Grade 2	Unit 1: Number Computation		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 strategies can you use to solve number equations? 2. How can we show relationships between numbers?	***<u>Program of Studies</u>*** ❑ *NC-3 explore appropriate estimation procedures* ❑ *NC-11 order and compare numbers from 0-100, introducing the symbols (<, >, =).* ❑ *NC-12 explore multiples, skip counting by twos (odd, even).* ❑ *NC-14 read, write, and model whole numbers, 0-1,000, understanding place value for thousands.* ❑ *NC-19 Explore appropriate estimation procedures* ❑ *NC-24 divide an area into thirds and fourths, naming fractional parts.* ❑ *NC-26 introduce decimals to represent money* ❑ *NC-26 Understand and count unit fractions, such as one-fourth, two-fourths, and three-fourths in real world context* ❑ *NC-33 explore the concepts of multiplication and division using physical models* ❑ *NC-37 solve two-digit problems using addition and subtraction with manipulatives and symbols.* ❑ *NC-38 explore factor-factor-product (e.g., 2 x 3 = 6) using manipulatives.* ❑ *NC-44 Add and subtract decimals using 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 9,999):** ❑ **apply multiple representations (e.g.,**	❑ Number line ❑ Digit ❑ Place value ❑ Whole number	❑ Use place value blocks to show a given number. DOK 1

Grade 2	Unit 1: Number Computation		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment Student will:
	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 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 representation). DOK 1** ❑ **MA-EP-1.2.1Students 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** ❑ **add and subtract decimals related to**	❑ Greater than ❑ Less than ❑ Estimate ❑ Addend ❑ Difference ❑ Subtract ❑ Related facts ❑ Sum ❑ Add ❑ Regroup ❑ Fraction ❑ Multiply ❑ Product	❑ Draw a number card (1-100). Given symbol cards (<,>,=) and a partner, students will physically represent relationship between numbers. DOK 1 ❑ Use cooking recipes to see and understand how fractions are used. DOK 2 ❑ Use M&Ms to explore the estimation procedure. DOK 2 ❑ Use a number line to practice 'counting on' procedure. DOK 2 ❑ Count by 2's, 5's, and 10's- highlight counting patterns on a 100 number chart. DOK 1 ❑ Make and display fact family houses. DOK 1 ❑ Use base 10 mats and base 10 blocks to show regrouping. DOK 1 ❑ Tape number cards to the floor equal distance apart, students will step from one to another to demonstrate 'counting back' in subtraction. DOK 1

Grade 2	Unit 1: Number Computation		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment Student will:
	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-1.5.1Students will identify and provide examples of odd numbers, even numbers, and multiples of a number 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.	❑ Even ❑ Odd ❑ Commutative ❑ Associative ❑ Identity	❑ Use cubes to show even and odd numbers. DOK 1 ❑ Manipulate counters on the overhead to demonstrate commutative property. DOK 1

Grade 2	Unit 2:Geometry/Measurement		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment Student will:
1. What strategies	***Program of Studies*** ❑ *GM-5 identify, describe, model, draw, and*		

Grade 2	Unit 2:Geometry/Measurement		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and <u>Assessment</u> Student will:
do you use to count groups of pennies, nickels, dimes, and quarters to find the total value? 2. How do you compare and show money amounts? 3. How do you identify plane shapes, solid shapes, congruent shapes, and shapes with symmetry? 4. How do you identify and compare fractions? 5. How do you measure lengths in customary and metric units? 6. How do you compare the weight of an object to a pound or kilogram?	*classify/sort two-dimensional shapes* ❑ *GM-6 Identify, describe, model, draw, and classify/sort three dimensional shapes including spheres, cones, cylinders, rectangular solids, and pyramids* ❑ *GM-8 explore flips, slides, and turns with physical models* ❑ *GM-9 determine if simple shapes are congruent* ❑ *GM-10 determine lines of symmetry in simple shapes.* ❑ *GM-11 Identify, describe, and compare three-dimensional shapes according to the number and shape of faces, edges, base, and angles* ❑ *GM-12 Identify, describe, model, draw, and classify/sort two- and three- dimensional shapes and objects using properties* ❑ *GM-22 compare and order by size (e.g., large/small), length/width, and temperature with nonstandard units.* ❑ *GM-23 make combinations of coins and bills to make a given amount.* ❑ ***GM-24 identify correct symbols for money.*** ❑ *GM-25 tell time to hour and half-hour.* ❑ *GM-26 compare and measure length and weight of familiar objects in nonstandard (e.g., shoe lengths, rocks) and standard units (e.g., inches, pounds).* ❑ *GM-27 expand the use of coins and bills to give change for a given amount.* ❑ *GM-29 tell time to quarter hour.* ❑ ***GM-32 tell time to the nearest 5 minutes and distinguish between a.m. and p.m.*** **<u>Core Content</u>** ❑ **MA-EP-2.1.1 Students will apply standard units to measure length (to the nearest half-inch or nearest centimeter) and to**	❑ Penny ❑ Nickel ❑ Dime	❑ Use money stamps to show different ways to make a specific money amount. DOK 2 ❑ Work with a partner to count individual Ziploc bags of

Grade 2	Unit 2:Geometry/Measurement		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment Student will:
7. What strategy do you use to compare capacities of cup, pint, and quart, and capacity of containers to a liter? 8. How do you read and write time to 5-minute intervals using a clock? 9. How do you determine elapsed time? 10. How do you identify and compare periods of time using 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 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, 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	❑ Quarter ❑ Dollar ❑ Decimal point ❑ Pound ❑ Temperature ❑ Fahrenheit ❑ Celsius ❑ Inch ❑ Foot ❑ Centimeter ❑ Meter ❑ Perimeter ❑ Kilogram ❑ Cup ❑ Pint ❑ Quart ❑ Liter ❑ Seconds ❑ Minute ❑ Hour ❑ Half-hour ❑ Quarter-hour ❑ Estimate	coins and record the amount. Pass the bags around the class. DOK 1 ❑ Determine length, width, and volume of objects around the room using paper clips and blocks. DOK 2 ❑ Use time clocks to practice telling time by the hour and half hour. DOK 1 ❑ Find the perimeter and explore area of rectangles using geoboards. DOK 2 ❑ Measure items around the room using rulers, one-inch blocks, centimeter blocks, and Cuisenaire rods. DOK 1

Grade 2	Unit 2:Geometry/Measurement		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment Student will:
	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 (minutes, hours, days, weeks, months), weight (ounce, pound), and length (inch, foot). ❑ **MA-EP-3.1.1 Students will describe and provide examples of basic geometric elements and terms (sides, edges, faces, bases, vertices, angles), and will apply these elements to solve real-world and mathematical problems. DOK 2** ❑ **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** ❑ **MA-EP-3.1.3 Students will describe and provide examples of basic three-dimensional objects (spheres, cones, cylinders, pyramids, cubes), and will apply the attributes 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.	❑ Sides ❑ Vertex ❑ Vertices ❑ Faces ❑ Edges ❑ Triangle ❑ Square ❑ Rectangle ❑ Circle ❑ Cube ❑ Sphere ❑ Pyramid ❑ Cylinder ❑ Cone ❑ Rectangular prism ❑ Congruent	❑ Trace pattern blocks to make a picture to create a geometric pattern. DOK 2 ❑ Compare and contrast two shapes using a Venn diagram. DOK 2 ❑ Use geoboards to construct 2 dimensional shapes. DOK 2 ❑ Use gumdrops and toothpicks to construct 3 dimensional shapes. DOK 2 ❑ Use geoboards to construct congruent shapes (in pairs). DOK 3

Grade 2	Unit 2:Geometry/Measurement		Suggested Length: Ongoing
Essential Questions	*Program of Studies* and Core Content	Key Terms and Vocabulary	Classroom Instruction and Assessment Student will:
	❑ **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.	❑ Symmetry ❑ Grid ❑ Plot points	❑ Paper folds to demonstrate line of symmetry (butterfly). DOK 2

Grade 2	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 do you compare and use data in tables? 2. How do you interpret and make a bar graph and pictograph? 3. How do you predict and record the outcome of an event?	***Program of Studies*** ❑ *PS-8 display data on student invented representations* ❑ *PS-9 read and compares data on student-invented graphs.* ❑ *PS-13 explore chance (probability) as two separate events (likely/unlikely outcomes)* **Core Content** ❑ **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** ❑ MA-EP-4.1.2 Students will collect data. ❑ MA-EP-4.1.3 Students will organize and	❑ Data ❑ Bar graph ❑ Pictograph ❑ Tally marks ❑ Survey	❑ Use a pictograph to record and interpret information. DOK 1 ❑ Use their own created graph to write facts based on their investigation. Present information to class. DOK 2 ❑ M & M graph. DOK 2 ❑ Create a question; poll a chosen class and display data

Grade 2	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:
	display data. ❑ MA-EP-4.2.1 Students will determine the mode (of 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 ❑ 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).	❑ More likely ❑ Less likely ❑ Probability	on their invented graphs. Students will compare how data was presented. DOK 3 ❑ Predict the likelihood of certain colored chips being pulled from a bag based on the number of colored chips placed in the bag. DOK 2 ❑ Use spinners to more likely and less likely will happen. DOK 2

Grade 2	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 can you create and extend patterns? 2. What strategies can you use to solve simple equations? 3. How can you solve for unknowns?	***Program of Studies*** ❑ *A-6 create, reproduce, and extend patterns of shapes, objects, movements, and sounds.* ❑ *A-9 explore input-output machines (e.g., function machines).* ❑ *A-10 explore unknowns and open sentences to express relations* ❑ *A-12 recognize, extend, and explain rules orally for a number pattern* **Core Content** ❑ **MA-EP-5.1.1Students will extend simple patterns (e.g., 2,4,6,8,…;◊Δ◊Δ…). DOK 2**	❑ Patterns ❑ Extend	❑ Create their own patterns and extensions using manipulatives. DOK 2 ❑ Describe what patterns they see using what they know about the calendar. DOK 2

Grade 2	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-5.1.2 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 real-world problems. DOK 2**		❑ Make up their own pattern of each (shapes, objects, movement, sounds). Each student will share and the rest of the students will have to recreate the pattern and extend it. DOK 2 ❑ Students will construct algebraic number sentences using story problems. DOK 2 ❑ Find missing addends using manipulatives. DOK 2