



IMPACT

Mathematics

COURSE 1

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STANDARDS	PAGE REFERENCES
Performance Indicators & Descriptors	
<p>A. NUMBER: Students use numbers in everyday and mathematical contexts to quantify or describe phenomena, develop concepts of operations with different types of numbers, use the structure and properties of numbers with operations to <i>solve</i> problems, and perform mathematical computations. Students develop number sense related to magnitude, estimation, and the effects of mathematical operations on different types of numbers. It is expected that students use numbers flexibly, using forms of numbers that best match a situation. Students compute efficiently and accurately. <i>Estimation</i> should always be used when computing with numbers or solving problems.</p>	
Whole Number	
<p>1 Students use factors and multiples.</p> <ul style="list-style-type: none"> a. Identify prime numbers and composite numbers and use their properties to <i>solve</i> problems. b. Use the property that every integer greater than one is a prime number or can be written as a unique product of prime numbers. c. <i>Interpret</i> and use exponential notation as repeated multiplication. d. Find the least common multiple and greatest common factor of two numbers. 	<p>Student Edition: 61-63, 64-65 <i>Math Link</i> 63</p> <p>Teacher Guide: ML 63; TT 62; WU 64</p>

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Rational Number	
<p>2 Students express fractions greater than 0 as decimals and compare positive numbers that are written as fractions and decimals and place them on the number line.</p>	<p>Student Edition: 64-65, 88-91, 91-93, 94-97 <i>On Your Own Exercises</i> 69, 71-72 <i>Inquiry Investigation</i> 82-83</p> <p>Teacher Guide: 88B DU 64-65, 88-91, 91-93; EE 88; RAL 94; TT 65, 89, 96</p>
<p>3 Students add, subtract, multiply, and divide numbers expressed as fractions and as decimals including mixed numbers.</p>	<p>Student Edition: 198-201, 201-204, 205-207, 216-219, 219-221, 222-225, 226-229, 229-232, 242-245, 245-247, 248-250, 251-254, 254-256 <i>Inquiry Investigation</i> 208-209 <i>On Your Own Exercises</i> 210-214, 233-241, 257-264</p> <p>Teacher Guide: 198B, 216B, 242B A 201, 207, 220, 221, 222, 226, 227; DU 199-201, 202-204, 206-207, 217-219, 220-221, 222-225, 226-229, 243-245, 245-247, 248-250, 251-254; MB 217, 232; QQ 215, 241, 264; RAL 200, 204, 205, 218, 225, 231, 251; T 198, 219, 245, 254; TT 230</p>
<p>4 Students <i>understand</i> how to express relative quantities as percentages and as decimals and fractions.</p> <p>a. Use ratios to describe relationships between quantities.</p> <p>b. Use decimals, fractions, and percentages to express relative quantities.</p> <p>c. <i>Interpret</i> relative quantities expressed as decimals, fractions, and percentages.</p>	<p>Student Edition: 348-351, 352-354, 354-357, 357-361, 368-371, 372-375, 380-384, 384-387 <i>On Your Own Exercises</i> 362-367, 376-379, 390-392 <i>Inquiry Investigation</i> 388-389</p> <p>Teacher Guide: 348B, 368B A 353, 356, 374, 380, 383; DU 349-351, 353-354, 355-357, 358-361, 372-375, 382-384, 385-387; QQ 367, 379, 392; RAL 371, 375, 385; T 351, 357, 360, 371, 384</p>
<p>5 Students multiply and divide decimals with up to three decimal places by tens, hundreds, and thousands.</p>	<p>Student Edition: 242-245, 245-247, 248-250, 251-254, 254-256 <i>On Your Own Exercises</i> 257-264</p> <p>Teacher Guide: 242B DU 243-245, 245-247, 248-250, 251-254; QQ 264; RAL 251; T 245, 254</p>

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Real Number	
<p>No performance indicator.</p> <p>Although no performance indicators are stated, students are expected to have instructional experiences in which they use rational numbers including rational approximations for pi or square roots.</p>	
<p>B. DATA: Students make measurements and collect, display, evaluate, analyze, and compute with data to describe or model phenomena and to make decisions based on data. Students compute statistics to summarize data sets and use concepts of probability to make predictions and describe the uncertainty inherent in data collection and measurement. It is expected that when working with measurements students:</p> <ul style="list-style-type: none"> • understand that most measurements are approximations and that taking repeated measurements reveals this variability; • understand that a number without a unit is not a measurement, and that an appropriate unit must always be attached to a number to provide a measurement; • understand that the precision and accuracy of a measurement depends on selecting the appropriate tools and units; and • use estimation comparing measures to benchmarks appropriate to the type of measure and units. 	
Measurement and Approximation	
<p>1 Students convert within measurement systems.</p> <p>a. Solve problems where different <i>units</i> are used within the metric and traditional systems of measurement.</p>	<p>Student Edition: 449-453, 454-456 <i>On Your Own Exercises</i> 257 #3-#8, 457-460</p> <p>Teacher Guide: 449B A 453; DU 450-453; QQ 461; RAL 450, 456; T 254</p>
Data Analysis	
<p>2 Students read and <i>interpret</i> pie charts.</p>	<p>Many kinds of graphs are discussed in Lesson 10.1 <i>Data Displays</i> and Lesson 10.2 <i>Collect and Analyze Data</i>.</p> <p>Student Edition: 578-580, 581-584, 585-587, 588-600, 609-616</p>
<p>3 Students find and compare the mean, median, mode, and range for sets of data.</p>	<p>Student Edition: 265-268, 269-271, 272-275 <i>On Your Own Exercises</i> 276-281</p> <p>Teacher Guide: 265B A 267; DU 266-268, 269-271, 272-275; RAL 275; T 268</p>

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Probability	
<p>No performance indicator. Although no performance indicators are stated, students are expected to have experiences with probability in grade six, but it is not expected that the knowledge will be secure.</p>	
<p>C. <u>GEOMETRY</u>: Students use measurement and observation to describe objects based on their sizes and shapes; <i>model</i> or construct two-dimensional and three-dimensional objects; <i>solve</i> problems involving geometric properties; compute areas and volumes based on object properties and dimensions; and perform transformations on geometric figures. When making or calculating measures students use <i>estimation</i> to check the reasonableness of results.</p>	
Geometric Figures	
<p>1 Students represent solid figures in two dimensions.</p> <p>a. Represent cubes, prisms, and square-based or triangular-based pyramids using <i>nets</i>.</p> <p>b. Recognize and <i>classify</i> solids presented in picture views.</p> <p>c. Sketch three-dimensional figures.</p>	<p>Student Edition: 434-437, 437-440 <i>Inquiry Investigation</i> 441-443 <i>On Your Own Exercises</i> 444-447</p> <p>Teacher Guide: 434B DU 435-437, 438-440; RAL 435, 438; T 439</p>
Geometric Measurement	
<p>2 Students find the perimeters and areas of geometric figures.</p> <p>a. Triangles</p> <p>b. Quadrilaterals</p> <p>c. Circles</p>	<p>Student Edition: 40-44, 44-47, 398-402, 402-404, 409-412, 413-416, 419-421, 422-424 <i>On Your Own Exercises</i> 48-51, 405-408, 425-433 <i>Review and Self-Assessment</i> 55</p> <p>Teacher Guide: 40B, 398B, 409B A 400, 415; DU 41-44, 399-402, 413-416, 420-422; MB 414; QQ 51, 408, 433; RAL 42, 45, 409; T 47, 410, 419</p>
<p>3 Students find the volume and surface areas of right prisms with bases that are triangles and quadrilaterals.</p>	<p>Student Edition: 434-437, 437-440 <i>On Your Own Exercises</i> 444-447 <i>Review and Self-Assessment</i> 464-465</p> <p>Teacher Guide: 434B DU 435-437, 438-440; QQ 447; RAL 435</p>

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Transformations	
<p>4 Students <i>understand</i> and use reflections, rotations, and translations to define and identify congruent plane figures.</p> <p>a. Apply the <i>understanding</i> that if a plane figure can be laid on top of another plane figure by rotations, translations, or reflections then the figures are congruent.</p>	<p>Student Edition: 321-324, 325-326 <i>On Your Own Exercises</i> 335-336 <i>Review and Self-Assessment</i> 343-344</p> <p>Teacher Guide: 321B DU 322-324</p>
<p>5 Students <i>understand</i> how to use proportional relationships to make indirect linear measurements and use scale drawings to make linear measurements.</p>	<p>Student Edition: 325-326, 327-331, 332-334 <i>On Your Own Exercises</i> 335-340, 339 #23</p> <p>Teacher Guide: A 328, 329; DU 325-326, 328-331; MB 325</p>
<p>D. ALGEBRA: Students use symbols to represent or <i>model</i> quantities, patterns, and relationships and use symbolic manipulation to <i>evaluate</i> expressions and <i>solve</i> equations. Students <i>solve</i> problems using symbols, tables, graphs, and verbal rules choosing the most effective representation and converting among representations.</p>	
Symbols and Expressions	
<p>1 Students <i>create</i> and <i>evaluate</i> expressions.</p> <p>a. <i>Create</i> and <i>evaluate</i> expressions using whole numbers.</p> <p>b. <i>Create</i> and <i>evaluate</i> expressions using positive fractions including decimals.</p>	<p>Student Edition: 126-129, 130-132, 143-148, 149-152, 160-162, 163-165 <i>On Your Own Exercises</i> 136-141, 166-173 <i>Inquiry Investigation</i> 157-159 <i>Review and Self-Assessment</i> 193-194</p> <p>Teacher Guide: 120B, 143B A 127, 128, 130, 145; DU 127-129, 130-132, 145-148, 149-151, 161-162, 164-165; RAL 129, 164; T 148</p>

STANDARDS	PAGE REFERENCES
Equations and Inequalities	
<p>2 Students recognize and solve problems involving linear equations and recognize examples and non-examples of linear equations.</p> <p>a. Solve equations of the form $ax \pm b = c$ where a, b, and c are whole numbers.</p> <p>b. Recognize from a table whether a relationship has a constant rate of change.</p>	<p>Student Edition: 40-44, 44-47, 534-536, 536-538, 546-549, 550-552, 553-554, 560-563, 563-565, 566-567 <i>On Your Own Exercises</i> 48-51, 541-545, 555-559, 568-572 <i>Inquiry Investigation</i> 539-540 <i>Review and Self-Assessment</i> 573-575</p> <p>Teacher Guide: A 534; DU 41-43, 535, 537-538, 547-549, 550-552, 553-554, 563-565, 567; QQ 545, 559, 572; RAL 42, 537, 549, 564</p>
Functions And Relations	
<p>3 Students use tables, formulas, diagrams, and graphs to analyze relationships between quantities.</p> <p>a. Use tables, formulas, and graphs to analyze constant difference (additive) relationships.</p> <p>b. Use tables, formulas, and graphs to analyze constant ratio (multiplicative) relationships.</p>	<p>Student Edition: 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>Teacher Guide: 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>