

NORTHWESTERN LOCAL SCHOOLS

SUBJECT: MATH

GRADE 4

DATE: November 2009

FIRST QUARTER							
ESSENTIAL INDICATORS			Resources	SUPPORTING INDICATORS			RESOURCES
<i>NNSO</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 THOUSANDS.		<i>NNSO</i>	11	Develop and explain strategies for performing computations mentally.	
<i>NNSO</i>	3	Round whole numbers to a given place value.		<i>GSS</i>	6	Specify locations and plot ordered pairs on a coordinate plane, using first quadrant points.	
<i>PFA</i>	4	USE RULES AND VARIABLES TO DESCRIBE PATTERNS AND OTHER RELATIONSHIPS.		<i>DAP</i>	1	Create a plan for collecting data for a specific purpose.	
<i>PFA</i>	5	Represent mathematical relationships with equations or inequalities.		<i>DAP</i>	2	Represent and interpret data using tables, bar graphs, line plots and line graphs.	
<i>PFA</i>	2	REPRESENT AND ANALYZE PATTERNS AND FUNCTIONS USING WORDS, TABLES AND GRAPHS.		<i>DAP</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.	
<i>PFA</i>	3	Construct a table of values TO SOLVE PROBLEMS ASSOCIATED WITH A MATHEMATICAL RELATIONSHIP.		<i>DAP</i>	13	List and count all possible combinations using one member from each of several sets, each of several sets, each containing 2 or 3 members;; e.g., the number of possible outfits from 3 shirts, w shorts, and 2 pairs of shoes.	
<i>PFA</i>	6	DESCRIBE HOW A CHANGE IN ONE VARIABLE AFFECTS THE VALUE OF A RELATED VARIABLE: E.G., AS ONE INCREASES THE OTHER INCREASES OR AS ONE INCREASES THE OTHER DECREASES.		<i>DAP</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 the data.	
<i>DAP</i>	5	PROPOSE AND EXPLAIN INTERPRETATIONS AND PREDICTIONS BASED ON DATA DISPLAYED IN TABLES, CHARTS AND GRAPHS.		<i>DAP</i>	7	Identify the median of a set of data and describe what it indicates about the data.	
<i>DAP</i>	2	REPRESENT AND INTERPRET DATA USING TABLES, BAR GRAPHS, LINE PLOTS AND LINE GRAPHS.					
<i>DAP</i>	3	Interpret and construct VENN DIAGRAMS to sort and describe data.					
<i>DAP</i>	8	USE RANGE, MEDIAN AND MODE TO MAKE COMPARISONS AMONG RELATED SETS OF DATA.					

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SECOND QUARTER							
ESSENTIAL INDICATORS			Resources	SUPPORTING INDICATORS			RESOURCES
NNSO	4	IDENTIFY AND REPRESENT FACTORS AND MULTIPLES OF WHOLE NUMBERS THROUGH 100 AND CLASSIFY NUMBERS AS PRIME OR COMPOSITE.		NNSO	8	Solve problems involving counting money and making change, using both coins and paper bills.	
NNSO	12	ANALYZE AND SOLVE MULTI-STEP PROBLEMS INVOLVING ADDITION, SUBTRACTION, MULTIPLICATION AND DIVISION USING AN ORGANIZED APPROACH, AND VERIFY AND INTERPRET RESULTS WITH RESPECT OT THE ORIGINAL PROBLEM.		NNSO	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.	
NNSO	9	Estimate the results of computations involving whole numbers, fractions and decimals, USING A VARIETY OF STRATEGIES.					
NNSO	13	USE A VARIETY OF METHODS AND APPROPRIATE TOOLS FOR COMPUTING WITH WHOLE NUMBERS; E.G., MENTAL MATH, PAPER AND PENCIL, AND CALCULATOR.					

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THIRD QUARTER							
ESSENTIAL INDICATORS			Resources	SUPPORTING INDICATORS			RESOURCES
<i>NNSO</i>	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.		<i>NNSO</i>	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: $5 \times 47 = 5 \times 40 + 5 \times 7 = 200 + 35 = 235$.	
<i>NNSO</i>	8	Use geometric models to solve problems in other areas of mathematics, such as number (multiplication/division) and measurement (area, perimeter, border). GEOMETRY AND SPACIAL SENSE		<i>M</i>	2	Demonstrate and describe perimeter as surrounding and area as covering a two-dimensional shape, and volume as filling a three-dimensional object.	
<i>M</i>	3	Identify and select appropriate units to measure: a. PERIMETER – string or links (inches or centimeters). b. AREA – tiles (square inches or square centimeters). c. VOLUME – cubes (cubic inches or cubic centimeters).					
<i>M</i>	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 IRREGULAT SHAPES ON A GRID, LAYER CUBES IN A BOX TO FIND ITS VOLUME.					
<i>GSS</i>	3	IDENTIFY SIMLARITIES AND DIFFERENCES OF QUADRILATERALS; E.G., SQUARES, RECTANGLES, PARALLELOGRAMS AND TRAPEZOIDS.					
<i>GSS</i>	4	Identify and define triangles based on angle measures (equiangular, right, acute and obtuse triangles) and side lengths (isosceles, equilateral and scalene triangles).					
<i>GSS</i>	5	DESCRIBE POINTS, LINES AND PLANES, AND IDENTIFY MODELS IN THE ENVIRONMENT.					

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FOURTH QUARTER						
ESSENTIAL INDICATORS			Resources	SUPPORTING INDICATORS		RESOURCES
NNSO	1	Identify and generate equivalent forms of FRACTIONS AND DECIMALS . For example: a. Connect physical, verbal and symbolic representations of fractions, decimals and whole numbers: e.g., $\frac{1}{2}$, $\frac{5}{10}$, 2, 10. b. Understand and explain the ten tenths is the same as one whole in both fraction and decimal form, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{1}{10}$, 10.		DAP	11	Relate the concepts of impossible and certain-to-happen events to the numerical values of 0 (impossible) and 1 (certain).
NNSO	9	Estimate the results of computations involving whole numbers, fractions and decimals, using a variety of strategies.		DAP	10	Represent the likelihood of possible outcomes for chance situations; e.g., probability of selecting a red marble from a bag containing 3 red and 5 white marbles.
NNSO	5	Use models and points of reference to compare commonly used fractions.		DAP	9	Conduct simple probability experiments and draw conclusions from results; e.g., rolling number cubes or drawing marbles from a bag.
NNSO	10	USE PHYSICAL MODELS, VISUAL REPRESENTATIONS, AND PAPER AND PENCIL TO ADD AND SUBTRACT DECIMALS AND COMMONLY USED FRACTIONS WITH LIKE DENOMINATORS.		DAP	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.
M	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.				

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FOURTH QUARTER - continued						
GSS	3	IDENTIFY SIMILARITIES AND DIFFERENCES OF QUADRILATERALS; E.G., SQUARES, RECTANGLES, PARALLELOGRAMS AND TRAPEZOIDS.				
GSS	4	IDENTIFY AND DEFINE TRIANGLES BASED ON ANGLE MEASURES (EQUIANGULAR, RIGHT, ACUTE AND OBTUSE TRIANGLES) AND SCALENE TRIANGLES).				
GSS	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.				
GSS	1	IDENTIFY, DESCRIBE AND MODEL INTERSECTING, PARALLEL AND PERPENDICULAR LINES AND LINE SEGMENTS; E.G., USE STRAWS OR OTHER MATERIAL TO MODEL LINES.				
GSS	2	DESCRIBE, CLASSIFY, COMPARE AND MODEL TWO- AND THREE- DIMENSIONAL OBJECTS USING THEIR ATTRIBUTES.				
GSS	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.				
PFA	1	Use models and words to describe, extend and make generalizations of patterns and relationships occurring in computation, numerical patterns, geometry, graphs and other applications.				
DAP	10	REPRESENT THE LIKELIHOOD OF POSSIBLE OUTCOMES FOR CHANCE SITUATIONS: E.G., PROBABILITY OF SELECTING A RED MARBLE FROM A BAG CONTAINING 3 RED AND 5 WHITE MARBLES.				