

Cliffside Park Public Schools

	September	October	November	December	January	February	March	April	May	June
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**GRADE 3
MAP
of
MATH CURRICULUM TOPICS**

	September	October	November	December	January	February	March	April	May	June
GRADE 3 UNITS OF STUDY & BENCHMARKS	Place Value: -to identify place value through 100,000 Money: -to count money -to make change -to compare values and order	Addition & Subtraction: -to add and subtract whole numbers -to identify and use the properties of addition & subtraction -to find patterns in the same --to estimate sums and differences -to add and subtract with regrouping	Time: -to convert time between simple units -to find elapsed time Data & Graphs: -to make & compare line plots -to read and make bar graphs -to read and make pictographs -to find coordinates	Multiplication Concepts & Facts: -to multiply facts to 10 -to multiply 2 digits by 1-digit	Division concepts & Facts: -to divide facts to 10 -to divide 2 & 3 digits by 1 digit	Measurement: -to estimate measure, order and compare in customary units (length, capacity) -to convert units of length, capacity and weight -to estimate measure, order and compare units in metric system	Geometry: -to classify 2 & 3 dimensional objects, lines, segments, rays, angles, polygons, triangles, quadrilaterals, congruent, symmetry, area & volume	Fractions: -to identify fractions, mixed numbers and equivalent fractions - to add & subtract fractions with like denominators Probability: -to organize results of probability experiments -to predict occurrences in an event	Decimals: -to add and subtract decimals -to understand relationship between fractions and decimals -to order and compare decimals	REVIEW
	COMPUTATIONAL FLUENCY SPIRALING (Through daily review) PROBLEM OF THE DAY (use strategies to solve problems)									

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*CURRICULUM FOCAL POINTS (NCTM)	<p>Number and Operations and Algebra: Developing understandings of multiplication and division and strategies for basic multiplication facts and related division facts</p> <p>Students understand the meanings of multiplication and division of whole numbers through the use of representations (e.g., equal-sized groups, arrays, area models, and equal “jumps” on number lines for multiplication, and successive subtraction, partitioning, and sharing for division). They use properties of addition and multiplication (e.g., commutativity, associativity, and the distributive property) to multiply whole numbers and apply increasingly sophisticated strategies based on these properties to solve multiplication and division problems involving basic facts. By comparing a variety of solution strategies, students relate multiplication and division as inverse operations.</p>			<p>Number and Operations: Developing an understanding of fractions and fraction equivalence</p> <p>Students develop an understanding of the meanings and uses of fractions to represent parts of a whole, parts of a set, or points or distances on a number line. They understand that the size of a fractional part is relative to the size of the whole, and they use fractions to represent numbers that are equal to, less than, or greater than 1. They solve problems that involve comparing and ordering fractions by using models, benchmark fractions, or common numerators or denominators.</p> <p>They understand and use models, including the number line, to identify equivalent fractions.</p>			<p>Geometry: Describing and analyzing properties of two-dimensional shapes</p> <p>Students describe, analyze, compare, and classify two-dimensional shapes by their sides and angles and connect these attributes to definitions of shapes. Students investigate, describe, and reason about decomposing, combining, and transforming polygons to make other polygons. Through building, drawing, and analyzing two-dimensional shapes, students understand attributes and properties of two-dimensional space and the use of those attributes and properties in solving problems, including applications involving congruence and symmetry.</p>			
	<p>Connections to the Focal Points</p> <p>Algebra: Understanding properties of multiplication and the relationship between multiplication and division is a part of algebra readiness that develops at grade 3. The creation and analysis of patterns and relationships involving multiplication and division should occur at this grade level. Students build a foundation for later understanding of functional relationships by describing relationships in context with such statements as, “The number of legs is 4 times the number of chairs.”</p> <p>Measurement: Students in grade 3 strengthen their understanding of fractions as they confront problems in linear measurement that call for more precision than the whole unit allowed them in their work in grade 2. They develop their facility in measuring with fractional parts of linear units. Students develop measurement concepts and skills through experiences in analyzing attributes and properties of two-dimensional objects. They form an understanding of perimeter as a measurable attribute and select appropriate units, strategies, and tools to solve problems involving perimeter.</p> <p>Data Analysis: Addition, subtraction, multiplication, and division of whole numbers come into play as students construct and analyze frequency tables, bar graphs, picture graphs, and line plots and use them to solve problems.</p> <p>Number and Operations: Building on their work in grade 2, students extend their understanding of place value to numbers up to 10,000 in various contexts. Students also apply this understanding to the task of representing numbers in different equivalent forms (e.g., expanded notation). They develop their understanding of numbers by building their facility with mental computation (addition and subtraction in special cases, such as $2,500 + 6,000$ and $9,000 - 5,000$), by using computational estimation, and by performing paper-and-pencil computations.</p>									

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MATHEMATIC VOCABULARY	Place value Digit Exponential form Standard form Period Round	Addend Commutative property Associative property Pattern Regroup Estimate Fact families Related facts	A.M./P.M. elapsed time line plot survey pictograph key bar graph scale ordered pair	Factor Multiplication Product Multiplication sentence Multiple Array Commutative Property of x Zero property of x Associative property of x Square number Regroup Estimate Round	Division Divisor Quotient Dividend Fact family Factors Compatible numbers Unit price Per Remainder	Length Capacity Weight Mass Celsius Fahrenheit	3-dimensional figure 2-dimensional figure Polygon Triangle Congruent Quadrilateral Similar Motions Line of symmetry Perimeter Area Volume	Fraction Denominator Numerator Equivalent fractions Mixed number Simplest form Probability Possible outcomes	Decimal Decimal point Equivalent fractions	
ACTIVITIES	Base 10 blocks Centers Manipulatives Shopping Card games	Base 10 blocks Flash cards Games Linking cubes	Mini clocks Snake Elapsed time ruler Graph paper Charts Graphs	Math mountain Math quiz game show Snake	Math quiz game show Snake	Conversion chart Measuring objects	Geometric movements	Making symmetry	Making change Making a place value chart	
	Math Journals Writing Word Problems									
CROSS-CURRICULAR	LAL: Hershey books Sir cumference									

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	Additional LAL: - see Marilyn Burns List (Appendix) - see Authentic Literature List (Appendix) - <i>Reading Aloud Across the Curriculum</i> (Laminak & Wadsworth, 2006) Music: - Math Songs CD Technology: - Math Traveler, - Math Tool Chest - Study Island									
ACCOMMODATIONS (ESL & SPECIAL EDUCATION)	Grids	Connecting cubes	Play money	Counters	Graph paper	Rulers & yard sticks	Pipe cleaners	Paper folding	Connecting cubes	As needed
	Place value models & charts	Place value models and charts	Number line	Graph paper	Connecting cubes	Scales	Popsicle sticks	Paper plates	Play money number line	
	Checklist	Drawing pictures to solve problems	Calendar	Connecting cubes	Counters	Metric bottles	Cubes	Counters		
		Play money	Graph paper	Hundreds chart	Multiplication tables		Dot paper	Graph paper		
			Connecting cubes	Number line	Beans (as counters)		Graph paper	Number line		
			Bar graph	Play money			Connecting cubes	Pictograph		
				Multiplication table						
				Tree diagram						
				Place value models & charts						
	<ul style="list-style-type: none"> • e-glossary (www.mhschool.com/math) • Visual Models • Concrete Objects • Pictorial Models • Leading Questions • Act Out • Tools (rulers, measuring cups, scales, etc.) • Pattern Blocks • Cooperative Learning: Team Assisted Individualization (TAI) – heterogenous groups helping each other • Explicit Systematic Instruction: teacher demonstration, thinking aloud, about decision-making, opportunities for student questions and answers • Guided & Strategy Groups • Power Facts (Macmillan/McGraw-Hill) • Chapter Prescription Table (Macmillan/McGraw-Hill) • Bridge the Gaps (Macmillan/McGraw-Hill) 									

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ASSESSMENT	Formative: conversation, observation, journal writing, self-assessment and daily work Summative: Chapter Tests/Quizzes, Minute Math Book Performance-based: Hands-on Activities SmartBoard Activities Learnia									
	Macmillan/ McGraw-hill <i>Mathematics: Grade 3 (2002)</i> -Chapter 1	Macmillan/ McGraw-hill <i>Mathematics: Grade 3 (2002)</i> -Chapters 2 & 3	Macmillan/ McGraw-hill <i>Mathematics: Grade 3 (2002)</i> -Chapter 4	Macmillan/ McGraw-hill <i>Mathematics: Grade 3 (2002)</i> -Chapters 5, 6 & 9	Macmillan/ McGraw-hill <i>Mathematics: Grade 3 (2002)</i> -Chapters 7, 8 & 10	Macmillan/ McGraw-hill <i>Mathematics: Grade 3 (2002)</i> -Chapters 11	Macmillan/ McGraw-hill <i>Mathematics: Grade 3 (2002)</i> -Chapter 12	Macmillan/ McGraw-hill <i>Mathematics: Grade 3 (2002)</i> -Chapter 13	Macmillan/ McGraw-hill <i>Mathematics: Grade 3 (2002)</i> -Chapter 14	Macmillan/ McGraw-hill <i>Mathematics: Grade 3 (2002)</i> -as needed
RESOURCES	Hyde, Arthur. <i>Comprehending Math.: Adapting Reading Strategies to Teach Mathematics, K-6.</i> 2006 Murray, Miki. <i>The Differentiated Math Classroom: A Guide for Teachers, K-8.</i> 2007. <i>Math Process Standards Series.</i> 2007. Heinemann. O'Connell, Susan. <i>Now I Get It: Strategies for Building confident and Competent Mathematicians, K-6.</i> 2005. Websites: <ul style="list-style-type: none"> • www.mathblaster.com • www.atmath.com • www.funbrain.com • www.mhschool.com/math • www.scholastic.com • www.elearning4kids.com • www.enchantedlearning.com • www.nctm.org • www.mathcats.com SmartBoard Study Island Instructivision									
NJCCCS	4.1.3.A 4.1.3.B 4.1.3.C	4.1.3.A 4.1.3.B 4.1.3.C 4.3.3.A 4.3.3.B 4.3.3.C 4.3.3.D	4.2.3.D 4.2.3.D 4.4.3.A 4.4.3.C 4.4.3.D	4.1.3.A 4.1.3.B 4.1.3.C 4.3.3.A 4.3.3.B 4.3.3.C 4.3.3.D	4.1.3.A 4.1.3.B 4.1.3.C 4.3.3.A 4.3.3.B 4.3.3.C 4.3.3.D	4.1.3.C 4.2.3.D	4.2.3.A 4.2.3.B 4.2.3.C 4.2.3.E	4.2.3.D 4.4.3.B	4.1.3.A 4.1.3.B 4.1.3.C 4.3.3.A 4.3.3.B 4.3.3.C 4.3.3.D	As per teacher re-commendation

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	4.3.2.B 4.5.3.A 4.5.3.B 4.5.3.C 4.5.3.D 4.5.3.E 4.5.3.F									
NCTM STANDARDS	1,2,5,6,8,9,10	1,2,3,4,5,6,7,8,9	1,3,4,5,6,8,9,10	1,2,4,5,6,7,8,9,10	1,2,4,5,6,7,8,9,10	1,4,5,6,7,8,9	1,2,3,4,5,6,7,8,9,10	1,2,4,5,6,7,8,9,10	1,2,4,5,6,7,8,9,10	As per teacher re-commendation

* The set of three **curriculum focal points** and related connections for mathematics in grade 3. These topics are the recommended content emphases for this grade level. It is essential that these focal points be addressed in contexts that promote problem solving, reasoning, communication, making connections, and designing and analyzing representations.