Cliffside Park Public Schools

	September	October	November	December	January	February	March	April	May	June

GRADE K
MAP
of
MATH CURRICULUM TOPICS

	September	October	November	December	January	February	March	April	May	June
GRADE K UNITS OF STUDY & BENCHMARKS	**Position & Classify:** -identify: Top, middle, bottom Inside & Outside Left & Right Same & Different	**Sorting:** -by 1 & 2 attributes, -use more and fewer to compare groups of objects -sort basic shapes	**Data & Graphs:** -make picture graphs Make bar graphs **Patterns:** -finding, copying & extending patterns **Numbers:** -count, read and write numbers to 5 -compare and order numbers to 5	**Numbers to 10:** -count, read 7 write numbers to 10 -compare and order numbers to 10 -use ordinal numbers to 10^{th}	**Numbers to 20:** -count, read and write numbers to 20 -compare and order numbers to 20 -Skip counting: -by 2s & 5s to 50 -Place Value: -tens & ones -more & fewer	**Numbers to 100:** -count, read, and write numbers to 50 -compare and order numbers to 50 -count by 1s, 5s, 10s to 100 Estimation	**Money:** -identify coins & dollar bills -identify value **Measurement** – find longer & shorter of 2 objects -measure using nonstandard units -explore capacity, weight, & temperature **Time**: -identify months & days -to ½ hour and hour **Sequencing:** -to order events using logical reasoning	**Addition Concepts:** -to 10 – with and without pictures -horizontal & vertical addition	**Subtraction Concepts**: from 10 – with and without pictures -horizontal & vertical subtraction	**Geometry:** -sort solid figures -relate plane figures & solid figures -explore: equal parts, equal groups and halves **Review**
	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**									

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***CURRICULUM FOCAL POINTS (NCTM)**	***Number and Operations:*** **Representing, comparing, and ordering whole numbers and joining and separating sets** Children use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set, creating a set with a given number of objects, comparing and ordering sets or numerals by using both cardinal and ordinal meanings, and modeling simple joining and separating situations with objects. They choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the number in a small set, counting and producing sets of given sizes, counting the number in combined sets, and counting backward.			***Geometry:*** **Describing shapes and space** Children interpret the physical world with geometric ideas (e.g., shape, orientation, spatial relations) and describe it with corresponding vocabulary. They identify, name, and describe a variety of shapes, such as squares, triangles, circles, rectangles, (regular) hexagons, and (isosceles) trapezoids presented in a variety of ways (e.g., with different sizes or orientations), as well as such three-dimensional shapes as spheres, cubes, and cylinders. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.			***Measurement:*** **Ordering objects by measurable attributes** Children use measurable attributes, such as length or weight, to solve problems by comparing and ordering objects. They compare the lengths of two objects both directly (by comparing them with each other) and indirectly (by comparing both with a third object), and they order several objects according to length.			
	Connections to the Focal Points ***Data Analysis:*** Children sort objects and use one or more attributes to solve problems. For example, they might sort solids that roll easily from those that do not. Or they might collect data and use counting to answer such questions as, "What is our favorite snack?" They re-sort objects by using new attributes (e.g., after sorting solids according to which ones roll, they might re-sort the solids according to which ones stack easily). ***Geometry:*** Children integrate their understandings of geometry, measurement, and number. For example, they understand, discuss, and create simple navigational directions (e.g., "Walk forward 10 steps, turn right, and walk forward 5 steps"). ***Algebra:*** Children identify, duplicate, and extend simple number patterns and sequential and growing patterns (e.g., patterns made with shapes) as preparation for creating rules that describe relationships.									
MATHEMATIC VOCABULARY	Top Middle Bottom Inside Outside Over Under Behind Left Right Same Different	Sort More Fewer Same number	Picture graph Bar graph Pattern Count Number Equal to More Fewer (Number words to 5)	Tally Mark Table Order Before Between After First Next Last (Number words to 10)	Tens Ones Skip count (Number words to 20)	(Number words to 100)	Penny Cent Nickel Dime Quarter Dollar Longer Shorter Lighter Heavier Hot Cold Calendar Day Month Hour hand Minute hand	Add Plus Equals Sum	Subtract Minus Equal Difference	Rectangular prism Sphere Cube Cone Cylinder Equal parts Halves One half Equal groups

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ACTIVITIES	-follow directions and place items according to position words -usewooden blocks	-use attribute blocks -"People Sort" using sorting rule (e.g. shirt color, hair color, etc.)	-make class survey and graph -develop patterns -groups draw animals according to assigned number to make a group book; share with the class	-assign students numbers; arrange in order	-use connecting cubes and counters -make a class book on 20 objects	-fill in grid paper with numbers to 100 -order chips with numbers by 10s written on them -count nickels -count dimes	-class store and play money -measure objects in classroom -calendar work	-use dominoes for vertical and horizontal addition	-use counters and cubes to perform subtraction exercises -write subtraction problems as a group -act out subtraction problems	-find shapes in classroom; on a class walk through neighborhood or to the park
	Manipulatives									
ADDITIONAL CROSS-CURRICULUAR OPPORTUNITIES	LAL: Big Book Stories *Biggest, Strongest, Fastest* (Jenkins) *Chicka, Chicka* (Martin) *We Went on a Safari* (Kribs) SCIENCE: -classify leaves as same and different	LAL: Big Book Stories *Bear in a Square* (Blackstone) *Over in the Meadow* (Keats) *Let's Count it Out Jesse Bear* (Carlstrom) *Roar* (Edwards) MUSIC: -change words from 12 days of Christmas to objects sorted in the classroom SCIENCE: -sort animals according to needs	LAL: Big Book Stories *Patterns* (Berger) *Let's go Visiting* Williams) *Five Little Monkeys* *Five Little Monkeys Play hide and Seek* *Five Little monkeys in a Tree* (Christelow) SCIENCE: -graph animals ART & SCIENCE: -make leaf patterns MUSIC & PHYS. ED.: -patterns to movement	LAL: Big Book Stories *Ten Black Cats* (Crews) *Feast for 10* (Falwell) *Ten for Dinner* (Bogart) *Ten Red Apples* (Hutchins) SOCIAL STUDIES: -identify 10 features of community; illustrate on map	LAL: Big Book Stories *What Comes in 2s, 3s and 4s?* (Aher) *Boom Chicka Rock* (Archambault) SCIENCE: -graph weather for 20 days SOCIAL STUDIES: -make a class list of 20 community rules	LAL: Big Book Stories *One Hundred Angry Ants* (Pinczes) SOCIAL STUDIES: -collect 100 items to recycle	LAL: Big Book Stories *Cookie's Week* (Ward) *What Time is it Mr. Crocodile?* (Sierra) *A Second is a Hiccup (*Hutchins) *Chicken soup with rice* (Sendak) SCIENCE: Measure liqids, weights and temperatures	LAL: Big Book Stories *Monster Math* *Monster Math Picnic* (Maccarone) ART & LAL: -assign students 3s between 5 & 10; assign a spring-themed object and have students/groups illustrate to make a spring counting book	LAL: Big Book Stories *Hershey Kisses Subtraction Book* (Pallotta) SCIENCE: -start with 10 seeds; have students plant 1,2, 3, 4 or 5 and tell how many are left.	LAL: Big Book Stories *Shapes, Shapes, Shapes* (Hoban) ART: -make mosaics of shapes
	Additional LAL: - see Marilyn Burns List (Appendix) - see Authentic Literature List (Appendix) - *Reading Aloud Across the Curriculum* (Laminak & Wadsworth, 2006) Music: - Math Songs CD Technology: - Math Traveler, - Math Tool Chest - SmartBoard									

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ACCOMMODATIONS (ESL & SPECIAL EDUCATION)	• e-glossary (www.mhschool.com/math) • Modelling • Visual Models • Concrete Objects: cubes, counters, bean bags, etc. • Pictorial Models/Picture Clues • 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 Rubrics Performance-based: Hands-on Activities SmartBoard Activities Center Work									
RESOURCES	McGraw-Hill *Mathematics: Grade K* (2002) -Chapter 1	McGraw-Hill *Mathematics: Grade K* (2002) -Chapter 2	McGraw-Hill *Mathematics: Grade K* (2002) -Chapters 3, 4 & 5	McGraw-Hill *Mathematics: Grade K* (2002) -Chapter 6	McGraw-Hill *Mathematics: Grade K* (2002) -Chapter 7	McGraw-Hill *Mathematics: Grade K* (2002) -Chapter 8	McGraw-Hill *Mathematics: Grade K* (2002) -Chapters 9, 10 & 11	McGraw-Hill *Mathematics: Grade K* (2002) -Chapter 12	McGraw-Hill *Mathematics: Grade K* (2002) -Chapter 13	McGraw-Hill *Mathematics: Grade K* (2002) -Chapter 14

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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									
NJCCCS	4.2.K.A	4.2.K.A 4.2.K.B	4.4.K.A 4.3.K.A 4.1.K.A 4.1.K.B 4.1.K.C	4.1.K.A 4.1.K.B 4.1.K.C	4.1.K.A 4.1.K.B 4.1.K.C	4.1.K.A 4.1.K.B 4.1.K.C	4.1.K.A 4.2.K.D 4.2.K.E 4.2.K.D	4.1.K.A 4.1.K.B 4.1.K.C	4.1.K.A 4.1.K.B 4.1.K.C	4.2.K.E
					4.5.K.A 4.5.K.B 4.5.K.C 4.5.K.D 4.5.K.E 4.5.K.F					
NCTM STANDARDS	2,3,5,7,8,9,10	1,2,5,6,8,9,10	1,2,5,6,8,9,10	1,4,5,6,8,9,10	1,6,8,9,10	1,5,7,8,9,10	1,4,6,7,8,9,10	1,6,8,9,10	1,2,6,8,9,10	2,3,5,7,8,9,10

* The set of three **curriculum focal points** and related connections for mathematics in grade 4 follow. 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.