Grade 3	Unit 1: Number Computation (Section I)		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and <u>Assessment</u> Student will:
1. How can students use fractions to describe parts of regions and parts of groups? 2. How will you relate fractional knowledge to computation? 3. How are fractions and decimals related?	**<u>Program of Studies</u>** ❑ *NC-15 order and compare numbers from 0-1,000* ❑ *NC-16 understand the relative magnitude of whole numbers from 0-1,000 (e.g., describe a real world situation in which 50 is big/small amount).* ❑ *NC-19 read, write, and model whole numbers, 0-10,000, developing place value for ten thousands.* ❑ *NC-20 order and compare numbers from 0-10,000.* ❑ *NC-21 understand the relative magnitude of whole numbers from 0-10,000.* ❑ *NC-25 understand and count unit fractions, such as one-fourth, two-fourths, and three-fourths in real world context.* ❑ *NC-27 expand fraction concepts (e.g., whole to part, part to whole).* ❑ *NC-28 use decimals to represent money* **<u>Core Content</u>** ❑ **MA-EP-1.1.1 Students will:** ❑ **apply multiple representations (e.g., drawings, manipulatives, base-10 blocks, number lines, expanded form, symbols) to describe whole numbers (0 to 999):** ❑ **apply multiple representations (e.g., drawings, manipulatives, base-10 blocks, number lines, expanded form, symbols) to describe fractions (halves, thirds, fourths);** ❑ **apply these numbers to represent real-world problems; and** ❑ **explain how the base 10 number**	❑ Numerator ❑ Denominator ❑ Equivalent fraction ❑ Mixed numbers ❑ Improper fractions ❑ Whole numbers	❑ Activity: The Hundredth Grid (pp. 516-517) Using a Hundredth Grid, write mixed number and a decimal for shaded parts. ❑ Chapter 11 Pretest: Do you remember?

Grade 3	Unit 1: Number Computation (Section I)		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment Student will:
	system relates to place value. DOK 2 ❑ MA-EP-1.1.2 Students will read, write and rename whole numbers (0 to 9,999) and apply to real-world and mathematical problems. ❑ **MA-EP-1.1.3 Students will compare (<, >, =) and order whole numbers to whole numbers, decimals to decimals (as money only) and fractions to fractions (limited to pictorial representations). DOK 1**	❑ Fraction ❑ Compare ❑ Order ❑ Decimal point ❑ Decimals ❑ Equivalent	❑ Reviewing vocabulary words and symbols (pp. 482-483) ❑ Activity: Design your own flag (p. 485) ❑ Activity: Develop a class survey (p.487) ❑ Activity: Divvy It Up! (Fraction Dice Games-S.T.) ❑ Activity: Model equivalent fractions using fraction pieces (manipulatives) ❑ Activity: Four in a Row with a Partner (p. 495) ❑ Activity: Riddle Time with Mixed Numbers (p. 503) ❑ Activity: Fraction Quilt (Math Art-S.T.) ❑ Activity: Fraction Bingo (p. 507) ❑ Activity: Color the Fence (p. 513) ❑ Activity: Use models to compare and order decimals (pp. 518-519) ❑ Activity: Display Data in a Bar Graph (p. 521) ❑ Activity: Estimating Fractions and Decimals (p. 523) ❑ Activity: Adding and Subtracting Decimals (pp. 520-522) ❑ Activity: Input/Output Machines: Compare Decimals, Fractions & Money ❑ ASSESSMENT: Chapter 11 Test ❑ Literature Links: ❖ *The Day the Doorbell Rang* ❖ *Twizzlers Percentage Book* ❖ *The Grapes of Math* ❖ *Hershey Math Book*

Grade 3	Unit 1: Number Computation (Section II)		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment ***Student will:***
1. What are the Commutative, Zero, and Associative	**Program of Studies** ❑ *NC-3 explore appropriate estimation procedures* ❑ *NC-36 develop the concept of multiplication and division using physical models*		

Grade 3 Unit 1: Number Computation (Section II) Suggested Length: Ongoing

Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment ***Student will:***
Properties? 2. What is the procedure for regrouping? 3. How do you round numbers to estimate sums? 4. What steps do you follow to add numbers? 5. What is the regrouping procedure when you subtract? 6. How do you round numbers to estimate differences? 7. How do you subtract across zeros? 8. How do you use addition and subtraction to solve problems?	❑ *NC-39 relate division facts to multiplication facts using factor-factor-product.* ❑ *NC-40 solve multi-digit addition and subtraction problems that contain numerals and symbols.* ❑ *NC-41 develop factor-factor-product using manipulatives.* ❑ *NC-42 add common fractions with like denominators using manipulatives.* **Core Content** ❑ **MA-EP-1.2.1 Students will apply and describe appropriate strategies for estimating quantities of objects and computational results (limited to addition and subtraction). DOK 2** ❑ **MA-EP-1.3.1 Students will analyze real-world problems to identify the appropriate mathematical operations, and will apply operations to solve real-world problems with the following constraints:** ❑ **add and subtract whole numbers with three digits or less;** ❑ **multiply whole numbers of 10 or less;** ❑ **add and subtract fractions with like denominators less than or equal to four and**	❑ Number sentence ❑ Addend ❑ Addition ❑ Sum ❑ Subtraction ❑ Difference ❑ Regrouping	❑ Play "Who Has I Have" ❑ Use base ten blocks to regroup in addition. ❑ Use function machines (input/output) to add and subtract numbers. ❑ Use calculators to check addition and subtraction problems. ❑ Estimate distances between cities on a map. ❑ Using a grocery store add, estimate how much five items would cost. Add to find the exact cost. ❑ Roll dice to keep adding until reaching 200. After reaching 200, subtract until reaching 0. ❑ Play subtraction bingo. Pg.172 ❑ Students model subtraction with regrouping on the board. Follow with board races.

Grade 3	Unit 1: Number Computation (Section II)		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment ***Student will:***
	❑ **add and subtract decimals related to money. DOK 2** ❑ MA-EP-1.3.2 Students will skip-count forward and backward by 2s, 5s, 10s and 100s. ❑ MA-EP-1.3.3 Students will divide two digit numbers by single digit divisors (with or without remainders) in real-world and mathematical problems. ❑ **MA-EP-1.5.1 Students will identify and provide examples of odd numbers, even numbers and multiples of numbers and will apply these numbers to solve real-world problems. DOK 2** ❑ MA-EP-1.5.2 Students will use the commutative properties of addition and multiplication, the identity properties of addition and multiplication and the zero property of multiplication in written and mental computation.	❑ Commutative property ❑ Zero Property ❑ Associative Property	❑ Use manipulatives to demonstrate the Commutative, Zero, and Associative Properties.

Grade 3	Unit 1: Number Computation (Section III)		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment ***Student will:***
1. How is addition and multiplication related? 2. What methods can you use to		❑ Multiplication ❑ Factors ❑ Product ❑ Commutative	❑ Activity: Explore multiplication by means of arrays (p. 208) ❑ Activity: Students Skip Count ❑ Activity: Access to Computer Software on Multiplication in Computer Lab ❑ Activity: Build Multiplication Table ❑ Activity: Function Machines/Input Output

Grade 3	Unit 1: Number Computation (Section III)		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment ***Student will:***
multiply?		Property ❑ Associative Property ❑ Multiple	❑ Activity: Find Patterns Using Multiplication Tables ❑ Activity: Find Common Multiples of Certain Numbers ❑ Activity: Make Multiplication Constellation (Math Art-S.T.) ASSESSMENT: Chapter 5 Test/Chapter 6 Test ❑ Activity: Find Common Multiples of Certain Numbers

Grade 3	Unit 1: Number Computation (Section IV)		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment ***Student will:***
1. What is the difference between Standard Form, Word Form, and Word Form? 2. How do you round numbers? 3. How do you know if a number is an estimate or exact amount? 4. How do you determine the place value of a number?		❑ Digit ❑ Place Value ❑ Expanded Form ❑ Standard Form ❑ Word Form ❑ Round ❑ Compare ❑ Greater Than ❑ Less Than ❑ Equal To	

Grade 3	Unit 1: Number Computation (Section IV)		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment ***Student will:***
5. What steps do follow in order to compare and order numbers?			

Grade 3	Unit 2: Geometry/Measurement (Section I)		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment Student will:
1. How do we identify and describe polygons by their attributes? 2. How do you identify congruent and symmetrical figures? 3. How do you determine the perimeter and area of a given shape?	**Core Content** **MA-EP-3.1.1 Students will describe and provide examples of basic geometric elements and terms (sides, edges, faces, vertices, angles) and will apply these elements to solve real-world problems. DOK 2**	❑ Obtuse ❑ Right ❑ Acute ❑ Angle ❑ Diameter ❑ Radius ❑ Vertices ❑ Face ❑ Edge ❑ Side ❑ Segment ❑ Line ❑ Ray ❑ Point ❑ Geometric ❑ Isosceles ❑ Equilateral	❑ Activity: Describing and classifying plane figures by attributes such as sides, corners, or angles. ❑ Activity: Construct shapes using Geoboards and rubber bands. ❑ Activity: Use kinesthetic moments to represent line segments, rays and angles. ❑ Activity: Classifying Triangles: students sort triangles into right, isosceles, and equilateral, and illustrate two more examples.
4. How three-dimensional shapes be identify, describe, and classified?	**MA-EP-3.1.2 Students will describe and provide examples of basic two-dimensional shapes (circles, triangles, squares, rectangles, trapezoids, rhombuses, hexagons) and will apply these shapes to solve real-world and mathematical problems. DOK 2**	❑ 2-dimensional shapes ❑ Circles ❑ Triangles ❑ Perimeter ❑ Squares ❑ Rectangles ❑ Trapezoids	❑ Activity: Paper folds and geometry mirrors to show the line of symmetry.

Grade 3	Unit 2: Geometry/Measurement (Section I)		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and <u>Assessment</u> Student will:
5. How can volumes of containers be estimated by using unit cubes?	**MA-EP-3.1.3 Students will describe and provide examples of basic three-dimensional shapes (spheres, cones, cylinders, pyramids, cubes) and will apply these shapes to solve real-world and mathematical problems. DOK 1** MA-EP-3.1.5 Students will identify and describe congruent figures in real-world and mathematical problems. **MA-EP-3.2.1 Students will describe and provide examples of line symmetry in real-world and mathematical problems or will apply one line of symmetry to construct a simple geometric design. DOK 2** MA-EP-3.3.1 Students will locate points on a grid representing a positive coordinate system.	❑ Rhombuses ❑ Hexagon ❑ Octagon ❑ Pentagon ❑ 3-dimensional shapes ❑ Spheres ❑ Cones ❑ Cylinders ❑ Pyramids ❑ Cubes ❑ Congruent ❑ Non congruent ❑ Symmetrical ❑ Assymmetrical ❑ Grid ❑ Plot points ❑ Area	❑ Activity: Determine the perimeter of given shapes using grid paper and rulers. ❑ Activity: Determine the area of plane figures using grid paper. ❑ Activity: Construct solid figures. ❑ Identify congruent objects in the classroom, i.e. Desks, ceiling tiles, etc.

Grade 3	Unit 2: Geometry/Measurement (Section II)		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and <u>Assessment</u> ***Student will:***
1. What is the value of a dollar, dime,	**<u>Core Content</u>** ❑ **MA-EP-2.1.1 Students will apply standard units to measure length (to the nearest half-inch or the nearest centimeter) and to**	❑ Digital time ❑ Analogue time ❑ Lapsed time	❑ Count money using coin manipulatives. ❑ Work with partners to "buy" items and make change using manipulative money.

Grade 3	Unit 2: Geometry/Measurement (Section II)		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment ***Student will:***
and penny? 2. How do you show equivalent amounts of money? 3. How do we make change by counting? 4. How do you tell time to the hour, half-hour, quarter-hour, 5 minutes, and minute? 5. How do you calculate elapsed time? 6. How do you read and used a calendar?	**determine:** ❑ **Weight (nearest pound);** ❑ **Time (nearest quarter hour);** ❑ **Money (identify coins and bills by value) and** ❑ **Temperature (Fahrenheit). DOK 1** ❑ MA-EP-2.1.2 Students will use standard units to measure temperature in Fahrenheit and Celsius to the nearest degree. ❑ MA-EP-2.1.3 Students will choose and use appropriate tools (e.g., thermometer, scales, balances, clock, ruler) for specific measurement tasks. ❑ MA-EP-2.1.4 Students will use nonstandard and standard units of measurement to identify measurable attributes of an object (length – in, cm; weight – oz, lb) and make an estimate using appropriate units of measurement. ❑ MA-EP-2.1.5 Students will use units of measurement to describe and compare attributes of objects to include length (in, cm), width, height, money (cost), temperature (F), and weight (oz, lb), and sort objects and compare attributes by shape, size, and color. ❑ MA-EP-2.1.6 Students will estimate weight,	❑ Hour ❑ Minute ❑ Second ❑ Pint ❑ Quart ❑ Gallon ❑ Inches ❑ Foot ❑ Yard ❑ Mile ❑ Cent ❑ Dollar ❑ Decimal ❑ Estimate	❑ Using individual clocks, students will model time. ❑ Give students various scenarios to determine elapsed time. ❑ Use calendar to read and write ordinal numbers. ❑ Model equivalent amount of money by using overhead projector and student dry erase boards.

Grade 3	Unit 2: Geometry/Measurement (Section II)		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment ***Student will:***
	length, perimeter, area, angles, and time using appropriate units of measurement. ❑ MA-EP-2.2.1 Students will describe, define, give examples of and use to solve real-world and mathematical problems nonstandard and standard (U.S. Customary, metric) units of measurement to include length (in., cm.), time, money, temperature (Fahrenheit) and weight (oz., lb.). ❑ MA-EP-2.2.2 Students will determine elapsed time by half hours. ❑ MA-EP-2.2.3 Students will convert units within the same measurement system including money (dollars, cents), time (minute, hour, days, weeks, months), weight (ounce, pound), and length (inch, foot).		

Grade 3	Unit 3:Probability/Statistics		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment Student will:
1. How can you organize and display data? 2. How are the outcomes of experiments determined? 3. How is data used to draw conclusions?	**Program of Studies** ❑ *PS-11 collect and display data* ❑ *PS-12 read, compare, and interpret student collected data.* ❑ *PS-14 pose questions; collect, organize, and display data.* ❑ *PS-15 draw simple conclusions based on student investigations* ❑ *PS-16 display data using line plots* ❑ *PS-17 explore basic concepts of probability through simple experiments* **Core Content**		

Grade 3	Unit 3:Probability/Statistics		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and <u>Assessment</u> Student will:
	❑ **MA-EP-4.1.1 Students will analyze and make inferences from data displays (drawings, tables/charts, tally tables, pictographs, bar graphs, circle graphs with two or three sectors, line plots, two-circle Venn diagrams). DOK 3**	❑ Pictograph ❑ Bar graph ❑ Circle graph ❑ Data ❑ Ordered pair ❑ Coordinates ❑ Line plot ❑ Line graph	❑ Collect data and construct bar graph, pictograph, line graph, and circle graph. ❑ Analyze the information on the graphs individually to answer questions. ❑ Randomly combine the information on the graphs to analyze information and answer questions. ❑ Locate points on a grid.
	❑ MA-EP-4.1.2 Students will collect data.	❑ Tally chart ❑ Tally mark	❑ Display data in a line plot to show how often something happens.
	❑ MA-EP-4.1.3 Students will organize and display data.		
	❑ MA-EP-4.2.1 Students will determine the mode (of a set of data with no more than one mode) and the range of a set of data.		
	❑ MA-EP-4.3.1 Students will pose questions that can be answered by collecting data	❑ Survey	❑ Conduct a survey and record results.
	❑ MA-EP-4.4.3 Students will describe and give examples of the probability of an unlikely event (near zero) and a likely event (near one).	❑ Probability ❑ Outcome ❑ Equally likely	❑ Draw colored tiles out of bags to determine probability. ❑ Toss coin to determine outcomes. ❑ Use spinners to determine fairness.

Grade 3	Unit 4: Algebraic Ideas		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment Student will:
1. How do you determine the sequence of a pattern? 2. How are patterns used in every day life?	**Program of Studies** ❑ *A-11 use function machines.* ❑ *A-13 solve function machine tasks.* ❑ *A-14 solve for unknown and open sentences* ❑ *A-15 recognize, extend, and explain rules for a number pattern.* **Core Content**	❑ Pattern ❑ Extend	❑ Create a pattern. Have a partner explain pattern rule extend the sequence.

Grade 3	Unit 4: Algebraic Ideas		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment Student will:
	MA-EP-5.1.1 Students will extend simple patterns (e.g., 2,4,6,8,…;◊Δ◊Δ…). DOK 2 **MA-EP-5.1.2 Students will describe functions (input-output) through pictures and words. DOK 2** MA-EP-5.1.3 Students will determine the value of an output given a function rule and an input value. **MA-EP-5.3.1 Students will model real-world and mathematical problems with simple number sentences (equations and inequalities) with a missing value (e.g., 2 + ? =7, _ < 6), and apply simple number sentences to solve mathematical and real-world problems. DOK 2**		❑ Locate patterns in environment other than classroom. ❑ Use graphic organizer to compare patterns.