

Mathematics – Grade 4

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. Recognize and generate equivalent representations for whole numbers, fractions and decimals.

Content Organizer: *Number and Number Systems*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>1. Identify and generate equivalent forms of fractions and decimals. For example:</p> <p style="padding-left: 20px;">a. Connect physical, verbal and symbolic representations of fractions, decimals and whole numbers; e.g., $\frac{1}{2}$, $\frac{5}{10}$, “five tenths,” 0.5, shaded rectangles with half, and five tenths.</p> <p style="padding-left: 20px;">b. Understand and explain that ten tenths is the same as one whole in both fraction and decimal form.</p>	<p>1. Explain vocabulary of fractions. Supply students with paper strips of equal length. Using a ruler, students will measure and color strips to show fractional parts of the whole strip.</p> <p>(a) Using paper rectangles and a ruler, students will measure and shade the rectangle to show $\frac{1}{2}$ and $\frac{5}{10}$.</p> <p>(b) Student will demonstrate to others that $10/10 = 1$ by using base ten blocks, or Cuisenaire rods/centimeter cubes.</p> <p>(c) Compare using dimes – 1 dime = $1/10$ of a dollar 10 dimes or $10/10 = 1$ dollar or 1 whole</p> <p>*Overhead teaching activity 8-1, 8-3.</p>	<p>Houghton Mifflin, pp. 372-373, 378-379 TRB, pp. 36-37 CCPG, pp. 46, 47 & 48 BO, pp. 25-27</p> <p>*Computer-Cornerstone Math *Accelerated Math</p>	<p>*Houghton Mifflin, Quick Check, Student Edition, pp. 386 & 400</p> <p>*Chapter Test, Student Edition, pp. 408-409.</p> <p>*Houghton Mifflin Reteach Workbook, pp. 179 & 180</p>

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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: A. Use place value structure of the base-ten number system to read, write, represent and compare whole numbers and decimals.

Content Organizer: *Number and Number Systems*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
2. Use place value structure of the base-ten number system to read, write, represent and compare whole numbers through millions and decimals through thousandths.	1. Organize base-ten blocks to represent numbers. 2. Houghton Mifflin, p. 377. 3. Create a place value chart. 4. Pair students. Have them randomly put numbers in the chart through millions and decimals through thousandths. Each student must read the number which has been created. 5. Overhead Teaching Activity 1-1, 1-2, 1-6, 1-7. 6. Overhead Teaching Activity 8-4 & 8-5.	Houghton Mifflin, 4-5, 16-19, 380 Practice Book, pp. 1, 2, & 5 Reteach 1, 2, & 5 Challenge Workbook, pp. 1, 2, & 5 TRB, p. 7 & 8 CCPG, pp. 14-16 Blast-Off, pp. 1-5 *Computer-Cornerstone Math *Accelerated Math	*Use a place value chart and base ten blocks to visually check understanding *Houghton Mifflin, Quick Check Student Edition, pp. 14, 28, 38 *Houghton Mifflin, Chapter test, S.E., pp. 46-47 *Houghton Mifflin Formal tests, pp. 11-18 *Houghton Mifflin Performance Assessment Student Edition, p. 48

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<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>3. Round whole numbers to a given place value.</p>	<p>1. Explain to students the rule for rounding number on p. 10 in Houghton Mifflin.</p> <p>2. Create a large number line on the classroom floor or other large space. Mark off by 10's 0-100. Several students draw numbers from a container & stand at the spot on number line that corresponds with drawn number. Students determine which number they are closest to by rounding. Also practice 100's & 1,000's by creating large number line.</p> <p>3. Point out concept by holding up index cards with numbers. Students write down on paper the number it round to.</p> <p>4. Overhead Teaching Activity 1-3 & 1-8.</p>	<p>Houghton Mifflin 10-15, 24-25</p> <p>Practice Book, pp. 3 & 8</p> <p>Reteach Book, pp. 3 & 8</p> <p>Challenge, p. 3</p> <p>CCPG, pp. 14-16</p> <p>Blast-Off, pp. 44-45</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p>	<p>*Houghton Mifflin, Quick Check Student Edition, pp. 14 & 28</p> <p>*Houghton Mifflin, Extra Practice, Student Edition, p. 41-set C, set F</p> <p>*Houghton Mifflin, Student Edition Chapter Review, p. 44, problem 21-29</p> <p>*Houghton Mifflin-SE, Chapter Test, p. 46, problem 14-23</p> <p>*Houghton Mifflin, chapter 1 test, pp. 11-18</p> <p>Houghton Mifflin Reteach Workbook, pp. 152 & 153</p>

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Benchmark: E. Recognize and classify numbers as prime or composite and list factors.

Content Organizer: *Number and Number Systems*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>4. Identify and represent factors and multiples of whole numbers through 100, and classify numbers as prime or composite.</p>	<p>1. Generate arrays using centimeter cubes or counters. Students count out a specific number of pieces. Then they make arrays using the pieces. Ex: 12 pieces = 1 x 12, 12 x 1, 2 x 6, 6 x 2, 3 x 4, 4 x 3.</p> <p>2. Flash Cards – Practice basic multiplication facts.</p> <p>3. Sequence count to determine multiples of numbers and recall multiplication facts.</p> <p>4. Demonstrate the Sieve of Eratosthenes – Student Test, p. 161. Use Teacher Resource book, p. 29 (Hundred Chart) to create the sieve.</p> <p>5. Houghton Mifflin Overhead Teaching Activity 5-12, p. 65.</p>	<p>Houghton Mifflin, 106, 109, 113, 161, 166-167, 192-193, 248-249</p> <p>Practice Book, pp. 26, 28, 41, 50 & 65</p> <p>Reteach Book, pp. 26, 28, 41, 50 & 65</p> <p>Challenge Workbook, pp. 41, 50 & 65</p> <p>CCPG, pp. 68-70</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p>	<p>*Houghton Mifflin, Extra Practice Student Edition, p. 204-set A, set B & set G</p> <p>*Houghton Mifflin Chapter 3 test, pp. 28-31</p> <p>*Prime/Composite Numbers-Assessment Challenge, p. 65</p> <p>*Houghton Mifflin, Extra Practice, Student Edition, p. 266, set I</p>

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Benchmark: D. Use models, points of reference and equivalent forms of commonly used fractions to judge the size of fractions and to compare, describe and order them.
Content Organizer: *Number and Number Systems*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
5. Use models and points of reference to compare commonly used fractions.	<p>1. Create fraction strips to compare fractions – like and unlike.</p> <p>2. Create a number line. Place selected fractions on the number line. The fraction farthest to the right is the greater fraction.</p> <p>3. Teach strategy for like denominators – look at the numerator. The largest numerator is the greater fraction.</p> <p>4. Unlike denominators – find the least common multiple of fractions. Relate this to find equivalent fractions. Then compare the numerators to determine the greater fraction.</p> <p>5. Pair students. Play game “Action Fractions” outlined on p. 341, Houghton Mifflin textbook.</p> <p>6. Houghton Mifflin Overhead Teaching Activity 7-6, p. 86.</p>	<p>Houghton Mifflin, 338-340 & 382-383</p> <p>Houghton Mifflin Practice Book, pp. 87 & 97</p> <p>Houghton Mifflin Reteach Book, pp. 87 & 97</p> <p>Houghton Mifflin Challenge Workbook, pp. 87 & 97</p> <p>Houghton Mifflin CCPG, pp. 42-45</p> <p>Blast-Off, lesson 6, pp. 37-40</p> <p>Computer - Cornerstone Math</p> <p>Accelerated Math</p> <p>Houghton Mifflin Teacher Resource book, p. 36, Fraction Pieces</p>	<p>*Houghton Mifflin Extra Practice, p. 359, set D, p. 404, set D</p> <p>*Houghton Mifflin Chapter Test, Student Text, p. 364</p> <p>Houghton Mifflin Chapter 7 Test, Assessment guide, pp. 56-60</p>

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Benchmark: K. Analyze and solve multi-step problems involving addition, subtraction, multiplication and division using whole numbers.
Content Organizer: *Meaning of Operations*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>6. Use associative and distributive properties to simplify and perform computations; e.g., use left to right multiplication and the distributive property to find an exact answer without paper and pencil, such as $5 \times 47 = 5 \times 40 + 5 \times 7 = 200 + 35 = 235$.</p>	<p>1. Student Test, pp. 54, 110, 194 & 213, demonstrate each property for computations. Demonstrate these properties using counters, base ten blocks, or centimeter cubes. Practice finding answers mentally.</p> <p>2. Houghton Mifflin Overhead Teaching Activity, 2-1, p. 11, 3-2, p. 25 & 4-12, p. 53</p>	<p>Houghton Mifflin, 54-55, 110-11, 194-195 & 213</p> <p>Houghton Mifflin Practice Book, pp. 13 & 27</p> <p>Houghton Mifflin Reteach Book, pp. 13 & 27</p> <p>Houghton Mifflin challenge Workbook 2-1, p. 13, 3-2, p. 27</p> <p>Houghton Mifflin CCPG, pp. 18-25 & 34-36</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p>	<p>*Houghton Mifflin, Student Text, Extra Practice, p. 92, set A, p. 152, set B, Chapter Review, p. 96</p> <p>*Houghton Mifflin Chapter 2 Test Assessment Guide, pp. 21-25</p> <p>*Houghton Mifflin Chapter 3 Test Assessment Guide, pp. 28-31</p>

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Content Organizer: *Meaning of Operations*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>7. Recognize that division may be used to solve different types of problem situations and interpret the meaning of remainders; e.g., situations involving measurement, money.</p>	<p>1. Race for Remainders, Student Edition, p. 225.</p> <p>2. Overhead Teaching Activity, 3-8, 5-2, 5-3 & 5-8.</p> <p>3. Students manipulate centimeter cubes, counters, coins to compute division.</p> <p>4. Relate real word situations to demonstrate division. Divide candy, crackers, etc.</p>	<p>Houghton Mifflin, 126-127, 220, 226-227, 236-237</p> <p>Copymaster Reteach, p. 24</p> <p>Houghton Mifflin Practice 5-3, p. 56 & 5-4, p. 57</p> <p>Houghton Mifflin Reteach 5-3, p. 56 & 5-4, p. 57, Challenge 5-3, p. 56 & 5-4, p. 57 and Math Center 7.2</p> <p>Accelerated Math</p> <p>Saxon Lesson 88</p> <p>Computer-Cornerstone Math</p>	<p>*Quickcheck, Teacher Edition, p. 227</p> <p>*Houghton Mifflin Student Text, p. 267, 1-4, and p. 265, set F</p>

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Benchmark: F. Count money and make change using both coins and paper bills. K. Analyze and solve multi-step problems involving addition, subtraction, multiplication and division using whole numbers.

Content Organizer: *Computation and Estimation*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
8. Solve problems involving counting money and making change, using both coins and paper bills.	<p>1. Practice Game, p. 33 – Dollar Dunk. Select play money & marked items/products and set up a mini store & paired grouping – One student is the customer and one student is the cashier.</p> <p>2. Pair with lower grade level-students model money & spending for items to children.</p> <p>3. Price items in room and have students demonstrate what money dominations will purchase item.</p> <p>4. Overhead Teaching Activity 1-10.</p>	<p>Houghton Mifflin, 30-32 & 34-37</p> <p>Houghton MifflinWK Math Steps, pp. 37-38</p> <p>Math Arena</p> <p>Accelerated Math</p> <p>Houghton Mifflin Practice Book, pp. 10, 11 & 12; Reteach Book, pp. 10, 11 & 12; Challenge Workbook, pp. 10, 11 & 12</p> <p>Learn About It – Teacher’s Manual 34</p> <p>Blast-Off, pp. 113-115</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p>	<p>*Observation</p> <p>*Quickcheck, TM-35</p> <p>*Houghton Mifflin Student Text Extra Practice, p. 42, set G & set H and 9-11, p. 43</p> <p>*Blast-Off, pp. 113-115</p> <p>*Houghton Mifflin Chapter 1 Test, Assessment Guide, pp. 11-18</p>

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Benchmark: J. Estimate the results of whole number computations using a variety of strategies, and judge the reasonableness. M. Add and subtract commonly used fractions with like denominators and decimals, using models and paper and pencil.
Content Organizer: *Computation and Estimation*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>9. Estimate the results of computations involving whole numbers, fractions and decimals, using a variety of strategies.</p>	<p>1. Houghton Mifflin Overhead Teaching Activity 2-4.</p> <p>2. Have students participate in Houghton Mifflin Overhead Teaching Activity. Alternate Activity 2-4 using calculators to work sample problems.</p> <p>3. Houghton Mifflin Overhead Teaching Activity 4-4.</p> <p>4. Students participate Overhead Teaching Activity 4-4. Use calculators.</p> <p>5. Houghton Mifflin Overhead Teaching Activity 5-15.</p> <p>6. Write numbers on 3x5 cards, 0-100 counting by 10's. Arrange on the floor or other large area. Choose 2 numbers between 0 & 100. Two students stand where those numbers would be. The remaining students determine what the answer would be by estimating.</p> <p>7. Overhead Teaching Activity 8-10.</p>	<p>Houghton Mifflin, 64-67, 174-175, 254-255, 394-396 & 547-555.</p> <p>Houghton Mifflin Practice Book, pp. 16, 17, 44, 68 & 102</p> <p>Houghton Mifflin Reteach Book, pp. 16, 17, 44,, 68 & 102</p> <p>Houghton Mifflin Challenge Workbook 2-4, p. 16; 2-5, p. 17; 4-4, p. 44; and 8-10, p. 102</p> <p>Houghton Mifflin CCPG, pp. 18-21, pp. 34-37</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p>	<p>*Houghton Mifflin Student Text Extra Practice, set D, p. 93; set C, p. 204; set K, p. 266 & set G, p. 404</p> <p>*Houghton Mifflin Chapter 2 Test, Assessment Guide, pp. 21-25</p> <p>*Houghton Mifflin Chapter 4 Test, Assessment Guide, pp. 34-38</p> <p>*Houghton Mifflin Chapter 5 Test, Assessment Guide, Pgs. 41-45</p> <p>*Houghton Mifflin Chapter 8 Test, Assessment Guide, pp. 63-68</p>

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Benchmark: M. Add and subtract commonly used fractions with like denominators and decimals, using models and paper and pencil.

Content Organizer: *Computation and Estimation*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>10. Use physical models, visual representations, and paper and pencil to add and subtract decimals and commonly used fractions with like denominators.</p>	<ol style="list-style-type: none"> 1. Create fraction strips to practice adding fractions. 2. Combine base ten blocks and centimeter cubes to practice adding tenths and hundredths. 3. Organize dimes and pennies to model adding tenths and hundredths. 4. Point out the relationship between fractions and decimals. Ex: $4/10 = 0.4$ and $10/10 = 1.0$ 5. Overhead Teaching Activity 7-9 6. Overhead Teaching Activity 7-10 7. Practice Game Student Text, p. 377 8. Overhead Teaching Activity 8-7. 9. Overhead Extension Activity 8-7. 	<p>Houghton Mifflin, pp. 350-353 & 388-391</p> <p>Houghton Mifflin Practice Book, pp. 90, 91, 99 & 100</p> <p>Houghton Mifflin Reteach Book, pp. 90, 91, 99 & 100</p> <p>Houghton Mifflin Challenge Workbook 7-9, p. 90; 7-10, p. 91; 8-7, p. 99; and 8-8, p. 100</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p>	<p>*Houghton Mifflin Student Text, Extra Practice, set F, p. 360; set G, p. 360; set E, p. 404; 5-7, p. 405</p> <p>*Houghton Mifflin Chapter 7, Test Assessment Guide, pp. 56-60</p> <p>*Houghton Mifflin Chapter 8, Test Assessment Guide, pp. 63-68</p>

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<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
11. Develop and explain strategies for performing computations mentally.	1. Teach basic facts +, X, & -. 2. Overhead Teaching Activity 2-1, 3-2, 3-4, 4-8 & 4-10.	Houghton Mifflin, 54-55, 104, 110-114, 118-119, 164-167, 186-187 & 192-193. Divide multiples of 10,100 and 1,000, p. 230-231. Divide multiples 10, pp. 568-569 Multiply 10, 100, 1000, pp. 166-167 Multiply by 10 & 100,pp. 192-198 Houghton Mifflin Practice Book, pp. 13, 27-29, 41, 48, & 50 Houghton Mifflin Reteach Book, pp. 13, 27-29, 41, 48, & 50 Houghton Mifflin Challenge Book 2-1, p. 13; 3-2, p. 27; 3-3, p. 28; 3-4, p. 29; 4-1, p. 41; 4-8, p. 48 & 4-10, p. 50	*List problems on board/overhead having student give answers only *Houghton Mifflin Student Text, Extra Practice, p. 152, set B, set C & set D *Extra Practice Student Text, p. 204, set A; p. 205, set F; & p. 206, set G.

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<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
12. Analyze and solve multi-step problems involving addition, subtraction, multiplication and division using an organized approach, and verify and interpret results with respect to the original problem.	1. Model sample problems for students. Students identify the problem. Decide which information will solve the problem. 2. Use Houghton Mifflin Problem Solving for Success Intervention Masters, pp. 25-27, 34, & 133-135. 3. Students write individual story problems with multi-steps. Students exchange problems with a partner and solve the problems. Check answers to determine whether students organized information to solve the problem.	Houghton Mifflin, 128-129, 576-577 Houghton Mifflin Practice Book, pp. 34 & 144 Houghton Mifflin Reteach Book, pp. 34 & 144 Houghton Mifflin Challenge Workbook, 3-9, p. 34 & 12-4, p. 144 Houghton Mifflin CCPG, p. 28 Blast-Off, lesson 9, pp. 51-56 Computer-Cornerstone Math Accelerated Math	*Houghton Mifflin Student Text, Extra Practice, p. 155 & p. 597 *Houghton Mifflin Chapter 12 Test, pp. 95-98 *Houghton Mifflin Problem Solving for Success, Intervention Masters, pp. 142-144 *Houghton Mifflin Student Text, Chapter Test, pp. 601 & 602

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Benchmark: L. Use a variety of methods and appropriate tools (mental math, paper and pencil, calculators) for computing with whole numbers.

Content Organizer: *Computation and Estimation*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
13. Use a variety of methods and appropriate tools for computing with whole numbers; e.g., mental math, paper and pencil, and calculator.	<p>1. Devise methods to compute problems – estimation, mental math, paper/pencil, calculator work sample problems on the overhead.</p> <p>2. Present students with word problems. Students select appropriate tools and compute the problems.</p>	<p>Houghton Mifflin, 22, 80, 127, 184, 255, 296, 345, 395, 398-399, 405, 466, 541, 572</p> <p>Houghton Mifflin Practice Book 103</p> <p>Houghton Mifflin Reteach Book 103</p> <p>Houghton Mifflin Challenge Workbook 8-11, p. 103</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p> <p>Houghton Mifflin Problem Solving for Success, Intervention Masters (Entire book), use as appropriate</p>	<p>*Houghton Mifflin Problem Solving for Success, Intervention Masters, pp. 10-12, 22-24, 34-36, 46-48, 58-60, 70-72, 82-84, 94-96, 106-108, 118-120, 130-132 & 142-144</p> <p>*Houghton Mifflin Student Text Extra Practice, pp. 361, 405, 557 & 597</p>

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Benchmark: I. Demonstrate fluency in multiplication facts with factors through 10 and corresponding divisions. L. Use a variety of methods and appropriate tools (mental math, paper and pencil, calculators) for computing with whole numbers.

Content Organizer: *Computation and Estimation*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>14. Demonstrate fluency in adding and subtracting whole numbers and in multiplying and dividing whole numbers by 1- and 2-digit numbers and multiples of ten.</p>	<ol style="list-style-type: none"> 1. Flash cards 2. Paired practice. 3. Math races. 4. Number Sense, p. 59 & 173 5. Get the Least, p. 63 6. Factors, p. 109. 7. Multiples, p. 115. 8. Show What You Know 185. 9. Overhead Teaching Activity 2-3, 2-4, 2-6, 3-3, 3-4, 3-5, 3-7, 3-8, 4-1, 4-2, 4-3, 4-6, 4-7, 4-8, 4-10, 4-11, 4-12, 5-2, 5-3, 5-5, 5-6, 5-9. 	<p>Houghton Mifflin, 56-62, 68-69, 106-108, 112-114, 118-121, 124-127, 166-172, 180-184, 186-187, 192-196, 198-199, 218-224, 230-233 & 238-240</p> <p>Accelerated Math</p> <p>Computer-Cornerstone Math</p> <p>Houghton Mifflin Practice Book, pp. 14, 15, 18, 26, 28-30, 32-33, 41-43, 46-48, 50-52, 54, 58-59 & 62</p> <p>Houghton Mifflin Resource Book, pp. 14, 15, 18, 26, 28-30, 32, 41-43, 46-48, 50-52, 54, 58-59 & 62</p> <p>Houghton Mifflin Challenge Workbook, 2-2, p. 14; 2-3, pg 15; 2-6, p. 18; 3-1, p. 26; 3-3, p. 28; 3-4, p. 29, 30, 32; 3-8, p. 33; 4-1, p. 41; 4-2, p. 42; 4-3, pp. 43; 4-6, p. 46; 4-7, p. 47; 4-8, p. 48, 4-10, p. 50; 4-11, p. 51; 4-12, p. 52; 5-1, p. 54, 5-5, p. 58, 5-6, p. 59 & 5-9, p. 62</p>	<p>*Houghton Mifflin, Student Text Extra Practice, p. 92, set B, set C p. 93, set E p. 152, set A, set C, set D p. 153, set E, set H p. 204, set A, set B p. 205, set D, set E, set F p. 206, set G, set H, set I p. 264, set A, set B, set D p. 265, set G</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: B. Know that the number of units is inversely related to the size of the unit for any item being measured. C. Develop common referents for units of measure for length, weight, volume (capacity) and time to make comparisons and estimates.

Content Organizer: *Measurement Units*

<i>Grade Level Indicator:</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
1. Relate the number of units to the size of the units used to measure an object; e.g., compare the number of cups to fill a pitcher to the number of quarts to fill the same pitcher.	<p>1. Hands on activities measure items/objects in room/home.</p> <p>2. Using overhead transparencies, explain procedure of calculating perimeter while students complete activity at table.</p> <p>3. Games</p> <p>4. Overhead Teaching Activity, 6-2, 6-3, 6-7 & 10-15</p>	<p>Houghton Mifflin, capacity pp. 276-277</p> <p>Metric Units pp. 294-296</p> <p>Cubic Units, pp. 504-507</p> <p>Perimeter/Metric length, pp. 292-293, Practice 6-6; Reteach 6-6 and Challenge 6-6</p> <p>Perimeter/customary Length, pp. 280-281 Practice 6-2; Reteach 6-2 & Challenge 6-2</p> <p>Customary Capacity/Weight, pp. 282-285 Practice 6-3; Reteach 6-3 & Challenge 6-3</p> <p>Metric Units of Capacity/Mass, pp. 294-296</p> <p>Blast-Off</p> <p>Computer-Cornerstone Math Accelerated Math</p>	<p>*Houghton Mifflin Extra Practice, p. 310, set A & set B; p. 311, set D & p. 512, set L</p> <p>*Students measure water, rice, sand, etc. using capacity, measurements such as cups, pints, quarts, gallons, liter, milliliter. Use centimeter cubes to determine cubic centimeter. Teacher checks student use of measurement – Informal Assessment</p> <p>*Blast-Off, pp. 103-107</p>

Mathematics – Grade 4

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:			
Content Organizer: <i>Measurement Units</i>			
<i>Grade Level Indicator:</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>2. Demonstrate and describe perimeter as surrounding and area as covering a two-dimensional shape, and volume as filling a three-dimensional object.</p>	<ol style="list-style-type: none"> 1. Give students a piece of construction paper 9"x12". Explain that the outside edges make the perimeter. It is like a fence. Measure distance around the edge to find perimeter. 2. Illustrate that the space inside the perimeter is area. We can measure it by measuring the amount of square inches inside. Mark off each inch using a ruler to create a grid. 3. Use grid paper to practice finding area and perimeter. Use centimeter cubes to practice. 4. Point out that area and perimeter are measured on a flat surface (2-dimensional-plane surface), volume measures, 3-dimensional shapes. Show students a 3-dimensional cube. Make sure it measures a certain amount of cubic centimeters. Pair students. Have them construct a centimeter cube exactly the same size using centimeter cubes. 5. Overhead Teaching Activity, 10-9 & 10-15. 6. Manipulate geo boards to practice finding area and perimeter. 	<p>Houghton Mifflin, pp. 280-281, 486-487 & 504-505</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p> <p>Blast-Off, lesson 19, pp. 108-112</p>	<p>*This outcome tests students ability to demonstrate and describe perimeter, area and volume.</p> <p>*Assess student's ability to measure area and perimeter on grid paper.</p> <p>*Assess student's ability to create 3-dimensional shapes (volume) using centimeter cubes.</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 4

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 for perimeter, area, weight, volume (capacity), time and temperature using: objects of uniform size; U.S. customary units; e.g., mile, square inch, cubic inch, second degree Fahrenheit, and other units as appropriate; metric units; e.g., millimeter, kilometer, square centimeter, kilogram, cubic centimeter, degree Celsius, and other units as appropriate. Content Organizer: <i>Measurement Units</i></p>			
<i>Grade Level Indicator:</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>3. Identify and select appropriate units to measure:</p> <p>(a) Perimeter – use string links (inches or centimeters).</p> <p>(b) Area – use tiles (square inches, or square centimeters).</p> <p>(c) Volume – use cubes (cubic inches, or cubic centimeters).</p>	<p>1. Describe formulas for finding perimeter, area and volume. $P = L+W+L+W$ (Perimeter = Length + Width + Length + Width) $A = L \times W$ (Area = Length x Width) Area is written in square units. $V = LXWXH$ (Volume = Length x Width x Height) Volume is written in cubic units</p> <p>2. Overhead Teaching Activity 10-10.</p> <p>3. Overhead Teaching Activity Alternate Activity 10-16.</p> <p>4. Practice finding perimeter, area, and volume using string links or rulers for perimeter, tiles or grid paper for area and centimeter cubes or inch cubes for volume.</p> <p>5. Manipulate geo boards to practice finding area and perimeter.</p>	<p>Houghton Mifflin, 3a) pp. 280-281; 3b) 486-490; 3c) 504-505</p> <p>Houghton Mifflin Practice Book, pp. 72, 123, 124 & 129</p> <p>Houghton Mifflin Reteach Book, pp. 72, 123, 124 & 129</p> <p>Houghton Mifflin Challenge Workbook, 6-2, p. 72; 10-9, p. 123; 10-10, p. 123; 10-15, p. 129</p> <p>Houghton Mifflin CCPG, pp. 30-32</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p> <p>Blast-Off, lesson 19, pp. 108-112</p>	<p>*Houghton Mifflin Student Text, Extra Practic, p. 310, set A; p. 511, set H & p. 512, set L</p> <p>*Houghton Mifflin Student Text, Chapter Review, p. 314, 5-13</p> <p>*Houghton Mifflin Chapter 6 Test, Assessment guide, pp. 49-53</p> <p>*Houghton Mifflin Chapter 10 Test, Assessment guide, pp. 80-84</p>

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Mathematics – Grade 4

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: D. Identify appropriate tools and apply counting techniques for measuring side lengths, perimeter, and area of squares, rectangles, and simple irregular two-dimensional shapes, volume of rectangular prisms, and time and temperature. 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. Develop and use strategies to find perimeter using string or links, area using tiles or a grid, and volume using cubes; e.g., count squares to find area of regular or irregular shape on a grid, layer cubes in a box to find its volume.</p>	<p>1. Complete Number Sense activity in Houghton Mifflin Student Text, p. 491 to demonstrate conversion from square feet to square yards. Extend square inches to square feet.</p> <p>2. Overhead Teaching Activity, 10-11, 10-15, Alternate Activity, 10-16.</p> <p>3. Utilize grid paper to practice measuring the area and perimeter of irregular shapes. Trace objects. Ex: your hand, paper clips, pencil, coins.</p> <p>4. Practice stacking centimeter cubes in irregular shapes to find volume.</p>	<p>Houghton Mifflin, pp. 280-281, 486-490, 492-493 & 504-505</p> <p>Houghton Mifflin Practice Book, pp. 72, 125 & 130</p> <p>Houghton Mifflin Reteach Book, pp. 72, 125 & 130</p> <p>Houghton Mifflin Challenge Workbook, 6-2, p. 72; 10-11, p. 125 & 10-16, p. 130</p> <p>Houghton Mifflin CCPG, pp. 30-32</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p> <p>Blast-Off, lesson 19, pp. 108-112</p>	<p>*Houghton Mifflin Student Text, Extra Practice, p. 310, set A; p. 511, set H & p. 512, set L</p> <p>*Houghton Mifflin Student Text, Chapter Review, p. 314, 5-13 & p. 515, 19-25</p> <p>Houghton Mifflin Chapter 6, Test Assessment Guide, pp. 49-53</p> <p>Houghton Mifflin chapter 10, Test Assessment guide, pp. 80-84</p> <p>Houghton Mifflin Student Text, Another Look, p. 518</p> <p>Houghton Mifflin Problem Solving for Success Using Formulas, pp. 115-117</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 4

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: Content Organizer: <i>Use Measurement Techniques and Tools</i>			
<i>Grade Level Indicator:</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
5. Make simple unit conversions within a measurement system; e.g., inches to feet, kilograms to grams, quarts to gallons.	1. Measure desk/table in standard measurement and convert to feet and metric measurement. 2. Using sand, rice/water measure mass with balance scales. 3. Use sand, rice/water measure capacity and convert kilograms to grams, quarts to gallons.	Houghton Mifflin, Conversion Customary Capacity, pp. 276, 282 & 284, Practice 6-3 Reteach 6-3 Challenge 6-3 Length, pp. 276, 280 & 281 Practice 6-2 Reteach 6-2 Challenge 6-2 Weight, pp. 276, 283-285 Conversion-Metric Capacity, 276, 294-296 Length, pp. 276, 290-293 Practice 6-5 & 6-6 Reteach 6-5 & 6-6 Challenge 6-5 & 6-6 Computer-Cornerstone Math Accelerated Math Blast-Off	*Write/Talk About It *Informal Assessment *Teacher Observation Checklist *Blast-Off, 103-107

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 4

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: Content Organizer: <i>Use Measurement Techniques and Tools</i>			
<i>Grade Level Indicator:</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
6. Write, solve, and verify solutions to meaningful, multi-step problems involving measurement.	1. Overhead Teaching Activity: Model – write, solve, verify page. 2. Multi-step problems involving measurement.	Houghton Mifflin, p. 279 & 281 p. 284-287, 293 & 296 Practice 6-3; 6-4; 6-6 & 6-7 Reteach 6-3; 6-4; 6-6 & 6-7 Challenge Workbook 6-3, 6-4, 6-6 & 6-7 Problem Solving for Success, pp. 61-63 Blast-Off, pp. 51-56 Computer-Cornerstone Math Accelerated Math	Houghton Mifflin Student Text, Extra Practice, p. 310, set B; p. 311, set C; p. 311, set D & p. 314, set 1-4

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 4

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. Describe and identify intersecting, parallel and perpendicular lines or segments in the environment. Content Organizer: Characteristics and Properties			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>1. Identify, describe and model intersecting, parallel and perpendicular lines and line segments; use straws or other material to model lines.</p>	<p>1. Describe and define intersecting, parallel and perpendicular lines for students. Have them distinguish each type of line using pencils, toothpicks, or straws.</p> <p>2. Ask students to look around the classroom and identify examples of each type of line.</p> <p>3. Overhead Teaching Activity 10-1.</p> <p>4. Reconstruct each type of lines on a geo board.</p> <p>5. Draw selected capital letters of the alphabet. Students determine the type of lines in each letter.</p>	<p>Houghton Mifflin, pp. 460-462</p> <p>Houghton Mifflin Practice Book, p. 115</p> <p>Houghton Mifflin Reteach Book, p. 115</p> <p>Houghton Mifflin Challenge Workbook, 10-1, p. 115</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p> <p>Blast-Off, lesson 15, pp. 83-84</p>	<p>*Assess students understanding by asking them to construct lines on a geo board or by using physical models and check informally.</p> <p>*Houghton Mifflin Student Text, Extra Practice, p. 510, set A</p> <p>*Houghton Mifflin Student Text, Chapter Review, p. 514, 7-10</p> <p>*Houghton Mifflin Chapter 10 Test Assessment Guide, pp. 80-84</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 4

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: E. Use attributes to describe, classify and sketch plane figures and build solid objects. Content Organizer: Characteristics and Properties			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>2. Describe, classify, compare and model two- and three-dimensional objects using their attributes.</p>	<p>1. Define polygon – a flat, closed plane figure made up of 3 or more line segments called sides. Define each polygon: <u>Triangle</u> – 3 sides <u>Quadrilateral</u> – 4 sides <u>Pentagon</u> – 5 sides <u>Hexagon</u> – 6 sides <u>Octagon</u> – 8 sides</p> <p>2. Define a circle – all points in a plane that are the same distance from a given point (center).</p> <p>3. Define solid 3-dimensional figures: <u>Cube</u> – 6 faces, all faces are squares. <u>Rectangular Prism</u> – 6 faces, all faces are rectangles. <u>Triangular Prism</u> – 5 faces, opposite faces are triangles, 3 faces are rectangles. <u>Square Pyramid</u> – 5 faces, base is a square, sides are triangles. <u>Triangular Pyramid</u> – 4 faces, all faces are triangles. <u>Cylinder, Cone, Sphere</u></p> <p>4. Overhead Teaching Activity, 10-3, 10-4, 10-5, 10-13, 10-14 Transparency Blackline Masters 20 & 21</p> <p>5. Create polygons on a geo board.</p> <p>6. Find examples in the classroom or environment.</p>	<p>Houghton Mifflin, pp. 466-471 & 498-500</p> <p>Houghton Mifflin Practice book, pp. 117, 118, 119 & 127</p> <p>Houghton Mifflin Reteach Book, pp. 117, 118, 119 & 127</p> <p>Houghton Mifflin Challenge Workbook, 10-4, p. 118 & 10-13, p. 127</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p> <p>Blast-Off, lesson 16, pp. 88-92</p>	<p>*Houghton Mifflin, Student Text, Making Solid Figures, p. 501</p> <p>*Houghton Mifflin, Student Text Extra Practice, p. 510, set C & set D; p. 511, set E & p. 512, set J & set K</p> <p>*Assess student’s ability to create polygons on a geo board. Assess informally.</p> <p>*Houghton Mifflin Chapter 10 Test, Assessment Guide, pp. 80-84</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 4

Adams County/Ohio Valley
Course of Study

Geometry and Spatial Sense 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. Provide rationale for groupings and comparisons of two-dimensional figures and three-dimensional objects. F. Develop definitions of classes of shapes.

Content Organizer: *Characteristics and Properties*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
3. Identify similarities and differences of quadrilaterals; e.g., squares, rectangles, parallelograms and trapezoids.	<p>1. Define each quadrilateral listing attributes of each: <u>Square</u> – 4 sides, 2 pairs of parallel sides, all sides are the same length, all angles are right angles. <u>Rectangle</u> – 4 sides, 2 pairs of parallel sides, all angles are right angles, opposite sides same length. <u>Parallelogram</u> – 4 sides, 2 pairs of parallel sides, opposite sides the same length. <u>Trapezoid</u>- 4 sides, one pair of parallel sides.</p> <p>2. Practice creating each quadrilateral on a geo board.</p> <p>3. Overhead Teaching Activity 10-3. Give students transparency Blackline Master 16.</p>	<p>Houghton Mifflin, pp. 466-467</p> <p>Houghton Mifflin Practice Book, p. 117</p> <p>Houghton Mifflin Reteach Book, p. 117</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p> <p>Blast-Off, lessone 16, pp. 88-92</p>	<p>*Assess student’s ability to create and name each quadrilateral on a geo board.</p> <p>*Houghton Mifflin Chapter 10, Test Assessment Guide, pp. 80-84</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 4

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. Provide rationale for groupings and comparisons of two-dimensional figures and three-dimensional objects. F. Develop definitions of classes of shapes.

Content Organizer: *Characteristics and Properties*

<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
4. Identify and define triangles based on angle measures (equiangular, right, acute and obtuse triangles) and side lengths (isosceles, equilateral and scalene triangles).	<p>1. Define each type of triangle by length of sides or size of angle: <u>Equilateral Triangle</u> – 3 sides, all sides the same length. <u>Isosceles Triangle</u> – 3 sides, at least 2 sides are the same length. <u>Scalene Triangle</u> – 3 sides, no sides are the same length. <u>Right Triangle</u> – 3 sides, one angle is a right angle (90 degree). <u>Obtuse Triangle</u> – 3 sides, one angle an obtuse angle (more than 90 degree). <u>Acute Triangle</u> – 3 sides, all angles are acute angles (less than 90 degree).</p> <p>2. Overhead Teaching Activity 10-4. Give students copies of transparency Blackline Master 10 & 17.</p> <p>3. Create each triangle on a geo board.</p>	<p>Houghton Mifflin, pp. 468-469</p> <p>Houghton Mifflin Practice Book p. 118</p> <p>Houghton Mifflin Reteach Book p. 118</p> <p>Houghton Mifflin Challenge Workbook 10-4, p. 118</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p> <p>Blast-Off, lesson 16, pp. 88-92</p>	<p>*Assess students ability to create each triangle on a geo board.</p> <p>Houghton Mifflin Student Text, Extra Practice, p. 510, set D</p> <p>Houghton Mifflin Chapter 10, Test Assessment Guide, pp. 80-84</p>

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Mathematics – Grade 4

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. Describe and identify points, lines and planes in the environment. Content Organizer: <i>Spatial Relationships</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
5. Describe points, lines and planes, and identify models in the environment.	1. Describe and define point, line, line segment, end point, parallel lines, intersecting lines, perpendicular lines. Model each line using toothpicks, pencils or straws. 2. Draw lines using a ruler. Label end points, measure line segments. 3. Identify examples of lines and planes in the classroom or the outside environment. 4. Overhead Teaching Activity 10-1 5. Houghton Mifflin Student Text, p. 463, Practice Game – Triple Concentration – Teaching Tool 17	Houghton Mifflin pp. 460-462 Houghton Mifflin Practice Book, p. 115 Houghton Mifflin Reteach Book, p. 115 Houghton Mifflin Challenge Workbook, 10-1, p. 115 Computer-Cornerstone Math Accelerated Math Blast-Off, lesson 15, pp. 83-84	*Assess students by asking them to construct lines on a geo board or by using physical models, assess informally *Houghton Mifflin Student Text, p. 510, set A *Houghton Mifflin Student Text, Chapter Review, p. 514, 7-10 * Houghton Mifflin Chapter 10, Test Assessment Guide, pp. 80-84

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Mathematics – Grade 4

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: G. Find and name locations in coordinate systems. Content Organizer: <i>Spinal Relationships</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
6. Specify locations and plot ordered pairs on a coordinate plane, using first quadrant points.	1. Overhead Teaching Activity 11-1, 11-2, 11-3 & 11-4. 2. Map Activity – Explore Ohio, p. 4 3. Teacher Resource Book, pp. 41 & 61	Houghton Mifflin pp. 524-533 Houghton Mifflin Practice Book, pp. 131-134 Houghton Mifflin Reteach Book, pp. 131-134 Houghton Mifflin Challenge Workbook 11-1, p. 131; 11-2, p. 132 & 11-3, p. 133 Computer-Cornerstone Math Accelerated Math	*Houghton Mifflin Student Text, p. 554, set A, set B & set C *Houghton Mifflin Student Text, p. 558, Chapter Review *Houghton Mifflin Chapter 11, Test Assessment Guide, pp. 88-92

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. 31

Mathematics – Grade 4

Adams County/Ohio Valley
Course of Study

<p>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. Describe, identify and model reflections, rotations and translations, using physical materials. J. Describe a motion or series of transformations that show two shapes are congruent.</p> <p>Content Organizer: <i>Transformations and Symmetry</i></p>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>7. Identify, describe and use reflections (flips), rotations (turns), and translations (slides) in solving geometric problems; e.g., use transformations to determine if 2 shapes are congruent.</p>	<p>1. Overhead Teaching Activity 10-7.</p> <p>2. Introduce vocabulary: Reflections – flips Rotations – turns Translations – slides</p> <p>3. Use geo boards to create geometric shapes. Students demonstrate flips, turns and slides.</p> <p>4. Use grid paper to draw geometric figures. Create flips, turns and slides of figures.</p> <p>5. Use pattern blocks or tangram pieces to demonstrate each – flip, turn, slide.</p> <p>6. Visual thinking, p. 481.</p> <p>7. Enrichment, p. 563.</p> <p>8. AIMS – Series I, pp. 165-187</p>	<p>Houghton Mifflin pp. 474-477, 481, 519 & 563</p> <p>Houghton Mifflin Practice Book, p. 120</p> <p>Houghton Mifflin Reteach Book, p. 120</p> <p>Houghton Mifflin Challenge Book 10-6, p. 120</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p> <p>Blast-Off, pp. 75-79 & 82</p>	<p>*Visually check students comprehension by creating flips, turns & slides on the geo board – informal assessment</p> <p>*Demonstrate understanding of flips, slides and turns by creating each on grid paper</p> <p>*Houghton Mifflin Chapter 10, Test Assessment Guide, pp. 80-84</p>

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Mathematics – Grade 4

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>8. Use geometric models to solve problems in other areas of mathematics, such as number (multiplication/division) and measurement (area, perimeter, border).</p>	<p>1. Manipulate base 10 blocks to model multiplication problems.</p> <p>2. Organize centimeter cubes to create arrays. Practice dividing these arrays.</p> <p>3. Select centimeter cubes, inch cubes to measure area and perimeter.</p> <p>4. H.M. Overhead Teaching Activity 4-2, 5-1, 6-6, 10-10 & 10-11.</p> <p>5. Houghton Mifflin Teacher Resource Book Hundred Chart, p. 29.</p>	<p>Houghton Mifflin pp. 168-169, 218-219, 292-293, 482-483, 488 & 492-493</p> <p>Houghton Mifflin Practice Book, pp. 42, 54, 76, 120 & 121</p> <p>Houghton Mifflin Reteach book, pp. 42, 54, 120 & 121</p> <p>Houghton Mifflin Challenge Workbook, 4-2, p. 42 & 5-1, p. 54</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p> <p>Blast-Off, pp. 111-112</p>	<p>*Visually check students ability to multiply or divide using base-ten blocks or centimeter cubes and measure area or perimeter – Informal Assessment</p> <p>*Houghton Mifflin Chapter 10, Test Assessment Guide, pp. 80-84</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 4

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. Use patterns to make predictions, identify relationships, and solve problems. D. Represent an unknown quantity as a variable using a symbol, including letters.</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. Using models and words to describe, extend and make generalizations of patterns and relationships occurring in computation, numerical patterns, geometry, graphs and other applications.</p>	<p>1. Houghton Mifflin Teacher Manual, p. 21 Number Sense</p> <p>2. Houghton Mifflin Student Text, pg 35, problem 19.</p> <p>3. Houghton Mifflin Student Test, p. 115 Number Sense - Multiples</p>	<p>Houghton Mifflin pp. 21, 35, 112-113, 139-141, 166-167, 176-177, 192-193, 230-231, 384-385 & 568-569</p> <p>Houghton Mifflin Practice Book, pp. 28 36 & 37</p> <p>Houghton Mifflin Reteach Book 28, 36 & 37</p> <p>Houghton Mifflin Challenge Workbook 3-3, p.28; 3-11, p. 36 & 3-12, p. 37</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p>	<p>*Blast-Off, pp. 65-68</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. 34

Mathematics – Grade 4

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. Analyze and extend patterns, and describe the rule in words.</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>2. Represent and analyze patterns and functions, using words, tables and graphs.</p>	<p>1. Houghton Mifflin, Teacher’s Manual, p. 59 & Number Sense, p. 139.</p> <p>2. Overhead Teaching Activity 2-12, 3-3, 4-1, 4-10 & 5-5.</p>	<p>Houghton Mifflin pp. 21, 35, 58, 87, 94, 96, 112-114, 131, 139-141, 146-147, 150, 166-167, 175-177, 192-193, 224, 230-231, 325, 384-385, 396, 405, 494-495</p> <p>Houghton Mifflin Practice Book, pp. 24, 28, 36, 37, 39, 41 & 45</p> <p>Houghton Mifflin Reteach Book, pp. 24, 28, 36, 37, 39, 41 & 45</p> <p>Houghton Mifflin Challenge Workbook 3-3, p. 28; 3-11, p. 36; 2-12, p. 24; 3-14, p. 39; 4-1, p. 41 & 4-5, p. 45</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p>	<p>*Blast-Off, pp. 69-74</p>

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Mathematics – Grade 4

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. Construct and use a table of values to solve problems associated with mathematical relationships. Content Organizer: Use Algebraic Representation			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
3. Represent mathematical relationships with equations or inequalities.	1. AIMS – Series 2 Logic 2. Houghton Mifflin Student Edition, Guided Practice, p. 298, 1 & 2.	Houghton Mifflin pp. 298-299 Houghton Mifflin Practice Book, p. 78 Houghton Mifflin Reteach Book, p. 78 Houghton Mifflin Challenge Workbook, 6-8, p. 78 Computer-Cornerstone Math Accelerated Math	*Houghton Mifflin Student Text, p. 299, Choose a Strategy Problems 3, 6, 7 Houghton Mifflin Student Text, p. 313, Extra Practice #5 & #6 Houghton Mifflin Problem Solving for Success, pp. 70-72

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 4

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: E. Use variables to create and solve equations representing problem situations. Content Organizer: Use Algebraic Representations			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
4. Construct a table of values to solve problems associated with a mathematical relationship.	1. Houghton Mifflin Teacher Resource book, p. 52, Parent Letter. 2. Houghton Mifflin Teacher Resource Book, p. 27 – Input/Output Tables.	Houghton Mifflin pp. 21, 35, 112-113, 139-141, 147-149, 166-167, 175-177, 192-193, 230-231, 325, 384-385, 405 & 494-495 Houghton Mifflin Practice Book, pp. 37, 39, 40, 45, 98 & 126 Houghton Mifflin Reteach Book, pp. 37, 39, 40, 45, 98, 126 Houghton Mifflin Challenge Workbook 3-12, p. 37; 3-14, p. 39; 3-15, p. 40; 4-5, p. 45; 8-6, p. 98 & 10-12, p. 126 Computer-Cornerstone Math Accelerated Math Blast-Off	*Houghton Mifflin Problem Solving for Success, pp. 28, 29, 35, 37, 38, 39, 87, 94, 112, 113, 114 & 119 *Houghton Mifflin p. 405, Student Text 1-4 *Teacher Made Tests *Blast-Off, pp. 65-74

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 4

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. Write and solve open sentences and explain strategies. Content Organizer: Use Algebraic Representations			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
5. Use rules and variables to describe patterns and other relationships.	1. Overhead Teaching Activity 2-8, 2-10, 2-11, 2-12, 3-11, 3-13 & 3-14. 2. AIMS Series I – pp. 73-75.	Houghton Mifflin pp. 75-77, 82-87, 123, 136-138, 142-149 Houghton Mifflin Practice Book, pp. 20, 22, 23, 24, 36, 38, 39, 40 Houghton Mifflin Reteach Book, pp. 20, 22, 23, 24, 36, 38, 39, 40 Houghton Mifflin Challenge Workbook 2-8, p. 20; 2-10, p. 22; 2-11, p. 23; 2-12, p. 24; 3-11, p. 36; 3-13, p. 38 & 3-15, p. 40 Computer-Cornerstone Math Accelerated Math	*Houghton Mifflin Chapter 2 Test Assessment Guide, pp. 22-25 *Houghton Mifflin Student Text, p. 94, set F, set H, set I & p. 154, set J & set K

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. 38

Mathematics – Grade 4

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: G. Describe how a change in one variable affects the value of a related variable. Content Organizer: <i>Analyze Change</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
6. Describe how a change in one variable affects the value of a related variable; e.g., as one increase the other increases or as one increase the other decreases.	1. Overhead Teaching Activity 3-14. 2. Show What You Know, p. 147. 3. Brain Teasers at Kids' Place www.eduplace.com/kids/mhm at Education Place	Houghton Mifflin pp. 144-146 Houghton Mifflin Practice Book, p. 39 Houghton Mifflin Reteach Book, p. 39 Houghton Mifflin Challenge Workbook 3-14, p. 39 Computer-Cornerstone Math Accelerated Math	*Houghton Mifflin Student Text, p. 146 *Houghton Mifflin Student Text, p. 154, set K *Chapter 3 Test Assessment Guide, pp. 28-31

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. 39

Mathematics – Grade 4

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: Gather and organize data from surveys and classroom experiments, including data collected over a period of time. Content Organizer: <i>Data Collection</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
1. Create a plan for collecting data for a specific purpose.	1. Overhead Teaching Activity 9-1. 2. AIMS – Series I Sharing Birthday, pp. 76-80.	Houghton Mifflin 416-417 Houghton Mifflin Practice Book, p. 104 Houghton Mifflin Reteach Book, p. 104 Houghton Mifflin Challenge Workbook 9-1, p. 104 Computer-Cornerstone Math Accelerated Math Blast-Off, pp. 121-135	*Chapter 10 Test Assessment Guide, pp. 80-84 *Students poll classmates on favorite item such as snack, color, sport, etc. and create a graph using Graph Club or similar program or create graph on paper.

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Mathematics – Grade 4

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: B. Read and interpret tables, charts, graphs (bar, picture, line, line plot), and timelines as sources of information, identify main idea, draw conclusions, and make predictions. C. Construct charts, tables and graphs to represent data, including picture graphs, bar graphs, line graphs, line plots and simple Venn diagrams.</p> <p>Content Organizer: <i>Data Collection</i></p>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>2. Represent and interpret data using tables, bar graphs, line plots and line graphs.</p>	<p>1. Houghton Mifflin Student Text, p. 201, problems 1 & 2.</p> <p>2. Overhead Teaching Activity, pp. 9-1, 9-3 & 9-5.</p> <p>3. AIMS Series I – Water in Apples, pp. 83-87.</p>	<p>Houghton Mifflin 200-201, 298-299, 416-417, 422-424, 426-429 & 550-551</p> <p>Houghton Mifflin Practice Book, pp. 53, 78, 104, 106, 107, 108, 140</p> <p>Houghton Mifflin Reteach Book, pp. 53, 78, 104, 106, 107, 108 & 140</p> <p>Houghton Mifflin Challenge Workbook 4-13, p. 53; 6-8, p. 78; 9-1, p. 104; 9-3, p. 106; 9-4, p. 107; 9-5, p. 108 & 11-10, p. 140</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p>	<p>*Houghton Mifflin Student Text, p. 207, 9-12; p. 313, 5 & 6; p. 446, set B & set C & p. 557, 7 & 8</p> <p>*Houghton Mifflin p. 416 – Divide on a survey question with 3 or 4 possible answers. Predict the most popular, lease popular. Then tally the survey and represent data in a table, bar graph, line graph and line plot. Students explain how results compared to predictions.</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 4

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: C. Construct charts, tables and graphs to represent data, including picture graphs, bar graphs, line graphs, line plots and simple Venn diagrams. Content Organizer: <i>Data Collection</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
3. Interpret and construct Venn diagrams to sort and describe data.	<p>1. On the board, create a Venn diagram to compare class pets, favorite foods, or attributes of students. Students fill in their name in the appropriate space on the diagram. Compare results of student selections to interpret the data.</p> <p>2. AIMS – Series 2, Sorting Teddy Grahams, pp. 77-81.</p>	<p>Houghton Mifflin 101 & 476</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p>	<p>*Provide students with data. They create a Venn diagram to display the data.</p> <p>*Teacher made Test</p> <p>*Enrichment, p. 101</p> <p>*Logical Thinking, p. 476</p>

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Mathematics – Grade 4

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: C. Construct charts, tables and graphs to represent data, including picture graphs, bar graphs, line graphs, line plots and simple Venn diagrams. Content Organizer: <i>Data Collection</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
4. Compare different representations of the same data to evaluate how well each representation shows important aspects of the data, and identify appropriate ways to display the data.	1. Overhead Teaching Activity 9-1, 9-3 & 9-5. 2. AIMS Series I – M & M Activity, pp. 29-34.	Houghton Mifflin 416-417, 422-424, 426-429 Houghton Mifflin Practice Book, pp. 104, 106, 107, 108 Houghton Mifflin Reteach Book, pp. 104, 106, 107 & 108 Houghton Mifflin Challenge Workbook 9-1, p. 104; 9-3, p. 106; 9-4, p. 107 & 9-5, p. 108 Computer-Cornerstone Math Accelerated Math Blast-Off, pp. 121-135	*Houghton Mifflin Problem Solving for Success – Intervention Master 9-4, pp. 97 & 98 *Houghton Mifflin Student Text – Extra Practice, p. 446, set B & set C *Houghton Mifflin Student Text Chapter Review, p. 450, 14-16 & p. 451, 19-21 *Houghton Mifflin Student Text Chapter Test, p. 452, 5-12 Houghton Mifflin Chapter 9 Test Assessment Guide, pp. 72-77

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. 43

Mathematics – Grade 4

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: B. Read and interpret tables, charts, graphs (bar, picture, line, line plot), and timelines as sources of information, identify main idea, draw conclusions, and make predictions.</p> <p>Content Organizer: <i>Data Collection</i></p>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>5. Propose and explain interpretations and predictions based on data displayed in tables, charts and graphs.</p>	<p>1. Explore Ohio – p. 9</p> <p>2. Create classroom graphs and tables based on tallies that you select. Compare data.</p> <p>3. Overhead Teaching Activity 9-3.</p>	<p>Houghton Mifflin 83, 121, 196, 200-201, 224, 258, 354-355, 414-415, 418-429 & 486-487</p> <p>Houghton Mifflin Practice Book, pp. 92, 105, 106, 107</p> <p>Houghton Mifflin Reteach Book, pp. 92, 105, 106, 107</p> <p>Houghton Mifflin Challenge Workbook 7-11, p. 92; 9-2, p. 105; 9-3, p. 106 & 9-4, p. 107</p> <p>Accelerated Math</p> <p>Computer-Cornerstone Math</p>	<p>*Blast-Off, pp. 124-133</p> <p>*Houghton Mifflin p. 196, 40-42</p> <p>*Houghton Mifflin p. 201, 3-7</p> <p>*Houghton Mifflin p. 207, 9-12</p> <p>*Houghton Mifflin p. 224, 41-44</p> <p>*Houghton Mifflin p. 258, 39-44</p> <p>*Houghton Mifflin p. 421</p> <p>*Houghton Mifflin p. 446, set B</p> <p>*Houghton Mifflin p. 449, 1-3</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. 44

Mathematics – Grade 4

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. Describe data using mode, median and range. Content Organizer: <i>Statistical Methods</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
6. Describe the characteristics of a set of data based on a graphical representation, such as range of the data, clumps of data, and holes in data.	1. Overhead Teaching Activity 9-2. 2. Number Sense, p. 421.	Houghton Mifflin 418-421 Houghton Mifflin Practice Book, p. 105 Houghton Mifflin Reteach Book, p. 105 Houghton Mifflin Challenge Workbook 9-2, p. 105 Computer-Cornerstone Math Accelerated Math	*Houghton Mifflin Student Text, Extra Practice, p. 446, set A *Houghton Mifflin Student Text, Chapter Review 1-7, p. 450 *Houghton Mifflin Student Text, Chapter Test 1-4, p. 452 *Houghton Mifflin chapter 9 Test Assessment Guide, pp. 72-77

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. 45

Mathematics – Grade 4

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. Describe data using mode, median and range. Content Organizer: <i>Statistical Methods</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
7. Identify the median of a set of data and describe what it indicates about the data.	1. Houghton Mifflin Overhead Teaching Activity 9-2.	Houghton Mifflin 418-420 Houghton Mifflin Practice Book, p. 105 Houghton Mifflin Reteach Book, p. 105 Houghton Mifflin Challenge Workbook 9-2, p. 105 Computer-Cornerstone Math Accelerated Math	*Houghton Mifflin Student Text Extra Practice, p. 446, set A *Houghton Mifflin Student Text Chapter Review 1-7, p. 450 *Houghton Mifflin Student Text Chapter Test 1-4, p. 452 *Houghton Mifflin Chapter 9 Test Assessment Guide, pp. 72-77

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Mathematics – Grade 4

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. Describe data using mode, median and range. Content Organizer: <i>Statistical Methods</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
8. Use range, median and mode to make comparisons among related sets of data.	1. Overhead Teaching Activity 9-2.	Houghton Mifflin 418-421 Houghton Mifflin Practice Book, p. 105 Houghton Mifflin Reteach Book, pp. 105 Houghton Mifflin Challenge Workbook 9-2, p. 105 Computer-Cornerstone Math Accelerated Math	*Hm Student Text, Extra Practice, p. 446, set A *Houghton Mifflin Student Text, Chapter Review 1-7, p. 450 *Houghton Mifflin Student Text, Chapter Test 1-4, p. 452 *Houghton Mifflin Chapter 9, Test Assessment Guide, pp. 72-77

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 4

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. Conduct a simple probability experiment and draw conclusions about the likelihood of possible outcomes. Content Organizer: <i>Probability</i>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
9. Conduct simple probability experiments and draw conclusions from the results; e.g., rolling number cubes or drawing marbles from a bag.	1. Overhead Teaching Activity 9-7, 9-8, 9-9 & 9-10. 2. Houghton Mifflin Teacher Resource book, p. 43. Students cut out cube and color 1 side green, 2 sides blue and 3 sides red. Make predictions: Which color will come up most often if you roll the cube 50 times? Roll the cube, tally and write observations.	Houghton Mifflin 434-441 Houghton Mifflin Practice Book, pp. 110-113 Houghton Mifflin Reteach Book, pp. 110-113 Houghton Mifflin Challenge Workbook 9-7, p. 110; 9-8, p. 111; 9-9, p. 112 & 9-10, p. 113 Computer-Cornerstone Math Accelerated Math Blast-Off, pp. 136-144	*Houghton Mifflin Student Text Extra Practice, p. 447, set D & set E & p. 448, set F *Houghton Mifflin Student Text Chapter Review 19-21, p. 451 *Houghton Mifflin chapter 9 Test Assessment guide, pp. 72-77

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Mathematics – Grade 4

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. Benchmark: E. Conduct a simple probability experiment and draw conclusions about the likelihood of possible outcomes. G. Use the set of possible outcomes to describe and predict events. Content Organizer: <i>Probability</i></p>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>10. Represent the likelihood of possible outcomes for chance situations; e.g., probability of selecting a red marble from a bag with 3 red and 5 white marbles.</p>	<p>1. Overhead Teaching Activity 9-8, 9-9 & 9-10</p> <p>2. Houghton Mifflin Teacher Resource Book, p. 40 – Teacher made worksheet.</p>	<p>Houghton Mifflin 436-411</p> <p>Houghton Mifflin Practice Book, pp. 111-113</p> <p>Houghton Mifflin Reteach book, pp. 111-113</p> <p>Houghton Mifflin Challenge Workbook 9-8, p. 111; 9-9, p. 112 & 9-10, p. 113</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p> <p>Blast-Off, pp. 136-144</p>	<p>*Houghton Mifflin Student Text Extra Practice, p. 447, set E & p. 448, set F</p> <p>*Houghton Mifflin Chapter 9 Test Assessment Guide, pp. 72-77</p>

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Mathematics – Grade 4

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. Benchmark: E. Conduct a simple probability experiment and draw conclusions about the likelihood of possible outcomes. G. Use the set of possible outcomes to describe and predict events. Content Organizer: <i>Probability</i></p>			
<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
<p>11. Relate the concepts of impossible and certain-to-happen events to the numerical values of 0 (impossible) and 1 (certain).</p>	<p>1. Overhead Teaching Activity 9-8.</p>	<p>Houghton Mifflin 436-437</p> <p>Houghton Mifflin Practice Book, p. 111</p> <p>Houghton Mifflin Reteach Book, p. 111</p> <p>Houghton Mifflin Challenge Workbook 9-8, p. 111</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p> <p>Blast-Off, pp. 136-144</p>	<p>*Houghton Mifflin Student Text Extra Practice, p. 447, set E</p> <p>*Houghton Mifflin Chapter 9 Test Assessment Guide, pp. 72-77</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. 50

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<i>Grade Level Indicator</i>	<i>Instructional Activities/Strategies</i>	<i>Resources</i>	<i>Assessment</i>
12. Place events in order of likelihood and use a diagram or appropriate language to compare the chance of each event occurring; e.g., impossible, unlikely, equal, likely, certain.	1. Overhead Teaching Activity 9-7.	Houghton Mifflin 434-435 Houghton Mifflin Practice Book, p. 110 Houghton Mifflin Reteach Book, p. 110 Houghton Mifflin Challenge Workbook 9-7, p. 110 Computer-Cornerstone Math Accelerated Math Blast-Off, pp. 136-144	*Houghton Mifflin Student Text Extra Practice, p. 447, set D *Houghton Mifflin Student Text Chapter Review, p. 451, 19-21 *Houghton Mifflin Chapter 9 Test Assessment Guide, pp. 72-77

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Mathematics – Grade 4

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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: F. Identify and represent possible outcomes, such as arrangements of a set of up to four members and possible combinations from several sets, each containing 2 or 3 members.</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>13. List and count all possible combinations using one member from each of several sets, each containing 2 or 3 members; e.g., the number of possible outfits from 3 shirts, 2 shorts, and 2 pairs of shoes.</p>	<p>1. Houghton Mifflin Student Text, Logical Thinking, p. 240.</p> <p>2. Illustrate all possible combinations using the numbers 1, 2, 3 or colors. Students write problems and give to a partner to solve.</p> <p>3. AIMS – Series I, Teddy Bears Dress-UP, pp. 102-105.</p>	<p>Houghton Mifflin p. 240, 455</p> <p>Computer-Cornerstone Math</p> <p>Accelerated Math</p>	<p>*Houghton Mifflin – Logical Thinking, p. 24</p> <p>*Houghton Mifflin – Enrichment, p. 455</p>

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