

Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students demonstrate number sense, including an understanding of number systems and operations and how they relate to one another. Students compute fluently and make reasonable estimates using paper and pencil, technology-supported and mental methods. Benchmark: B. Compare, order and convert among fractions, decimals and percents. D. Use models and pictures to relate concepts of ratio, proportion and percent. Content Organizer: <i>Number and Number Systems</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>1. Use models and visual representation to develop the concept of ratio as part-to-part and part-to-whole, and the concept of percent as part-to-whole.</p>	<p>A. Houghton Mifflin Overhead Activity 11-1. Model to students using overhead counters to model ratios to students. Houghton Mifflin Practice p. 139</p> <ul style="list-style-type: none"> • Have students in pairs use colored cubes to model ratios. One student models the ratio, while the other student writes the ration students also can say the ration while the other models it. • Have students find the ratio of boys to girls in class. Teacher to students ratio at different grade levels. <p>B. Houghton Mifflin Overhead Activity 11-6. Model the meaning of percent to students.</p> <ul style="list-style-type: none"> • Have students outline a 10x10 area on grid paper. Using 4 different colored pencils have students color in a determined amount of squares for each color. Students then determine the ratio of each color to the whole and write the percent of each ration. <p>Houghton Mifflin Practice p. 144-145 Houghton Mifflin Challenge p. 144-145</p> <p>C. Accelerated Math objectives 172, 177-180</p>	<p>A. Houghton Mifflin text p. 518-519</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 11-1 • Houghton Mifflin Practice Workbook p. 139 • Colored cubes <p>B. Houghton Mifflin text p. 530-533</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 11-6 • Houghton Mifflin Practice p. 144 • Houghton Mifflin Challenge p. 144 • Centimeter Grid Paper • Colored Pencils 4 different colors per pair of students. • Ruler <p>C. Accelerated Math Program</p>	<p>A. Houghton Mifflin text p. 535 Show What You Know</p> <ul style="list-style-type: none"> • Have students use manipulatives to model a ration given. • Have students write the ratio of models provided • Houghton Mifflin Quick Check p. 528 <p>B. Houghton Mifflin test p. 535 Show What You Know</p> <ul style="list-style-type: none"> • Have students write the ratio of grids with shaded amounts. • Given ratio, have students color in a grid to represent the ratio or ratios provided <p>C. Accelerated Math test objectives 172, 177-180</p>

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks. 14

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<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
2. Use various forms of “one” to demonstrate the equivalence of fractions; e.g., $\frac{18}{24} = \frac{9}{12} \times \frac{2}{2} = \frac{3}{4} \times \frac{6}{6}$.	A. Houghton Mifflin Overhead Activity 7-8. Use number lines to show students how to find equivalent fractions. <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 86 • Houghton Mifflin Challenge p. 86 • Houghton Mifflin text p. 318-319 • Show students how to multiply the numerator and the denominator by the same number to obtain a equivalent fraction. B. Teacher Resource Book p. 30 Have students cut out fraction pieces. Students use pieces to identify equivalent fractions. C. Teacher Resource Book p. 31-32. Students use fraction circle and fraction squares to determine equivalent fractions. D. Accelerated math Objectives 87-88	A. Houghton Mifflin p. 318-319 <ul style="list-style-type: none"> • Overhead Teaching Activity 7-8 • Houghton Mifflin Practice Workbook p. 86 • Houghton Mifflin Challenge Workbook p. 86 B. Teacher Resource Book p. 30 <ul style="list-style-type: none"> • Scissors C. Teacher Resource Book p. 31-32 <ul style="list-style-type: none"> • Scissors D. Accelerated Math Program	A. Houghton Mifflin Chapter 7 test p. 358 <ul style="list-style-type: none"> • Provide students with a list of fractions. Have students find equivalent fractions by multiplying by 1, ex $\frac{2}{2}$, $\frac{3}{3}$, etc. B. Provide students with a list of fractions. Have students use their fraction pieces to find a equivalent fraction. C. Have students identify equivalent fractions of a list of fractions provided by using their fraction circles and squares. D. Accelerated math test over objectives 87-88.

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<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>3. Identify and generate equivalent forms of fractions, decimals and percents.</p>	<p>A. Houghton Mifflin pp. 536-537</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 11-8 Teach students how to use express a percent as a ratio, then as a decimal. • Houghton Mifflin Practice 11-8 • Houghton Mifflin Challenge 11-8 <p>With a partner, students play a concentration game to identify decimal and percent equivalents.</p> <p>B. Houghton Mifflin pp. 538-539</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 11-9 use a place value chart to compare fractions, decimals and percents. • Houghton Mifflin Practice p. 147 <p>Students learn how to use a number line to make comparisons and find equivalent fractions.</p> <p>C. Color in different amounts of squares on 10 x 10 grid paper. Do several of these. Have students write the percent, fraction and decimal number for the amount of squares colored.</p> <p>D. Students play concentration on p. 553 with a partner.</p> <p>E. Accelerated Math objectives 169-171, 175-176.</p>	<p>A. Houghton Mifflin text p. 536-537</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 11-8 • Houghton Mifflin Challenge p. 146 • 24 Index cards per pair of students. <p>B. Houghton Mifflin text p. 538-539</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 11-9 • Houghton Mifflin Practice Workbook p. 147 <p>C. Teacher Resource Book p. 14</p> <ul style="list-style-type: none"> • Crayons or colored pencils to color in squares. • 10 x 10 Grid paper <p>D. Houghton Mifflin text p. 553 Teacher Resource book p. 11 (copies for students)</p> <p>E. Accelerated Math Program</p>	<p>A. Houghton Mifflin Chapter test p. 564-565</p> <p>B. Have students use a number line or place value chart to find equivalent forms of fractions, decimals, and percents.</p> <p>C. Have students write the percent, fraction and decimal form of a grid with different amount of squares colored in.</p> <p>E. Accelerated math test over objectives 169-171, 175-176.</p>

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<p>Content Standard: Students demonstrate number sense, including an understanding of number systems and operations and how they relate to one another. Students compute fluently and make reasonable estimates using paper and pencil, technology-supported and mental methods.</p> <p>Benchmark: I. Use a variety of strategies, including proportional reasoning, to estimate, compute, solve and explain solutions to problems involving integers, fractions, decimals and percents.</p> <p>Content Organizer: <i>Number and Number Systems</i></p>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>4. Round decimals to a given place value and round fractions (including mixed numbers) to the nearest half.</p>	<p>A. Houghton Mifflin Overhead Teaching Activity 1-10. Model how to use a number line to round decimals. Finding the place you want to round to, Look to the digit to its right, it is 5 or more then you round.</p> <ul style="list-style-type: none"> • Houghton Mifflin pp. 28-29 • Houghton Mifflin Challenge 1-10 p. 10 <p>Students use information provided to find the possibilities for missing digits.</p> <p>B. Using 4 sets of cards labeled 0-9, have students pick 4 cards to form a decimal in thousandths. Then round the decimal to the nearest tenth and hundredth.</p> <p>C. Accelerated Math Objectives 56, 67-69, 77-78.</p>	<p>A. Houghton Mifflin pp. 28-29, 403</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead 1-10 • Houghton Mifflin Challenge workbook p. 10 • Houghton Mifflin Practice workbook p. 10 • Houghton Mifflin Assessment and guide p. 10, 13. <p>B. Index cards</p> <p>C. Accelerated math program</p>	<p>A. Houghton Mifflin Quick check p. 36</p> <p>Houghton Mifflin Chapter test pp. 44-45</p> <p>Houghton Mifflin Assessment guide p. 10, 13</p> <p>C. Accelerated math test over objectives 56, 67-69, 77-78</p>

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<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
5. Recognize and identify perfect squares and their roots.	<p>A. Overhead teaching activity lesson 1-2. Model how to read and write numbers with exponents. Houghton Mifflin text pp. 6-7.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 1-2 • Houghton Mifflin Challenge 1-2 <p>B. Use the square coin activity in <u>Hands On Math</u></p> <ul style="list-style-type: none"> • Use pennies and a calculator • Have students do the hands on activity to help explain square roots <p>C. Accelerated math objective 41</p>	<p>A. Houghton Mifflin pp. 6-7</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 1-2 • Houghton Mifflin Practice workbook p. 2 • Houghton Mifflin Challenge workbook p. 2 <p>B. Hands on Math p. 22-23 Appendix 1</p> <ul style="list-style-type: none"> • Pennies • Calculators <p>C. Accelerated Math Program</p>	<p>A. Houghton Mifflin Quick check p. 22 Houghton Mifflin chapter test p. 44-45</p> <p>B. Use further investigations hand on math appendix 7.</p> <p>C. Accelerated math test over objective 41.</p>

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<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>6. Represent and compare numbers less than 0 by extending the number line and using familiar applications; e.g., temperature, owing money.</p>	<p>A. Houghton Mifflin text pp. 32-33</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 1-12 Model to students how to compare positive and negative integers. • Students locate integers on a number line. Then compare the farthest to the left is least, and the integer farthest to the right is the greatest. • Challenge 1-12 Students use a number line to follow directions to find a bug's final locations. <p>B. Accelerated math objective 84, 129</p>	<p>A. Houghton Mifflin pp. 32-33, 339</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead 1-12 • Houghton Mifflin Challenge 12 <p>B. Accelerated Math Program</p>	<p>A. Houghton Mifflin Quick check p. 36 Houghton Mifflin Chapter test p. 44-45</p> <p>B. Accelerated Math test over objective 84, 129</p>

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<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>7. Use commutative, associative, distributive, identity and inverse properties to simplify and perform computations.</p>	<p>A. Houghton Mifflin Overhead teaching activity for lesson 3-1. Model how to use the distributive property to multiply equations.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 3-1 <p>B. Houghton Mifflin Overhead activity 3-3 Model to students how to multiply numbers that contain zero and check using the distributive property.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 3-3 <p>C. Houghton Mifflin Overhead activity 4-12 Model to students how to write an algebraic expression and explaining the commutative property.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 4-12 • On page 165 students match equations to the correct property. <p>D. Accelerated math objectives 19, 38</p>	<p>A. Houghton Mifflin p. 96-97</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 3-1 • Houghton Mifflin practice workbook p. 25 • Grid paper • Straight edge • Colored pencils <p>B. Houghton Mifflin p. 100-101</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 3-3 • Houghton Mifflin practice workbook p. 27 <p>C. Houghton Mifflin p. 162-165</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 4-12 • Houghton Mifflin practice workbook p. 45 <p>D. Accelerated math program</p>	<p>A. Houghton Mifflin Quick check p. 104</p> <p>B. Houghton Mifflin Quick check p. 104</p> <p>C. Houghton Mifflin Quick check p. 176 Houghton Mifflin chapter test p. 184-185</p> <p>D. Accelerated math test over objectives 19, 38</p>

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<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>8. Identify and use relationships between operations to solve problems.</p>	<p>A. Houghton Mifflin overhead activity 2-2 Model to students how to subtract whole numbers up to five digits.</p> <ul style="list-style-type: none"> • Houghton Mifflin practice 2-2 <p>B. Houghton Mifflin overhead activity Model how to divide with one digit divisors</p> <ul style="list-style-type: none"> • Students use division to solve problems on Houghton Mifflin text p. 135 • Houghton Mifflin practice 4-1 <p>C. Houghton Mifflin overhead activity Model when to put zeros in the quotient.</p> <ul style="list-style-type: none"> • Houghton Mifflin text p. 137 Student • Solve problems using division • Houghton Mifflin Practice 4-2 <p>D. Houghton Mifflin overhead activity Model how to divide a fraction with a numerator of 1.</p> <ul style="list-style-type: none"> • Students solve division of fraction problems on Houghton Mifflin text p. 379 • Houghton Mifflin practice 8-5 • Houghton Mifflin text p. 379 • Houghton Mifflin text p. 389 Students play division scramble with a partner. <p>E. Houghton Mifflin overhead activity Model how to divide a decimal by a whole number.</p> <ul style="list-style-type: none"> • Houghton Mifflin practice 9-7 <p>F. Accelerated math objectives 26-28, 42-44, 79-82</p>	<p>A. Houghton Mifflin p. 54-55</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 2-2 • Houghton Mifflin practice workbook p. 15 <p>B. Houghton Mifflin p. 134-135</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 4-1 • Houghton Mifflin Practice workbook p. 34 <p>C. Houghton Mifflin text p. 136-137</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 4-2 • Houghton Mifflin Practice workbook p. 35 <p>D. Houghton Mifflin p. 378-379</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 8-5 • Houghton Mifflin Practice workbook p. 107 • For division scramble game use teacher resource book p. 2 and 8 <p>E. Houghton Mifflin p. 422-423</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 9-7 • Houghton Mifflin Practice workbook p. 115 <p>F. Accelerated Math Program</p>	<p>A. Houghton Mifflin Quick Check p. 64</p> <p>B. Houghton Mifflin Quick Check p. 144 Houghton Mifflin Quick Check p. 160 Houghton Mifflin Chapter Test p. 184-185</p> <p>C. Houghton Mifflin Quick Check p. 144 Houghton Mifflin Quick Check p. 160 Houghton Mifflin Chapter Test p. 184-185</p> <p>D. Houghton Mifflin Quick Check p. 392 Houghton Mifflin Chapter test p. 400-401</p> <p>E. Houghton Mifflin Quick Check p. 438 Houghton Mifflin Chapter test p. 446-447</p> <p>F. Accelerated math test over objectives 26-28, 44, 79, 80-82</p>

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<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
9. Use order of operations, including use of parentheses, to simplify numerical expressions.	A. Houghton Mifflin Overhead activity Model to students how to simplify expressions. <ul style="list-style-type: none"> • Houghton Mifflin Practice 2-7 Students simplify expressions and equations and solve problems. • Houghton Mifflin Challenge 2-7 Students write then match with other expressions. B. Accelerated Math Objectives 19, 38	A. Houghton Mifflin p. 66-69 <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 2-7 • Houghton Mifflin Practice workbook p. 20 • Houghton Mifflin Challenge workbook p. 20 B. Accelerated Math Program	A. Houghton Mifflin Quick Check p. 80 Houghton Mifflin Chapter test p. 88-89 B. Accelerated Math Tests on objectives 19 and 38

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<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>10. Justify why fractions need common denominators to be added or subtracted.</p>	<p>A. Overhead teaching activity Model how to add and subtract fractions that have different denominators.</p> <ul style="list-style-type: none"> • Students use fraction strips to model the addition of fractions with unlike denominators. • Students use fraction squares to find common pieces that can be added or subtracted. • Houghton Mifflin Practice 7-14 • Houghton Mifflin Challenge 7-14 <p>B. Complete explorations p. 13-15 in <u>Fractions and Decimals</u>. After completing each exploration, students will explain why then need to compute common denominators in order to add and subtract fractions.</p> <p>C. Accelerated Math objectives 99-101, 104-108</p>	<p>A. Houghton Mifflin p. 332-333</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead 7-14 • Houghton Mifflin teacher resource book p. 30 copies for students • Fraction strips • Scissors • Houghton Mifflin teacher resource book p. 32 copies for students. • Houghton Mifflin Practice Workbook p. 92 • Houghton Mifflin Challenge Workbook p. 92 <p>B. <u>Fractions and Decimals</u> p. 13-18 (Appendix 3)</p> <ul style="list-style-type: none"> • Houghton Mifflin teacher resource book p. 30 Fraction Pieces <p>C. Accelerated Math Program</p>	<p>A. Houghton Mifflin Quick check p. 350</p> <ul style="list-style-type: none"> • Houghton Mifflin Chapter test p. 358-359 <p>C. Accelerated Math test over objectives 99-101, 104-108</p>

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<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
13. Estimate the results of computations involving whole numbers, fractions and decimals, using a variety of strategies.	A. Houghton Mifflin overhead activity 2-1 Model to students how to estimate sums using a 4 step methods. <ul style="list-style-type: none"> • Houghton Mifflin Practice 2-1 B. Houghton Mifflin overhead activity 2-2 Model how to estimate differences <ul style="list-style-type: none"> • Houghton Mifflin Practice 2-2 C. Houghton Mifflin overhead activity 3-2 Students multiply one digit numbers and estimate to check. <ul style="list-style-type: none"> • Houghton Mifflin Practice 3-2 • Houghton Mifflin Practice 3-4 D. Houghton Mifflin overhead activity 3-8 Model how to multiply by a two digit number and check by estimating. <ul style="list-style-type: none"> • Houghton Mifflin Practice 3-8 E. Houghton Mifflin overhead activity 4-3 Model using 2 step method how to estimate quotients. <ul style="list-style-type: none"> • Houghton Mifflin Practice 4-3 F. Houghton Mifflin overhead activity 4-8, 4-9 Model how to adjust on estimated quotient that is too large or too small. <ul style="list-style-type: none"> • Houghton Mifflin Practice 4-8, 4-9 G. Houghton Mifflin overhead activity 4-10 Model how to divide a two digit number into a dividend. <ul style="list-style-type: none"> • Houghton Mifflin Practice 4-10 • Students play quotient quest estimation game on p. 157 H. Houghton Mifflin overhead activity 9-2 estimate product I. Accelerated Math objectives 20-23, 33-35, 39-40, 45-46, 48-49, 52-53	A. Houghton Mifflin p. 52-53 <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 2-1 • Houghton Mifflin Practice 2-1 p. 14 B. Houghton Mifflin p. 54-55 <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 2-2 • Houghton Mifflin Practice 2-2 p. 15 C. Houghton Mifflin pp. 98-99, 102-103 <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 3-2 • Houghton Mifflin Practice 2-1 p. 26 & 28 D. Houghton Mifflin p. 114-115 <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 3-8 • Houghton Mifflin Practice 3-8 p. 32 E. Houghton Mifflin p.138-139 <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 4-3 • Houghton Mifflin Practice p. 36 F. Houghton Mifflin p. 150-153 <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 4-8, 4-9 • Houghton Mifflin Practice p. 41-42 G. Houghton Mifflin p. 154-157 <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 4-10 • Houghton Mifflin Practice p. 43 • Houghton Mifflin Teacher Resource book p. 3-4 copies for students • Scissors H. Houghton Mifflin text p. 410-411 <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 9-2 • Houghton Mifflin Practice 9-2 Houghton Mifflin Workbook p. 110 I. Accelerated Math Program	A. Houghton Mifflin Quick Check p. 64 Houghton Mifflin Chapter test p. 88 B. Houghton Mifflin Quick Check p. 64 Houghton Mifflin Chapter test p. 88 C. Houghton Mifflin Quick Check p. 104 D. Houghton Mifflin Quick Check p. 118 Houghton Mifflin Chapter test p. 126-127 E. Houghton Mifflin Quick Check p. 144 Houghton Mifflin Chapter test p. 184-185 F. Houghton Mifflin Quick Check p. 160 Houghton Mifflin Chapter test p. 184-185 G. Houghton Mifflin Quick Check p. 160 Houghton Mifflin Chapter test p. 184-185 H. Houghton Mifflin Quick Check p. 418 I. Accelerated Math Test over objectives 20-23, 33-35, 39-40, 45-46, 48-49, 52-53

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks. 26

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Adams County/Ohio Valley
Course of Study

<p>Content Standard: Students estimate and measure to a required degree of accuracy and precision by selecting and using appropriate units, tools and technologies. Benchmark: A. Select appropriate units to measure angles, circumference, surface area, mass and volume, using: U.S. customary units; e.g., degrees, square feet, pounds, and other units as appropriate; Metric units; e.g., square meters, kilograms and other units as appropriate. E. Use problem solving techniques and technology as needed to solve problems involving length, weight, perimeter, area, volume, time and temperature. F. Analyze and explain what happens to area and perimeter or surface area and volume when the dimensions of an object are changed.</p> <p>Content Organizer: Measurement Units</p>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>1. Identify and select appropriate units to measure angles; i.e., degrees.</p>	<p>A. Students use a protractor to measure angles provided using a three step method. 1. Place the center mark of protractor on the vertex. 2. Align the 0 degree mark of one of the protractor scales with one ray of the angle to be measured. 3. Find where the other ray passes through the same scale. Read the measure of the angle on that scale.</p> <ul style="list-style-type: none"> • Overhead activity 10-2 • Practice 10-2 • Challenge 10-2 Students use a protractor to draw angles described. • Reteach 10-2 <p>B. Students use a Angle Ruler to measure angles using instructions on p. 30-31. Students use a map and a angle ruler to measure the angles of Amelia Earharts historic crash. Students discover how many degrees off course Earharts crash site was from her intended destination.</p> <ul style="list-style-type: none"> • Students use a shape set and measure each angle of each shape. <p>C. Accelerated Math Objective 135</p>	<p>A. Houghton Mifflin text pp. 456-459</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 10-2 • Protractor • Houghton Mifflin Practice Workbook p. 122 • Houghton Mifflin Challenge Workbook p. 122 • Houghton Mifflin Reteach workbook p. 122 • Protractor <p>B. Connected math shapes and design text p. 32-34</p> <ul style="list-style-type: none"> • Angle Rulers • Shape Set p. 129-130 • Transparency 3.5-3.6 on p. 115-116 • Lab sheet 3.6 p. 102 <p>C. Accelerated Math Program</p>	<p>A. Quick Check p. 468</p> <ul style="list-style-type: none"> • Chapter test p. 510-511 • Have students measure angles of selected objects in the classroom. ie. Angle of door opening, angle of a shape on a poster, etc. <p>B. Connected math shapes and design test p. 85. Students measure each angle on different shapes.</p> <p>C. Accelerated math objective 135 test.</p>

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Adams County/Ohio Valley
Course of Study

Content Standard: Students estimate and measure to a required degree of accuracy and precision by selecting and using appropriate units, tools and technologies. Benchmark: F. Analyze and explain what happens to area and perimeter or surface area and volume when the dimensions of an object are changed. E. Use problem solving techniques and technology as needed to solve problems involving length, weight, perimeter, area, volume, time and temperature. Content Organizer: Measurement Units			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>2. Identify paths between points on a grid or coordinate plane and compare the lengths of the paths; e.g., shortest path, paths of equal length.</p>	<p>A. Houghton Mifflin transparency 12-2 Model to students how to locate and graph points on a coordinate plane describing the x-coordinate horizontal axis and the vertical axis y-coordinate. Explain that the 1st number in a ordered pair is the x-coordinate is the first number the y-coordinate is the y-coordinate. Model to students how to identify the length of a path of a point. Ex. Point (4, 2), Count 4 over to the right, 2 up. The path would be 6. This is called the practical distance.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 12-2 Students write the ordered pair for selected points on the graph. • Houghton Mifflin p. 577 Students play "Where's The Space" with a partner. Students try to find the others space craft by naming coordinates teaching too 1-p. 12 • Given several sets of ordered pairs, students plot the points on a coordinate plane, then count the paths of each point and compare the paths of each. <p>B. Connected math shapes and designs p. 29, students play "Four in a Row".</p> <p>C. Accelerated Math objective 144</p>	<p>A. Houghton Mifflin pp. 574-577</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice workbook 12-2 • Houghton Mifflin overhead teaching activity 12-2 • Colored pencils • Houghton Mifflin Assessment Guide p. 96-98 • Houghton Mifflin teacher resource book p. 12, 15 copies of p. 16 for students. <p>B. Connect math shapes and designs text.</p> <ul style="list-style-type: none"> • Labsheet 3.4 p. 100 • Transparency 3.4 p. 114 <p>C. Accelerated Math Program</p>	<p>A. Identify points on a coordinate graph. Have students identify the length of each path, then place the points in order form least to greatest concerning the length of their path on the coordinate plane.</p> <ul style="list-style-type: none"> • Quick check p. 582 • Chapter test p. 600 • Chapter 12 multiplication choice test p. 96-98 • Chapter 12 Free response test p. 94-95 • Houghton Mifflin assessment Guide p. 94-98 <p>C. Accelerated objective 144 test</p>

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Course of Study

Content Standard: Students estimate and measure to a required degree of accuracy and precision by selecting and using appropriate units, tools and technologies. Benchmark: F. Analyze and explain what happens to area and perimeter or surface area and volume when the dimensions of an object are changed. G. Understand and demonstrate the independence of perimeter and area for two-dimensional shapes and of surface area and volume for three-dimensional shapes. Content Organizer: Measurement Units			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>3. Demonstrate and describe the differences between covering the faces (surface area) and filling the interior (volume) of three-dimensional object.</p>	<p>A. Overhead teaching activity 10-16</p> <ul style="list-style-type: none"> • Students cut out copies of nets which can be folded to make a solid figure. Students fold, identify how many faces the solid has. Finds the area of each face, then add the area of all of the faces to find the surface area. • Guided & Independent practice p. 496 • Students use small cubes to build solid figures and have a partner identify the surface area. • Houghton Mifflin Practice 10-16 • Houghton Mifflin Challenge 10-16 <p>B. Overhead teaching activity 10-17</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 10-17 • Houghton Mifflin Challenge 10-17 • Have students find the surface area and volume of different containers; ie. Milk cartons, cereal boxes, popcorn boxes, etc. then compare the differences of the surface area and volume of each. <p>C. Accelerated Math Objectives 151-154</p>	<p>A. Houghton Mifflin pp. 494-497</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead teaching activity 10-16 • Houghton Mifflin overhead teaching activities 10-16. • Houghton Mifflin practice workbook 10-16 • Manipulatives • Cubes • Copies of p. 165 for students (In Transparency Blackline Master Book) <p>B. Houghton Mifflin pp. 498-499</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead teaching activity 10-17 • Houghton Mifflin Practice Workbook 10-17 • Houghton Mifflin Challenge Workbook 10-17 • Several empty containers, ie. Milk cartons, cereal boxes, any type of box which held dry food from grocery store. <p>C. Accelerated math program</p>	<p>A. Quick Check p. 502</p> <ul style="list-style-type: none"> • Chapter 10 test p. 510-511 • Have students find the surface area of several different rectangular prisms made from cubes. • Have students cut out different nets, fold to make a solid, then find the surface area. • Have students find the surface area of empty boxes. <p>B. Quick check p. 502</p> <ul style="list-style-type: none"> • Chapter 10 test p. 510-511 • Have students find the volume of rectangular prisms made from cubes. • Have students find the volume of empty boxes. • Have students find both the surface area and volume of selected cartons describe the differences between them. <p>C. Test on objectives 151-154, on accelerated math program.</p>

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Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students estimate and measure to a required degree of accuracy and precision by selecting and using appropriate units, tools and technologies. Benchmark: F. Analyze and explain what happens to area and perimeter or surface area and volume when the dimensions of an object are changed. G. Understand and demonstrate the independence of perimeter and area for two-dimensional shapes and of surface area and volume for three-dimensional shapes. Content Organizer: Use Measurement Techniques and Tools			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>4. Demonstrate understanding of the differences among linear units, square units and cubic units.</p>	<p>A. Houghton Mifflin overhead activity 10-12. Model how to find the perimeter and the area of a complex figure by using the activity for lesson 10-12. p. 486-487 Houghton Mifflin.</p> <p>B. Houghton Mifflin overhead activity 10-16. Model how to recognize which nets can be folded into a cube. p. 494-497 Houghton Mifflin text.</p> <p>C. Houghton Mifflin overhead activity 10-17 Model how to find the volume of rectangular prisms and cubes.</p> <ul style="list-style-type: none"> • Houghton Mifflin 498-499 • Work through exercise on p. 499. Have students explain how they found their answers. <p>D. Accelerated Math Objectives 145-150</p>	<p>A. Houghton Mifflin pp. 486-487</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 10-12 • Houghton Mifflin Practice Workbook 10-12 • Practice 10-12 • Reteach 10-12 • Challenge 10-12 <p>B. Houghton Mifflin Practice Workbook 10-16 Houghton Mifflin p. 494-497</p> <p>C. Houghton Mifflin Practice Workbook 10-17 Houghton Mifflin pp. 498-499</p> <p>D. Accelerated Math Program</p>	<p>A. Quick Check p. 502</p> <ul style="list-style-type: none"> • Houghton Mifflin test preparation. Cumulative review p. 503 • Chapter test Houghton Mifflin p. 510-511 <p>D. Accelerated Math Test objectives 145-150</p>

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks. 14

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Adams County/Ohio Valley
Course of Study

Content Standard: Students estimate and measure to a required degree of accuracy and precision by selecting and using appropriate units, tools and technologies. Benchmark: B. Convert units of length, area, volume, mass and time within the same measurement system. Content Organizer: Use Measurement Techniques and Tools			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
5. Make conversions within the same measurement system while performing computation.	<p>A. Houghton Mifflin overhead activity 5-3 Model to students how to change one customary unit of weight or capacity to another.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 5-3. Houghton Mifflin Reteach 5-3. Have students use customary units of weight and capacity to make conversions of problems. <p>B. Houghton Mifflin overhead activity 5-5 Model to students how to measure in metric units and make conversions of length by multiplying or dividing by powers of 10.</p> <ul style="list-style-type: none"> • Select items in the room for students to measure. Have students convert their measurements into decimeters, centimeters, or millimeters. <p>C. Houghton Mifflin overhead activity 5-6 Model to students how to change from one metric unit of mass or capacity to another.</p> <ul style="list-style-type: none"> • Houghton Mifflin practice 5-6 students convert metric units of mass and capacity. <p>D. Create groups of 3 or 4 students. Have them measure each others height using a meter stick. Have groups convert their measurements.</p> <ul style="list-style-type: none"> • Do the same with a yard stick, then convert to feet and inches. <p>E. Have students bring in items whose capacity, volume and weight can be easily measured, ex. Glass, stick of gum, etc. Have them find measurements in both metric and customary then convert.</p> <p>F. Accelerated Math objectives 117-126</p>	<p>A. Houghton Mifflin pp. 198-199</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 5-3 • Houghton Mifflin practice p. 53 • Houghton Mifflin reteach p. 53 • Houghton Mifflin Assessment Guide p. 39-42 <p>B. Houghton Mifflin p. 202-205</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 5-5 • Meter sticks • Centimeter rulers • Houghton Mifflin Assessment Guide p. 39-42 <p>C. Houghton Mifflin p. 206-207</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity p. 5-6 • Houghton Mifflin practice workbook p. 55 • Houghton Mifflin Assessment Guide p. 39-42 <p>D. Meter sticks, yard sticks</p> <p>E. Example of resources: cups, bowls, stick of gum, pencil, film, canister, milk cartons.</p> <ul style="list-style-type: none"> • Meter stick, centimeter ruler • Yard stick, 12 inch ruler • Scales to weigh with metric and US customary <p>F. Accelerated Math Program</p>	<p>A. Houghton Mifflin Quick Check p. 212 Houghton Mifflin Chapter Test p. 236-237 Houghton Mifflin Assessment Guide p. 39-42</p> <p>B. Houghton Mifflin Quick Check p. 212 Houghton Mifflin Chapter Test p. 236-237 Houghton Mifflin Assessment Guide p. 39-42</p> <p>C. Houghton Mifflin Quick Check p. 212 Houghton Mifflin Chapter Test p. 236-237 Houghton Mifflin Assessment Guide p. 39-42</p> <p>D. Have students measure items selected then convert their measurement.</p> <p>E. Have students measure, weigh, find the capacity of selected items and convert within the same measurement system. (Both metric and US customary).</p> <p>F. Accelerated math test over objectives 117-126</p>

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Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students estimate and measure to a required degree of accuracy and precision by selecting and using appropriate units, tools and technologies. Benchmark: C. Identify appropriate tools and apply appropriate techniques for measuring angles, perimeter or circumference and area of triangles, quadrilaterals, circles, and composite shapes, and surface area and volume of prisms and cylinders. Content Organizer: Use Measurement Techniques and Tools			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>6. Use strategies to develop formulas for determining perimeter and area of triangles, rectangles and parallelograms, and volume of rectangular prisms.</p>	<p>A. Houghton Mifflin overhead activity 5-2 Model to students how to find the perimeter and area of rectangles.</p> <ul style="list-style-type: none"> • Houghton Mifflin practice 5-2 • Have students measure to identify the perimeter and area of a piece of notebook paper, top of their desk in customary units. <p>B. Houghton Mifflin overhead activity 10-12 Model how to find the perimeter and area of complex figures.</p> <ul style="list-style-type: none"> • Houghton Mifflin practice 10-12 • Have groups of 4 students create complex figures and identify the perimeter and area. Then switch with another groups figures, then compare answers. <p>C. Houghton Mifflin overhead activity 10-13 Model to students how to find and use the formula for the area of a parallelogram.</p> <ul style="list-style-type: none"> • Houghton Mifflin practice 10-13 Students find the area of a different parallelograms. <p>D. Houghton Mifflin overhead activity 10-14 Model how to find and use the formula for the area of a triangle</p> <ul style="list-style-type: none"> • Houghton Mifflin practice 10-14 <p>E. Houghton Mifflin Activity Card #26. Students select the greatest perimeter of different polygons. (Goes with lesson 5.8)</p>	<p>A. Houghton Mifflin text p. 194-197</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 5-2 • Houghton Mifflin practice workbook p. 132 • Yard sticks -1 foot rulers <p>B. Houghton Mifflin p. 486-487</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 10-12 • Houghton Mifflin practice workbook p. 132 • Meter sticks - centimeter rulers • Yard sticks - 1 foot rulers • Complex figures - provided by students <p>C. Houghton Mifflin text 488-489</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 10-13 • Houghton Mifflin practice workbook p. 133 <p>D. Houghton Mifflin text p. 490-491</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 10-14 • Houghton Mifflin practice workbook p. 134 <p>E. Houghton Mifflin Activity Card # 26 MCR 1; Ruler; Scissors</p>	<p>A. Houghton Mifflin Quick Check p. 212</p> <ul style="list-style-type: none"> • Houghton Mifflin Unit test p. 236 • Provide students with different sized rectangles - have them find the perimeter and area and state a formula they used. <p>B. Houghton Mifflin Quick Check p. 502</p> <ul style="list-style-type: none"> • Houghton Mifflin Chapter test p. 510-511 • Have students identify the perimeter and area of selected shapes and have them write formulas used. <p>C. Houghton Mifflin Quick Check p. 502</p> <ul style="list-style-type: none"> • Houghton Mifflin Chapter test p. 510-511 <p>D. Houghton Mifflin Quick Check p. 502</p> <ul style="list-style-type: none"> • Houghton Mifflin Chapter test p. 510-511 <p>E. Houghton Mifflin Chapter test p. 510-511</p>

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Adams County/Ohio Valley
Course of Study

Content Standard: Students estimate and measure to a required degree of accuracy and precision by selecting and using appropriate units, tools and technologies.
Benchmark: C. Identify appropriate tools and apply appropriate techniques for measuring angles, perimeter or circumference and area of triangles, quadrilaterals, circles, and composite shapes, and surface area and volume of prisms and cylinders. H. Solve increasingly complex non-routine measurement problems and check for reasonableness of results.

Content Organizer: *Use Measurement Techniques and Tools*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
6. Use strategies to develop formulas for determining perimeter and area of triangles, rectangles and parallelograms, and volume of rectangular prisms.	<p>F. Houghton Mifflin overhead activity 10-17 Model how to find volume of rectangular prisms.</p> <ul style="list-style-type: none"> • Houghton Mifflin practice 10-17 <p>F. Accelerated Math objective 152</p> <p>G. Hardhatting in a Geo-World students find out how areas of rectangles with equal perimeter compare.</p> <p>H. Hardhatting in a Geo-World. Students find and measure squares, rectangles, and circles on the play ground.</p>	<p>F. Houghton Mifflin text pp. 498-499</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 10-17 • Houghton Mifflin practice workbook p. 137 • Cubes (centimeter or inch) <p>F. Accelerated Math Program</p> <p>G. Hardhatting in a Geo-World p. 91-94 (Appendix 4)</p> <ul style="list-style-type: none"> • 32 cm length of string • 4 push pins • 1 cardboard box • transparent tape <p>H. Hardhatting in a Geo-World p. 105-107 (Appendix 5)</p> <ul style="list-style-type: none"> • Meter sticks • Trundle wheels or metric tapes • calculators 	<p>F. Houghton Mifflin Quick Check p. 502</p> <ul style="list-style-type: none"> • Houghton Mifflin Chapter test 510-511 • Have students find the area of rectangular prisms made from cubes. <p>G. Accelerated Math test objective 152</p>

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Content Standard: Students estimate and measure to a required degree of accuracy and precision by selecting and using appropriate units, tools and technologies. Benchmark: Content Organizer: Use Measurement Techniques and Tools			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>7. Use benchmark angles (e.g.; 45°, 90°, 120°,) to estimate the measure of angles, and use a tool to measure and draw angles.</p>	<p>A. Houghton Mifflin text p. 460-461</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 10-3 Model to students the angle sum of a triangle. • Houghton Mifflin practice p. 123 • Houghton Mifflin Challenge p. 123 Students find missing angles. <p>B. Houghton Mifflin text p. 464-465</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 10-5 Model to students the sum of angle measurements of quadrilaterals. • Houghton Mifflin resource p. 34 Students use a protractor to find angles of tangram pieces. <p>C. Connected Math Shapes and Designs. Problems 3.2 and 3.3</p> <ul style="list-style-type: none"> • Using benchmark angles, students estimate the measures of angles, then sketch angles of measurements given using benchmarks. Students then measure the angles using a protractor to check their answers. <p>D. Accelerated math objective 135-classify angles.</p> <p>E. Have students estimate angles using benchmarks of selected items in the classroom, ex. Door openings, angle of chalkboard corner, etc.</p>	<p>A. Houghton Mifflin text pp. 460-461</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 10-3 • Houghton Mifflin practice workbook p. 123 • Houghton Mifflin challenge workbook p. 123 <p>B. Houghton Mifflin text pp. 464-465</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 10-5 • Houghton Mifflin teacher resource book p. 34 • Protractor for students <p>C. Connected Math Shapes and Designs p. 25-28</p> <ul style="list-style-type: none"> • Connected math shapes and designs transparency 3.2A, 3.2B, 3.3 p. 111-113 • Shape set p. 129-130 copies for each student. • Protractor for each student <p>D. Accelerated Math program</p> <p>E. Mark angles in room to be estimated.</p>	<p>A. Houghton Mifflin Quick Check p. 468 Houghton Mifflin chapter test p. 510 Houghton Mifflin Assessment Guide p. 81-84, and 78-80</p> <p>B. Houghton Mifflin Quick Check p. 468 Houghton Mifflin chapter text 510 Houghton Mifflin Assessment Guide p. 81-84, and 78-80</p> <p>C. Connected Math Shapes and Designs - Applications p. 35-37 Connected Math Shapes and Designs Self-Assessment p. 91.</p> <p>D. Accelerated math test over objective - classify angles 135</p> <p>E. Have students estimate angles provided.</p>

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Adams County/Ohio Valley
Course of Study

Content Standard: Students identify, classify, compare and analyze characteristics, properties and relationships of one-, two-, and three-dimensional geometric figures and objects. Students use spatial reasoning, properties of geometric objects and transformations to analyze mathematical situations and solve problems. Benchmark: B. Draw circles, and identify and determine the relationships among the radius, diameter, center and circumference. Identify, describe and classify types of line pairs, angles, two-dimensional figures and three-dimensional objects using their properties. Content Organizer: Characteristics and Properties			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>1. Draw circles and identify and determine relationships among the radius, diameter, center and circumference; e.g., radius is half the diameter, the ratio of the circumference of a circle to its diameter is an approximation of π.</p>	<p>A. Houghton Mifflin Overhead Teaching Activity 10-7 Model to students how to draw and circle and identify the parts of the circle.</p> <ul style="list-style-type: none"> • Students use a compass to construct circles, identify and define diameter, chord, and radius. • Houghton Mifflin Practice 10-7 • Houghton Mifflin Challenge 10-7 <p>B. Houghton Mifflin Overhead Teaching Activity 10-15</p> <ul style="list-style-type: none"> • Have students measure the diameter of a can, plastic lid, etc. and record it. Using string have students wrap it around the lid, then use a ruler to find its length and record. Have students continue recording data on several different sized cans or lids. Students should discover that the circumference is slightly over three times that of the diameter. For the same lids measured, have students use calculators to find the circumference of each lid using the formula $c = d$. compare with the circumference they recorded for each lid, and circle. • Houghton Mifflin Practice 10-15 • Houghton Mifflin Challenge 10-15 <p>C. Accelerated Math Objective 143</p> <p>D. Hardhatting in a Geo-World. Students will use paper clips to draw circles, determining their radii and diameter.</p>	<p>A. Houghton Mifflin pp. 470-471</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Teaching Activity 10-17 • Compass <p>B. Houghton Mifflin pp. 492-493</p> <ul style="list-style-type: none"> • Plastic lids with different diameters. • Cans with different diameters. • String • Rulers/meter sticks • Houghton Mifflin Overhead Teaching Activity 10-15 • Houghton Mifflin Practice Workbook 10-15 p. 135 • Houghton Mifflin Challenge 10-15 p. 135 <p>C. Accelerated Math Program</p> <p>D. Hardhatting in a Geo-World p. 101-104 (Appendix 6)</p> <ul style="list-style-type: none"> • Paper clips, jumbo and regular size • Large construction paper • 12" x 18" 2 sheets per pair of students • Tape • Chart paper • Markers or colored tissue paper, white glue, and paint brushes 	<p>A. Houghton Mifflin Quick Check p. 502</p> <ul style="list-style-type: none"> • Have students draw circles with different diameters. • Have students label and describe the parts of a circle in writing. <p>B. Students find the diameter and circumference of lids or cans.</p> <ul style="list-style-type: none"> • Students use the formula $C = d$. to find the circumference of different sized circles. • Have students find the circumference of a sphere. Then have students determine what the approximate diameter and radius would be. <p>C. Accelerated Math Test over objective 143.</p>

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks. 20

Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students identify, classify, compare and analyze characteristics, properties and relationships of one-, two-, and three-dimensional geometric figures and objects. Students use spatial reasoning, properties of geometric objects and transformations to analyze mathematical situations and solve problems. Benchmark: A. Identify and label angle parts and the regions defined within the plane where the angle resides. Content Organizer: <i>Characteristics and Properties</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
2. Use standard language to describe line, segment, ray, angle, skew parallel, perpendicular.	A. Houghton Mifflin Overhead Activity 10-1 Model to students how to identify and draw points, lines, line segments, and rays. <ul style="list-style-type: none"> • Houghton Mifflin Practice 10-1 • Houghton Mifflin Challenge 10-1 B. Houghton Mifflin Overhead Activity 10-8 Model to students how to construct lines that are parallel or perpendicular to a given line. <ul style="list-style-type: none"> • Houghton Mifflin Practice 10-8 • Houghton Mifflin Challenge 10-8 C. Accelerated Math objectives 132, 133	A. Houghton Mifflin p. 454-455 <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 10-1 • Houghton Mifflin Practice Workbook p. 121 • Houghton Mifflin Challenge Workbook p. 121 B. Houghton Mifflin p. 472-475 <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 10-8 • Houghton Mifflin Practice Workbook p. 128 • Houghton Mifflin Challenge Workbook p. 128 C. Accelerated Math Program	A. Houghton Mifflin Quick Check p. 468 B. Houghton Mifflin Quick Check p. 484 Houghton Mifflin Chapter Test p. 510-511 C. Accelerated Math Test objectives 132, 133

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks. 21

Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students identify, classify, compare and analyze characteristics, properties and relationships of one-, two-, and three-dimensional geometric figures and objects. Students use spatial reasoning, properties of geometric objects and transformations to analyze mathematical situations and solve problems. Benchmark: A. Identify and label angle parts and the regions defined within the plane where the angle resides. Content Organizer: <i>Characteristics and Properties</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>3. Label vertex, rays, interior and exterior for an angle.</p>	<p>A. Houghton Mifflin Overhead Activity 10-2 Model to students how to measure, label and classify angles.</p> <ul style="list-style-type: none"> • Students use a protractor to find the measure of angles provided using the 3 step method. • Students use a protractor to draw angles using a 4 step method. • Houghton Mifflin Practice 10-2 • Houghton Mifflin Challenge 10-2 <p>B. Use investigation 3 polygons and angles p. 21h-41k to discuss what a vertex, ray, interior and exterior for an angle is.</p> <p>C. Use pages 55 to 65 Wedges to Wangles in <u>Hardhatting in a Geo-World</u></p>	<p>A. Houghton Mifflin Text pp. 456-459</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice Workbook p. 122 • Houghton Mifflin Challenge Workbook p. 122 • Protractor for each student • Houghton Mifflin Assessment Guide p. 78-80, 81-84 <p>B. Connected Math Shapes and Designs p. 21h-41k</p> <p>C. Hardhatting in A Geo-World (Appendix 2)</p>	<p>A. Houghton Mifflin Quick Check p. 468 Houghton Mifflin Chapter test p. 510-511 Houghton Mifflin Assessment Guide p. 78-80, 81-84</p> <p>B. Give students various angles to label, vertex, ray, interior and exterior.</p>

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks.

Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students identify, classify, compare and analyze characteristics, properties and relationships of one-, two-, and three-dimensional geometric figures and objects. Students use spatial reasoning, properties of geometric objects and transformations to analyze mathematical situations and solve problems. Benchmark: F. Describe and use the concepts of congruence, similarity and symmetry to solve problems. J. Apply properties of equality and proportionality to solve problems involving congruent or similar figures; e.g., create a scale drawing. Content Organizer: <i>Characteristics and Properties</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>4. Describe and use properties of congruent figures to solve problems.</p>	<p>A. Houghton Mifflin Overhead Activity 10-4 Model to students how to identify congruent figures and congruent parts of figures.</p> <ul style="list-style-type: none"> • Use a tracing or a ruler and a protractor • Houghton Mifflin Practice 10-4 • Houghton Mifflin Challenge 10-4 <p>B. Complete activities on p. 22-32 in <u>Image Reflector Geometry</u> Students will investigate congruence through a variety of informal experiences.</p> <p>C. Accelerated Math objective 138</p>	<p>A. Houghton Mifflin pp. 462-463</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 10-4 • Houghton Mifflin Practice p. 124 • Houghton Mifflin Challenge p. 124 <p>B. <u>Image Reflector Geometry</u> p. 22-32 (Appendix 7)</p> <ul style="list-style-type: none"> • Image Reflectors <p>C. Accelerated Math Program</p>	<p>A. Houghton Mifflin Quick Check p. 468 Houghton Mifflin Chapter Test p. 510-511</p> <p>C. Accelerated Math test on objective 138</p>

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks.

Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students identify, classify, compare and analyze characteristics, properties and relationships of one-, two-, and three-dimensional geometric figures and objects. Students use spatial reasoning, properties of geometric objects and transformations to analyze mathematical situations and solve problems. Benchmark: D. Identify, describe and classify types of line pairs, angles, two-dimensional figures and three-dimensional objects using their properties. G. Describe and use properties of triangles to solve problems involving angle measures and side lengths of right triangles. Content Organizer: <i>Characteristics and Properties</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>5. Use physical models to determine the sum of the interior angles of triangles and quadrilaterals.</p>	<p>A. Houghton Mifflin Overhead Activity 10-3 Model the sum of angles in a triangle is 180°.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 10-3 • Houghton Mifflin Challenge 10-3 • Provide students with different types of triangles. Have students measure the angles to find the sum of each triangles angles <p>B. Houghton Mifflin Overhead Activity 10-5 Model finding the sum of angles in a quadrilateral (360°).</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 10-5 • Houghton Mifflin Challenge 10-5 • Students measure the interior angles of different types of quadrilaterals provided and find each ones sum. 	<p>A. Houghton Mifflin text pp. 460-461</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 10-3 • Houghton Mifflin Practice p. 123 • Houghton Mifflin Challenge p. 123 • Protractor • Triangles can be made from poster board. <p>B. Houghton Mifflin Text p. 464-465</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 10-5 • Houghton Mifflin Practice p. 125 • Houghton Mifflin Challenge p. 125 • Protractor • Models of different types of quadrilaterals, can be made using poster board. • Poster board 	<p>A. Houghton Mifflin Quick Check p. 468 Houghton Mifflin Chapter test p. 510-511</p> <p>B. Houghton Mifflin Quick Check p. 468 Houghton Mifflin Chapter test p. 510-511</p>

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Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students identify, classify, compare and analyze characteristics, properties and relationships of one-, two-, and three-dimensional geometric figures and objects. Students use spatial reasoning, properties of geometric objects and transformations to analyze mathematical situations and solve problems. Benchmark: C. Specify locations and plot ordered pairs on a coordinate plane. D. Identify, describe and classify types of line pairs, angles, two-dimensional figures and three-dimensional objects using their properties. Content Organizer: <i>Spatial Relationships</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>6. Extend understanding of coordinate system to include points whose x or y values may be negative numbers.</p>	<p>A. Houghton Mifflin Text p. 574-577</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity Model how to plot ordered pairs on a coordinate plane, explain x-axis and y-axis. • Have students form pairs to practice identifying, and graphing points on a grid. Have one student describe the location of a point on a grid while the other graphs the point. Have students switch roles. • Houghton Mifflin Text p. 577 Students play Wheres The Spaceship. Students practice locating coordinates by playing this game with a partner. <p>B. Houghton Mifflin Text p. 578-579</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 12-3 Model how to use coordinates to describe transformation. • Houghton Mifflin Practice p. 155 • Houghton Mifflin Challenge p. 155 <p>C. Houghton Mifflin Text p. 578-579</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 12-7 • Have students graph the equation $y=x+5$ on a coordinate plane. Students then make a function table to find the ordered pairs. Students then graph each ordered pair on a coordinate plane. <p>D. Accelerated math objective 144</p>	<p>A. Houghton Mifflin Text p. 574-577</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 12-2 • Houghton Mifflin Teacher Resource Book p. 12, 15 • Houghton Mifflin Practice p. 154 • Houghton Mifflin Challenge p. 154 <p>B. Houghton Mifflin Text p. 578-579</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 12-3 • Houghton Mifflin Practice p. 155 • Houghton Mifflin Challenge p. 155 <p>C. Houghton Mifflin Text p. 578=579</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 12-7 • Houghton Mifflin Teacher Resource Book p. 12 <p>D. Accelerated Math Program</p>	<p>A. Houghton Mifflin Quick Check p. 582 Houghton Mifflin Chapter Test p. 600 Houghton Mifflin Assessment Guide p. 94, 96 Have students graph and label ordered pairs on a coordinate plane. (Check students graphs)</p> <p>B. Houghton Mifflin Quick Check p. 582 Houghton Mifflin Chapter Test p. 600</p> <p>C. Houghton Mifflin Quick Check p. 582 Houghton Mifflin Chapter Test p. 600 Have students find three ordered pairs that make the equation $y=4x-4$ true. Then graph the equation. Check students graphs.</p> <p>D. Accelerated Math Test objective 144</p>

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks. 25

Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students identify, classify, compare and analyze characteristics, properties and relationships of one-, two-, and three-dimensional geometric figures and objects. Students use spatial reasoning, properties of geometric objects and transformations to analyze mathematical situations and solve problems. Benchmark: Content Organizer: <i>Visualization and Geometric Models</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>7. Understand that the measure of an angle is determined by the degree of rotation of an angle side rather than the length of either side.</p>	<p>A. Students use a protractor to measure angles provided using a three-step method.</p> <ol style="list-style-type: none"> 1. Place the center mark of protractor on the vertex. 2. Align the 0 degree mark of one of the protractor scales with one ray of the angle to be measured. 3. Find where the other ray passes through the same scale. <ul style="list-style-type: none"> • Overhead Activity 10-2 • Practice 10-2 Students use a protractor to draw angles described. • Reteach 10-2 <p>B. Students use an angle ruler to measure angles using instructions on p. 30-31. students use a map and an angle ruler to measure the angles of Amelia Earharts historic crash. Students discover how many degrees off course Earharts crash site was from her intended destination.</p> <ul style="list-style-type: none"> • Students use a shape set and measure each angle of each shape. <p>C. Accelerated Math Objective 135</p>	<p>A. Houghton Mifflin Text pp. 456-459</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 10-2 • Protractor • Houghton Mifflin Practice p. 122 • Houghton Mifflin Challenge p. 122 • Houghton Mifflin Reteach p. 122 <p>B. Connected Math Shapes & Design Text p. 32-34</p> <ul style="list-style-type: none"> • Angle Rulers • Shape Set p. 129-130 • Transparency 3.5-3.6 on p. 115-116 • Lab Sheet 3.6 p. 102 <p>C. Accelerated Math Program</p>	<p>A. Houghton Mifflin Quick Check p. 468</p> <ul style="list-style-type: none"> • Houghton Mifflin Chapter Test p. 510-511 • Have students measure angles of selected objects in the classroom, ie., angle of door opening, angle of a shape on a poster, etc. <p>B. Connected Math Shapes & Design text p. 85 Students measure each angle on different shapes.</p> <p>C. Accelerated Math Objective 135</p>

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks. 26

Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students identify, classify, compare and analyze characteristics, properties and relationships of one-, two-, and three-dimensional geometric figures and objects. Students use spatial reasoning, properties of geometric objects and transformations to analyze mathematical situations and solve problems. Benchmark: I. Identify and draw three-dimensional objects from different views (top, side, front and perspective). Content Organizer: Visualization and Geometric Models			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>8. Predict what three-dimensional object will result from folding a two-dimensional net, then confirm the prediction by folding the net.</p>	<p>A. Houghton Mifflin Overhead Teaching Activity 10-16 Model to students how a net can be folded to make a rectangular prism. Students cut out nets on p. 38-43 in Teacher Resource Book and fold nets into solid figures, cones, cylinders, etc.</p> <p>B. On one inch grid paper draw an assortment of nets make copies for each student. Have students mentally fold each one in their mind. Have students color only the nets they think will make a three-dimensional object. Have students cut out the nets, fold and tape to see the results of their predictions.</p> <p>C. Have students save their milk cartons so each students has two. Have students cut one milk carton along the edges to make a two-dimensional net. Have the students repeat the same procedure with the 2nd milk carton and try to cut a different net. Have students compare their nets to find how many different nets they make.</p> <p>D. Harthatting in a Geo-World</p>	<p>A. Houghton Mifflin pp. 494-495</p> <ul style="list-style-type: none"> • Houghton Mifflin Teacher Resource Book p. 38-43 • Houghton Mifflin Overhead Activity 10-16 • Scissors • Scotch Tape <p>B. One inch grid paper</p> <ul style="list-style-type: none"> • Crayons • Scissors • Tape <p>C. Lunchroom milk cartons 2 per student</p> <ul style="list-style-type: none"> • Scissors • Scotch Tape <p>D. Harthatting in a Geo-World p. 86-90 (Appendix 10)</p> <p><u>Part 1</u></p> <ul style="list-style-type: none"> • One set of pentominoes for each student • Scissors • Crayons <p><u>Part 2</u></p> <ul style="list-style-type: none"> • 2 half-pint milk cartons • scissors • crayons • chart-sized paper for each group • glue 	<p>A. Provide students with drawing of nets-have students write what three-dimensional object each net will produce.</p> <p>B. Provide students with drawing of nets-have students write what three-dimensional object each net will produce.</p> <p>C. Provide students with drawing of nets-have students write what three-dimensional object each net will produce.</p>

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks.

Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

<p>Content Standard: Students use patterns, relations and functions to model, represent and analyze problem situations that involve variable quantities. Students analyze, model and solve problems using various representations such as tables, graphs and equations.</p> <p>Benchmark: A. Describe, extend and determine the rule for patterns and relationships occurring in numeric patterns, computation, geometry, graphs and other applications.</p> <p>Content Organizer: <i>Use Patterns, Relations, and Functions</i></p>			
<i>Grade Level Indicator:</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>1. Justify a general rule for a pattern or a function by using physical materials, visual representations, words, tables or graphs.</p>	<p>A. Houghton Mifflin Overhead Activity 2-10 Model to students using a visual representation how to complete a function table.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 2-10 Complete function tables. • Houghton Mifflin Challenge 2-10 <p>B. Houghton Mifflin Overhead Activity 3-5 Students use patterns to multiply multiples of 10.</p> <ul style="list-style-type: none"> • Houghton Mifflin overhead activity 3-6 Students learn how a pattern of zeros can be used to find a product. • Houghton Mifflin Practice p. 30 • Houghton Mifflin Challenge p. 30 <p>C. Houghton Mifflin Text p. 348-349, 416-417 Using word problems, students make a table to find a pattern to solve problems and determine rule.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 7-20 p. 98, 113 • Houghton Mifflin Challenge p. 113 <p>D. Houghton Mifflin Overhead Activity 12-5 Students complete function tables or find the function</p> <ul style="list-style-type: none"> • Houghton Mifflin Text pp. 584-585 • Houghton Mifflin Practice p. 157 • Houghton Mifflin Challenge p. 157 <p>E. Accelerated Math objectives 36, 37, 181, 182</p>	<p>A. Houghton Mifflin Text pp. 76-77</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 23 • Houghton Mifflin Challenge p. 23 • Houghton Mifflin Assessment Guide p. 18-19 <p>B. Houghton Mifflin Text pp. 106-107, 110-111</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 3-5, 3-6 • Houghton Mifflin Practice p. 30 • Houghton Mifflin Challenge p. 30 • Houghton Mifflin Assessment Guide p. 27-28 <p>C. Houghton Mifflin Text pp. 348-349</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 98, 113 • Houghton Mifflin Challenge p. 113 <p>D. Houghton Mifflin Text pp. 584-585</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 12-5 • Houghton Mifflin Transparency blackline master 4 (copies for students) • Houghton Mifflin Practice p. 157 • Houghton Mifflin Challenge p. 157 <p>E. Accelerated Math Program</p>	<p>A. Houghton Mifflin Chapter Text p. 88 Houghton Mifflin Free response text p. 18-19</p> <p>B. Houghton Mifflin Assessment Guide p. 27-28</p> <p>C. Quick Check Houghton Mifflin Text p. 418 Houghton Mifflin Chapter test p. 446</p> <p>D. Quick Houghton Mifflin Text p. 592</p> <p>E. Accelerated Math test objectives 36, 37, 181, 182</p>

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks. 28

Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students use patterns, relations and functions to model, represent and analyze problem situations that involve variable quantities. Students analyze, model and solve problems using various representations such as tables, graphs and equations.

Benchmark: A. Describe, extend and determine the rule for patterns and relationships occurring in numeric patterns, computation, geometry, graphs and other applications.

Content Organizer: *Use Patterns, Relations, and Functions*

<i>Grade Level Indicator:</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
2. Use calculators or computers to develop patterns, and generalize them using tables and graphs.	<p>A. Houghton Mifflin Text p. 348-349 Students use patterns to solve problems. Students use calculators to extend these patterns.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 7-20 • Houghton Mifflin Challenge 7-20 <p>B. Houghton Mifflin Text p. 584-585</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 12-5 • Houghton Mifflin Challenge 12-5 • Students can use a calculator to extend patterns of integers. <p>C. Houghton Mifflin Text p. 586-587</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 12-6 • Houghton Mifflin Challenge 12-6 • Students use a calculator to continue patterns on time temperature. 	<p>A. Houghton Mifflin Text pp. 348-349</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 98 • Houghton Mifflin Challenge p. 98 • Calculators <p>B. Houghton Mifflin Text pp. 584-585</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 157 • Houghton Mifflin Challenge p. 157 • Calculator <p>C. Houghton Mifflin Text pp. 584-585</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 158 • Houghton Mifflin Challenge p. 158 • Calculator 	<p>A. Provide students with a pattern. Have students use calculators to extend the pattern.</p> <ul style="list-style-type: none"> • Houghton Mifflin Chapter text p. 358-359 <p>C. Houghton Mifflin Quick Check p. 592</p> <ul style="list-style-type: none"> • Provide students with patterns to extend using a calculator. Have students use a calculator to develop their own patterns.

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Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

<p>Content Standard: Students use patterns, relations and functions to model, represent and analyze problem situations that involve variable quantities. Students analyze, model and solve problems using various representations such as tables, graphs and equations.</p> <p>Benchmark: B. Represent, analyze and generalize a variety of patterns and functions with tables, graphs, words and symbolic rules. E. Use rules and variables to describe patterns, functions and other relationships. G. Write, simplify and evaluate algebraic expressions.</p> <p>Content Organizer: <i>Use Algebraic Representation</i></p>			
<i>Grade Level Indicator:</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>3. Use variables as unknown quantities in general rules when describing patterns and other relationships.</p>	<p>A. Houghton Mifflin Overhead Activity 2-10 Model how to use a function table to solve addition and subtraction equations</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 2-10 • Houghton Mifflin Challenge 2-10 <p>B. Houghton Mifflin Overhead Activity 4-15 Model how to write an equation for a function.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 4-15 <p>Houghton Mifflin Challenge 4-15</p> <p>C. Houghton Mifflin Overhead Activity 2-5 Model to students how to use ordered pairs to find a function.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 12-5 • Houghton Mifflin Challenge 12-5 	<p>A. Houghton Mifflin pp. 76-77</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 23 • Houghton Mifflin Challenge p. 23 • Houghton Mifflin Overhead Activity 2-10 <p>B. Houghton Mifflin pp. 170-171</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 48 • Houghton Mifflin Challenge p. 48 • Houghton Mifflin Overhead Activity 4-15 <p>C. Houghton Mifflin pp. 584-585</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 157 • Houghton Mifflin Challenge p. 157 • Houghton Mifflin Overhead Activity 12-5 	<p>A. Houghton Mifflin Chapter Test p. 88</p> <p>B. Houghton Mifflin Chapter Test p. 184</p> <p>C. Houghton Mifflin Quick Check p. 592 Houghton Mifflin Chapter test p. 600</p>

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks. 30

Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students use patterns, relations and functions to model, represent and analyze problem situations that involve variable quantities. Students analyze, model and solve problems using various representations such as tables, graphs and equations. Benchmark: C. Use variables to create and solve equations and inequalities representing problem situations Content Organizer: Use Algebraic Representations			
<i>Grade Level Indicator:</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>4. Create and interpret the meaning of equations and inequalities representing problem situations.</p>	<p>A. Houghton Mifflin Overhead Problem Solving process transparency. Model to students how to write an equation to solve a problem, especially with problems that involve number patterns.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 3-7 • Houghton Mifflin Challenge 3-7 • Students write an equation to solve problems. <p>• B. Houghton Mifflin Overhead problem solving process transparency.. Model to students how to use a formula to solve a problem.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 9-12 • Houghton Mifflin Challenge 9-12 	<p>A. Houghton Mifflin Text pp. 112-113 Problem solving process transparency</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 31 • Houghton Mifflin Challenge p. 31 <p>B. Houghton Mifflin Text pp. 436-437</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead - Problem solving process 	<p>A. Houghton Mifflin Text p. 123</p> <p>B. Houghton Mifflin Quick p. 438</p>

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Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students use patterns, relations and functions to model, represent and analyze problem situations that involve variable quantities. Students analyze, model and solve problems using various representations such as tables, graphs and equations.
Benchmark: F. Use representations, such as tables, graphs and equations, to model situations and to solve problems, especially those that involve linear relationships.
K. Graph linear equations and inequalities.
Content Organizer: *Use Algebraic Representations*

<i>Grade Level Indicator:</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
5. Model problems with physical materials, visual representations and use graphs and tables to draw conclusions and make predictions.	<p>A. Houghton Mifflin Overhead Activity problem solving process transparency. Model to students how a diagram can help you solve a problem. Students draw diagrams to solve problems.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 5-8 Students make a table to solve problems. <p>B. Houghton Mifflin Overhead Activity Use problem solving process transparency. Model to students how to device a table and identify a pattern.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 9-5, 12-4 • Houghton Mifflin Challenge 9-5, 12-4 <p>C. Complete "Heads Up" experiments p. 52-53 in <u>Hands On Math</u></p> <p>D. Houghton Mifflin How-To Card # 19. Students select a data card, create a bar graph, with a partner write three questions about the graph and have your partner explain their answer.</p>	<p>A. Houghton Mifflin Text pp. 158-159, 210-211, 270-271</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead problem solving transparency • Houghton Mifflin Practice p. 44, 57, 74 <p>B. Houghton Mifflin Text pp. 416-417, 580-581</p> <ul style="list-style-type: none"> • Houghton Mifflin problem solving process transparency • Houghton Mifflin Practice p. 113, 156 • Houghton Mifflin Challenge 113, 156 <p>C. <u>Hands On Math</u> p. 52-53 (Appendix 8)</p> <p>D. Houghton Mifflin How to Card # 19</p> <ul style="list-style-type: none"> • Data Card Deck • MCR 5 or MCR 6 	<p>A. Houghton Mifflin Chapter test p. 184-185 Houghton Mifflin Quick Check p. 228 Houghton Mifflin Chapter test p. 236-237 Houghton Mifflin Quick Check p. 272 Houghton Mifflin Chapter test p. 290-291</p> <p>B. Houghton Mifflin Quick Check p. 418 Houghton Mifflin Chapter test p. 446-447, 600-601</p> <p>D. Houghton Mifflin Chapter test p. 184-185.</p>

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Adams County/Ohio Valley
Course of Study

Content Standard: Students use patterns, relations and functions to model, represent and analyze problem situations that involve variable quantities. Students analyze, model and solve problems using various representations such as tables, graphs and equations. Benchmark: L. Analyze functional relationships, and explain how a change in one quantity results in a change in the other. Content Organizer: Analyze Change			
<i>Grade Level Indicator:</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
6. Describe how the quantitative change in a variable affects the value of a related variable; e.g., describe how the rate of growth varies over time, based upon data in a table or graph.	A. Houghton Mifflin Overhead Activity 4-15 Model how to write an equation for a function. <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 48 • Houghton Mifflin Challenge p. 48 B. Houghton Mifflin Activity Card # 23. Students select a state and show the population for every ten years from 1900. Students create graph, then answer questions based on the data presented on their graph.	A. Houghton Mifflin text pp. 170-172 <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 48 • Houghton Mifflin Challenge p. 48 B. Houghton Mifflin Activity Card # 23 <ul style="list-style-type: none"> • Encyclopedia, almanac, internet • MCR 5 or MCR 6 	A. Houghton Mifflin Quick Check p. 176 Houghton Mifflin Chapter Test p. 184-185 B. Houghton Mifflin Chapter test p. 236-237

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Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data. Benchmark: A. Read, create and use line graphs, histograms, circle graphs, box-and-whisker plots, stem-and-leaf plots, and other representations when appropriate. Content Organizer: <i>Data Collection</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
1. Read, construct and interpret frequency tables, circle graphs and line graphs.	<p>A. Houghton Mifflin text p. 250-252</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 6-3 • Show students the three steps involved in making a frequency table. • Houghton Mifflin Challenge p. 67 students interpret a frequency table to find missing data and finish a histogram. <p>B. Houghton Mifflin text p. 262-265</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 6-7 • Houghton Mifflin Practice p. 71 • Houghton Mifflin Challenge p. 71 • Students learn to interpret line graphs without numbers. • Students match different situations with unlabeled line graphs. <p>C. Have students construct a circle graph depicting the population of the 7 continents.</p> <ul style="list-style-type: none"> • Have students create a line graph containing the temperature throughout the day measured every hour. <p>D. Accelerated Math objectives 157, 160</p>	<p>A. Houghton Mifflin Text p. 250-252</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 6-3 • Houghton Mifflin Challenge p. 67 <p>B. Houghton Mifflin Text p. 262-263</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 6-7 • Houghton Mifflin Practice p. 71 • Houghton Mifflin Challenge p. 71 <p>C. Compass</p> <ul style="list-style-type: none"> • Thermometers • Ruler • Centimeter grid paper p. 15 in Teacher Resource Book <p>D. Accelerated Math Program</p>	<p>A. Houghton Mifflin Quick Check p. 256 Houghton Mifflin Chapter Test p. 290-291 Assessment Guide p. 47-51</p> <p>B. Houghton Mifflin Quick Check p. 256 Houghton Mifflin Chapter Test p. 290-291 Assessment Guide p. 47-51</p> <p>C. Have students interpret graphs from newspapers, magazines, etc. Provide students with real world weather data taken off the internet or newspapers. Have students depict information on a circle or line graph.</p> <p>D. Accelerated Math test objectives 57, 160</p>

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Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data. Benchmark: E. Collect, organize, display, and interpret data for a specific purpose or need. Content Organizer: <i>Data Collection</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>2. Select and use a graph that is appropriate for the type of data to be displayed; e.g., numerical vs. categorical data, discrete vs. continuous data.</p>	<p>A. Houghton Mifflin Overhead teaching activity 6-9 Instruct students that the type of graph to choose depends on the data they want to show. Circle graphs- use when data are parts of a whole. Line graph-use when you want to show changes over time. Pictograph use when the data are multiples of a number. Bar graph use when data can be counted and you want to make comparisons. Histogram use to show how often something happens within equal intervals.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 6-9 (p. 73) Students make an appropriate graph for data given. • Houghton Mifflin Challenge 6-9 (p. 73) For different situations. Students identify which graph to use. <p>B. Connected Math - Data About Us p. 22-29</p> <ul style="list-style-type: none"> • Numerical Data - Collect Data about height, family size, pulse rates, time spent sleeping in one day. • Categorical data - Collect data about hobbies, favorite colors, favorite sports, favorite type of book, month they were born, pets they have. <p>Students then select a graph and display data.</p>	<p>A. Houghton Mifflin Text p. 268-269</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead Activity 6-9 • Houghton Mifflin Practice p. 73 • Houghton Mifflin Challenge p. 73 <p>B. Connected Math - Data About Us (p. 22-29)</p> <ul style="list-style-type: none"> • Transparencies 2.1 p. 102 2.2 A p. 103 and 2.2.8 p. 104 	<p>A. Houghton Mifflin Another Look p. 292 Houghton Mifflin Quick Check p. 272 Houghton Mifflin Chapter test p. 290-291</p> <p>B. Provide students with data from both numerical and categorical data. Have students graph the information.</p>

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Adams County/Ohio Valley
Course of Study

Content Standard: Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data. Benchmark: D. Compare increasingly complex displays of data, such as multiple sets of data on the same graph. Content Organizer: <i>Data Collection</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>3. Read and interpret increasingly complex displays of data, such as double bar graphs.</p>	<p>A. Houghton Mifflin Text p. 246-249</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 6-2 • Model to students how to use 5-steps to make a double bar graph. • Houghton Mifflin Practice 6-2 <p>Students answer questions pertaining to double bar graph.</p> <p>B. Penny drop game Houghton Mifflin p. 249</p> <p>Students play game and then make a double bar graph to compare their scores.</p> <ul style="list-style-type: none"> • Houghton Mifflin Challenge 6-2 <p>C. Houghton Mifflin Text p. 264-267</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 6-8 • Model how to read a double line graph. • Houghton Mifflin Practice p. 72 <p>Students answer questions pertaining to line and double line graph.</p> <ul style="list-style-type: none"> • Students collect data on sunrise and sunset times and create a double line graph and interpret. <p>D. Accelerated Math objective 158, 159</p>	<p>A. Houghton Mifflin Text p. 246-249</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 6-2 • Houghton Mifflin Practice p. 66 <p>B. Houghton Mifflin Teacher Resource Book p. 5-6 copies for students.</p> <ul style="list-style-type: none"> • Grid paper • Colored pencils • Ruler • Houghton Mifflin Challenge p. 66 <p>C. Houghton Mifflin Text p. 264-267</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 6-8 • Houghton Mifflin Practice p. 72 <p>D. Accelerated math program</p>	<p>A. Houghton Mifflin Chapter Test p. 290-291</p> <p>Houghton Mifflin Quick Check p. 256</p> <p>B. Houghton Mifflin Quick Check p. 256</p> <p>Houghton Mifflin Text p. 292</p> <p>Houghton Mifflin Chapter Test p. 290-291</p> <p>C. Houghton Mifflin Quick Check p. 272</p> <p>Houghton Mifflin Chapter test p. 290-291</p> <p>D. Accelerated math test over objectives 158, 159</p>

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks. 35

Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data. Benchmark: E. Collect, organize, display, and interpret data for a specific purpose or need. Content Organizer: <i>Data Collection</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>4. Determine appropriate data to be collected to answer questions posed by students or teacher, collect and display data, and clearly communicate findings.</p>	<p>A. Houghton Mifflin Overhead activity 6-1 Model how to read a stem and leaf plot.</p> <ul style="list-style-type: none"> • Students play test your reflexes game on Houghton Mifflin text p. 244. Collect data, construct a stem and leaf plot to identify findings. <p>B. Connected Math Data About Us As a class collect and organize data about how long it takes students to get to school, how far they travel and mode of travel. Have students construct a stem plot for the data and write what they discovered.</p> <p>C. Houghton Mifflin Overhead activity 6-6 Model how to use a line plot, and identify the mode, mean, and median.</p> <ul style="list-style-type: none"> • Practice 6-6 Students make a line plot for a set of data. <p>D. Connected Math Data About Us Students collect data on height and arm span measurements of students in class. Students then make a coordinate graph to represent the data. Students answer questions pertaining to their data on p. 44</p>	<p>A. Houghton Mifflin Text p. 244-246</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 6-1 • Houghton Mifflin Practice p. 65 • Houghton Mifflin Challenge p. 65 <p>B. Connected Math Data About Us p. 80-83</p> <ul style="list-style-type: none"> • Transparencies 3.1A p. 105, 3.1B p. 106, 3.2 p. 107 • Graph paper • Calculator (per student) <p>C. Houghton Mifflin Text p. 260-261</p> <ul style="list-style-type: none"> • Houghton Mifflin Overhead activity 6-6 • Houghton Mifflin Practice p. 70 <p>D. Connected Math Data About Us p. 42-44</p> <ul style="list-style-type: none"> • Meter sticks to measure • Centimeter grid paper p. 11a • Transparencies 4.1A p. 108, 4.1B p. 109 	<p>A. Houghton Mifflin Text p. 284 Houghton Mifflin Chapter test p. 290-291 Houghton Mifflin Assessment Guide p. 50-51 or 47-49</p> <p>B. Connected Math Data About Us p. 124 p. 71-75 question bank, self assessment p. 80 Applications p. 47-48</p> <p>C. Houghton Mifflin Chapter test p. 290-291 Houghton Mifflin Assessment guide p. 50-51 or 47-49</p> <p>D. Connected Math Data About Us p. 125 Have students write questions. Students then collect data on their question, display their data, and brief the class on what they found out.</p>

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Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data. Benchmark: B. Evaluate interpretations and conclusions as additional data are collected, modify conclusions and predictions, and justify new findings. Content Organizer: <i>Data Collection</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
5. Modify initial conclusions, propose and justify new interpretations and predictions as additional data are collected.	A. Connected Math Data About Us B. Houghton Mifflin Overhead activity 6-5 Model how to find the mean, median, mode and range of a set of data. <ul style="list-style-type: none"> • Houghton Mifflin p. 258-259 • Houghton Mifflin Practice p. 69 • Houghton Mifflin Challenge p. 69 C. Houghton Mifflin Overhead activity 6-6 Model how to use a line plot to find the mean, median, and mode of a set of data. <ul style="list-style-type: none"> • Houghton Mifflin p. 260-261 • Houghton Mifflin Practice p. 70 • Houghton Mifflin Challenge p. 70 	A. Connected Math Data About Us Pg. 60-61 B. Houghton Mifflin p. 258-259 <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 69 • Houghton Mifflin Challenge p. 69 C. Houghton Mifflin p. 260-261 <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 70 • Houghton Mifflin Challenge p. 70 	B. Houghton Mifflin Quick Check p. 272 Houghton Mifflin Chapter test p. 290-291 C. Houghton Mifflin Quick check p. 272 Houghton Mifflin Chapter test p. 290-291

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Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data. Benchmark: F. Determine and use the range, mean, median and mode to analyze and compare data, and explain what each indicates about the data. Content Organizer: <i>Statistical Methods</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>6. Determine and use the range, mean, median and mode, and explain what each does and does not indicate about the set of data.</p>	<p>A. Houghton Mifflin Overhead activity 4-4 Model how to find the mean to students.</p> <ul style="list-style-type: none"> • Have students find the mean of a previous test taken in class by all students, using a calculator. • Overhead activity 6-6 • Students collect temperature data for a given time frame, or collect data on height in centimeters and find the range, median, mode and mean by using a calculator. • Houghton Mifflin Practice 6-5 p. 69 • Houghton Mifflin Challenge 6-5 p. 69 <p>B. Connected Math Data About Us p. 9-21 and p. 53-59</p> <ul style="list-style-type: none"> • Collect name-length data from students number of letters in name. On a strip adding machine tape have students list name length from shortest to longest. Have students fold paper in half to find the medium. • Collect data on number of people in students households. Students create a cube tower to show the size of each household. Students move cubes to make towers even finding the mean. <p>C. Accelerated Math objectives 163-166</p>	<p>A. Houghton Mifflin p. 140-141, p. 258-259</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 69 • Houghton Mifflin Challenge p. 69 • Calculator • Houghton Mifflin overhead activity 4-4 • Houghton Mifflin Assessment Guide p. 47-51 • Houghton Mifflin Overhead Activity 6-6 <p>B. Connected Math Data About US p. 9-21 and p. 53-59</p> <ul style="list-style-type: none"> • Transparencies 5.1A, 5.1B, 5.2, 5.3, 5.4 and 5.5 • Small cubes • Calculators • Adding machine tape <p>C. Accelerated Math Program</p>	<p>A. Houghton Mifflin Quick Check p. 144 Houghton Mifflin Quick Check p. 272 Provide a group of numbers to students ie. 27, 46, 83, 90, 74, 27, 29. Have students determine the mean, mode, range, and median. Houghton Mifflin Quick Check p. 277 Houghton Mifflin Chapter test p. 290-291 Houghton Mifflin Assessment Guide 47-51</p> <p>B. Check up p. 70 Quiz p. 71</p> <p>C. Accelerated math test objectives 163-166</p>

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<p>Content Standard: Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data.</p> <p>Benchmark:</p> <p>Content Organizer: <i>Statistical Methods</i></p>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>6. Determine and use the range, mean, median and mode, and explain what each does and does not indicate about the set of data.</p>	<p>D. Houghton Mifflin Activity Card # 25 In groups, students measure the arm span of each person in inches. Students record then find the mean, median, and range of the data.</p>	<p>D. Houghton Mifflin Activity Card # 25</p> <ul style="list-style-type: none"> • MCR 1 (1 copy per group) • Yardstick or tape measure for each group. 	<p>D. Check up Houghton Mifflin Text p. 70.</p>

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Content Standard: Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data. Benchmark: H. Find all possible outcomes of simple experiments or problem situations, using methods such as lists, arrays and tree diagrams. Content Organizer: <i>Probability</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
7. List and explain all possible outcomes in a given situation.	<p>A. Houghton Mifflin Overhead activity 6-11 Model how to make a tree diagram to find outcomes using a spinner.</p> <ul style="list-style-type: none"> • Students determine how many choices of pants and a shirt would there be if they choose from jeans, black pants, and tan slacks, and from red, white, and green shirts. • Students determine how many different double dip cones can be made from the following colors. (Lime, chocolate, grape, strawberry, vanilla, lemon, orange, chocolate chip) • Six brown socks and 4 white socks are all mixed up in a dresser drawer. The room is dark. Pulling socks from the drawer, one at a time. Students determine what is the fewest number of socks that you must take in order to be certain that they will have a pair that match. • Houghton Mifflin Practice 6-11 p. 75 • Houghton Mifflin Challenge 6-11 p. 75 <p>B. Accelerated Math objective 167</p>	<p>A. Houghton Mifflin p. 274-275</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 75 • Houghton Mifflin Challenge p. 75 • Houghton Mifflin Assessment Guide p. 50 • Houghton Mifflin Overhead activity 6-11 <p>B. Accelerated math program</p>	<p>A. Quick Check p. 282 Chapter 6 Test p. 290-292 Multiple choice test p. 50 Assessment Guide Have students determine how many different outfits can be made from the following shirts, yellow, orange, blue, red. Shorts brown, black, green, purple.</p> <p>B. Accelerated math test objective 167</p>

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Adams County/Ohio Valley
Course of Study

Content Standard: Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data. Benchmark: I. Describe the probability of an event using ratios, including fractional notation. Content Organizer: <i>Probability</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>8. Identify the probability of events within a simple experiment, such as three chances out of eight.</p>	<p>A. Houghton Mifflin Overhead activity 6-13 Model to students how to use fractions to find probability.</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 77 • Houghton Mifflin Challenge p. 77 <p>B. Houghton Mifflin Teaching Tool p. 35 Have students cut out and color spinners then conduct a experiment with each spinner with a partner. Collect data for 10 spins on each spinner. Students then identify the probability of landing on each color, and compare it with what actually occurred.</p> <p>C. Accelerated math objective 167</p> <p>D. Probability experiments. In the bank. Who goes first? Appendix 9</p>	<p>A. Houghton Mifflin p. 278-279</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice p. 77 • Houghton Mifflin Challenge p. 77 • Houghton Mifflin Assessment Guide p. 47-51 <p>B. Houghton Mifflin Teaching Tool p. 35 (Copies for students)</p> <ul style="list-style-type: none"> • Braids for spinners • Crayons <p>C. Accelerated math program</p> <p>D. Data, chance and probability activity book 4-6 (Appendix 9)</p>	<p>A. Houghton Mifflin Quick Check p. 282 Houghton Mifflin Chapter test p. 290-291 Houghton Mifflin Assessment Guide p. 47-51</p> <p>C. Accelerated math test objective 167</p> <p>D. Provide students with spinners divided in different increments and different colors. Have students identify the probability on each color or each spinner.</p>

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks. 41

Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

<p>Content Standard: Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data.</p> <p>Benchmark: I. Describe the probability of an event using ratios, including fractional notation. J. Compare experimental and theoretical results for a variety of simple experiments.</p> <p>Content Organizer: <i>Probability</i></p>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>9. Use 0, 1 and ratios between 0 and 1 to represent the probability of outcomes for an event, and associate the ratio with the likelihood of the outcome.</p>	<p>A. Houghton Mifflin Overhead activity 6-13 Model to students how to use fractions to find probability. Impossible event has probability of 0. Certain event has probability of 1.</p> <ul style="list-style-type: none"> • Place two red cubes and three blue cubes into a bag. In groups of 4 have students take turns reaching into the bag and draw out a cube. Record each cubes color. Continue until they have 20 trials. Have groups compare data with the rest of the class. Have students write a ratio for their outcome. • Have students determine the probability of each of the following and write Impossible (0), certain (1) or the ratio of the event occurring. <ol style="list-style-type: none"> 1. Rolling an even number on a die. 2. Drawing a spade from a deck of cards. 3. Rolling a 0 on a die. 4. A coin landing on heads. 5. Drawing a red or black card from a deck of cards. • Houghton Mifflin Practice 6-13 p. 77 • Houghton Mifflin Challenge 6-13 p. 77 	<p>A. Houghton Mifflin pp. 278-279</p> <ul style="list-style-type: none"> • Houghton Mifflin Practice 6-13 p. 77 • Houghton Mifflin Challenge 6-13 p. 77 • Houghton Mifflin Assessment Guide p. 47-51 • Red cubes 2 per group of students • Blue cubes 3 per group of students • Small brown paper bag 1 per group of students • 1 die per group • 1 deck of cards per group of students • 1 coin per group 	<p>A. Houghton Mifflin Quick Check p. 282</p> <p>Houghton Mifflin Chapter test p. 290-291</p> <p>Houghton Mifflin Assessment Guide p. 47-51</p>

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks.

Mathematics – Grade 5

Adams County/Ohio Valley
Course of Study

Content Standard: Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data. Benchmark: K. Make and justify predictions based on experimental and theoretical probabilities. Content Organizer: Probability									
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>						
<p>10. Compare what should happen (theoretical/expected results) with what did happen (experimental/actual results) in a simple experiment.</p>	<p>A. Student will roll three cubes to determine whether the resulting number (which represent lengths of line segments) make it possible to construct a triangle. Students will discover a pattern in predicting whether or not a group of numbers will construct a triangle.</p> <p>B. Students will explore the probability of rolling three dice so that a given type of triangle will result.</p> <p>C. Accelerated Math objective 168</p> <p>D. Students use a bottle cap. Out of 50 tries, have students decide what probability does the cap with land top up. Record data for 1st 50 tosses. Do again, record data. Look at both totals and compare with their prediction.</p>	<p>A. Trying Triangles p. 15 & 18 (Appendix 10)</p> <ul style="list-style-type: none"> • 3 numbered cubes per group of 2-5 students (1-6 on each cube) • Plastic straws cut in these lengths: (set of 18 straws per group) <table style="margin-left: 20px; border: none;"> <tr> <td>3-1 inch</td> <td>3-3 inch</td> </tr> <tr> <td>3-2 inch</td> <td>3-4 inch</td> </tr> <tr> <td>3-5 inch</td> <td>3-6 inch</td> </tr> </table> <p>Yarn or string for "threading" straws.</p> <p>B. See how they roll p. 19-23 (See Appendix 11)</p> <ul style="list-style-type: none"> • Chart of possible outcomes that form a triangle from Trying Triangles activities. <p>C. Accelerated math program</p> <p>D. Bottle Cap 1 per student</p>	3-1 inch	3-3 inch	3-2 inch	3-4 inch	3-5 inch	3-6 inch	<p>A. Houghton Mifflin Quick Check p. 282 Houghton Mifflin Chapter test p. 290-291</p> <p>C. Accelerated Math Test over objective 168.</p>
3-1 inch	3-3 inch								
3-2 inch	3-4 inch								
3-5 inch	3-6 inch								

Mathematical Processes Standard – Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas. Mathematical processes are used in all content areas and should be incorporated within instruction and assessment of the content-specific standards and benchmarks.

