



# IMPACT

## Mathematics

COURSE 1

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STANDARDS	PAGE REFERENCES
<b>NUMBER AND OPERATIONS</b>	
<b>Multiply and divide fractions</b>	
<p><b>N.MR.06.01</b> Understand division of fractions as the inverse of multiplication, e.g., if <math>4/5 \div 2/3 = \square</math>, then <math>2/3 \cdot \square = 4/5</math>, so <math>\square = 4/5 \cdot 3/2 = 12/10</math>.</p>	<p><b>Student Edition:</b> 226-229, 229-232 <i>On Your Own Exercises</i> 233-241</p> <p><b>Teacher Guide:</b> A 226, 227; DU 227-229, 231-232; MB 232; RAL 231; TT230</p>
<p><b>N.FL.06.02</b> Given an applied situation involving dividing fractions, write a mathematical statement to represent the situation.</p>	<p><b>Student Edition:</b> 226-229, 229-232 <i>On Your Own Exercises</i> 233-241</p> <p><b>Teacher Guide:</b> A 226, 227; DU 227-229, 231-232; MB 232; RAL 231; TT230</p>
<p><b>N.MR.06.03</b> Solve for the unknown in equations such as <math>1/4 \div \square = 1</math>, <math>3/4 \div \square = 1/4</math>, and <math>1/2 = 1 \cdot \square</math>.</p>	<p><b>Student Edition:</b> 216-219, 226-229 <i>On Your Own Exercises</i> 233-237</p> <p><b>Teacher Guide:</b> DU 217-219, 227-229; MB 217; RAL 228; T 219</p>

STANDARDS	PAGE REFERENCES
<p><b>N.FL.06.04</b> Multiply and divide any two fractions, including mixed numbers, fluently.</p>	<p><b>Student Edition:</b> 222-225, 226-229, 229-232 <i>On Your Own Exercises</i> 233-241</p> <p><b>Teacher Guide:</b> A 222, 226, 227; DU 222-225; MB 232; RAL 225, 231; TT 230</p>
<p><b>Represent rational numbers as fractions or decimals</b></p>	
<p><b>N.ME.06.05</b> Order rational numbers and place them on the number line.</p>	<p><b>Student Edition:</b> 88-89, 90, 358-359 <i>On Your Own Exercises</i> 100, 102</p> <p><b>Teacher Guide:</b> DU 88-91</p>
<p><b>N.ME.06.06</b> Represent rational numbers as fractions or terminating decimals when possible, and translate between these representations.</p>	<p><b>Student Edition:</b> 88-91, 91-93, 94-97, 97-99 <i>On Your Own Exercises</i> 100-104</p> <p><b>Teacher Guide:</b> 88B DU 88-91, 91-93; EE 88; QQ 104; RAL 94; T 95; TT 89, 96</p>
<p><b>N.ME.06.07</b> Understand that a fraction or a negative fraction is a quotient of two integers, e.g., <math>-8/3</math> is <math>-8</math> divided by <math>3</math>.</p>	<p><b>Student Edition:</b> 94-97 <i>On Your Own Exercises</i> 100-104</p> <p><b>Teacher Guide:</b> DU 94-97; T 95</p>
<p><b>Add and subtract integers and rational numbers</b></p>	
<p><b>N.MR.06.08</b> <i>Understand integer subtraction as the inverse of integer addition. Understand integer division as the inverse of integer multiplication.*</i></p>	<p>See <i>Impact Mathematics Course 2</i> © 2009 and <i>Math Connects: Concepts, Skills, and Problem Solving Course 1</i> © 2009.</p>
<p><b>N.FL.06.09</b> <i>Add and multiply integers between -10 and 10; subtract and divide integers using the related facts. Use the number line and chip models for addition and subtraction.*</i></p>	<p>See <i>Impact Mathematics Course 2</i> © 2009 and <i>Math Connects: Concepts, Skills, and Problem Solving Course 1</i> © 2009.</p>

STANDARDS	PAGE REFERENCES
<p><b>N.FL.06.10</b> Add, subtract, multiply and divide positive rational numbers fluently.</p>	<p><b>Student Edition:</b>            198-201, 201-204, 205-207, 216-219, 219-221, 222-225, 226-229, 229-232  <i>Inquiry Investigation</i> 208-209  <i>On Your Own Exercises</i> 210-214, 233-241</p> <p><b>Teacher Guide:</b>            198B, 216B, 242B            A 201, 207, 220, 221, 222, 226, 227; DU 199-201, 202-204, 206-207, 217-219, 220-221, 222-225; MB 217, 232; QQ 215; RAL 200, 204, 205, 218, 225, 231; T198, 219; TT230</p>
<b>Find equivalent ratios</b>	
<p><b>N.ME.06.11</b> Find equivalent ratios by scaling up or scaling down.</p>	<p><b>Student Edition:</b>            294-296, 297-299  <i>On Your Own Exercises</i> 302-307</p> <p><b>Teacher Guide:</b>            A 298; DU 295-296; RAL 296, 297; T 294</p>
<b>Solve decimal, percentage and rational number problems</b>	
<p><b>N.FL.06.12</b> Calculate part of a number given the percentage and the number.</p>	<p><b>Student Edition:</b>            368-371, 372-375, 380-384, 384-387  <i>On Your Own Exercises</i> 376-379, 390-392  <i>Inquiry Investigation</i> 388-389</p> <p><b>Teacher Guide:</b>            368B            A 374, 380, 383; DU 372-375, 382-384, 385-387; QQ 379, 392; RAL 371, 375, 385; T 371, 384</p>
<p><b>N.MR.06.13</b> Solve contextual problems involving percentages such as sales taxes and tips.*</p>	<p><b>Student Edition:</b>            249 #3, 368-371, 372-375  <i>On Your Own Exercises</i> 376-379</p> <p><b>Teacher Guide:</b>            368B            A 374; DU 372-375; QQ 379; RAL 371, 375; T 371</p>
<p><b>N.FL.06.14</b> For applied situations, estimate the answers to calculations involving operations with rational numbers.</p>	<p><b>Student Edition:</b>            242-245, 248-250, 251-254  <i>On Your Own Exercises</i> 257-264</p> <p><b>Teacher Guide:</b>            DU 243-244, 251-254; EP 242</p>

STANDARDS	PAGE REFERENCES
<p><b>N.FL.06.15</b> Solve applied problems that use the four operations with appropriate decimal numbers.</p>	<p><b>Student Edition:</b> 242-245, 245-247, 248-250, 251-254, 254-256 <i>On Your Own Exercises</i> 257-264</p> <p><b>Teacher Guide:</b> DU 243-245, 245-247, 251-254; RAL 251; T 254</p>
<p><b>Use exponents</b></p>	
<p><b>N.ME.06.16</b> <i>Understand and use integer exponents, excluding powers of negative bases; express numbers in scientific notation.*</i></p>	<p><b>Student Edition:</b> 113-116 <i>On Your Own Exercises</i> 117-119</p> <p><b>Teacher Guide:</b> A 114; DU 114-116; QQ 119; RAL 113, 115</p>
<p><b>Understand rational numbers and their location on the number line</b></p>	
<p><b>N.ME.06.17</b> Locate negative rational numbers (including integers) on the number line; know that numbers and their negatives add to 0, and are on opposite sides and at equal distance from 0 on a number line.</p>	<p><b>Student Edition:</b> 510-512, 512-514 <i>On Your Own Exercises</i> 524-525</p> <p><b>Teacher Guide:</b> A 511, 513; DU 511-512, 513-514; RAL 512, 514</p>
<p><b>N.ME.06.18</b> Understand that rational numbers are quotients of integers (non zero denominators), e.g., a rational number is either a fraction or a negative fraction.</p>	<p><b>Student Edition:</b> 94-97 <i>On Your Own Exercises</i> 100-104</p> <p><b>Teacher Guide:</b> DU 94-97; T 95</p>
<p><b>N.ME.06.19</b> Understand that 0 is an integer that is neither negative nor positive.</p>	<p><b>Student Edition:</b> 510-512</p> <p><b>Teacher Guide:</b> DU 511-512</p>
<p><b>N.ME.06.20</b> Know that the absolute value of a number is the value of the number ignoring the sign; or is the distance of the number from 0.</p>	<p><b>Student Edition:</b> 512-514 <i>On Your Own Exercises</i> 524 #9-#15</p> <p><b>Teacher Guide:</b> A 513; DU 513-514; RAL 514</p>

STANDARDS	PAGE REFERENCES
<b>ALGEBRA</b>	
<b>Calculate rates</b>	
<p><b>A.PA.06.01</b> Solve applied problems involving rates, including speed, e.g., if a car is going 50 mph, how far will it go in <math>3\frac{1}{2}</math> hours?</p>	<p><b>Student Edition:</b> 299-301, 325-326, 327-331, 332-334 <i>On Your Own Exercises</i> 304-305, 335-340, 339 #23</p> <p><b>Teacher Guide:</b> A 328, 329; DU 299-301, 325-326, 328-331; MB 325; RAL 299</p>
<b>Understand the coordinate plane</b>	
<p><b>A.RP.06.02</b> Plot ordered pairs of integers and use ordered pairs of integers to identify points in all four quadrants of the coordinate plane.</p>	<p><b>Student Edition:</b> 491-494, 495-499, 509-512, 515-518, 519-521 <i>On Your Own Exercises</i> 503-508, 524-527 <i>Inquiry Investigation</i> 522-523</p> <p><b>Teacher Guide:</b> 509B A 492, 495, 511, 513, 520; DU 490-494, 497-499, 511-512, 513-514, 515-517, 519-521; QQ 508, 527; RAL 499, 516</p>
<b>Use variables, write expressions and equations, and combine like terms</b>	
<p><b>A.FO.06.03</b> Use letters, with units, to represent quantities in a variety of contexts, e.g., y lbs., k minutes, x cookies.</p>	<p><b>Student Edition:</b> 143-148, 149-152, 152-156, 160-162 <i>Inquiry Investigation</i> 157-159 <i>On Your Own Exercises</i> 166-173</p> <p><b>Teacher Guide:</b> 143B A 145; DU 145-148, 149-152, 154-156; RAL 158, 160; T 148</p>
<p><b>A.FO.06.04</b> Distinguish between an algebraic expression and an equation.</p>	<p><b>Student Edition:</b> 144-148, 534-538</p> <p><b>Teacher Guide:</b> A 145, 534; MB 536; RAL 537; SS 538; T 148</p>
<p><b>A.FO.06.05</b> Use standard conventions for writing algebraic expressions, e.g., <math>2x + 1</math> means “two times x, plus 1” and <math>2(x + 1)</math> means “two times the quantity <math>(x + 1)</math>.”</p>	<p><b>Student Edition:</b> 149-152, 152-156 <i>On Your Own Exercises</i> 166-167</p> <p><b>Teacher Guide:</b> DU 149-152, 154-156</p>

STANDARDS	PAGE REFERENCES
<p><b>A.FO.06.06</b> Represent information given in words using algebraic expressions and equations.</p>	<p><b>Student Edition:</b> 163-165 <i>On Your Own Exercises</i> 169 #20-#24</p> <p><b>Teacher Guide:</b> DU 164-165; RAL 164</p>
<p><b>A.FO.06.07</b> Simplify expressions of the first degree by combining like terms, and evaluate using specific values.</p>	<p><b>Student Edition:</b> 143-148, 160-162 <i>On Your Own Exercises</i> 166-173</p> <p><b>Teacher Guide:</b> 143B A 145; T 148, 162</p>
<p><b>Represent linear functions using tables, equations, and graphs</b></p>	
<p><b>A.RP.06.08</b> Understand that relationships between quantities can be suggested by graphs and tables.</p>	<p><b>Student Edition:</b> 149-152, 152-156, 160-162, 550-552, 552-554 <i>Inquiry Investigation</i> 157-159 <i>On Your Own Exercises</i> 166-173, 555-559</p> <p><b>Teacher Guide:</b> DU 149-151, 161-162; RAL 158,160</p>
<p><b>A.PA.06.09</b> <i>Solve problems involving linear functions whose input values are integers; write the equation; graph the resulting ordered pairs of integers, e.g., given <math>c</math> chairs, the “leg function” is <math>4c</math>; if you have 5 chairs, how many legs?; if you have 12 legs, how many chairs?*</i></p>	<p><b>Student Edition:</b> 534-536, 536-538, 550-552, 552-554 <i>Inquiry Investigation</i> 539-540 <i>On Your Own Exercises</i> 541-545, 555-559</p> <p><b>Teacher Guide:</b> 534B DU 535-536; MB 536; RAL 537</p>
<p><b>A.RP.06.10</b> Represent simple relationships between quantities using verbal descriptions, formulas or equations, tables, and graphs, e.g., perimeter-side relationship for a square, distance-time graphs, and conversions such as feet to inches.</p>	<p><b>Student Edition:</b> 491-494, 495-499, 509-512, 515-518, 519-521 <i>On Your Own Exercises</i> 503-508, 524-527 <i>Inquiry Investigation</i> 522-523</p> <p><b>Teacher Guide:</b> 509B A 492, 495, 511, 513, 520; DU 490-494, 497-499, 511-512, 513-514, 515-517, 519-521; QQ 508, 527; RAL 499, 516</p>

STANDARDS	PAGE REFERENCES
<b>Solve equations</b>	
<p><b>A.FO.06.11</b> <i>Relate simple linear equations with integer coefficients, e.g., <math>3x = 8</math> or <math>x + 5 = 10</math>, to particular contexts and solve.*</i></p>	<p><b>Student Edition:</b> 534-536, 536-538 <i>On Your Own Exercises</i> 541-545 <i>Inquiry Investigation</i> 539-540 <i>Review and Self-Assessment</i> 573-575</p> <p><b>Teacher Guide:</b> A 534; DU 535, 537-538; QQ 545; RAL 537</p>
<p><b>A.FO.06.12</b> Understand that adding or subtracting the same number to both sides of an equation creates a new equation that has the same solution.</p>	<p><b>Student Edition:</b> 546-549, 550-552, 553-554 <i>On Your Own Exercises</i> 555-559 <i>Review and Self-Assessment</i> 573-575</p> <p><b>Teacher Guide:</b> DU 547-549, 550-552, 553-554 QQ 559; RAL 549</p>
<p><b>A.FO.06.13</b> Understand that multiplying or dividing both sides of an equation by the same non-zero number creates a new equation that has the same solutions.</p>	<p><b>Student Edition:</b> 546-549, 550-552, 553-554 <i>On Your Own Exercises</i> 555-559 <i>Review and Self-Assessment</i> 573-575</p> <p><b>Teacher Guide:</b> DU 547-549, 550-552, 553-554 QQ 559; RAL 549</p>
<p><b>A.FO.06.14</b> Solve equations of the form <math>ax + b = c</math>, e.g., <math>3x + 8 = 15</math> by hand for positive integer coefficients less than 20, use calculators otherwise, and interpret the results.</p>	<p><b>Student Edition:</b> 534-536, 536-538, 546-549, 550-552, 553-554, 560-563, 563-565, 566-567 <i>On Your Own Exercises</i> 541-545, 555-559, 568-572 <i>Inquiry Investigation</i> 539-540 <i>Review and Self-Assessment</i> 573-575</p> <p><b>Teacher Guide:</b> A 534; DU 535, 537-538, 547-549, 550-552, 553-554, 563-565, 567; QQ 545, 559, 572; RAL 537, 549, 564</p>

STANDARDS	PAGE REFERENCES
<b>MEASUREMENT</b>	
<b>Convert within measurement systems</b>	
<p><b>M.UN.06.01</b> Convert between basic units of measurement within a single measurement system, e.g., square inches to square feet.</p>	<p><b>Student Edition:</b> 449-453, 454-456 <i>On Your Own Exercises</i> 257 #3-#8, 457-460</p> <p><b>Teacher Guide:</b> 449B A 453; DU 450-453; QQ 461; RAL 450, 456; T254</p>
<b>Find volume and surface area</b>	
<p><b>M.PS.06.02</b> Draw patterns (of faces) for a cube and rectangular prism that, when cut, will cover the solid exactly (nets).</p>	<p><b>Student Edition:</b> 434-437, 437-440 <i>Inquiry Investigation</i> 441-443 <i>On Your Own Exercises</i> 444-447</p> <p><b>Teacher Guide:</b> 434B DU 435-437, 438-440; RAL 435, 438; T 439</p>
<p><b>M.TE.06.03</b> Compute the volume and surface area of cubes and rectangular prisms given the lengths of their sides, using formulas.</p>	<p><b>Student Edition:</b> 434-437, 437-440 <i>On Your Own Exercises</i> 444-447 <i>Review and Self-Assessment</i> 464-465</p> <p><b>Teacher Guide:</b> 434B DU 435-437, 438-440; QQ 447; RAL 435</p>

STANDARDS	PAGE REFERENCES
<b>GEOMETRY</b>	
<b>Understand and apply basic properties</b>	
<p><b>G.GS.06.01</b> Understand and apply basic properties of lines, angles, and triangles, including:</p> <ul style="list-style-type: none"> <li>• triangle inequality</li> <li>• relationships of vertical angles, complementary angles, supplementary angles</li> <li>• congruence of corresponding and alternate interior angles when parallel lines are cut by a transversal, and that such congruencies imply parallel lines</li> <li>• locate interior and exterior angles of any triangle, and use the property that an exterior angle of a triangle is equal to the sum of the remote (opposite) interior angles</li> <li>• know that the sum of the exterior angles of a convex polygon is <math>360^\circ</math>.</li> </ul>	<p><b>Student Edition:</b> 2-3, 4-8, 8-11, 24-29, 30-34, 44-47 <i>Inquiry Investigation</i> 16-17 <i>On Your Own Exercises</i> 18-19, 35-39</p> <p><b>Teacher Guide:</b> 24B, 40B A 11, 17; DU 7-9, 10-11, 45-47; MB 27, 46; RAL 6, 9, 16, 45; QQ 23</p>
<b>Understand the concept of congruence and basic transformations</b>	
<p><b>G.GS.06.02</b> Understand that for polygons, congruence means corresponding sides and angles have equal measures.</p>	<p><b>Student Edition:</b> 321-324, 325-326 <i>On Your Own Exercises</i> 335-336 <i>Review and Self-Assessment</i> 343-344</p> <p><b>Teacher Guide:</b> 321B DU 322-324</p>
<p><b>G.TR.06.03</b> Understand the basic rigid motions in the plane (reflections, rotations, translations), relate these to congruence, and apply them to solve problems.</p>	<p><b>Student Edition:</b> 321-324, 325-326 <i>On Your Own Exercises</i> 335-336 <i>Review and Self-Assessment</i> 343-344</p> <p><b>Teacher Guide:</b> 321B DU 322-324</p>
<p><b>G.TR.06.04</b> Understand and use simple compositions of basic rigid transformations, e.g., a translation followed by a reflection.</p>	<p>Beginning of Concept is discussed in the following references and may be expanded upon to meet this objective.</p> <p><b>Student Edition:</b> 9 <i>On Your Own Exercises</i> 19</p> <p><b>Teacher Guide:</b> A9; RAL 9</p>

STANDARDS	PAGE REFERENCES
<b>Construct geometric shapes</b>	
<p><b>G.SR.06.05</b> Use paper folding to perform basic geometric constructions of perpendicular lines, midpoints of line segments and angle bisectors; justify informally.</p>	<p><b>Student Edition:</b> 8-11, 12-15 <i>On Your Own Exercises</i> 19-24</p> <p><b>Teacher Guide:</b> A 11; DU 10-11; QQ 23; RAL 9,12</p>
<b>DATA AND PROBABILITY</b>	
<b>Understand the concept of probability and solve problems</b>	
<p><b>D.PR.06.01</b> Express probabilities as fractions, decimals, or percentages between 0 and 1; know that 0 probability means an event will not occur and that probability 1 means an event will occur.</p>	<p><b>Student Edition:</b> 621-625, 628-632 <i>Inquiry Investigation</i> 626-627 <i>On Your Own Exercises</i> 633-637</p> <p><b>Teacher Guide:</b> 617B DU 621-625; MB 621, 622; RAL 617,623</p>
<p><b>D.PR.06.02</b> Compute probabilities of events from simple experiments with equally likely outcomes, e.g., tossing dice, flipping coins, spinning spinners, by listing all possibilities and finding the fraction that meets given conditions.</p>	<p><b>Student Edition:</b> 617-620, 621-625, 628-632 <i>Inquiry Investigation</i> 626-627 <i>On Your Own Exercises</i> 633-637</p> <p><b>Teacher Guide:</b> 617B A 619, 631; DU 618-620, 621-625, 628-631; T 620, 632</p>

\* revised expectations in italics