

Diocese of Jefferson City Curriculum Guide

(Revised w/ Prekindergarten Standards 2013)

Math STANDARDS		3-4 yr olds	4-5 yr olds	K	1	2	3	4	5	6	7	8
Standard A: Problem Solving												
YY	Differentiate between more and less, greater/fewer as mathematical terms	I	D	M								
A.1	Sort a group to find more or less	I	D	M								
A.2	Sort a group and record information		I	D	D	D	M	R				
A.3	Match numbers and sets	I	D	D	D	D	M					
A.4	Create original problems			I	D	D	D	M	R	R	R	R
A.5	Select a strategy and solve simple problems	I	D	D	M	R						
A.6	Use the four-step problem solving method (understand question, determine a strategy, solve the problem, and evaluate the solution)					I	D	D	D	M	R	R
A.7	Provide simple explanation for use of a strategy in solving problems		I	D	D	M	R					
A.8	Construct informal logical arguments to justify reasoning process and methods of solutions to problems and develop more efficient methods							I	D	D	D	D
A.9	Differentiate between needed and unneeded information to solve word problems				I	D	D	D	D	M	R	R
A.10	Use numerical reasoning to solve problems			I	D	D	D	D	D	D	D	D
A.11	Use drawings or pictures to solve problems and explain solutions		I	D	D	D	D	D	D	M	R	R
A.12	Use modeling and looking for patterns to solve problems		I	D	D	D	D	D	D	M	R	R
A.13	Use place value models to solve problems				I	D	D	D	D	M	R	R
A.14	Use guess and check, estimation and/or predictions to solve problems				I	D	D	D	D	M	R	R
A.15	Use fraction concepts to solve problems				I	D	D	D	D	D	D	D
A.16	Use backward and simpler form equations to solve word problems							I	D	M	R	R
A.17	Use number theory concepts (divisibility rules, remainders, factors, multiples, prime and composite numbers) to solve problems							I	D	D	D	M
A.18	Use order of operations to solve problems							I	D	D	D	M
A.19	Use equalities and inequalities to solve problems ($x + 3 \geq 5$)								I	D, M	R	R
A.20	Solve multi-step problems with whole numbers						I	D	D	M	R	R
A.21	Solve multi-step problems with integers									I	D	D
A.22	Use proportions and ratios to solve problems								I	D	D	D
A.23	Express word problems as algebraic equations							I	D	D	D	D
A.24	Apply appropriate use of technology (calculators, spreadsheet formulas, drawing programs) to solve problems					I	D	D	D	D	D	D

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Standard B: Properties and Concepts of Numbers												
B.1	Use mathematical vocabulary to explain properties and concepts			I	D	D	D	D	D	D	D	D
B.2	Match groups of items one-to-one	I	D	M								
YY	Make sets of specific numbers of objects	I	D	M								
B.3	Make sets of specific numbers of objects and write the number related to the set		I	D	M							
B.4	Compare groups up to ten items to identify more, less, or equal	I	D	D	M							
B.5	Accurately use the following words: one/many; none/some/all; more/less; and most/least	I	D	D	M							
B.6	Comprehend that a group of objects has the same number of objects regardless of arrangement or position of the objects	I	D	D	M							
YY	Rote count to 10	I,D	M									
B.7	Rote count to 25, 50, 100		I	D,M								
YY	Recognize numbers up to 10, 21, 31		I	D,M								
B.8	Read, write, and compare whole numbers to 50, 100		I	D	M							
B.9	Count, read, write, and order whole numbers to 1000				I	D,M						
B.10	Count, read, write, and order whole numbers to 10,000					I	D,M					
B.11	Count, read, write, and order whole numbers to 100,000						I	D,M				
B.12	Count, read, write, and order whole numbers less than 1,000,000							I	D,M			
B.13	Count forward or backward from a given number		I	D	D	M	R					
B.14	Recognize numbers that come before, after or between given number		I	D	D	M	R					
B.15	Skip count by 2, 5, and 10		I	D	D,M							
B.16	Skip count by 25, 50, and 100				I,D	M						
B.17	Skip count by 3, 4					I	D,M					
B.18	Skip count by 6, 9						I	D,M				
B.19	Skip count by 7, 8							I	D,M			
B.20	Identify even and odd numbers				I	D	M					
B.21	Define and identify prime, composite, and square numbers								I,D	M		
B.22	State ordinal position 1-12	I	D	D	D,M							
B.23	Identify a number that is 10 or 100 more or less than a given number				I	D	M					
B.24	Use number lines for counting and computation			I	D	M	R					
B.25	Use a number line for locating and sequencing whole numbers		I	D	D	M	R					
B.26	Use a number line to locate and sequence fractions, decimals, and percents							I	D	D	M	R
B.27	Use greater than, less than, and equal to compare numbers and groups (>, <, =)				I	D	M	R				
B.28	Write equalities and inequalities using appropriate symbols						I	D	D	M	R	R
B.29	Identify, order, and use integers								I	D	D	M
B.30	Identify square and cubic numbers and determine whole number roots and cubes									I,D	M	R
B.31	Approximate the value of square roots to the nearest whole number										I	D
B.32	Understands and use positive exponents								I	D	M	R

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B.33	Understand and use negative and fractional exponents											I	D
B.34	Understand and use rational and irrational numbers											I	D
B.35	Build sets of 100's, 10's and 1's to demonstrate place value			I	D	M	R						
B.36	Use place-value to read, write, and compare whole numbers up to 100			I	D	M	R						
B.37	Use place-value to read, write, and compare whole numbers up to 10,000					I,D	M	R					
B.38	Use place-value to read, write, and compare whole numbers up to 1,000,000							I	D	D	M	R	
B.39	Relate standard number to expanded form (13 = one ten and three ones)			I	D	D	M	R					
B.40	Round whole numbers to the nearest tens, hundreds, thousands place[2] or ten thousands place[3]					I	D	M					

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Standard C: Computation												
C.1	Identify symbols of addition and subtraction (+, -, =)		I	D,M	R							
C.2	Explain addition and give scenarios that require addition	I	D	D	M							
C.3	Model addition by joining groups of objects		I	D	M							
C.4	Apply number sentences with the +, -, and = symbols to obtain solutions to problems			I, D	M	R						
C.5	Add to or subtract from ten in vertical and horizontal formats			I,D	M							
C.6	Add and subtract numbers to and from 18 in vertical and horizontal format				I,D	M						
C.7	Explain subtraction and give scenarios that require subtraction	I	D	D	M							
C.8	Model subtraction by taking away objects from a group		I	D	M							
C.9	Comprehend the role of zero in addition and subtraction			I	D	M						
C.10	Add and subtract 2-digit numbers without regrouping				I,D	M						
C.11	Add and subtract 2-digit numbers with regrouping				I	D	M					
C.12	Add and subtract 3 and 4-digit numbers with regrouping					I	D	M	R			
C.13	Demonstrate quick recall of basic addition facts			I,D	M	R						
C.14	Demonstrate quick recall of basic subtraction facts					I,D,M	R					
C.15	Demonstrate quick recall of basic multiplication facts						I,D,M	R				
C.16	Demonstrate quick recall of basic division facts						I	D,M	R			
C.17	Apply commutative and associative properties (fact families) of addition to whole numbers				I	D	M	R				
C.18	Identify relationships between addition and subtraction (fact families)				I	D	M	R				
C.19	Use inverse operations to check addition and subtraction				I	D	M	R				
C.20	Use equivalent expressions ($43=40+3=30+13$) to demonstrate the same numbers in different manners					I	D	M				
C.21	Identify multiplication as repeated addition					I,D	M					
C.22	Use multiplication facts and symbols to solve problems					I	D	M				
C.23	Multiply by tens (10, 100, 1000)					I	D	M				
C.24	Multiply a 2, 3, or 4 digit number by a 1, 2, or 3 digit number with regrouping						I	D	M			
C.25	Apply the commutative and associative properties of multiplication to solve problems						I	D	D	M		
C.26	Apply the distributive property to simplify expressions and solve equations							I	D	D	M	
C.27	Use inverse operations to check multiplication and division						I	D	M	R		
C.28	Use division facts and symbols to solve problems							I	D	D	M	

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C.29	Divide 2 or 3 digit numbers by 1 digit divisors with remainders							I,D	M			
C.30	Divide 2 or 3 digit numbers by 2 digit divisors with remainders							I	D,M	R		
C.31	Find greatest common factor (GCF)							I	D	M	R	R
C.32	Find least common multiple (LCM)							I	D	M	R	R
C.33	Uses prime factorization								I	D	M	R
C.34	Recall and use the order of operations							I	D	D	D	M
C.35	Use pictorial models and manipulatives to represent fractions			I	D	D	M	R				
C.36	Recognize fractions as parts of a whole or parts of a set		I	D	M	R						
C.37	Identify $\frac{1}{2}$ of an object or set	I	D	D	M							
C.38	Identify $\frac{1}{3}$ and $\frac{1}{4}$ of an object or set		I	D	D	M						
C.39	Write fractions $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{3}$ of an object or set			I	D	M						
C.40	Recognize equivalence between halves, fourths, and eighths					I	D,M	R				
C.41	Recognize and identify unit fractions: halves, thirds, fourths, fifths, sixths, eighths, tenths, and twelfths					I	D	M	R			
C.42	Identify and represent equivalent fractions in halves, thirds, fourths, fifths, sixths, eighths, tenths, and twelfths					I	D	M	R			
C.43	Recognize equalities between fractions and common decimals (0.5, 0.25)						I	D	D	M		
C.44	Identify and write improper fractions						I	D,M				
C.45	Add and subtract fractions with common denominators						I	D,M				
C.46	Add and subtract fractions with unlike denominators							I,D	M			
C.47	Divide and multiply fractions							I	D	D	M	
C.48	Write and convert between mixed numbers and improper fractions							I	D	D	M	
C.49	Convert among fractions, decimals, and percents							I	D	M	R	
C.50	Write decimals up to thousandths and locate on a number line							I	D	M		
C.51	Add and subtract decimals through the thousandths							I	D	D	M	R
C.52	Multiply and divide decimals through the thousandths							I	D	D	M	
C.53	Add, subtract, multiply, and divide integers										I	D

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Standard D: Measurement												
YY	Identifies appropriate non-standard tools of measurement	I	D	M								
D.1	Identify appropriate tools or units of measurement		I	D	D	D	D	M	R	R	R	R
D.2	Order up to six events by picture cards (use first, next, or last)	I	D	M								
D.3	Understand that certain activities require more or less time		I	D	M							
D.4	Comprehend that calendars are tools used to measure time (Participate in calendar activities)		I	D	M	R						
D.5	Relate actual time to daily activities			I	D	M						
D.6	Tell time to the hour [K], half-hour [1], quarter hour [2], 5 minute intervals [3], and 1 minute intervals [4] using analog and digital clocks			I	D	D	D	M				
D.7	Solve problems involving elapsed time			I	D	D	D	D	M	R		
D.8	Differentiate between A.M. and P.M.			I	D,M							
D.9	Describe time relationships: seconds in a minute, minutes in an hour, hours in a day, days in a week, and days, weeks, and months in a year				I	D,M	R					
D.10	Convert units of time measurement within a system (seconds, minutes, and hours; hours and days; days and weeks)					I	D	M				
YY	Recognize the use of currency in daily life	I	D	D	M	R						
D.11	Identify name and value of penny, nickel, dime, and quarter		I	D	D	M						
D.12	Identify name and value of half dollar and dollar				I	D	M					
D.13	Count coins of same denomination		I	D	M	R						
D.14	Count mixed coins			I	D	M	R					
D.15	Solve simple problems using money			I	D	D	M					
D.16	Apply knowledge of money to real life situations				I	D	D	D	M	R	R	R
D.17	Add and subtract money without regrouping [1] and with regrouping [2]				I	D	M	R				
D.18	Compare equivalent and non-equivalent money amounts				I	D	M	R				
D.19	Make change from \$1.00 [2], \$5.00 [3], \$10.00 [4]				I	D	D	M	R			
D.20	Add and subtract money values to \$5.00 [3] and \$10.00 [4]						I	D,M	R			
D.21	Estimate length using non-standard units (ex: length of book with paper clips)			I	D,M	R						
D.22	Compare 3 or more objects in length to determine shortest and longest	I	D	M	R							
D.23	Measure length using inches and centimeters				I,D	M	R					
D.24	Measure length using feet meters					I	D	M				
D.25	Estimate lengths to the nearest inch, foot, centimeter and meter					I	D	M				
D.26	Measure length to the nearest one-fourth inch, half-inch or centimeter						I,D	M				
D.27	Measure length to the nearest one-eighth inch, centimeter, meter, and millimeter							I,D	M			
D.28	Add and subtract inches, feet, yards, and miles						I	D	D	M		
D.29	Estimate weight using non-standard units		I	D	M	R						
D.30	Use balance scale for weight to determine heaviest, lightest object		I	D	M	R						

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D.31	Estimate and measure weight using customary units (ounces/pounds) and metric units (grams/kilograms)				I	D	D	D	M	R		
D.32	Estimate and measure volume (capacity) using customary units (cup, pint, quart, gallon) and metric units(liter and milliliter)				I	D	D	D	M	R		
D.33	Convert between units of measurements within a system (yards, feet, inches; kilograms and grams; gallons, quarts, pints, and cups)				I	D	D	D	M	R	R	
D.34	Solve problems involving units of measurement and convert answers to a larger or smaller unit within the same system (yards, feet, inches; kilograms and grams; gallons, quarts, pints, and cups)						I	D	D	M	R	R
D.35	Estimate measurements of acute, right and obtuse angles							I, D	M	R		
D.36	Use tools to measure angles to the nearest degree and classify the angle as acute, obtuse, right, straight, or reflex								I	D	M	R
D.37	Know and use measurement properties of angles formed by parallel lines cut by a transversal (alternate interior, alternate exterior, corresponding)										I,D	M
D.38	Calculate perimeter of triangles, rectangles, and squares						I	D	M	R		
D.39	Calculate area of squares and rectangles						I	D	M	R		
D.40	Calculate the perimeter and area of polygons (triangles, parallelograms, trapezoids)								I	D	M	R
D.41	Find perimeter and area of irregular figures which can be divided into basic geometric shapes									I	D	M
D.42	Calculate the circumference and area of a circle									I	D,M	R
D.43	Calculate the surface area and volume of a cylinder, rectangular prism, and triangular prism										I,D	M
D.44	Distinguish between hot and cold temperatures	I	D	M								
D.45	Measure temperature using a Fahrenheit thermometer		I	D	M							
D.46	Measure temperature using a Celsius thermometer						I,D	M	R			

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Standard E: Geometry												
E.1	Find patterns in everyday life—clothes, nature, floor tile, buildings	I	D	D	M							
E.2	Identify, write, and extend patterns in shapes, colors, designs, and/or symbols		I	D	M	R						
E.3	Create and extend an original pattern		I	D	D	M	R					
E.4	Identify and extend missing elements in a visual pattern		I	D	D	D	M	R				
E.5	Describe the properties and characteristics of patterns having two or more attributes						I	D	M			
E.6	Describe, name and interpret relative positions in space (above, below, front, behind, left, right)	I	D	D	M							
YY	Identify basic figures (triangle, circle, rectangle, square, oval)	I	D	M								
E.7	Draw and sort basic figures (triangle, circle, rectangle, square)		I	D,M								
E.8	Identify and describe two and three-dimensional figures using physical models (circle, rhombus, rectangle, triangle, trapezoid, rectangular prism, sphere, cylinder, pyramid) that represent shapes in our environment		I	D	M							
E.9	Name two and three-dimensional figures and describe their properties (circle, rhombus, rectangle, triangle, trapezoid, rectangular prism, sphere, cylinder, pyramid)				I	D,M						
E.10	Compare, sort and classify two- dimensional [3] and three-dimensional figures [4] (circle, rhombus, rectangle, triangle, trapezoid, rectangular prism, sphere, cylinder, pyramid)						I,D	D,M	R			
E.11	Bisect angles and line segments								I	D,M		
E.12	Use manipulatives to recognize models of slides and turns (spatial reasoning)		I	D	M	R						
E.13	Use manipulatives to perform flips, slides, and turns on polygons				I,D	M	R					
E.14	Determine if two sides are congruent through a slide, flip, or turn						I,D,M					
E.15	Explain geometric transformation of figures using rotations, translations, and reflections.							I	D	D	D	M
E.16	Identify and draw parallel and perpendicular lines						I,D	M				
E.17	Use compass and straightedge to construct parallel lines, perpendicular lines [4] and congruent triangles [5]							I	D	D	M	R
E.18	Identify and draw skew lines									I	D	M
E.19	Describe relationships among corresponding sides, corresponding angles, and corresponding perimeters of similar polygons										I,D	M
E.20	Identify line of symmetry of an object		I	D	M	R						
E.21	Recognize and create shapes that have symmetry				I	D,M						
E.22	Identify lines of symmetry in polygons						I,D	M				
E.23	Identify and create polygons and designs with rotational symmetry								I	D,M		
E.24	Identify the number of rotational symmetries of regular polygons										I, D	M
E.25	Identify congruency of two-dimensional figures									I	D,M	
E.26	Describe the relationship between the scale factor and the perimeter of an image using a dilation (contraction/ magnification)										I,D	M
E.27	Describe the relationship between the scale factor and the area of an image using a dilation (contraction /magnification)											I,D
E.28	Use spatial visualization to identify isometric representations of mat plans									I,D	D	M
E.29	Identify locations with simple relationships on a map (coordinate system)					I,D,M	R					

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E.30	Use coordinate systems to specify locations, describe paths, and find the distance between two points along horizontal and vertical lines							I	D	M			
E.31	Use x and y to describe points (x,y) in the first quadrant of a coordinate plane								I,D	M			
E.32	Use ordered pair notation to identify, describe and plot points in the coordinate plane (all four quadrants)										I,D	M	R
E.33	Use coordinate geometry to construct geometric shapes in the coordinates plane using their properties										I,D	M	R
E.34	Use coordinate geometry to analyze properties of right triangles and quadrilaterals (including the use of the Pythagorean Theorem)											I	D

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Standard F: Probability And Data Analysis												
F.1	Describe events as likely or unlikely and discuss the degree of likelihood using such words as certain, equally likely, and impossible			I	D	D	D	M				
F.2	Calculate experimental probability						I	D	D	D	M	R
F.3	Calculate simple theoretical probability of a favorable outcome, compound events, independent events										I	D
F.4	Sort and classify objects by common attributes such as color, size, shape and use	I	D	D	D	M						
F.5	Use simple bar graphs, charts, tables and pictographs to sort and display data		I	D	D	D	M					
F.6	Solve problems involving tables and graphs		I	D	D	D	D	M	R	R	R	R
F.7	Construct appropriate tables and charts to display data				I	D	D	M	R	R	R	R
F.8	Use circle graphs, line graphs and pictographs to sort and display data					I	D	M	R	R	R	R
F.9	Read and interpret Venn diagrams				I	D	D	M	R			
F.10	Find high values, low values, and range of a set of data					I	D	M	R	R		
F.11	Find measures of central tendencies (high value, low value, mean, median, mode and range)							I	D	M	R	R
F.12	Read and interpret charts, tables, and plots (stem and leaf, box and whisker, scatter, histograms and frequency tables)								I	D	M	R
F.13	Determine combinations and permutations									I	D	D
F.14	Identify and evaluate valid and skewed data										I	D

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Standard G: Functions and Algebra												
G.1	Recognize items that do not belong to a certain group	I	D	D	M							
YY	Identify missing elements in a pattern	I	D	D	M							
G.2	Identify and extend missing elements in a numerical pattern		I	D	D	D	M	R	R			
G.3	Identify patterns in sequences of letters, numbers, and combinations of letters and numbers				I	D	D	M	R	R		
G.4	Use addition and subtraction to construct number patterns					I,D	M	R	R			
G.5	Use multiplication and division to construct number patterns							I	D	M	R	
G.6	Identify and extend geometric sequences							I	D	M	R	R
G.7	Identify and extend patterns using algebraic expressions										I	D
G.8	Use symbols to stand for any number, measured quantity, or object in simple situations			I	D	D	M	R				
G.9	Formulates and solves one-step equations with whole numbers				I	D	D	M				
G.10	Formulates and solves multi-step equations with whole numbers					I	D	D	M	R	R	R
G.11	Formulates and solves one-step equations with fractions and decimals							I	D	M	R	
G.12	Formulates and solves multi-step equations with fractions and decimals								I	D	D	M
G.13	Explain, model and use the identity, zero, commutative, and associative properties of addition and multiplication						I	D	D	M	R	R
G.14	Explain, model, and use the distributive property of multiplication						I	D	D	M	R	R
G.15	Use variables to solve problems (algebraic expressions and equations)							I	D	M	R	R
G.16	Translate problem situations into algebraic equations and expressions							I	D	D	D	M
G.17	Apply the inverse property to solve equations							I	D	D	M	R
G.19	Use the constant rate of change to solve mathematical and real world problems										I	D
G.20	Use order of operations to simplify mathematical expressions and solve equations								I	D	D	M
G.21	Graph an inequality on a number line								I	D	M	R
G.22	Solve inequalities with one unknown										I	D
G.23	Write and solve algebraic expressions and equations for problems involving addition and/or subtraction							I	D	M	R	R
G.24	Write and solve algebraic expressions and equations for problems involving multiplication and/or division							I	D	M	R	R
G.25	Express algebraic expressions using numbers, symbols, grouping symbols, exponents and variables								I	D	M	R
G.26	Simplify rational and algebraic expressions									I	D	M
G.27	Express written sentences as mathematical expressions using pi, negative exponents, and/or radicals (+, -, x, ,, =, ≠, <, >, ≤, ≥, ≈, (), [])										I	D
G.28	Understand the basic concept of a function									I	D	D
G.29	Determine domain or range values for linear functions										I	D
G.30	Use the rectangular coordinate system to model and to solve problems										I	D
G.31	Identify, graph, and use linear functions to solve problems										I	D
G.32	Solve systems of equations by graphing, substitution and linear combination methods										I	D

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G.33	Solves systems of inequalities by graphing												I
G.34	Solve quadratic functions by factoring, completing the square and using the quadratic formula												I
G.35	Simplify and use polynomial expressions and equations to solve problems												I