Cliffside Park Public Schools

	September	October	November	December	January	February	March	April	May	June

GRADE 1
MAP
of
MATH CURRICULUM TOPICS

	September	October	November	December	January	February	March	April	May	June
GRADE 1 UNITS OF STUDY & BENCHMARKS	**Numbers to 20:** -to count, read and write numbers to 20 -compare numbers: more/fewer -compare data **Addition Concepts:** - to add sums to 8	**Addition Strategies and Facts to 12:** -Addition: 3 numbers Doubles Doubles + 1	**Subtraction Concepts:** -Subtract from 5,6,7,8 -Use subtraction to compare -use addition to check subtraction **Subtraction Strategies and Facts to12:** -count back to subtract -use doubles to subtract -subtract from 12 -fact families	**Data & Graphs:** -record and sort data -Represent data using picture and bar graphs -Use tally marks and tables	**Place Value & Patterns:** -use place value to 100 -read and write numbers to 100 -compare numbers to 100 -recognize odd & even numbers -use number patterns	**Addition & Subtraction Strategies and Facts to 20:** -add & subtract patterns based on 10 -add facts to 20 -subtract facts to 20 -add 3 numbers in any order	**Money:** -use mixed coins -make equal amounts using different groups of coins -add & subtract money **Time:** -tell time to the half hour -find elapsed times -read calendar (date, day of the week, month, year)	**Fractions:** -recognize fractions of a group, and fractions of the whole (½, ¼, 1/3, 1/6) -understand that fractions may make a whole -make simple predictions: "Certain, maybe, impossible"	**Addition and Subtraction 2-digit Numbers:** -with and without Regrouping -Relate addition and subtraction; use addition to check subtraction	**Measurement:** -measure length -measure capacity -measure weight and mass -measure temperature **Geometry:** -Position & Direction -identify cones, cubes, cylinders, pyramids, prisms, and spheres -categorize and classify 2 & 3-dimensional figures
	C O M P U T A T I O N A L F L U E N C Y **S P I R A L I N G (Through daily review)** **P R O B L E M O F T H E D A Y (use strategies to problem solve)**									

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***CURRICULUM FOCAL POINTS (NCTM)**	***Number and Operations*** **and** ***Algebra:*** **Developing understandings of addition and subtraction and strategies for basic addition facts and related subtraction facts** Children develop strategies for adding and subtracting whole numbers on the basis of their earlier work with small numbers. They use a variety of models, including discrete objects, length-based models (e.g., lengths of connecting cubes), and number lines, to model "part-whole," "adding to," "taking away from," and "comparing" situations to develop an understanding of the meanings of addition and subtraction and strategies to solve such arithmetic problems. Children understand the connections between counting and the operations of addition and subtraction (e.g., adding two is the same as "counting on" two). They use properties of addition (commutativity and associativity) to add whole numbers, and they create and use increasingly sophisticated strategies based on these properties (e.g., "making tens") to solve addition and subtraction problems involving basic facts. By comparing a variety of solution strategies, children relate addition and subtraction as inverse operations.			***Number and Operations:*** **Developing an understanding of whole number relationships, including grouping in tens and ones** Children compare and order whole numbers (at least to 100) to develop an understanding of and solve problems involving the relative sizes of these numbers. They think of whole numbers between 10 and 100 in terms of groups of tens and ones (especially recognizing the numbers 11 to 19 as 1 group of ten and particular numbers of ones). They understand the sequential order of the counting numbers and their relative magnitudes and represent numbers on a number line.			***Geometry:*** **Composing and decomposing geometric shapes** Children compose and decompose plane and solid figures (e.g., by putting two congruent isosceles triangles together to make a rhombus), thus building an understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine figures, they recognize them from different perspectives and orientations, describe their geometric attributes and properties, and determine how they are alike and different, in the process developing a background for measurement and initial understandings of such properties as congruence and symmetry.		
	Number and Operations and ***Algebra:*** Children use mathematical reasoning, including ideas such as commutativity and associativity and beginning ideas of tens and ones, to solve two-digit addition and subtraction problems with strategies that they understand and can explain. They solve both routine and nonroutine problems. ***Measurement*** and ***Data Analysis:*** Children strengthen their sense of number by solving problems involving measurements and data. Measuring by laying multiple copies of a unit end to end and then counting the units by using groups of tens and ones supports children's understanding of number lines and number relationships. Representing measurements and discrete data in picture and bar graphs involves counting and comparisons that provide another meaningful connection to number relationships. ***Algebra:*** Through identifying, describing, and applying number patterns and properties in developing strategies for basic facts, children learn about other properties of numbers and operations, such as odd and even (e.g., "Even numbers of objects can be paired, with none left over"), and 0 as the identity element for addition									
MATHEMATIC VOCABULARY	After Before Between Fewer More Add Addend Addition sentence Sum	Count on Doubles Turnaround facts	Difference Minus Subtract Subtraction sentence Count back Related f acts Fact family	Bar graph Picture graph Tally marks	Even Odd Tens Ones	Addend Difference Doubles Doubles plus 1 Fact families	Dime Dollar Nickel Penny Quarter Calendar hour	Fraction One fourth ¼ One half ½ One sixth 1/6 One third 1/3	Ones Regroup Tens Addend Difference	Centimeter Kilogram Inch Pound Pint Circle Cone Cube Cylinder Pyramid Rectangle Rectangular prism Sphere Square Triangle

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ACTIVITIES	-count using connecting cubes, manipulatives -board games &spinners	-count using connecting cubes, manipulatives -board games & spinners	-subtract using connecting Cubes, manipulatives	-develop class survey and graph results	-use tens & ones models -connecting cubes	-count using connecting cubes, manipulatives -board games &spinners	-class sore with play money -record and graph times for different daily activites	-paper folding -cut shapes into equal parts to illustrate fractions	-use tens models -use pennies and dime	-use measuring tools, measure classroom items -shape manipulatives
	Math Journals Writing Word Problems Center Activities Manipulatives									
ADDITIONAL CROSS-CURRICULUAR OPPORTUNITIES	LAL: *Look for Animals* (text) *Count What You See (text)* Science: counting and classifying different apples -counting apple seeds, acorns	LAL: *Let's Play Ball* (text) *A Bag Full of Pups* (Gackenbach) Science: -counting pumpkins/pumpkin seeds	LAL: *The Barnyard Dance* (text) *It's Sale Time* (text) Science: -subtraction using hibernation" Social Studies: -subtraction using Thanksgiving concepts	LAL: *School Fun* (text) *Tikki Tikki Tembo* (Mosel) Science: -graph snowfall (if applic.) or rainfall/weather	LAL: *Fun with Fruit* (text) *100 Days of School* Harris) *One Watermelon Seed* (Lottridge) Science; -construct snakes made out of 10 pieces	LAL: *Busy Bugs Indeed* (text) *-Domino Addition* (Long) Science/Health: -count and add different foods in food groups Social Studies & LAL: *George Washington's Teeth* (Chandra)	LAL: *Five Friends* (text) *The Tick Tock Game* (text) Art: -make clocks out of paper plates	LAL: *My Surprise* (text) *One Hungry Cat* (Rocklin) Science: -fraction of a group of items that is magnetic -pick a planet and cut into equal parts	LAL: *In My Garden* (text) *A Collection for Kate* (Derubertis) Science: -adding and subtracting using seeds or objects from the sea	LAL: *Sandcastles Everywhere* (text) *My Surprise!* (text) *How Tall, How Short, how Far Away* (Adler) *Captain Invincible and the Space Shapes* (Murphy) Science: -measure plants grown, how much soil is used to plant seeds in a cup, how much water should be used
	Additional LAL: - see Marilyn Burns List (Appendix) - see Authentic Literature List (Appendix) - *Reading Aloud Across the Curriculum* (Laminak & Wadsworth, 2006) - http://www.k-state.edu/smartbooks/strandindex.html - www.mathcats.com Music: - Math Songs CD Technology: - Math Traveler, - Math Tool Chest									

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ACCOMMODATIONS (ESL & SPECIAL EDUCATION)	• e-glossary (www.mhschool.com/math) • Visual Models • Pattern cards • Concrete Objects • Pictorial Models/drawing • 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)									
ASSESSMENT	Formative: conversation, observation, journal writing, self-assessment and daily work Summative: Chapter Tests/Quizzes, Minute Math Book Performance-based: Hands-on Activities, Performance assessment page SmartBoard Activities Center Work									
RESOURCES	McGraw-Hill *Mathematics: Grade 1* (2002) -Chapters 1 & 2	McGraw-Hill *Mathematics: Grade 1* (2002) -Chapter 3	McGraw-Hill *Mathematics: Grade 1* (2002) -Chapters 4 & 5	McGraw-Hill *Mathematics: Grade 1* (2002) -Chapter 6	McGraw-Hill *Mathematics: Grade 1* (2002) -Chapter 7	McGraw-Hill *Mathematics: Grade 1* (2002) -Chapter 9	McGraw-Hill *Mathematics: Grade 1* (2002) -Chapters 8 & 10	McGraw-Hill *Mathematics: Grade 1* (2002) -Chapter 13	McGraw-Hill *Mathematics: Grade 1*(2002) -Chapter 14	McGraw-Hill *Mathematics: Grade 1* (2002) -Chapters 11 & 12

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	Hyde, Atrthur. *Comprehending Math,: Adapting Reading Strategies to Teach Mathematics, K-6.* 2006 Murray, Miki. *The Differentiated Math Classroom: A Guide for Teachers, K-8.* 2007. *Math Process Standards Series.* 2007. Heinemann. O'Connell, Susan. *Now I Get It: Strategies for Building confident and Competent Mathematicians, K-6.* 2005. Websites: • 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 Boards: chalk, sand, white Spinners Cubes Transparencies File Folder activities Manipulatives									
NJCCCS	4.1.1.A 4.1.1.B 4.1.1.C 4.3.1.C 4.3.1.D	4.1.1.A 4.1.1.B 4.1.1.C 4.3.1.D	4.1.1.A 4.1.1.B 4.1.1.C 4.3.1.D	4.4.1.A	4.1.1.A 4.3.1.A	4.1.1.A 4.1.1.B 4.1.1.C 4.3.1.C 4.3.1.D	4.1.1.A 4.1.1.B 4.1.1.C 4.2.1.D 4.3.1.C 4.3.1.D	4.1.1.A 4.1.1.C	4.1.1.A 4.1.1.B 4.1.1.C 4.3.1.C 4.3.1.D	4.2.1.D 4.2.1.E 4.3.1.C 4.2.1.A 4.2.1.B 4.2.1.E
					4.3.1.B 4.5.1.A 4.5.1.B 4.5.1.C 4.5.1.D 4.5.1.E 4.5.1.F					
NCTM STANDARDS	1,2,4, 6, 7, 8, 9, 10	1,6,7,8,9,10	1,2,3,6,7,8,9,10	1,5,6,7,8,10	1,2,6,7,8,9,10	1,2,6,7,8,9,10	1,4,6,8,9,10	1,5,6,7,8,9,10	1,6,7,8,9,10	2,3,4,6,7,8,9,10

BASED ON:

NJCCCS (2008)

NCTM: Curriculum Focal Points; Standards

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* The set of three **curriculum focal points** and related connections for mathematics in grade 1. 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.