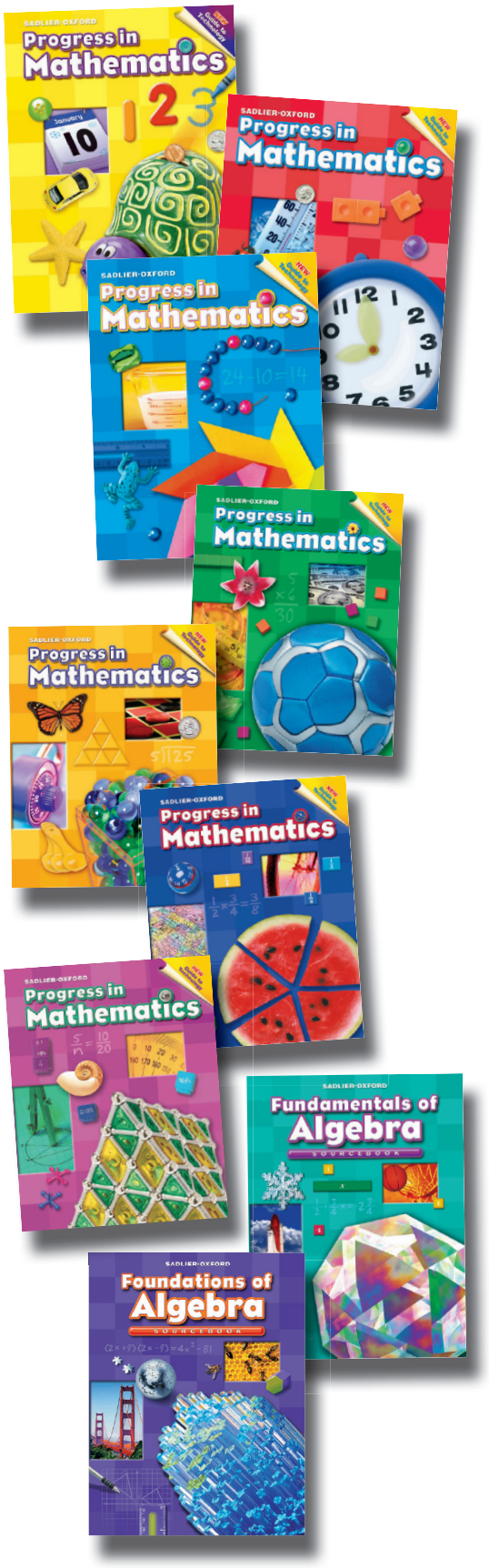

SADLIER

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Aligned to the

College & Career Ready Standards

Indiana

Academic Standards: Mathematics

Grade 4

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Number Sense

Indiana Academic Standards: Mathematics: Grade 4	Sadlier *Progress in Mathematics*, Grade 4
4.NS.1: Read and write whole numbers up to 1,000,000. Use words, models, standard form and expanded form to represent and show equivalent forms of whole numbers up to 1,000,000.	**Instruction** 1-1 Thousands—pp. 36-37 1-2 What is One Million?—pp. 38–39 1-3 Millions—pp. 40–41 1-4 Place Value—pp. 42–43 **Application** 1-13 Problem Solving Applications: Mixed Review—pp. 60–61
4.NS.2: Compare two whole numbers up to 1,000,000 using >, =, and < symbols.	**Instruction** 1-1 Thousands—pp. 36-37 1-4 Place Value—pp. 42–43 1-6 Compare and Order Whole Numbers—pp. 46–47 **Application** 1-13 Problem Solving Applications: Mixed Review—pp. 60–61
4.NS.3: Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. Name and write mixed numbers using objects or pictures. Name and write mixed numbers as improper fractions using objects or pictures.	**Instruction** *9-1B Decompose Fractions—Online
4.NS.4: Explain why a fraction, a/b, is equivalent to a fraction, (n × a)/(n × b), by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. [*In grade 4, limit denominators of fractions to 2, 3, 4, 5, 6, 8, 10, 25, 100.*]	**Instruction** *8-3A Model Equivalent Fractions—Online 8-4 Equivalent Fractions—pp. 272–273 8-5 Write Equivalent Fractions—pp. 274–275 8-7 Fractions: Lowest Terms—pp. 278–279 **Application** 8-12 Problem Solving Applications: Mixed Review—pp. 288–289
4.NS.5: Compare two fractions with different numerators and different denominators (e.g., by creating common denominators or numerators, or by comparing to a benchmark, such as 0, 1/2, and 1). Recognize comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions (e.g., by using a visual fraction model).	**Instruction** 8-2 Fractions on a Number Line—pp. 268–269 8-3 Estimate Fractions—pp. 270–271 8-4 Equivalent Fractions—pp. 272–273 *8-8A Compare Fractions Using Benchmarks—Online 8-9 Compare Fractions—pp. 282–283 8-10 Order Fractions—pp. 284–285 **Application** 8-12 Problem Solving Applications: Mixed Review—pp. 288–289
4.NS.6: Write tenths and hundredths in decimal and fraction notations. Use words, models, standard form and expanded form to represent decimal numbers to hundredths. Know the fraction and decimal equivalents for halves and fourths (e.g., 1/2 = 0.5 = 0.50, 7/4 = 1 3/4 = 1.75).	**Instruction** 13-1 Tenths and Hundredths—pp. 412–413 13-2 Decimals Greater Than One—pp. 414–415 13-3 Decimal Place Value—pp. 416–417
4.NS.7: Compare two decimals to hundredths by reasoning about their size based on the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions (e.g., by using a visual model).	**Instruction** *13-3A Compare Decimals with Models and Symbols—Online 13-4 Compare Decimals—pp. 418–419 13-5 Order Decimals—pp. 420–421

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Number Sense

Indiana Academic Standards: Mathematics: Grade 4	Sadlier *Progress in Mathematics*, Grade 4
4.NS.8: Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number.	**Instruction** 8-6 Factors—pp. 276–277 *9-6A Factor Pairs—Online *9-6B Prime and Composite Numbers—Online
4.NS.9: Use place value understanding to round multi-digit whole numbers to any given place value.	**Instruction** 1-10 Rounding—pp. 54–55 **Application** 1-5 Estimation—pp. 44–45 2-6 Mental Math—p. 79 2-7 Estimate Sums and Differences—pp. 80–81 2-8 Add and Subtract Money—pp. 82–83

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Computation

Indiana Academic Standards: Mathematics: Grade 4	Sadlier *Progress in Mathematics*, Grade 4
4.C.1: Add and subtract multi-digit whole numbers fluently using a standard algorithmic approach.	**Instruction** 2-9 Check Addition and Subtraction—pp. 84–85 3-2 Add with Regrouping—pp. 98–99 3-3 Four-Digit Addition—pp. 100–101 3-4 Add Larger Numbers—pp. 102–103 3-5 Three or More Addends—pp. 104–105 3-6 Subtract with Regrouping—pp. 106–107 3-7 Subtraction: Regroup Twice—pp. 108–109 3-8 Subtract Larger Numbers—pp. 110–111 3-9 Zeros in Subtraction—pp. 112–113 3-10 Addition and Subtraction Practice—pp. 114–115 **Application** 2-11 Problem Solving Applications: Mixed Review—pp. 88–89 3-12 Problem Solving Applications: Mixed Review—pp. 118–119
4.C.2: Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Describe the strategy and explain the reasoning.	**Instruction** 4-1 Multiplication Properties—pp. 126–127 4-2 Multiplication Models—pp. 128–129 4-3 Special Factors—pp. 130–131 4-4 Multiply by One-Digit Numbers—pp. 132–133 *4-5A Multiply with Models—Online 4-6 Multiply with Regrouping—pp. 136–137 *4-6A Use Mental Math to Multiply—Online 4-7 Multiply Three-Digit Numbers—pp. 138–139 4-9 Multiply Four-Digit Numbers—pp. 142–143 4-10 Patterns in Multiplication—pp. 144–145 *4-11A Multiply with Area Models—Online *4-11B Break Apart Numbers to Multiply—Online 4-12 Multiply by Two-Digit Numbers—pp. 148–149 4-13 More Multiplying by Two-Digit Numbers—pp. 150–151 *5-13A Multistep Problems & Bar Diagrams—Online
4.C.3: Find whole-number quotients and remainders with up to four-digit dividends and one- 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.	**Instruction** 5-2 Relate Multiplication and Division—pp. 166–167 *5-5A Use Models to Divide—Online 5-6 One-Digit Quotients—pp. 174–175 5-8 Two-Digit Quotients—pp. 178–179 5-9 More Two-Digit Quotients—pp. 180–181 5-10 Three-Digit Quotients—pp. 182–183 5-11 More Quotients—pp. 184–185 5-12 Zeros in the Quotient—pp. 186–187 5-13 Larger Numbers in Division—pp. 188–189 *5-13A Multistep Problems & Bar Diagrams—Online
4.C.4: Multiply fluently within 100.	**Instruction** 4-1 Multiplication Properties—pp. 126–127 4-2 Multiplication Models—pp. 128–129 4-3 Special Factors—pp. 130–131 4-4 Multiply by One-Digit Numbers—pp. 132–133 *4-5A Multiply with Models—Online 4-6 Multiply with Regrouping—pp. 136–137 *4-6A Use Mental Math to Multiply—Online 4-7 Multiply Three-Digit Numbers—pp. 138–139

Computation

Indiana Academic Standards: Mathematics: Grade 4	Sadlier *Progress in Mathematics*, Grade 4
	4-9 Multiply Four-Digit Numbers—pp. 142–143 4-10 Patterns in Multiplication—pp. 144–145 *4-11A Multiply with Area Models—Online *4-11B Break Apart Numbers to Multiply—Online 4-12 Multiply by Two-Digit Numbers—pp. 148–149 4-13 More Multiplying by Two-Digit Numbers—pp. 150–151 *5-13A Multistep Problems & Bar Diagrams—Online
4.C.5: Add and subtract fractions with common denominators. Decompose a fraction into a sum of fractions with common denominators. Understand addition and subtraction of fractions as combining and separating parts referring to the same whole.	**Instruction** *9-1A Use Models to Add Fractions—Online *9-1C Use Models to Subtract Fractions—Online
4.C.6: Add and subtract mixed numbers with common denominators (e.g. by replacing each mixed number with an equivalent fraction and/or by using properties of operations and the relationship between addition and subtraction).	**Instruction** *9-4A Add Mixed Numbers—Online *9-4B Subtract Mixed Numbers—Online 9-5 Add and Subtract Mixed Numbers—pp. 304–305
4.C.7: Show how the order in which two numbers are multiplied (commutative property) and how numbers are grouped in multiplication (associative property) will not change the product. Use these properties to show that numbers can by multiplied in any order. Understand and use the distributive property.	**Instruction** 4-1 Multiplication Properties—pp. 126–127 **Application** 4-2 Multiplication Models (associative)—pp. 128–129 4-4 Multiply by One-Digit Numbers (distributive)—pp. 132–133 *4-6A Use Mental Math to Multiply (distributive)—Online 5-3 Missing Numbers—pp. 168–169 *5-13A Multistep Problems & Bar Diagrams—Online

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Algebraic Thinking

Indiana Academic Standards: Mathematics: Grade 4	Sadlier *Progress in Mathematics*, Grade 4
4.AT.1: Solve real-world problems involving addition and subtraction of multi-digit whole numbers (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem).	**Instruction** 4-4 Multiply by One-Digit Numbers—pp. 132–133 4-7 Multiply Three-Digit Numbers—pp. 138–139 4-11 Products: Rounding to Estimate—pp. 146–147 5-5 Estimate in Division—pp. 172–173 5-6 One-Digit Quotients—pp. 174–175 5-8 Two-Digit Quotients—pp. 178–179 5-9 More Two-Digit Quotients—pp. 180–181 5-10 Three-Digit Quotients—pp. 182–183 5-11 More Quotients—pp. 184–185 5-12 Zeros in the Quotient—pp. 186–187 5-13 Larger Numbers in Division—pp. 188–189 *5-13A Multistep Problems & Bar Diagrams—Online 5-17 Problem Solving Strategy: Interpret the Remainder—pp. 196–197 6-13 Problem Solving Strategy: Use More Than One Step—pp. 230–231 12-2 Divisors: Multiples of Ten—pp. 384–385 12-3 Estimate Quotients—pp. 386–387 12-4 Two-Digit Dividends—pp. 388–389 12-5 Three-Digit Dividends—pp. 390–391 12-6 Trial Quotients—pp. 392–393 12-7 Greater Quotients—pp. 394–395 12-8 Four-Digit Dividends—pp. 396–397 12-10 Greater Dividends—pp. 400–401 12-11 Problem Solving Strategy: Use More Than One Step—pp. 402–403 14-1 Equations—pp. 442–443 **Application** 5-18 Problem Solving Applications: Mixed Review—pp. 198–199 12-12 Problem Solving Applications: Mixed Review—pp. 404–405
4.AT.2: Recognize and apply the relationships between addition and multiplication, between subtraction and division, and the inverse relationship between multiplication and division to solve real-world and other mathematical problems.	**Instruction** Skills Update: Meaning of Multiplication (repeated addition)—p. 7 Skills Update: Understand Division (repeated subtraction)—p. 10 Skills Update: Relate Multiplication and Division—p. 12 5-2 Relate Multiplication and Division—pp. 166–167 5-3 Missing Numbers—pp. 168–169 5-4 Number Patterns—pp. 170–171 *5-5A Use Models to Divide—Online 5-6 One-Digit Quotients—pp. 174–175 5-9 More Two-Digit Quotients—pp. 180–181 5-11 More Quotients—pp. 184–185 5-13 Larger Numbers in Division—pp. 188–189 *5-13A Multistep Problems & Bar Diagrams—Online 5-14 Divide Money—pp. 190–191

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Algebraic Thinking

Indiana Academic Standards: Mathematics: Grade 4	Sadlier *Progress in Mathematics*, Grade 4
	5-17 Problem Solving Strategy: Interpret the Remainder—pp. 196–197 5-18 Problem Solving Applications: Mixed Review—pp. 198–199
4.AT.3: Interpret a multiplication equation as a comparison (e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7, and 7 times as many as 5). Represent verbal statements of multiplicative comparisons as multiplication equations.	**Instruction** *4-1B Use Multiplication to Compare Numbers—Online
4.AT.4: Solve real-world problems with whole numbers involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem), distinguishing multiplicative comparison from additive comparison. [In grade 4, division problems should not include a remainder.]	**Instruction** *4-1B Use Multiplication to Compare Numbers—Online 4-15 Problem Solving Strategy: Work Backward—pp. 154–155 *5-4A Use Bar Diagrams—Online
4.AT.5: Solve real-world problems involving addition and subtraction of fractions referring to the same whole and having common denominators (e.g., by using visual fraction models and equations to represent the problem).	**Instruction** 9-1 Add Fractions: Like Denominators—pp. 296–297 *9-1A Use Models to Add Fractions—Online *9-1C Use Models to Subtract Fractions—Online 9-2 Subtract Fractions: Like Denominators—pp. 298–299 *9-2A Word Problems Involving Fractions—Online **Application** 9-12 Problem Solving Applications: Mixed Review—pp. 318–319
4.AT.6: Understand that an equation, such as $y = 3x + 5$, is a rule to describe a relationship between two variables and can be used to find a second number when a first number is given. Generate a number pattern that follows a given rule.	**Instruction** *4-1A Number Patterns—Online 5-4 Number Patterns—pp. 170–171 10-12 Problem Solving Strategy: Find a Pattern—pp. 348–349 14-3 Functions—pp. 446–447 **Teacher's Edition** English Language Learners: Number Patterns—TE p. 163I

Geometry

Indiana Academic Standards: Mathematics: Grade 4	Sadlier *Progress in Mathematics*, Grade 4
4.G.1: Identify, describe, and draw parallelograms, rhombuses, and trapezoids using appropriate tools (e.g., ruler, straightedge and technology).	**Instruction** 10-6 Quadrilaterals—pp. 336–337 **Teacher's Edition** English Language Learners: Quadrilaterals—TE p. 325H Differentiated Instruction: Accelerated Learners: Polygons—TE p. 325J
4.G.2: Recognize and draw lines of symmetry in two-dimensional figures. Identify figures that have lines of symmetry.	**Instruction** *10-7A Symmetry—Online **Application** 10-12 Problem Solving Strategy: Find a Pattern—pp. 348–349
4.G.3: Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint.	**Instruction** 10-1 Points, Lines, and Line Segments—pp. 326–327 10-2 Rays and Angles—pp. 328–329 **Teacher's Edition** Strategic Intervention: 2. Distinguish between parallel and intersecting lines—TE p. 325F English Language Learners: Rays and Angles—TE p. 325G Differentiated Instruction: Inclusion: Rays and Angles—TE p. 325J
4.G.4: Identify, describe, and draw rays, angles (right, acute, obtuse), and perpendicular and parallel lines using appropriate tools (e.g., ruler, straightedge and technology). Identify these in two-dimensional figures.	**Instruction** 10-2 Rays and Angles—pp. 328–329 10-3 Parallel and Perpendicular Lines—pp. 330–331 **Teacher's Edition** Strategic Intervention: 2. Distinguish between parallel and intersecting lines—TE p. 325F English Language Learners: Rays and Angles; Parallel and Perpendicular Lines—TE p. 325G Differentiated Instruction: Inclusion: Rays and Angles—TE p. 325J
4.G.5: Classify triangles and quadrilaterals based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles (right, acute, obtuse).	**Readiness** 10-2 Rays and Angles—pp. 328–329 10-3 Parallel and Perpendicular Lines—pp. 330–331 **Instruction** 10-6 Quadrilaterals—pp. 336–337 10-7 Triangles—pp. 338–339

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Measurement

Indiana Academic Standards: Mathematics: Grade 4	Sadlier *Progress in Mathematics*, Grade 4
4.M.1: Measure length to the nearest quarter- inch, eighth-inch, and millimeter.	**Instruction** 6-1 Measure with Inches (nearest quarter inch)—pp. 206–207 6-6 Measure with Metric Units (nearest decimeter)—pp. 216–217 **Teacher's Edition** English Language Learners: Measure with Inches, Measure with Metric Units—TE p. 205H Differentiated Instruction: Physically Impaired: Measure with Inches, Measure with Metric Units—TE p. 205J
4.M.2: Know relative sizes of measurement units within one system of units, including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec. Express measurements in a larger unit in terms of a smaller unit within a single system of measurement. Record measurement equivalents in a two-column table.	**Instruction** 6-2 Rename Units of Length—pp. 208–209 6-3 Compute Customary Units—pp. 210–211 6-4 Customary Units of Capacity—pp. 212–213 6-5 Customary Units of Weight—pp. 214–215 6-6 Measure with Metric Units—pp. 216–217 6-7 Work with Metric Units—pp. 218–219 6-8 Metric Units of Capacity—pp. 220–221 6-9 Metric Units of Mass—pp. 222–223 6-11 Time—pp. 226–227 6-12 Elapsed Time—pp. 228–229 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
4.M.3: Use the four operations (addition, subtraction, multiplication and division) to solve real-world problems involving distances, intervals of time, volumes, masses of objects, and money. Include addition and subtraction problems involving simple fractions and problems that require expressing measurements given in a larger unit in terms of a smaller unit.	**Instruction** 2-8 Add and Subtract Money—pp. 82–83 4-8 Multiply Money—pp. 140–141 4-12 Multiply by Two-Digit Numbers—pp. 148–149 5-14 Divide Money—pp. 190–191 6-2 Rename Units of Length—pp. 208–209 6-3 Compute Customary Units—pp. 210–211 6-4 Customary Units of Capacity—pp. 212–213 6-5 Customary Units of Weight—pp. 214–215 6-6 Measure with Metric Units—pp. 216–217 6-7 Work with Metric Units—pp. 218–219 6-8 Metric Units of Capacity—pp. 220–221 6-9 Metric Units of Mass—pp. 222–223 *6-9A Represent Measures on a Number Line—Online 6-12 Elapsed Time—pp. 228–229 6-13 Problem Solving Strategy: Use More Than One Step—pp. 230–231 6-14 Problem Solving Applications: Mixed Review—pp. 232–233 13-10 Divide with Money—pp. 430–431

Measurement

Indiana Academic Standards: Mathematics: Grade 4	Sadlier *Progress in Mathematics*, Grade 4
4.M.4: Apply the area and perimeter formulas for rectangles to solve real-world problems and other mathematical problems involving shapes. Recognize area as additive and find the area of complex shapes composed of rectangles by decomposing them into non-overlapping rectangles and adding the areas of the non- overlapping parts; apply this technique to solve real-world problems and other mathematical problems involving shapes.	**Readiness** Skills Update: Perimeter—p. 20 Skills Update: Area—p. 24 **Instruction** 11-1 Use Perimeter Formulas—pp. 358–359 11-2 Use Area Formulas—pp. 360–361 11-3 Perimeter and Area—pp. 362–363 *11-3A Perimeter and Area Formulas—Online **Application** 11-9 Problem Solving Applications: Mixed Review—pp. 374–375
4.M.5: Understand that an angle is measured with reference to a circle, with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. Understand an angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure other angles. Understand an angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees.	**Instruction** *10-1A Angle Measure—Online 10-2 Rays and Angles—pp. 328–329
4.M.6: Measure angles in whole-number degrees using appropriate tools. Sketch angles of specified measure.	**Instruction** 10-2 Rays and Angles—pp. 328–329 *10-2A Measure Angles—Online

Data Analysis

Indiana Academic Standards: Mathematics: Grade 4	Sadlier *Progress in Mathematics*, Grade 4
4.DA.1: Formulate questions that can be addressed with data. Use observations, surveys, and experiments to collect, represent, and interpret the data using tables (including frequency tables), line plots, and bar graphs.	**Readiness** Skills Update: Record and Organize Data—p. 25 Skills Update: Graphing Sense—p. 26 **Instruction** 7-1 Pictographs—pp. 240–241 7-2 Bar Graphs—pp. 242–243 7-3 Line Graphs—pp. 244–245 7-4 Surveys and Line Plots—pp. 246–247 **Application** 7-9 Problem Solving Strategy: Use a Diagram/Graph—pp. 256–257 7-10 Problem Solving Applications: Mixed Review—pp. 258–259 **Enrichment** Double Bar Graphs—p. 261 **Teacher's Edition** Strategic Intervention: 1. Make a bar graph from a tally chart; 2. Interpret data in a line graph—TE p. 239F English Language Learners: Pictographs; Line Graphs; Surveys and Line Plots; Bar Graphs—TE pp. 239H–239I Differentiated Instruction: At Risk: Pictographs (find median from pictograph); Physically Impaired: Bar Graphs; Inclusion: Surveys and Line Plots; Visually Impaired: Line Graphs—TE p. 239J
4.DA.2: Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using data displayed in line plots.	**Instruction** 7-4 Surveys and Line Plots—pp. 246–247 *9-5A Organize Measurement Data—Online
4.DA.3: Interpret data displayed in a circle graph.	**Instruction** 7-5 Circle Graphs—pp. 248–249

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