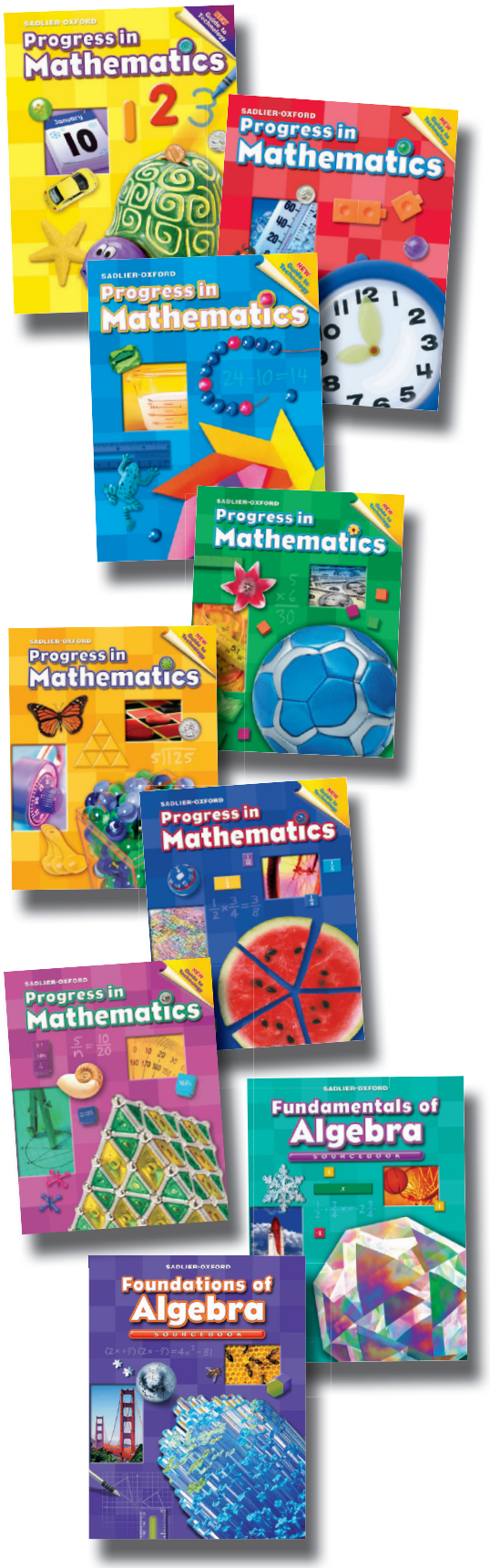

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Academic Standards: Mathematics

Grade 5

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Number Sense

Indiana Academic Standards: Mathematics: Grade 5	Sadlier *Progress in Mathematics*, Grade 5
5.NS.1: Use a number line to compare and order fractions, mixed numbers, and decimals to thousandths. Write the results using >, =, and < symbols.	**Readiness** Skills Update: Compare and Order Whole Numbers—p. 2 **Instruction** 1-6 Compare and Order Numbers—pp. 40–41 8-1 Decimal Sense—pp. 268–269
5.NS.2: Explain different interpretations of fractions, including: as parts of a whole, parts of a set, and division of whole numbers by whole numbers.	**Instruction** *6-7A Interpret the Remainder—Online
5.NS.3: Recognize the relationship that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right, and inversely, a digit in one place represents 1/10 of what it represents in the place to its left.	**Instruction** 1-1 What Is a Billion?—pp. 30–31 1-2 Place Value to Billions—pp. 32–33 1-3 Expanded Form—pp. 34–35 *1-3A Powers of Ten—Online 1-4 Thousandths—pp. 36–37 *1-4A Decimals and Expanded Form—Online 1-5 Decimals Greater Than One—pp. 38–39 8-2 Decimals and Place Value—pp. 270–271
5.NS.4: Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	**Instruction** *1-3A Powers of Ten—Online 2-3 Mental Math Special Factors—pp. 70–71 2-4 Patterns in Multiplication—pp. 72–73 9-1 Multiply by 10, 100, and 1000—pp. 294–295 9-6 Divide by 10, 100, and 1000—pp. 304–305
5.NS.5: Use place value understanding to round decimal numbers up to thousandths to any given place value.	**Readiness** Skills Update: Round Whole Numbers—p. 3 **Instruction** 1-7 Rounding Numbers—pp. 42–43 **Application** 8-4 Estimate Decimal Sums (rounding)—pp. 274–275 8-7 Estimate Decimal Differences (rounding)—pp. 280–281 9-2 Estimate Decimal Products (rounding)—pp. 296–297 9-10 Estimate with Money: Rounding to the Nearest Cent—p. 313
5.NS.6: Understand, interpret, and model percents as part of a hundred (e.g. by using pictures, diagrams, and other visual models).	**Instruction** 13-4 Relate Fractions to Percents—pp. 422–423 13-5 Relate Percents to Decimals—pp. 424–425 13-6 Find the Percent of a Number—pp. 426–427 13-7 Use Percent—pp. 428–429 **Application** 13-9 Problem Solving Applications: Mixed Review—pp. 432–433

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Number Sense

Indiana Academic Standards: Mathematics: Grade 5	Sadlier *Progress in Mathematics*, Grade 5
	Enrichment Enrichment: Percent Patterns—p. 435 **Teacher's Edition** English Language Learners: Relate Percents to Decimals, Use Percent; Use Percent; Relate Fractions to Percents—TE pp. 415H-415I

Computation

Indiana Academic Standards: Mathematics: Grade 5	Sadlier *Progress in Mathematics*, Grade 5
5.C.1: Multiply multi-digit whole numbers fluently using a standard algorithmic approach.	**Instruction** 2-6 Zeros in the Multiplicand—pp. 76–77 2-7 Multiply Two Digits—pp. 78–79 2-8 Multiply Three Digits—pp. 80–81 2-9 Zeros in the Multiplier—pp. 82–83 **Application** 2-12 Problem Solving Applications: Mixed Review—pp. 88–89
5.C.2: Find whole-number quotients and remainders with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Describe the strategy and explain the reasoning used.	**Instruction** 3-2 Division Patterns—pp. 98–99 3-3 Three-Digit Quotients—pp. 100–101 3-5 Zeros in the Quotient—pp. 104–105 3-6 Short Division—pp. 106–107 *3-9A Use Arrays to Divide—Online 3-10 Teens as Divisors—pp. 114–115 *3-10A Use Strategies to Divide—Online 3-11 Two-Digit Divisors—pp. 116–117 **Application** 3-16 Problem Solving Applications: Mixed Review—pp. 126–127
5.C.3: Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.	**Instruction** *6-2B Scaling Fractions—Online
5.C.4: Add and subtract fractions with unlike denominators, including mixed numbers.	**Instruction** *5-1A Add Fractions with Unlike Denominators—Online 5-2 Add Fractions Unlike Denominators—pp. 166–167 5-3 Add Three Fractions—pp. 168–169 5-4 Add Mixed Numbers—pp. 170–171 5-5 Rename Mixed Number Sums—pp. 172–173 *5-6A Subtract Fractions with Unlike Denominators—Online 5-7 Subtract Fractions Unlike Denominators—pp. 176–177 5-8 More Subtraction of Fractions—pp. 178–179 *5-8A Subtract Fractions and Whole Numbers from Mixed Numbers—Online 5-9 Subtract Mixed Numbers—pp. 180–181 5-10 Subtraction with Renaming—pp. 182–183 5-11 More Renaming in Subtraction—pp. 184–185
5.C.5: Use visual fraction models and numbers to multiply a fraction by a fraction or a whole number.	**Instruction** 6-1 Multiply Fractions—pp. 198–199 6-2 Multiply Fractions by Fractions—pp. 200–201 *6-2A Use Properties to Multiply Fractions and Whole Numbers—Online 6-3 Multiply Fractions and Whole Numbers—pp. 202–203
5.C.6: Explain why multiplying a number by a fraction greater than 1 results in a product greater than the given number. Explain why multiplying a number by a fraction less than 1 results in a product smaller than the given number. Relate the principle of fraction equivalence, $a/b = (n \times a)/(n \times b)$, to the effect of multiplying a/b by 1.	**Instruction** *6-2B Scaling Fractions—Online

Computation

Indiana Academic Standards: Mathematics: Grade 5	Sadlier *Progress in Mathematics*, Grade 5
5.C.7: Use visual fraction models and numbers to divide a unit fraction by a non-zero whole number and to divide a whole number by a unit fraction.	**Instruction** *6-10A Division with a Unit Fraction—Online 6-12 Divide Fractions by Whole Numbers—pp. 220–221
5.C.8: Add, subtract, multiply, and divide decimals to hundredths, using models or drawings and strategies based on place value or the properties of operations. Describe the strategy and explain the reasoning.	**Instruction** 2-10 Multiplication with Money—pp. 84–85 3-13 Divide Money—pp. 120–121 *8-2A Use Models to Add Decimals—Online *8-2B Mental Math Add Decimals—Online 8-3 Add Decimals—pp. 272–273 8-4 Estimate Decimal Sums—pp. 274–275 8-5 Add More Decimals—pp. 276–277 *8-5A Use Models to Subtract Decimals—Online 8-6 Subtract Decimals—pp. 278–279 8-8 Subtract More Decimals—pp. 282–283 9-1 Multiply by 10, 100, and 1000—pp. 294–295 *9-2A Multiply Decimals—Online 9-3 Multiply Decimals by Whole Numbers—pp. 298–299 *9-3A Model Multiplying Two Decimals—Online 9-4 Multiply Decimals by Decimals—pp. 300–301 9-5 Zeros in the Product—pp. 302–303 9-6 Divide by 10, 100, and 1000—pp. 304–305 *9-6A Model Dividing a Decimal by a Whole Number—Online 9-7 Divide Decimals by Whole Numbers—pp. 306–307 9-8 Zeros in Division—pp. 308–309 *9-8A Model Dividing a Decimal by a Decimal—Online *9-8B Divide Decimals—Online **Application** 8-10 Problem Solving Applications: Mixed Review—pp. 286–287 9-12 Problem Solving Applications: Mixed Review—pp. 316–31
5.C.9: Evaluate expressions with parentheses or brackets involving whole numbers using the commutative properties of addition and multiplication, associative properties of addition and multiplication, and distributive property.	**Instruction** 2-2 Properties of Multiplication—pp. 68–69 3-14 Order of Operations—pp. 122–123 *3-14A Variables and Expressions—Online

Algebraic Thinking

Indiana Academic Standards: Mathematics: Grade 5	Sadlier *Progress in Mathematics*, Grade 5
5.AT.1: Solve real-world problems involving multiplication and division of whole numbers (e.g. by using equations to represent the problem). In division problems that involve a remainder, explain how the remainder affects the solution to the problem.	**Instruction** 2-6 Zeros in the Multiplicand—pp. 76–77 2-7 Multiply Two Digits—pp. 78–79 2-8 Multiply Three Digits—pp. 80–81 2-9 Zeros in the Multiplier—pp. 82–83 3-2 Division Patterns—pp. 98–99 3-3 Three-Digit Quotients—pp. 100–101 3-5 Zeros in the Quotient—pp. 104–105 3-6 Short Division—pp. 106–107 *3-9A Use Arrays to Divide—Online 3-10 Teens as Divisors—pp. 114–115 *3-10A Use Strategies to Divide—Online 3-11 Two-Digit Divisors—pp. 116–117 **Application** 2-12 Problem Solving Applications: Mixed Review—pp. 88–89 3-16 Problem Solving Applications: Mixed Review—pp. 126–127
5.AT.2: Solve real-world problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators (e.g., by using visual fraction models and equations to represent the problem). Use benchmark fractions and number sense of fractions to estimate mentally and assess whether the answer is reasonable.	**Instruction** 4-4 Fraction Sense—pp. 140–141 5-1 Rename Fraction Sums Like Denominators—pp. 164–165 5-2 Add Fractions Unlike Denominators—pp. 166–167 5-3 Add Three Fractions—pp. 168–169 5-4 Add Mixed Numbers—pp. 170–171 5-5 Rename Mixed Number Sums—pp. 172–173 5-6 Rename Differences Like Denominators—pp. 174–175 5-7 Subtract Fractions Unlike Denominators—pp. 176–177 5-8 More Subtraction of Fractions—pp. 178–179 5-9 Subtract Mixed Numbers—pp. 180–181 *5-9A Use Benchmark Fractions—Online 5-10 Subtraction with Renaming—pp. 182–183 5-11 More Renaming in Subtraction—pp. 184–185 5-12 Estimate Sums and Differences of Mixed Numbers—pp. 186–187 5-13 Problem Solving Strategy: Work Backward—pp. 188–189 **Application** 5-14 Problem Solving Applications: Mixed Review—p. 191
5.AT.3: Solve real-world problems involving multiplication of fractions, including mixed numbers (e.g., by using visual fraction models and equations to represent the problem).	**Instruction** 6-2 Multiply Fractions by Fractions—pp. 200–201 6-3 Multiply Fractions and Whole Numbers—pp. 202–203 6-4 Multiply Fractions Using the GCF—pp. 204–205 6-5 Rename Mixed Numbers as Fractions—pp. 206–207 6-6 Multiply Fractions and Mixed Numbers—pp. 208–209 6-7 Multiply Mixed Numbers—pp. 210–211 *6-10B Word Problems Involving Fractions—Online **Application** 6-17 Problem Solving Applications: Mixed Review—pp. 230–231

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Algebraic Thinking

Indiana Academic Standards: Mathematics: Grade 5	Sadlier *Progress in Mathematics*, Grade 5
5.AT.4: Solve real-world problems involving division of unit fractions by non-zero whole numbers, and division of whole numbers by unit fractions (e.g., by using visual fraction models and equations to represent the problem).	**Instruction** 6-10 Divide Whole Numbers by Fractions—pp. 216–217 *6-10A Division with a Unit Fraction—Online *6-10B Word Problems Involving Fractions—Online 6-12 Divide Fractions by Whole Numbers—pp. 220–221
5.AT.5: Solve real-world problems involving addition, subtraction, multiplication, and division with decimals to hundredths, including problems that involve money in decimal notation (e.g. by using equations to represent the problem).	**Instruction** 2-10 Multiplication with Money—pp. 84–85 3-13 Divide Money—pp. 120–121 *8-2A Use Models to Add Decimals—Online *8-2B Mental Math Add Decimals—Online 8-3 Add Decimals—pp. 272–273 8-4 Estimate Decimal Sums—pp. 274–275 8-5 Add More Decimals—pp. 276–277 *8-5A Use Models to Subtract Decimals—Online 8-6 Subtract Decimals—pp. 278–279 8-8 Subtract More Decimals—pp. 282–283 9-1 Multiply by 10, 100, and 1000—pp. 294–295 *9-2A Multiply Decimals—Online 9-3 Multiply Decimals by Whole Numbers—pp. 298–299 *9-3A Model Multiplying Two Decimals—Online 9-4 Multiply Decimals by Decimals—pp. 300–301 9-5 Zeros in the Product—pp. 302–303 9-6 Divide by 10, 100, and 1000—pp. 304–305 *9-6A Model Dividing a Decimal by a Whole Number—Online 9-7 Divide Decimals by Whole Numbers—pp. 306–307 9-8 Zeros in Division—pp. 308–309 *9-8A Model Dividing a Decimal by a Decimal—Online *9-8B Divide Decimals—Online **Application** 8-10 Problem Solving Applications: Mixed Review—pp. 286–287 9-12 Problem Solving Applications: Mixed Review—pp. 316–31
5.AT.6: Graph points with whole number coordinates on a coordinate plane. Explain how the coordinates relate the point as the distance from the origin on each axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).	**Instruction** 14-13 The Coordinate Plane—pp. 464–465
5.AT.7: Represent real-world problems and equations by graphing ordered pairs in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	**Instruction** *14-13A Using Coordinate Graphs—Online 14-15 Functions and Coordinate Graphs—pp. 468–469
5.AT.8: Define and use up to two variables to write linear expressions that arise from real-world problems, and evaluate them for given values.	**Instruction** 2-2 Properties of Multiplication—pp. 68–69

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Algebraic Thinking

Indiana Academic Standards: Mathematics: Grade 5	Sadlier *Progress in Mathematics*, Grade 5
	3-14 Order of Operations—pp. 122–123 *3-14A Variables and Expressions—Online 14-1 Algebraic Expressions and Equations—pp. 440–441 14-2 Properties of Equality—pp. 442–443

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Geometry

Indiana Academic Standards: Mathematics: Grade 5	Sadlier *Progress in Mathematics*, Grade 5
5.G.1: Identify, describe, and draw triangles (right, acute, obtuse) and circles using appropriate tools (e.g., ruler or straightedge, compass and technology). Understand the relationship between radius and diameter.	**Instruction** 10-5 Triangles—pp. 332–333 10-6 Quadrilaterals—pp. 334–335 *10-6A Classify Quadrilaterals—Online
5.G.2: Identify and classify polygons including quadrilaterals, pentagons, hexagons, and triangles (equilateral, isosceles, scalene, right, acute and obtuse) based on angle measures and sides. Classify polygons in a hierarchy based on properties.	**Instruction** *10-6A Classify Quadrilaterals—Online

Measurement

Indiana Academic Standards: Mathematics: Grade 5	Sadlier *Progress in Mathematics*, Grade 5
5.M.1: Convert among different-sized standard measurement units within a given measurement system, and use these conversions in solving multi-step real-world problems.	**Instruction** 11-1 Relate Customary Units of Length—pp. 358–359 11-2 Relate Customary Units of Capacity—pp. 360–361 11-3 Relate Customary Units of Weight—pp. 362–363 11-7 Compute with Customary Units—pp. 370–371 **Instruction** 12-1 Metric Measurement—pp. 382–383 12-2 Relate Metric Units of Length—pp. 384–385 12-3 Relate Metric Units of Capacity—pp. 386–387 12-4 Relate Metric Units of Mass—pp. 388–389 **Application** 12-14 Problem Solving Applications: Mixed Review—pp. 408–409
5.M.2: Find the area of a rectangle with fractional side lengths by modeling with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	**Readiness** 6-1 Multiply Fractions—pp. 198–199 6-2 Multiply Fractions by Fractions—pp. 200–201 6-6 Multiply Fractions and Mixed Numbers—pp. 208–209 **Instruction** *12-5A Find Areas of Rectangles and Squares—Online
5.M.3: Develop and use formulas for the area of triangles, parallelograms and trapezoids. Solve real-world and other mathematical problems that involve perimeter and area of triangles, parallelograms and trapezoids, using appropriate units for measures.	**Instruction** 10-7 Perimeter—pp. 336–337 12-5 Square Measure—pp. 390–391 *12-5A Find Areas of Rectangles and Squares—Online 12-6 Areas of Rectangles and Squares—pp. 392–393 12-7 Areas of Parallelograms and Triangles—pp. 394–395 **Application** 12-14 Problem Solving Applications: Mixed Review—pp. 408–409 **Teacher's Edition** Strategic Intervention: 3. Estimate the area of irregular figures; 4. Find the area of figures—TE p. 381G Differentiated Instruction: Accelerated Learners: Perimeter and Floor Plans—TE p. 323J Differentiated Instruction: At Risk: Arrays to Find Area—TE p. 381J
5.M.4: Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths or multiplying the height by the area of the base.	**Instruction** 12-11 Volume—pp. 402–403 *12-11A Find Volume—Online 12-12 Estimate Volume—pp. 404–405
5.M.5: Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for right rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths to solve real-world problems and other mathematical problems involving shapes.	**Instruction** 12-11 Volume—pp. 402–403 *12-11A Find Volume—Online

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Measurement

Indiana Academic Standards: Mathematics: Grade 5	Sadlier *Progress in Mathematics*, Grade 5
5.M.6: Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems and other mathematical problems.	**Instruction** *12-11B Separate Solid Figures—Online

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Data Analysis and Statistics

Indiana Academic Standards: Mathematics: Grade 5	Sadlier *Progress in Mathematics*, Grade 5
5.DS.1: Formulate questions that can be addressed with data and make predictions about the data. Use observations, surveys, and experiments to collect, represent, and interpret the data using tables (including frequency tables), line plots, bar graphs, and line graphs. Recognize the differences in representing categorical and numerical data.	**Readiness** Skills Update: Make Pictographs—p. 18 Skills Update: Make Bar Graphs—p. 19 Skills Update: Equally/Not Equally Likely Outcomes—p. 20 Skills Update: List Outcomes—p. 21 **Instruction** 7-4 Collect and Organize Data—pp. 244–245 7-6 Graphing Sense—pp. 248–249 7-7 Line Plots—pp. 250–251 7-8 Histograms—pp. 252–253 7-9 Make Line Graphs—pp. 254–255 7-10 Interpret Circle Graphs—pp. 256–257 7-11 Problem Solving Strategy: Use a Model/Diagram—pp. 258–259 **Application** 7-12 Problem Solving Applications: Mixed Review—pp. 260–261 **Enrichment** Enrichment: Double Line and Double Bar Graphs—p. 263 **Teacher's Edition** Strategic Intervention Use a tally chart to make a pictograph; 4–5. Use data in a table to make a line plot and identify the range and median of the data—TE pp. 237F–237G English Language Learners: Graphing Sense; Collect and Organize Data—TE pp. 237H–237I Differentiated Instruction: At Risk: Use a Model/Diagram; Physically Impaired: Line Plots—TE p. 237J
5.DS.2: Understand and use measures of center (mean and median) and frequency (mode) to describe a data set.	**Instruction** 7-5 Range, Median, Mean and Mode—pp. 246–247 **Application** 7-7 Line Plots (median)—p. 251 9-8 Zeros in Division (mean, median, mode, and range)—p. 309 **Teacher's Edition** English Language Learners: Range, Median, Mean, and Mode—TE p. 237H