35-36, 37-38, 39-40, 43, 44, A14</p> <p>Teacher Guide: A T36, T38, T40; AL T43; I T35, T37, T39; R T36, T38, T40; RSD T44; TSSTF A16</p>
d. Make comparisons and describe quantitative relationships using ratios.	<p>Student Edition: 537-539, 540-543, 553, 567, R34, R76</p> <p>Teacher Edition: 5MC 540A, 544A; AE 538, 541; ATS 538, 540; CE 538; FA 539, 543; I 537, 540; SQ 537, 540</p> <p>Impact Mathematics Grade 4</p> <p>Student Edition: 35-36, 37-38, 39-40, 43, 44, A14</p> <p>Teacher Guide: A T36, T38, T40; ACE A16; AL T43; I T35, T37, T39; R T36, T38, T40; OYC T43; RSD T44; TSSTF A16</p>
<p>2.2</p> <p>Use numbers and their properties to compute flexibly and fluently, and to reasonably estimate measures and quantities.</p>	
a. Use place value concepts and commutative and associative properties to estimate and compute.	<p>Student Edition: 20-21, 29-30, 31, 33-34, 47-48, 55-57, 58-61, 62-63, 64-67, 70-71, 72-74, 85, 89, 150-153, 172-175, 579-581, 582-585, 607-609</p> <p><i>Math Activity</i> 20-21, 70-71</p> <p><i>Remember</i> 172</p> <p>Impact Mathematics Grade 4</p> <p>Student Edition: 46, 47-48, 49-50, 51-52, 53-54, 55, 56, A18</p> <p>Teacher Guide: A T48, T50, T52, T54; I T47, T49, T51, T53; R T48, T50, T52, T54; S T56; TSSTF A20;</p>

STANDARDS	PAGE REFERENCES
<p>b. Use number patterns, basic facts, rectangular arrays, place value models and the distributive property to multiply and divide.</p>	<p>Student Edition: 145-146, 147-149, 150-153, 154-157, 158, 160-162, 163, 166-169, 170, 172-175, 176-179, 181-186, 187 <i>Math Activity</i> 145-146</p> <p>Teacher Edition: 5MC 150A, 154A, 158A; AE 148, 151; ATS 148, 151</p> <p>Impact Mathematics Grade 4</p> <p>Student Edition: 1, 2, 3-4, 5-6, 7-8, 9-10, 11, 12, A2</p> <p>Teacher Guide: A T4, T6, T8, T10; I T3, T5, T7, T9; PBP T12; R T4, T6, T8, T10; TSSTF A4</p>
<p>c. Add and subtract fractions and mixed numbers with like and unlike denominators using models, pictures and number sentences.</p>	<p>Student Edition: LA14-LA17 <i>Remember</i> LA15</p> <p>Teacher Edition: 5MC LA18A; AE LA15; AT LA16; ATS LA16; BL LA14B; CE LA15, LA17; EF LA14B; ELL LA14B; FA LA17; FMC LA14A; I LA14; SQ LA14</p> <p>Impact Mathematics Grade 4</p> <p>Student Edition: 35, 41-42</p> <p>Teacher Guide: A T42; AL T43; I T41; R T42</p>

STANDARDS	PAGE REFERENCES
<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. Describe geometric properties of polygons and solids.</p>	<p>Student Edition: 359-361, 362-365, 372-375, 379, 380-381, 382-383, 384-388, 389 <i>Hands-On Mini Activity</i> 360 <i>Remember</i> 363 <i>Vocabulary</i> 360 Teacher Edition: AE 361, 363, 373, 377; ATS 360, 363, 373, 377, 381; SQ 359, 362, 372, 377 Impact Mathematics Grade 4 Student Edition: 59-60, 61-62, 63-64, 66, 103-104, A21-A22, A24 Teacher Guide: A T60, T62, T64; I T59, T61, T63; OYC T65; PRP T66; R T60, T62, T64; TSSTF A24</p>
<p>3.2 Use spatial reasoning, location and geometric relationships to solve problems.</p>	
<p>a. Find possible pathways between two points using maps that are based on the rectangular coordinate system.</p>	<p>Student Edition: 456-459, 460-463, 464-465, 475-476 <i>Measurement Activity</i> 464-465 Teacher Edition: 5MC 468A, 460A; AE 457, 461; ATS 457, 461; FA 459; I 456, 460, 512; POS 460A, 466A, 468A; SQ 456, 460</p>

STANDARDS	PAGE REFERENCES
<p>3.3 Develop and apply units, systems, formulas and appropriate tools to estimate and measure.</p>	
<p>a. Recognize that patterns exist between measurements of length, perimeter and area of squares and rectangles.</p>	<p>Student Edition: 441-443, 450-452, 453, 456-459, 460-462, 464-465, 468-471, 473-478, 479, 485, 486-489, 492-495, 496-497, 498-500, 501, 508-510, 512-515 <i>Measurement Activity</i> 464-465, 485, 496-497 Impact Mathematics Grade 4 Student Edition: 58, 59-60, 61-62, 63-64, 65, 66, 98, A21-A22 Teacher Guide: A T60, T62, T64; DI T58C; I T59, T61, T63; PBA T58D; PRP T66; R T60, T62, T64; TSSTF A24</p>
<p>b. Make precise measurements and use benchmarks to estimate measures.</p>	<p>Student Edition: 441-443, 450-452, 453, 456-459, 460-462, 464-465, 468-471, 473-478, 479, 485, 486-489, 492-495, 496-497, 498-500, 501, 508-510, 512-515 <i>Measurement Activity</i> 464-465, 485, 496-497 Impact Mathematics Grade 4 Student Edition: 25-26, 27-28, 29-30, 31, 58, 69-70, 81-82, 83-84, 85-86, 87, 88, A10, A30 Teacher Guide: A T28, T30, T82; I T27, T29, T81, T85; R T28, T30, T82</p>

STANDARDS	PAGE REFERENCES
<p align="center">Working with Data: Probability and Statistics – Data can be analyzed to make informed decisions using a variety of strategies, tools and technologies.</p> <p align="center">How can collecting, organizing and displaying data help us analyze information and make reasonable predictions and informed decisions?</p>	
<p align="center">Students should...</p>	
<p>4.1 Collect, organize and display data using appropriate statistical and graphical methods.</p>	
<p>a. Organize and analyze categorical and numerical data.</p>	<p>Student Edition: 95-97, 98-101, 102-103, 104-107, 108-110, 111, 112-114, 115, 116-117, 120-121, 133-136, 139, 140-141, R6-R8, R70-R71, R72-R73 <i>Statistics Activity</i> 116</p> <p>Teacher Edition: AE 96, 99, 105, 109, 113 Impact Mathematics Grade 4</p> <p>Student Edition: 44, 89, 90, 91-92, 93-94, 95-96, 97, 98, A34</p> <p>Teacher Guide: A T92, T94, T96; DNSR T98; I T91, T93, T95; OYC T97; R T92, T94, T96; TSSTF A36</p>
<p>4.2 Analyze data sets to form hypotheses and make predictions.</p>	
<p>a. Describe what is “average” about the characteristics in a data set.</p>	<p>Student Edition: 98-101, 105-107, 111, 133, R7, R75 <i>Remember</i> 99</p> <p>Teacher Edition: 5MC 102A, 108A; AE 99, 105; ATS 99; BL 98B; CE 100; EF 98B; ELL 98B; FA 107; FMC 98B; I 98; SQ 98, 104</p>

STANDARDS	PAGE REFERENCES
<p>4.3 Understand and apply basic concepts of probability.</p>	
<p>a. Determine fair situations and good choices based upon the likelihood of an occurrence.</p>	<p>Student Edition: 128-130, 131, 138, 139, R9, R76 <i>Technology Lab</i> 131</p> <p>Teacher Edition: 5MC 147A; AE 129; ATS 129; BL 128B; EF 128B; ELL 124B, 128B; FA 130; FMC 128A; I 128; SQ 128</p>