Year	Development	Grade	Overview
2010	**Debuting Single Digit by Double Digit Multiplication**	**Grade 3/4**	This lesson introduces the concept of two-digit by one-digit multiplication. It is expected that students are familiar with basic multiplication facts. During this lesson students will help the teacher plan a movie premiere for their class. Students will learn several methods for two-digit by one-digit multiplication; including using place value blocks, the draw-it strategy, the box method and decomposition.
2010	**Division at the Carnival**	**Grade 5**	Students will explore and practice various strategies for long division in order to be more accurate in their work. They will begin by estimating quotients to see the value of it in the real world and as a means to ensure realistic quotients when dividing. Students will also learn and practice new strategies for long division in order to provide another option for dividing successfully. By the end of the unit students will analyze remainders in division problems to determine their importance in analyzing real world situations.
2010	**How Does Your Garden Grow**	**Grades 3-5**	Students will use a variety of activities, projects, and games to practice using arrays and to develop fluency for targeted multiplication facts. Students will focus on the 21 hard-to-learn facts as they work as garden engineers, helping Farmer Magill solve a variety of problems he is having with his garden.
2010	**Place Value-able Facts**	**Grades 4 / 5**	In this place value lesson, students will work with *Fun Fact Cards* to explore numbers. It is expected that students are familiar with place value up to the millions place, have some knowledge of comparing numbers, and are knowledgeable about decimals. *However, this is not a lesson that focuses on decimals.* During this lesson, students will represent numbers to the billions place, acknowledge decimal fractions when reading money amounts, be able to represent numbers in standard, word, and expanded forms through exciting activities. While learning, students will be engaged through games like "Find-a-Fact," "Roll, Write, Compare!" and "Order Me Around."
2009	**Can I Get Your Digits?**	**Grade 3**	Students will learn the names and order of place value by manipulating digits to create numbers. They will identify and represent a value of a digit using games, exit cards, assessments, and activities.
2009	**Super Cents**	**Gradae 2**	In this unit, students will learn how to add money amounts of less than a dollar using different types of coins. Students will participate in activities and literature experiences that focus counting money.

Year	Development	Grade	Overview
2009	**Two-Digit Addition at the Zoo**	**Grade 2**	During the course of the week, students will use manipulatives as well as the standard algorithm to determine the sum of two-digit whole numbers with regrouping. The students will begin the week using manipulatives; as the week progresses the students will use the standard algorithm to solve word problems.
2009	**BASE-ic Space Travel**	**Grade 5**	This unit introduces the concepts of bases and exponents (or powers) in order to gain a deeper understanding of place value. Students will assume the role of intergalactic space travelers. Traveling in crews of four, they will journey to galaxies that use number systems other than base 10, including base 5 and base 2. To facilitate this travel, they must purchase fuel by learning about these bases, compare them to one another, and convert numbers between bases.
2009	**Exploring Place and Space: An Out of This World Unit on Place Value**	**Grades 3-5**	Students are expected to read, write, represent, and compare numbers up to 10,000 in third grade and up to 1,000,000 in fourth and fifth grade. In this unit, students will explore place value concepts with the help of some facts and figures from the Solar System. Pairing astronomy with math, this unit will engage students in identifying the values of digits and also comparing the large numbers associated with the Solar System.
2009	**Money Makes the Fair-Go-Round**	**Gradaes 2-3**	This lesson will develop and enrich counting strategies to determine the value of sets of money. They will apply these strategies to real-life experiences. Students will utilize money manipulatives to explore a county fair theme.
2009	**Place Value & Picasso**	**Grades 3-4**	The students will learn place value concepts through Arts Integration. The students will learn about the life and artistic style of Picasso and will create a picture representing his style. The picture will incorporate shapes that will be given a numeric value. The students must explain the value of the artwork and write the number in standard form, word form, and expanded notation.
2008	[Borrowing from Our Neighbors](#)	**Grades 2-3**	In these lessons, students will be introduced to three different approaches to subtracting with regrouping. First, the concept will be introduced through a story which students will act out. By the second day, students will model what they have learned about regrouping using based ten blocks. On the third day, students will practice this skill using a number line.

Year	Development	Grade	Overview
2008	Buggin' Out (Identifying and Adding Amounts of Money)	Grades 2-3	Students will use play money to investigate the concept of addition of money with and without regrouping. Students will count sets of money including dollars, quarters, dimes, nickels, and pennies. Students will record money in various ways including the use of the ¢ symbol, dollar sign and decimal point, and picture representations. Students will develop an understanding of how to add money using the dollar sign and decimal point to make a connection from school-based learning to real-world application. *This unit is designed for students who have already learned skills in addition with regrouping and counting money.
2008	Decimals Decide Olympic Champions!	Grades 4-5	The students will compare and order decimals and expand their knowledge up to the thousandths place. They will understand why decimal places up to the thousandths place can help compare and contrast data. They will demonstrate this idea using manipulatives to represent decimal values as well as organize them on a number line.
2008	Playing the Cards of Place Value	Grade 3	Students will use different manipulatives to investigate place value through 99,999. The activities have the students identify place value through the ten thousandths and discuss the value of each digit in a number. In addition, students will identify the three forms of a number and comparing two numbers using < , > , or =. The students will complete the activities in a whole group, partner, or individual settings.
2008	Smart Cookie Factors	Grades 4-5	In this unit, Smart Cookie Factors, students will be introduced to the concepts of factoring numbers in order to find the Greatest Common Factor. A variety of approaches to finding the greatest common factor will be introduced and practiced. The concept of prime and composite numbers will be introduced and/or reviewed.
2008	Smiling at Two Digit Multiplication	Grade 4	Students will solve multiplication problems by utilizing the multiplication strategies for Traditional Multiplication (repeated addition and multiplication fact sheet), the Partial Products Methods using factors as sums of ones, tens, and hundreds, and the Lattice Method finding the product using the lattice grid.
2008	Subtraction with Regrouping	Grade 4	In order to understand subtraction with regrouping, student should know basic subtraction facts as specified in the NCTM Content Standards. This unit uses "Recreation" for a real-world application of subtraction involving regrouping.
2008	The True Value of Sweets	Grade 5	Students will build upon their prior knowledge of fractions in order to understand decimals. The unit enables the student to extend his/her knowledge of decimals through exploration of place value and comparison of their relative size.

Year	Development	Grade	Overview
2007	Comparing Two-Digit Numbers With the Inequality Symbols	Grade 2	Students in second grade need to develop a sense of the size of a number in relation to other numbers. Prior to these lessons, students should have learned to read, write, and use base-10 blocks to represent two-digit numbers (place value models). In these lessons, students will continue to use manipulatives to represent two-digit numbers and compare the numbers using the >, <, = symbols.
2007	Exploring Equivalent Fractions	Grades 4-5	During the three days, students will develop an understanding of equivalent fractions. For this unit, students will need the prerequisite skills of representing and comparing fractions with like denominators. They will also need to be able to place a fraction on a number line labeled 0, ½, 1.
2007	Factor Fun for Fifth Graders	Grade 5	Factorization is a necessary step in order to advance into basic addition and subtraction of fractions. Students must understand the concept that numbers can be broken down into factors. Through the activities in this unit, students will be able to demonstrate the steps in identifying factors in pairs of numbers. This will help lead them to identifying greatest common factor among several numbers when adding, subtracting, and simplifying fractions.
2007	Multiplication Strategies - A Day at the Zoo	Grades 3-4	Students will use the multiplication strategies of repeated addition and the arrays model. They will apply either strategy to solve various real-life problems. All work will be centered around a zoo theme.
2007	Pizzarama	Grade 3	This unit focuses on student understanding of naming and comparing given fractions and finding the fractional of a set or regions. Students will also measure using their knowledge of fractions.
2007	Place Value - A Place for Apples	Grade 2	In this unit students will show an understanding of place value by representing numbers in various ways. The first lesson will focus on counting groups of tens using concrete objects. The second lesson extends the concept of tens and ones by representing numbers using place value models. In the last lesson, students will apply knowledge of number relationships by identifying a number that is ten more or ten less than a given number.
2007	Place Value of Whole Numbers Through One Million	Grade 3	This learning unit develops and reviews place value concepts through millions. It involves the utilization of manipulatives. The lessons focus on a student's basic understanding of place value and the reinforcement of the concept. It is ideal for a classroom setting where differentiation is implemented and can be used in a large or small group setting.

Year	Development	Grade	Overview
2007	Plunge Into Place Value	Grades 2-3	Understanding place value and expanded notation are critical components in understanding number sense. Through the lessons and activities in this unit, students will be able to read and write numbers up to 1,000 (up to 10,000 for third grade), write numbers in expanded notation, and identify the place value of a digit in a whole number.
2007	Two-Digit Subtraction With and Without Grouping	Grade 2	During the course of the three-day lessons, students will use manipulatives as well as mental math to determine the mathematical difference between two-digit basic whole numbers with and without regrouping. Students will first review subtracting single-digit numbers using manipulatives. As the week progresses, students will use mental math and alternative strategies to finding the difference between two-digit whole numbers.
2006	Add It Up In Number Ville! Adding 2-Digit Numbers With and Without Regrouping	Grades 2-3	This lesson introduces students to the skill of adding two-digit numbers, first without regrouping, and then with regrouping. Students will explore the place value of numbers, the traditional addition strategy and alternative algorithms for adding two- digit numbers. Students will be able to decide to use regrouping to add two-digit numbers as well as learn to use mental math and estimation to add two-digit numbers.
2006	Applying Knowledge of Money	Grades 2-3	This activity will introduce students to recognizing coins and dollar amounts. Students will practice naming coins and will identify coins using their different names. Students will rename coin and dollar values. Students will learn to add money values to one hundred dollars ($100.00).
2006	Decimals in the Dugout (Place Value) Pt. I | Pt. II | Pt. III	Grades 4-5	It's time to play ball with decimals and hit a home run out of Place Value Park! Students will explore the concepts of part to whole relationships, place value, and decimals while engaged in baseball-related activities. This learning unit focuses on place value to the decimal thousandths. Prior to beginning these activities, students should have a firm grasp of whole number place value through millions. The students will use base-ten blocks, tangrams and other manipulatives in order to gain an understanding of place value with decimals. Students will also have an opportunity to explore comparing decimals with extension activities. So let's root, root, root for the decimal home team!
2006	Money Math Carnival	Grade 3	Students will attend a math carnival that will utilize their money skills. While enjoying the sights, sounds, and excitement of the carnival, the students will play games and determine the value of sets of mixed currency. The students will also represent money amounts in different ways.

Year	Development	Grade	Overview
2006	"Numbers Make Sense"	Grade 2	This unit emphasizes the importance of understanding the relationships among numbers. The prerequisite skills for this unit include place value knowledge, and including decomposition of whole numbers into tens and ones. This unit uses friendly childhood themes including fables, and sports.
2006	Place Value Made Simple	Grades 3-5	This concept development unit will provide students with the knowledge and understanding of place value of whole numbers (0 - 1,000,000). Students will be able to read, write, and represent whole numbers using symbols, models, and words. Students will also express whole numbers in expanded form.
2006	Place Value - Butterflies Floating Place to Place	Grade 3	Students in third grade need to understand that each of the digits in a number have a specific value based on its place within the number. Prior to these lessons, students should have learned to read, write, and draw representations of three-digit numbers using base-10 blocks (place value models). In these lessons, students will continue to use base-10 blocks to represent numbers and will make connections between the place of the digit and the value of the digit in that place. Students will solve riddles using both place and value to write numbers in standard form and in expanded form.
2006	Reasonable Estimates	Grades 3-4	Estimation is a critical component of number sense. Through the activities and math games in this unit, students will practice identifying appropriate situations for estimation, calculating estimated sums and differences, and evaluating answers for reasonableness. They will have the opportunity to develop flexibility in their math thinking.
2005	Coin Carnival	Grades 2-3	This lesson takes students through different activities involving money. First, students will identify coins and their values. They will then move on to learning how to combine a number of the same coins and figure out how much money they have. Finally, students will learn how to exchange coins based on their values. This lesson allows students to learn all of these concepts through a variety of fun, carnival related activities. Come join us at the Coin Carnival!
2005	Expanding Place Value	Grade 2	This unit is designed to introduce place value from 0 to 999. In the first lesson, students will develop an understanding of hundreds, tens, and ones. Students will create a Number Wheel in order to identify digits and their value. In the second lesson, students will extend student understanding of place value by writing word names for numbers. The last lesson introduces expanded form and builds on the concept that numbers can be represented in several ways.

Year	Development	Grade	Overview
2005	[Fishin' for Fractions](#)	Grade 5	Students will explore the concepts of comparing and ordering fractions. It would be best, but not necessary, for students to have an understanding of equivalent fractions, least common denominator, and greatest common factor before beginning these lessons. During these lessons, students will use benchmarks in order to identify fractions as being near zero, one half, or one. They will also use models, pictures, and/or the least common denominator to compare and order fractions on a number line and without one. By the end of the lessons, students will be able to apply these fractions skills to a real-life situation while using problem-solving skills. The end of unit assessment will show student's individual understanding for comparing and ordering fractions.
2005	[Fraction Fever](#)	Grades 4-5	Students will find the factors of numbers first with Cuisenaire Rods, and then by using the rules for factorization. They will learn to identify the greatest common factor of two numbers. They will apply these skills by reducing fractions in isolation, and then by reducing the sums and differences of fractions with like denominators. In Lessons 3 and 4, students will find the multiples of whole numbers in several different ways: using the hundreds chart, multiplication chart, Cuisenaire Rods, and sequenced steps. Students will find the least common multiple of two whole numbers. Students will then apply this concept to fractions. They will find the LCM of the denominators of unlike fractions in order to rename the fractions and add the fractions.
2005	[Fractions In Action](#)	Grades 4-5	Students will explore the use of fractions as they develop skills to identify, compare and order, convert and measure whole and mixed numbers. Data analysis will be used to solve multi-step problems, as well as create graphs, charts, and number lines. Upon completion of this unit students will be able to add and subtract fractions and mixed numbers.
2005	[Giving It 100%](#)	Grades 3-4	This unit is developed for students to help build a bridge between decimals and percents. In this unit, you will find lessons that will allow students to identify (read and write) decimals, convert decimals to percents, graph percents, and compare decimals and percents. This unit provides instructional lessons, games and assessment activities that allow you to teach, monitor and assess your students' understanding of percent and decimals.
2005	[Go One.On.One With Decimals](#)	Grades 4-5	In order to understand decimals, students should have prior knowledge of fractions as specified in NCTM Content Standards. This unit uses a basketball theme to introduce students to the place value of decimals through thousandths and teaches them to compare their relative size.

Year	Development	Grade	Overview
2005	Multiplication Magic	Grades 4-5	Students will develop an understanding of how to multiply by two-digit numbers. They will build their understanding by exploring a variety of methods to solve problems. They will use manipulatives and decompose numbers to aid in their understanding of the traditional algorithm. Through these techniques, the students will realize that in order to develop a true understanding of multiplication, they will need to grasp the concepts of place value and regrouping. The product of a multiplication problem is not the result of "magic."
2005	Planetary Place-Value	Grade 3	Blast-off into learning fun!!! Students will explore the concepts of number sense and place value through a series of space-related activities that are out of this world! Focusing on numbers through 9,999, students will work with base-ten blocks and other manipulatives to become familiar with standard and expanded forms and word names. Once students achieve a deep understanding of these concepts, they will conclude the mini-unit with exercises that involve comparing and ordering numbers.
2005	Score With Soccer Subtraction	Grade 3	Students will use different manipulatives to investigate 3-digit subtraction with regrouping including zeros in the hundreds and tens place. They will develop their understanding of how place value is an integral role in subtraction with regrouping.
2004	Defining Division	Grades 3-5	Students will explore the use of fractions as a powerful strategy for constructing their own division strategies. They will develop their understanding of fractions as parts of unit wholes, as parts of a collection, and as divisions of whole numbers to solve multi-step problems. Throughout the problem-solving process students will develop mathematical arguments and proofs for their solutions as well as analyze and evaluate the mathematical thinking and strategies of each other. Finally, students will construct their own understandings for how fractions are connected to the function of division.
2004	I'll Have an Order of Subtraction, Please!	Grades 3-4	This Concept Development Unit focuses on the idea of subtracting with regrouping in terms of money. The students will have hands on activities where they demonstrate through manipulatives the decomposition of numbers in order to regroup. They will then apply their skills to money to show decimals. This will conclude by having students find change for purchases at a restaurant using regrouping with zeroes.

Year	Development	Grade	Overview
2004	March of the Dividing Ant	Grades 4-5	Students will explore their understanding of the divisibility rules of 2, 3, 5, 6, 9, and 10 in order to deconstruct whole numbers between 0-1000. Divisibility rules can be used as shortcuts to long division. Students who know these rules have an easier time with factorization, simplification of fractions, common denominators, and prime numbers, in addition to having an easier time with division.
2004	Multiplication: A Treasure Hunt to Two and Three Digit by One Digit Multiplication	Grades 3-4	This unit focuses on two and three digit by one digit multiplication. Students will be able to use what they know about place value and multiplication facts to multiply greater numbers. Students will understand this concept through the use of manipulatives, drawings, and number sentences. This unit focuses on the use of a partial product strategy to help students understand the algorithm for two- and three-digit by one-digit multiplication. The students will use these strategies to gain clues along a treasure hunt.
2004	Number and Operations: Webbing Our Way Through Numbers	Grade 2	The students will understand ways of representing numbers, relationships among numbers and number systems. The students will demonstrate an understanding of operations and how they relate to one another. They will compute and make reasonable estimates.
2004	Place Value/ How Much Is A Million?	Grades 3-4	This Concept Development Unit will provide students with the knowledge and understanding of the value of digits in a whole number that are between 0 and 1,000,000. In addition, students will be able to represent whole numbers in standard form, word form, and with pictorial representations of a given number. In addition, students will be able to compare and order numbers in order from least to greatest.
2004	Place Value- "Let's Party With Place Value"	Grades 2-3	Students will explore place value using number symbols, models, words, and expanded form to determine the value of numbers 0-10,000. Students will apply whole numbers and place value knowledge to a real life situation of attending a party.
2004	Place Value of Decimals to Hundredths: Diving For Decimals	Grades 4-5	In order to understand decimals, students should have prior knowledge of fractions as specified in NCTM Content Standards. The student will be able to write decimals in tenths and hundredths and relate them to common fractions by using prior knowledge of dollars and cents. Students will make a quick reference place value chart and be able to correctly place a decimal number on the number line. Students will be able to read a number with decimal place value up to hundredths.

Year	Development	Grade	Overview
2003	[A Place For Everything](#)	**Grades 2-3**	The students will use prior knowledge and manipulatives to explore the concept of place value to 1,000. They will investigate placing items into groups of 10 and understanding each place can only have up to nine items.
2003	[Add The Spread, Please](#)	**Grades 4-6**	Add The Spread, Please! is an instructional unit consisting of three modules, Finding Factor Facts, Multiple Focus -10, and The First-Outer-Inner-Last (F.O.I.L.) Investigation. Through the Fundamental Law of Distributive Properties, the students investigate the multiplication connection beyond repeated addition. With symbolism and representation, the students communicate how multiplication spreads across addition. While building upon conceptual and procedural knowledge of whole number computation, the students apply the distributive property as a mental math tool or strategy.
2003	[Bugs Can Multiply, So Can I](#)	**Grade 3**	This lesson focuses on the development of the concept of multiplication. Students will understand the concept of multiplication through pictures, drawings, repeated addition, and number sentences. Students will also write word problems based on multiplication sentences. This unit is also modified to meet the needs of students with learning disabilities. Information regarding this will be found in a separate box.
2003	[Count Pennies, Save A Dollar](#)	**Grades 2-3**	The students will use their knowledge of number relationships and computation to accumulate the most amount of money with the least amount of coins.
2003	[Do You Commute? Do You Associate?](#)	**Grades 3-5**	In this unit, students will be introduced to mathematical properties that form the foundation of computation. They will explore the commutative and associative properties of addition and multiplication to discover how order and grouping affect sums and products. Students will build upon their prior knowledge of counting strategies, equality, and the meanings of addition and multiplication. They will use a number line to visualize number relationships and chart the accompanying addition expressions in order to identify patterns and form a generalization about the relationships in the expressions. Using a number generator game, students will work together, creating number sentences to explore the idea that numbers can be added in any order, and the sum will remain the same. Students will act out the story, *One Hundred Hungry Ants* by Elinor J. Pinczes, generate equations based on the story, explore various grouping formations, and evaluate the affect on sums/products when three or more addends or factors are grouped before they are added or multiplied.

Year	Development	Grade	Overview
2003	Enough For Everybody	Grades 3-5	The students will use division strategies to determine approximate quotients of whole numbers with and without remainders. During the lesson, students will interpret quotients and remainders mathematically in context of problems.
2003	Perimeter Playground	Grades 2-3	The students will use real-life experiences to discover perimeter. The teacher will read aloud *Spaghetti and Meatballs for All* by Marilyn Burns to help them develop a visual awareness of perimeter. The students will utilize problem-solving strategies and their understanding of perimeter to create a "fantasy" playground.
1996	A Day to Remember!!	Grades 4-8	This is a series of five activities involving money and time that are designed to be used at the end of a money unit or a unit on estimation. The culmination of the lessons is a task that requires the student to integrate both time and money into an enjoyable, real-life situation.
1996	A Trip to Colonial Virginia	Grades 5-8	The students will be responsible for planning an actual two-day trip to Colonial Virginia. Working in groups, the children will assign hotel rooms and compute all costs for buses, hotel rooms, meals, and tours, using data given.
1996	Operation Spaghetti	Grades 3-5	The teacher will read the book *More Spaghetti*, *I Say!* by Rita Gelman. The students will estimate how much spaghetti the class could eat and figure out the most economical way of feeding spaghetti to the entire class. Estimation and unit pricing will be demonstrated in planning a spaghetti meal.
1996	Skipping into Multiplication	Grades 2-4	This activity develops the concept of multiplication through the use of patterns. The students will construct and identify arrays and use skip counting to complete patterns. Students will use the function of the constant key on the calculator to show skip counting and to develop the understanding of multiples.
1996	The Twelve Days of Christmas	Grades 5-6	In this unit, students will work both independently and cooperatively to demonstrate their acquisition of consumer skills. Activities require students to collect, analyze, compute, and record information as they purchase a variety of gift items. In addition, students will demonstrate problem solving skills pertaining to money equivalents.

Year	Development	Grade	Overview
1996	[When Life Serves You Lemons!](#)	**Grades 4-5**	The students will be asked to create a lemonade stand to make money for the summer. Measurement skills will be used to help students build the stand (computationally) and produce the lemonade. Computation and estimation skills will be demonstrated by the students to make decisions, find costs, and find profits. Statistical analysis and decision-making skills will be utilized to choose the best times and effectiveness of maintaining a lemonade stand.
1995	[The School Store](#)	**Grades 3-4**	Students will solve problems in mathematics in a real life situation, including problems with open-ended answers, with/without use of a calculator, in a cooperative atmosphere.
1995	[Touring Delmarva](#)	**Grade 3**	This interdisciplinary place-value mathematics/ language arts/ economics unit will offer a variety of hands-on experiences. Students will solve problems involving a numeral's value based on the digit positions, compare and order numerals, and generate data to be utilized.
1995	[Value Your Digits](#)	**Grade 3**	This lesson deals with the price of items from a school store to illustrate problem solving. Students choose the operation necessary to complete the given problem, explain what was done and why it was done, thereby showing understanding of the problem-solving concepts.