

Carroll County Public Schools Advanced Grade 4 Mathematics
Suggested Timeline and Text Reference

Benchmarks/Competencies	Approximate Time Frame	Scott Foresman 2005	McGraw Hill 1999	McGraw Hill 2005
Advanced Competency Cluster 4.1 Number Relationships and Computation – Decimals +/-	August/September Total Days – 19	5th Grade Text	5th Grade Text	5th Grade Text
Read and write standard form and expanded notation for numbers through hundred millions	1 day	4,5,10,14,15,16,20,21,50	2-5	4 – 6
Read, write and represent decimals on a number line using decimals with no more than two decimal places (0-100)	4 days	8,14,15,16,20,21	16 - 19, 24	8 –13
Compare and order decimal numbers with or without the symbols (>, <, =) using no more than four decimals and no more than three decimal places and numbers (0-100).	3 days	6,7,12,13,17,20,21	6-9, 16-23	14 –16
Round whole numbers and decimals	2 days	26-31,34,35,51	24-25	28 -31
Computation of Decimals		4th Grade Text	4th Grade Text	4th Grade Text
a. Estimate sums and differences with decimals	2day	632-637	463A-465; 45A-471	606-609 648-649
b. Add and subtract decimals and money (No more than 2 decimal places and no more than 4 digits, 0-100)	6 days	638-645 54-55		610-611 632-633 624-628
Apply Knowledge of Money				
a. Compare the value of 2 sets of mixed currency (\$0-100)	1 day	28-33 42-43	41A-43	642-545 20-25 32-33
b. Determine the change from \$100				
Problem Solving and Process Standards	Ongoing			
* It is recommended that this cluster be taught with all students in the top math group even if they may not be spending the entire year working in the advanced clusters. This will ensure that students have the prerequisite skills in decimals necessary for later advanced clusters should they be ready to be instructed at that level.				

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Advanced Competency Cluster 4.2 Knowledge of Statistics	Sept/Oct Total Days – 7	5th Grade Text	5th Grade Text	
Conduct surveys and gather relevant data and compare data sets to answer a question	1 day	260-261	Ch. 3: 78-81 Practice: 84	
Organize, display, and analyze data using: <ul style="list-style-type: none"> a. Stem and leaf plots with no more than 20 pieces of data points using whole number (0-100) b. Line plots with no more than 20 pieces of data with a range of no more than 20 using whole numbers (0-200) e. Double bar graphs with no more than four categories and intervals of 1, 2, 5, or 10 using whole numbers (0-100) Ⓔ. Double Line graphs with y-axis having intervals of 1, 2, 4, 5, or 10 and x-axis with no more than 10 time intervals using whole numbers (0-100) e. Determine appropriate type of graph to effectively display data 	3 days of instruction (followed by continuous use)	270-273, 288-291 260-261, 288-291 262-265 291,294 288-289	Ch. 3: 98–99 79-80 84-87 94-97	
Read Circle graphs with no more than 4 categories and data in whole numbers or percents which are multiples of 5 (0-100)	1 day	286-287	Ch.3: 82-83	
Find the median, mode and range of a data set and explain how these measures are different	1 day	282-285	Ch. 11: 418-419	
Apply the measures of central tendency to find the mean (with no remainders) of a given data set with no more than eight pieces of data using whole numbers (0-1000)	1 day	282-285 Grade 4 Text 404-405	Ch. 3: 82-83 Grade 4 Text 299A-301	Grade 4 Text 320-325
Problem Solving and Process Standards				

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<p>Advanced Competency Clusters 4.3 and 4.4 Number Relationships and Computation $x \div$ Knowledge of Algebra, Patterns, and Functions</p> <p>Develop and expand understanding of whole numbers through 2-digit multipliers</p> <p>a. Estimate products</p> <p>Divide (one digit divisors) whole numbers and interpret remainders</p> <p>a. Estimate quotients</p> <p>b. Divide up to a 3-digit dividend by a 1-digit divisor using whole numbers and no remainders (0-1,000)</p> <p>Express numeric relationships using $+x \div, /, <, >$, or =</p> <p>a. Select the appropriate operational and relational symbols to express relationships and solve problems</p> <p>b. Solve for an unknown in an equation. Write simple algebraic expressions in one unknown and evaluate by substitution</p> <p>Identify, describe, extend and create numeric patterns and functions to:</p> <p>a. Interpret or write the rule for a one-operation (+, -, x,) with no remainders) function table using whole numbers or decimals with no more than two decimal places (0-1000)</p> <p>b. Complete/create a function table with a one-operation (+, -, x) with no remainders) rule with using whole numbers or decimals with no more than two decimal places (0-200) to solve a real world problem.</p>	<p>Oct./Nov. Total Days – 30</p> <p>10 days</p> <p>2 days</p> <p>10 days</p> <p>2 days</p> <p>*It is assumed that algebra will be embedded throughout instruction</p> <p>6 days</p>	<p>4th Grade Text</p> <p>320-323 332-341</p> <p>316-319 407-411 368-371 372-393</p> <p>394-399</p> <p>Grade 5 Text 106-107,176-177</p> <p>Chap. 11</p>	<p>4th Grade Text</p> <p>205A-207, 209A-217, 223A-227 207A-209</p> <p>277A-279, 281A -285, 285C-293 279A-281</p> <p>296, 302, 303</p> <p>Grade 5 Text Practice: 54-55, 66-67, 68, 69</p>	<p>4th Grade Text</p> <p>250-257 260-261 266-269 264-265 296-300 294-295 302-307</p> <p>331</p> <p>Grade 5 Text 408-410</p>

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Advanced Competency Cluster 4.5 Apply Knowledge of Fractions	December Total Days – 10	5th Grade Text	5th Grade Text	5th Grade Text
Read, write, and represent fractions or mixed numbers with denominators as factors of 24 using symbols, words, or models (0 – 200)	2 days	Ch. 7 & 8 394-401	330-331, 352-353	206-208
Represent mixed numbers on a number line using mixed numbers with denominators of 2, 3, 4, 5, 6, 8, 10 (0-10)	1 day	404-405,430-431		230
Compare and order no more than four fractions or mixed numbers with denominators that are factors of 100 with or without using the symbols (<, >, =) (0 – 100)	3 days	404-405,418-423	356-357	224-225,234-236
Identify the greatest common factor which is no more than 10 of two whole numbers (0 – 100)	2 days	414-415	344-345	204-205
Identify a common multiple or the least common multiple of no more than four single digit whole numbers.	2 days	464-465	354-355	220-223

All Competencies up to this point will be assessed on the January Assessment.

Review for January Assessment	2 days
Administer January Assessment	2 days

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Competency Cluster 4.6 Number Relationships and Computation: Fraction Concepts Probability	January Total Days – 14	5th Grade Text	5th Grade Text	5th Grade Text
Add and subtract proper fractions or mixed numbers with denominators as factors of 24 and answers in simplest form (0 – 20)	4 – 6 days	416-417	346-347, Ch. 10: 374-401	251-254,258-264, 271-283
Use estimation to solve problems with fractions	1 days	402-403		286-287
Identify or determine equivalent forms of proper fractions with denominators that are factors of 100, decimals, or percents (0-200)	2 days	410-413	334 - 335, Ch. 10: 392-393 Ch. 13: 496-497	212-213,226-227
Compute 10, 20, 25, 50 and 100 percent of a number	2 days	668-671		647-651
Determine possible outcomes of two independent events with no more than four outcomes each, using an organized list or tree diagram.	2 days	5th Grade Text 300-301	5th Grade Text Ch. 5: 172, 173	
Find the probability of an event with equally likely outcomes and express the probability as a fraction with no more than 20 outcomes.	2 days	302-303	Ch. 13: 504-507 Grade 6 Text Ch. 12: 476-477	
Problem Solving and Process Standards	Ongoing		Ch. 13: 484-489, 504-507	

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<p>Advanced Competency Cluster 4.7 Addition and Subtraction Computation *Students should be proficient with addition and subtraction facts.</p> <p>Add and subtract whole numbers and decimals</p> <p>a. Add decimals, including money with no more than four addends and no more than three decimal places in each addend (0-1000)</p> <p>b. Subtract decimals including money with a minuend and subtrahend with no more than three decimal places (0-1000)</p> <p>c. Estimate and determine the perimeter of polygons with no more than eight sides using whole numbers (0 – 500).</p> <p>Explain and apply number relationships using the properties of operations, including associative, commutative, and identity</p> <p>Identify, describe, extend and create numeric patterns and functions to:</p> <p>a. Interpret or write the rule for a one-operation (+, -, x,) with no remainders) function table using whole numbers or decimals with no more than two decimal places (0-1000)</p>	<p>Total Days – 11 Ongoing</p> <p>4 days</p> <p>1-2 days</p> <p>1 day</p> <p>1 day</p>	<p>5th Grade Text</p> <p>36-41,46-47,50-51</p> <p>38-39</p> <p>40-41</p> <p>540-541,546-547</p> <p>22-25</p> <p>106-107,176-177</p>	<p>5th Grade Text</p> <p>44-47, 56-57, 60-63</p> <p>58-63</p> <p>446-447</p> <p>38-40</p> <p>Practice: 54-55, 66-67, 68, 69</p> <p>Grade 6 Text (McGraw-Hill) Pgs. 342-347, 376-377, 498, 544, 556-558</p>	<p>5th Grade Text</p> <p>23-26</p> <p>498-500</p> <p>34-35,266-267</p> <p>408-410</p>

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Benchmarks/Competencies	Approximate Time Frame	Scott Foresman 2005	McGraw Hill 1999	McGraw Hill 2005
<p>Write and identify expressions</p> <p>a. Represent unknown quantities with one unknown and one operation (+, -, x,) with no remainders) using whole numbers (0-100) and money (\$0-\$100)</p> <p>b. Determine the value of algebraic expressions with one unknown and one operation using whole numbers (0-1000).</p> <p>c. Use parenthesis to evaluate a numeric expression. <i>(Make connection to Order of Operations)</i></p>	1 day	5th Grade Text 108-109,112-113	5 th Grade Text 64-65	5th Grade Text 402-405 406-407
<p>Identify, write or solve and apply equations and inequalities</p> <p>a. Represent relationships by using the appropriate relational symbols (<, >, =) and one operational symbol (+, -, x,) with no remainders) on either side using whole numbers (0-400)</p>	1 day			
<p>b. Find the unknown in an equation with one operation (+, -, x, ÷ with no remainders) using whole(numbers 0 – 2,000)</p>	1 day	108-109,112-113	Ch. 2: 42-43,	402-405
<p>Use estimation to determine the sum of no more than three addends or the difference of a minuend and a subtrahend (No more than 3 decimal places, 0-1000)</p>				
<p>Problem Solving and Process Standards</p>	Ongoing			

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Advanced Competency Cluster 4.8 Number Relationships and Computation x/÷	Total Days – 18	5 th Grade Text	5 th grade Text	5 th Grade Text
Demonstrate proficiency with multiplication and division facts	Ongoing	64, 65	Practice: 158-161	54-55
Explain and apply number relationships using the properties of operations, including associative, commutative, distributive, identity, zero and <i>multiplicative inverse</i> (<i>connect to fractions</i>)	2 days	66-67, 70-71 162-167	Ch. 4: 114-115, 122-123	62-65, 56-57
Use number theory concepts of primes and composites (0-100), factors, prime factorization, and multiples to show number relationships	2 days		Ch. 9: 342-343, 349	
Multiply a 3-digit factor by another factor with no more than 2-digits using whole numbers (0-10,000)	2 days	71-74, 77, 83	Ch. 4: 124-131	202-203
Multiply a decimal in monetary notation by a single digit whole number (0 – 100)	3 days		Ch. 4: 136-145	58-60
Use estimation to determine the product of one 1-digit factor with the other factor having 3 or 4 digits	1 day	74	Ch. 4: 118-121	76-78
Estimate the product of a decimal in monetary notation by a single digit whole number.	1 day	550, 551, 561	446-447, 450-451	

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		5 th Grade Text	5 th grade Text	5 th Grade Text
Estimate and determine the area of rectangles with whole numbers (0–200).	1 day	552, 554, 558-561	446-447, 450-451	502-504
Identify and use rules of divisibility for 2, 3, 5, 9, or 10 with whole numbers (0 – 10,000)	1 day	162-163	Practice:158-161 Ch. 5: 175	108-112
Use estimation to determine the quotient of a dividend having no more than three digits and a 1-digit divisor using whole numbers (0- 5,000)	1 day	138-141	Ch. 5: 164-165, 184-185, 188-198	123-125
Interpret quotients (including remainders) with no more than a 3-digit dividend by a 1 or 2-digit divisor using whole numbers (0 – 1,000)	1 day	152,214,168, Ch.3&4	Ch. 5: 166-171 Ch. 6: 204-221	114-117
Divide decimals by whole numbers using one- and two- digit divisors	3 days	160, 161, 232-237	Ch. 5: 180-189 Ch. 6: 226-231	132-134
Problem Solving and Process Standards	Ongoing			

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Advanced Competency Cluster 4.9 Knowledge of Geometry	Total Days 13	5 th Grade Text	5 th grade Text	5 th Grade Text
Analyze properties of plane geometric figures to:				
a. Identify and describe parallel or perpendicular lines or line segments in geometric figures or pictures.	1 day	328-331	290-295	450-452
b. Identify a polygon with no more than eight sides as part of a composite figure comprised of triangles or quadrilaterals.	1 day		286-289	
c. Identify and describe the radius and diameter of a circle	1 day	336-337	308-309	472-474
Compare or classify quadrilaterals - squares, rectangles, rhombi, parallelograms, or trapezoids by sides or angles.	1 day	346-348	298 - 300	462-465
Identify, describe and draw acute, right, and obtuse angles, parallel line segments and perpendicular line segments given their dimensions using whole numbers (0 – 20) or angle measurements (0 - 180°)	2 days	332-335	292-294	456-457
Measure angles to the nearest degree using protractors.	2 days	332-335	292-294	

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Advanced Competency Cluster 4.10 Knowledge of Measurement	Total Days – 11	5 th Grade Text	5 th grade Text	5 th Grade Text
Use standard units and select appropriate tools within the customary and metric system to measure objects to the nearest 1/8 inch or millimeter	4 days	528-535	246-249, 260-264	358-360, 372-373
Calculate equivalent measurements to: a. Determine start, elapsed, and end time to the nearest minute b. Determine equivalent units of measurement using seconds, minutes, and hours, or pints, quarts, and gallons	5 days	562-567 614-615	250-252, 266- 269 270-273	352-355 362-364
Estimate and determine weight to the nearest ounce or gram	1 day	620-621 624-625	248-249	362-364, 374-376
Estimate and determine capacity to the nearest ounce	1 day		262-264	362-364
Problem Solving and Process Standard	Ongoing			

Review for May Assessment	2 days
Administer May Assessment	2 days