

Correlation of the Understanding Numeration 2008© Programs With the Everyday Math for Grade 2

The Understanding Numeration 2008© program consists of the following five concepts written for kindergarten through third grade:

Counting
Operations
Comparing and Ordering

Place Value
Problem Solving

The program is designed for use in a variety of teaching and learning environments ranging from a teacher-centered approach with one computer to a student-centered lab approach. The lessons may also be used in remediation, tutorials, intervention, resource, and fast tracking.

Each concept in the program covers several skills. Every skill has up to four different levels of difficulty with corresponding lessons for each level. The lessons are sequenced to build an understanding of concepts. Each concept also has the following:

- 1) an interactive concept introduction, usually with a variety of graphic approaches;
- 2) a number of particular examples;
- 3) a skill test with random questions and tracking;
- 4) worksheets with visual demonstrations on how to complete each worksheet;
- 5) teaching strategies including Math Circles Overview, Flight Plan Overview, Flight Plan Roles, and Flight Plan Navigation Sheet may be found on our website (www.neufeldmath.com).

Lesson Guide:

Unit One:	pages two to five	Unit Twelve:	page twenty-six
Unit Two:	pages six to eight		
Unit Three:	pages nine to ten		
Unit Four:	pages eleven to twelve		
Unit Five:	pages thirteen to fourteen		
Unit Six:	pages fifteen to seventeen		
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Unit Nine:	pages twenty-one to twenty-two		
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Unit 1. Numbers and Routines

Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
<p>1.1 Math Message and Number Sequences To introduce the Math Message routine; and to review number sequences and number lines.</p>	<p>COMPARING AND ORDERING Locate Whole Numbers on a Grid C... Numbers on 0 to 100 Grid: Worksheet #1, Worksheet #2 C... Missing Numbers to 100: Worksheet #1, Worksheet #2 C... Do Skill Test - 10 questions (randomly generated)</p>	
<p>1.2 Tools and Coins To introduce the tool kits; and to guide children as they find the values of coin combinations.</p>	<p>COUNTING Counting Using Money C... Quarters CANADIAN: Worksheet #1, Worksheet #2 C... Do Skill Test - 5 questions (randomly generated) USA D... Dollars USA: Worksheet #1, Worksheet #2 D... Do Skill Test - 5 questions (randomly generated) USA</p>	
<p>1.3 Calendars and Clocks To review months, weeks, and days; and to review telling time.</p>	<p>COMPARING AND ORDERING Understand Measurement of Time B... The Clock – An Introduction: Worksheet #1, Worksheet #2 B... Times to the Hour: Worksheet #1, Worksheet #2 B... Analog and Digital: Worksheet #1 B... Times to the Half Hour: Worksheet #1, Worksheet #2 B... Do Skill Test - 10 questions (randomly generated) C... Times to Five Minutes: Worksheet #1</p>	



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<p>1.4 Partner Study Routines To provide practice with addition facts; and to establish partnership principles.</p>	<p>OPERATIONS Demonstrate Addition Facts... Patterns A... Bar Machine: Worksheet #1 , Worksheet #2 A... Decomposition Tree #1: Worksheet #1, Worksheet #2 A... Adding Along the Numberline: Worksheet #1 A... Do Skill Test - 10 questions (randomly generated) B... Decomposition Tree #2: Worksheet #1, Worksheet #2 B... Do Skill Test - 5 questions (randomly generated) C... Decomposition Stack: Worksheet #1 C... Patterns in Addition: Worksheet #1, Worksheet #2 C... Do Skill Test - 5 questions (randomly generated) D... Decomposition Tree #3: Worksheet #1 D... Do Skill Test - 5 questions (randomly generated)</p> <p>Addition Strategies A... Tens and Doubles #1: Worksheet #1 A... Do Skill Test - 5 questions (randomly generated) B... Tens and Doubles #2: Worksheet #1 B... Do Skill Test - 5 questions (randomly generated) C... Darts – Add 3 or 4 Numbers: Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>1.5 Grouping by Tens- \$1, \$10, \$100 To provide review for grouping by tens; and to provide practice for exchanging \$1, \$10, \$100 bills.</p>	<p>PLACE VALUE Identify Place Value Patterns (to 100) C... Pictures to Numbers #2: Worksheet #1, Worksheet #2 C... Tens & Ones to Pictures #2: Worksheet #1, Worksheet #2 C...Numbers to Pictures #2: Worksheet #1, Worksheet #2</p>	



	C... 2 Digit Numbers – Different Ways: Worksheet #1, Workshee C... Do Skill Test - 5 questions (randomly generated)	
1.6 Math Boxes To introduce <i>My Reference Book</i> ; and to introduce the Math Boxes routine.	NOT INCLUDED	
1.7 Working in Small Groups To establish rules for working in small groups; and to review number patterns and sequences.	NOT INCLUDED	
1.8 Number Grids To guide children as they explore place-value patterns on number grids.	Identify Place Value Patterns (to 100) C... Pictures to Numbers #2: Worksheet #1, Worksheet #2 C... Tens & Ones to Pictures #2: Worksheet #1, Worksheet #2 C...Numbers to Pictures #2: Worksheet #1, Worksheet #2 C... 2 Digit Numbers – Different Ways: Worksheet #1, Worksheet #2 C... Do Skill Test - 5 questions (randomly generated)	
1.9 Equivalent Names for Numbers To provide experiences with giving equivalent names for numbers; and to review calculator use.	NOT INCLUDED	
1.10 Counting Patterns To guide children as they count and look for patterns on the calculator.	NOT INCLUDED	
1.11 Relations (<,>=) and Home Links To provide experiences with comparing numbers using the relation symbols <, >, =; and to introduce Home Links.	COMPARING AND ORDERING Working with Whole Numbers >, <, = B... Make It True #2: Worksheet #1 B... Greater Than, Less Than #2: Worksheet #1 B... Ordering... Horizontal #2: Worksheet #1 B... Ordering... Vertical #2 : Worksheet #1 B... Do Skill Test - 5 questions (randomly generated) C... Compare Numbers #1 :Worksheet #1 C... Do Skill Test - 5 questions (randomly generated) D... Compare Numbers #2: Worksheet #1 D... Do Skill Test - 5 questions (randomly generated)	



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<p>1.12 EXPLORATIONS: Exploring Temperatures, Base-10 Structures, and Dominoes To guide children as they read and display temperatures; combine values of ones, tens, and hundreds using base-10 blocks; and explore addition facts on dominoes.</p>	<p>COMPARING AND ORDERING Reading and Comparing Temperatures C... Fahrenheit and Celsius temperatures Worksheet #1, Worksheet #2 C... Compare Temperatures in a Day Worksheet #1, Worksheet #2 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>1.13 Progress Check 1 to assess children's progress on mathematical content through the end of Unit 1.</p>		



Unit 2. Addition and Subtraction Facts

Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
<p>2.1 Addition Number Stories To guide children as they make up, represent, and solve addition number stories.</p>	<p>PROBLEM SOLVING Strategies Number Sentence... Oranges: Worksheet #1 Number Sentence... Bill's Ball Worksheet #1</p>	
<p>2.2 Review "Easy" Addition Facts To review +0 and +1 addition facts; and to provide practice with addition facts in which one of the addends is 0, 1, 2, or 3.</p>	<p>OPERATIONS Demonstrate Addition Facts... Patterns C... Decomposition Stack: Worksheet #1 C... Patterns in Addition: Worksheet #1, Worksheet #2 C... Do Skill Test - 5 questions (randomly generated) Add 3 or 4 Numbers A... Add 3 Numbers Vertically...#1: Worksheet #1 A... Add 3 Numbers Horizontally... #1: Worksheet #1 A... Add 3 Numbers – Chain; Addition...#1: Worksheet #1, Worksheet #2 A... Do Skill Test - 10 questions (randomly generated) B... Add 3 Numbers Vertically...#2: Worksheet #1 B... Add 3 Numbers Horizontally... #2: Worksheet #1 B... Add 3 Numbers – Chain Addition...#2: Worksheet #1, Worksheet #2 O-12-B-03b B... Do Skill Test - 10 questions (randomly generated) C... Magic Square : Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)</p>	



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<p>2.3 Doubles Facts To review and provide practice for doubles facts.</p>	<p>OPERATIONS Addition Strategies A... Tens and Doubles #1: Worksheet #1 A... Do Skill Test - 5 questions (randomly generated) B... Tens and Doubles #2: Worksheet #1 B... Do Skill Test - 5 questions (randomly generated) C... Darts – Add 3 or 4 Numbers: Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>2.4 Turn-Around Facts and the +9 Shortcut To review the turn-around shortcut for addition; and to discover and provide practice for a shortcut for addition facts that have 9 as an addend.</p>	<p>NOT INCLUDED</p>	
<p>2.5 Addition Strategies That Use Doubles Facts To provide opportunities for children to explore and practice doubles-plus-1 and doubles-plus-2 facts.</p>	<p>OPERATIONS Addition Strategies B... Tens and Doubles #2: Worksheet #1</p>	
<p>2.6 Subtraction from Addition To review the -0 and -1 shortcuts; and to guide children to identify the subtraction facts related to given addition facts.</p>	<p>OPERATIONS Fact Families... Add and Subtract A... Doubles – Add and Subtract: Worksheet #1 A... Relate Addition and Subtraction: Worksheet #1, Worksheet #2 A... Fact Families #1: Worksheet #1 A... Do Skill Test - 10 questions (randomly generated) B... Doubles – Add and Subtract: Worksheet #1B... Fact Families #2: Worksheet #1 B ... Do Skill Test - 5 questions (randomly generated)</p>	
<p>2.7 Fact Families To demonstrate the inverse relationship between addition and subtraction; and to provide practice for addition and subtraction facts for sums up to and including 10.</p>	<p>NOT INCLUDED</p>	



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<p>2.8 EXPLORATIONS: Exploring Weights, Scales, Equal Groups To guide children as they use a pan balance and spring scale, experience the ounce/pound relationship, and find the total number of objects in equal groups.</p>	<p>OPERATIONS Fact Families... Add and Subtract C... Check Subtraction by Addition: Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>2.9 Name Collections To review the concept that a number can be named in many ways.</p>	<p>NOT INCLUDED</p>	
<p>2.10 Frames-and-Arrows Routines To guide children as they use a given addition or subtraction rule to generate a number sequence, and as they identify the rule for a given number sequence.</p>	<p>NOT INCLUDED</p>	
<p>2.11 “What’s My Rule?” Routines To provide experiences with identifying missing numbers in number pairs that are generated by a rule, and determining the rule used to generate number pairs.</p>	<p>NOT INCLUDED</p>	
<p>2.12 Counting Strategies for Subtraction To review develop, and provide practice for subtraction strategies.</p>	<p>OPERATIONS Fact Families... Add and Subtract C... Check Subtraction by Addition: Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>2.13 Shortcuts for “Harder” Subtraction Facts To guide children as they discover and practice shortcuts for subtracting 9 or 8 from any number.</p>	<p>OPERATIONS Introduce Subtraction Concretely... # - # = # C... Subtraction Sentences: Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>2.14 Progress Check 2 To assess children’s progress on mathematical content through the end of Unit 2.</p>		



Unit 3. Place Value, Time, and Money

Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
<p>3.1 Numeration and Place Value To review place value in 2-digit and 3-digit numbers.</p>	<p>PLACE VALUE Identify Place Value Patterns (to 100) C... Pictures to Numbers #2: Worksheet #1, Worksheet #2 C... Tens & Ones to Pictures #2: Worksheet #1, Worksheet #2 C...Numbers to Pictures #2: Worksheet #1, Worksheet #2 C... 2 Digit Numbers – Different Ways: Worksheet #1, Worksheet #2 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>3.2 Using Coins to Buy Things To review coin values and exchanges among coins; and to provide experiences with finding coins combinations needed to pay for items.</p>	<p>COUNTING Counting Using Money D... Do Skill Test - 5 questions (randomly generated) USA</p>	
<p>3.3 Telling Time To review telling time; and to provide experiences with writing time in digital-clock notation.</p>	<p>COMPARING AND ORDERING Understand Measurement of Time C... Times to Five Minutes: Worksheet #1 C... Do Skill Test - 5 questions (randomly generated) D... Times to the Minute: Worksheet #1 D... Do Skill Test - 5 questions (randomly generated)</p> <p>Describe Elapsed Time... Hours, 5 Minutes D... Times Goes By – Digital: Worksheet #1</p>	
<p>3.4 EXPLORATIONS: Exploring Numbers, Time, and Geoboards To provide experiences with representing and renaming numbers with base-10 blocks; review time; and making, describing, and comparing geoboard shapes.</p>	<p>NOT INCLUDED</p>	



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3.5 Data Day: Pockets To provide experience with gathering data, entering data in a table, and drawing a bar graph; and to demonstrate a strategy for finding the middle value in a data set.	OPERATIONS Given Graph... Perform Operations C... Operations with Bar Graphs: Worksheet #1, Worksheet #2	
3.6 Frames and Arrows Having Two Rules To guide children as they solve Frames-and-Arrows problems having two rules.	NOT INCLUDED	
3.7 Making Change by Counting Up To guide children as they make change by counting up from the cost of an item to the amount tendered.	COUNTING Counting Backwards A... Counting Up & Down #1 : Worksheet #1 A... Do Skill Test - 5 questions (randomly generated) B... Counting Up & Down #2 : Worksheet #1 B... Do Skill Test - 5 questions (randomly generated)	
3.8 Coin Exchanges To guide children as they solve multistep problems for amounts under \$1.00; and as they practice making change using nickels, dimes, and quarters.	OPERATIONS Counting Using Money D... Do Skill Test - 5 questions (randomly generated) USA	
3.9 Progress Check 3 To assess children's progress on mathematical content through the end of Unit 3.		



Unit 4. Addition and Subtraction

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<p>4.1 Change-to-More Number Stories To guide children as they solve change-to-more number stories.</p>	<p>NOT INCLUDED</p>	
<p>4.2 Parts-and-Total Number Stories To guide children as they solve parts-and-total number stories.</p>	<p>NOT INCLUDED</p>	
<p>4.3 EXPLORATIONS: Exploring Temperature, Money, and Shapes To guide children as they explore reading temperatures on a thermometer practice finding the total value of a group of coins, and develop readiness for classifying geometric shapes.</p> <p>4.4 Temperature Changes To guide children as they read and show temperatures and solve number stories about temperature changes.</p>	<p>COUNTING Counting Using Money D... Do Skill Test - 5 questions (randomly generated) USA</p> <p>Recognize and Count two-Dimensional Figures B... Counting 2-D Figures #1: Worksheet #1, Worksheet #2 B... Do Skill Test - 5 questions (randomly generated) C... Counting 2-D Figures #2: Worksheet #1, Worksheet #2 C... Do Skill Test - 5 questions (randomly generated)</p> <p>Reading and Comparing Temperatures C... Compare Temperatures in a Day Worksheet #1, Worksheet #2 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>4.5 Estimating Costs To guide children as they use estimation to solve problems for which an exact answer is not necessary.</p>	<p>COUNTING Estimating the # of Objects and Reasonableness B... Estimation and Counting Worksheet #1 B... Do Skill Test - 5 questions (randomly generated)</p>	



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<p>4.6 A Shopping Activity To guide children as they develop strategies for adding 2-digit numbers mentally; to provide experiences with calculating the total cost of two items; and to demonstrate making change for whole-dollar amounts up to \$100.</p>	<p>OPERATIONS Add 2 Digit Numbers... Concretely C... Addition Without Regrouping: Worksheet #1 , Worksheet #2 C... Do Skill Test - 5 questions (randomly generated)</p> <p>Add 2 Digit Numbers... Abstractly C... Addition Without Regrouping: Worksheet #1, Worksheet #2 C... Addition With Regrouping #1: Worksheet #1 C... Addition With Regrouping #2: Worksheet #1 C... Do Skill Test - 10 questions (randomly generated)</p>	
<p>4.7 EXPLORATIONS: Exploring Length, Area, and Attributes To guide children as they measure lengths and distances to the nearest inch and centimeter, explore area by tiling surfaces and sort attribute blocks according to rules.</p>	<p>OPERATIONS Finding the Area of a Shape D... Area of a Shaded Region #1: Worksheet #1, Worksheet #2</p>	
<p>4.8 Paper-and-Pencil Addition Strategies To guide children as they develop paper-and-pencil strategies for adding 2- and 3-digit numbers; and to demonstrate using estimation to check if answers are reasonable.</p> <p>4.9 The Partial-Sums Addition Algorithm To introduce and practice the partial-sums addition algorithm.</p>	<p>OPERATIONS Add 2 Digit Numbers... Concretely C... Addition Without Regrouping: Worksheet #1 , Worksheet #2 C... Do Skill Test - 5 questions (randomly generated)</p> <p>Add 3 Digit Numbers... Concretely D... Addition Without Regrouping: Worksheet #1 , Worksheet #2 D... Addition With Regrouping : Worksheet #1, Worksheet #2</p>	
<p>Progress Check 4 To assess children's progress on mathematical content through the end of Unit 4.</p>		



Unit 5. 3-D and 2-D Shapes

Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
<p>5.1 EXPLORATIONS: Exploring Rules, Sharing, and Time To demonstrate rules used to classify shapes; to develop readiness for division; and to demonstrate telling time using digital and analog notation.</p>	<p>OPERATIONS Introduction to Division C... Equal Groups of Eggs: Worksheet #1, Worksheet #2 C... Sharing Oranges Equally: Worksheet #1, Worksheet #2 C... Division Introduction – Eggs: Worksheet #1, Worksheet #2 C... Division Introduction – Oranges: Worksheet #1, Worksheet #2 C... Division – How many Groups: Worksheet #1, Worksheet #2 C... Do Skill Test - 10 questions (randomly generated)</p> <p>COMPARING AND ORDERING Understand Measurement of Time D... Times to the Minute: Worksheet #1 D... Do Skill Test - 5 questions (randomly generated)</p>	
<p>5.2 Points and Line Segments To guide children as they define name, and draw line segments.</p>	<p>NOT INCLUDED</p>	
<p>5.3 Parallel Line Segments To introduce the concepts of parallel and parallel line segments.</p>	<p>NOT INCLUDED</p>	
<p>5.4 EXPLORATIONS: Exploring Polygons, Arrays, and Attributes To review names and classify polygons; to develop readiness for multiplication; and to provide opportunities to explore similarities and differences of attribute blocks.</p>	<p>OPERATIONS Introduce Multiplication Concretely C... Grouping Eggs in Bowls: Worksheet #1, Worksheet #2 C... Grouping Chairs in Rows: Worksheet #1, Worksheet #2 C... Eggs in Bowls... Introduce \times: Worksheet #1, Worksheet #2 C... Chairs in Rows ... Introduce \times: Worksheet #1, Worksheet #2 C... Multiplication – Repeated Addition: Worksheet #1 C... Do Skill Test - 10 questions (randomly generated)</p>	



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5.5 Quadrangles To guide children as they identify the names and the characteristics of various quadrangles, and as they explore similarities and differences among quadrangles.	<i>NOT INCLUDED</i>	
5.6 3-Dimensional Shapes To guide children as they compare and contrast the characteristics of 3-dimensional shapes. 5.7 Pyramids To guide children as they construct pyramids and explore the relationship among the number of faces, edges, and vertices in pyramids.	COUNTING Recognize and Count Solids B... Counting Solids #1: Worksheet #1 B... Do Skill Test - 5 questions (randomly generated) C... Counting Solids #2 :Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)	
5.8 Line Symmetry To guide children as they find lines of symmetry in objects and complete drawings to create symmetrical shapes.	<i>NOT INCLUDED</i>	
5.9 Progress Check 5 To assess children's progress on mathematical content through the end of Unit 5.		

Unit 6. Whole Number Operations and Number Stories

Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
<p>6.1 Addition of Three or More Numbers To review strategies for solving addition problems, with emphasis on problems having three addends.</p>	<p>OPERATIONS Add 3 or 4 Numbers B... Add 3 Numbers Vertically...#2: Worksheet #1 B... Add 3 Numbers Horizontally... #2: Worksheet #1 B... Add 3 Numbers – Chain Addition...#2:Worksheet #1, Worksheet #2 B... Do Skill Test - 10 questions (randomly generated) C... Magic Square : Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)</p> <p>Add 3 Digit Numbers... Concretely D... Addition Without Regrouping: Worksheet #1 , Worksheet #2 D... Addition With Regrouping : Worksheet #1, Worksheet #2 D... Addition With Regrouping – Any Column: Worksheet #1, Worksheet #2 D... Do Skill Test - 10 questions (randomly generated)</p>	
<p>6.2 Comparison Number Stories To introduce comparison number stories by using comparison diagrams.</p>	<p>COMPARING AND ORDERING Working with Whole Numbers $>$, $<$, $=$ C... Compare Numbers #1 :Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>6.3 Data Day: The Four Food Groups To provide experiences with collecting, sorting, tallying, and graphing data.</p>	<p>OPERATIONS Given Graph... Perform Operations C... Operations with Tally Charts: Worksheet #1, Worksheet #2 C... Operations with Pictographs: Worksheet #1, Worksheet #2 C... Operations with Bar Graphs: Worksheet #1, Worksheet #2 C... Do Skill Test - 10 questions (randomly generated)</p>	



Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
<p>6.4 Mixed Addition and Subtraction Stories To guide children in selecting and completing an appropriate diagram to help solve an addition or subtraction problem.</p>	<p>PROBLEM SOLVING Number Sentence... Oranges: Worksheet #1 Number Sentence... Bill's Ball Worksheet #1</p>	
<p>6.5 Subtraction Strategies To review solution strategies for subtraction of 2-digit numbers.</p>	<p>OPERATIONS Subtract 2 Digit Numbers... Concretely C... Subtraction Without Regrouping: Worksheet #1, Worksheet #2 C... Subtraction With Regrouping: Worksheet #1, Worksheet #2 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>6.6 EXPLORATIONS: Exploring Arrays, Coins, and Division To develop readiness for multiplication; to guide children in finding coin combinations equivalent to \$1.00, and to explore one meaning of division.</p>	<p>OPERATIONS Introduction to Arrays C... Introduction to Arrays: Worksheet #1, Worksheet #2 C... Build Arrays: Worksheet #1, Worksheet #2 C... Introduction to Arrays with Multiplication: Worksheet #1, #2 C... Build Arrays with Multiplication: Worksheet #1, Worksheet #2 C... Do Skill Test - 10 questions (randomly generated)</p>	
<p>6.7 Multiples of Equal Groups To introduce multiplication as a way to find the total number of things in several equal groups.</p>	<p>OPERATIONS Introduce Multiplication Concretely C... Grouping Eggs in Bowls: Worksheet #1, Worksheet #2 C... Grouping Chairs in Rows: Worksheet #1, Worksheet #2 C... Eggs in Bowls... Introduce \times: Worksheet #1, Worksheet #2 C... Chairs in Rows ... Introduce \times: Worksheet #1, Worksheet #2 C... Multiplication – Repeated Addition: Worksheet #1 C... Do Skill Test - 10 questions (randomly generated) Introduce Multiplication Sentences C... Multiplication Sentences #2 Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)</p>	



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<p>6.8 Multiplication-Array Number Stories To introduce everyday examples of rectangular arrays; and to provide experiences with solving multiplication problems using multiplication diagrams and array models.</p> <p>6.9 Multiplication-Array Number Stories To introduce everyday examples of arrays; and to provide experiences with solving multiplication problems using multiplication diagrams and array models.</p>	<p>OPERATIONS Introduction to Arrays C... Introduction to Arrays: Worksheet #1, Worksheet #2 C... Build Arrays: Worksheet #1, Worksheet #2 C... Introduction to Arrays with Multiplication: Worksheet #1, #2 C... Build Arrays with Multiplication: Worksheet #1, Worksheet #2 C... Do Skill Test - 10 questions (randomly generated)</p>	
<p>6.10 Division Stories To guide children as the explore situations that require equal sharing or making equal groups of things.</p>	<p>OPERATIONS Introduction to Division C... Equal Groups of Eggs: Worksheet #1, Worksheet #2 C... Sharing Oranges Equally: Worksheet #1, Worksheet #2 C... Division Introduction – Eggs: Worksheet #1, Worksheet #2 C... Division Introduction – Oranges: Worksheet #1, Worksheet #2 C... Division – How many Groups: Worksheet #1, Worksheet #2 C... Do Skill Test - 10 questions (randomly generated)</p>	
<p>6.11 Progress Check 6 To assess children's progress on mathematical content through the end of Unit 6.</p>		



Unit 7. Patterns and Rules

Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
<p>7.1 Patterns in Counting To review counting by 2s, 5s, and 10s; to extend this to counting by any number n; and to provide experiences with describing patterns that result from counting.</p>	<p>COUNTING Skip Counting and Patterns C... Patterns in Rows : Worksheet #1, Worksheet #2 C... Skip Counting to 100: Worksheet #1 C... Skip Count by 2s to 100 : Worksheet #1, Worksheet #2 C... Next by 2s : Worksheet #1, Worksheet #2 C... Next by 5s : Worksheet #1 C... Do Skill Test - 10 questions (randomly generated)</p>	
<p>7.2 Extending Complements of 10 To provide experiences with finding complements of 10 and differences between 2-digit numbers and higher multiples of 10.</p>	<p>NOT INCLUDED</p>	
<p>7.3 Mental Arithmetic: A Basketball Game To guide children as they build mental arithmetic skills for adding three or more 1- and 2-digit numbers.</p>	<p>OPERATIONS Add 3 or 4 Numbers C ... Magic Square : Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>7.4 Patterns in Doubles and Halves To guide children as they practice repeated doubling and halving.</p>	<p>OPERATIONS Addition Strategies C... Darts – Add 3 or 4 Numbers: Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>7.5 EXPLORATIONS: Exploring Weights, Equal Sharing, and Patterns To provide experiences with exploring weights in pounds on a bath scale, developing readiness for division, and exploring area and patterns.</p>	<p>NOT INCLUDED</p>	



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7.6 Data Day: Standing Jumps and Arm Spans To guide children as they measure length to the nearest centimeter and to the nearest inch.	<i>NOT INCLUDED</i>	
7.7 Middle Value (Median) of a Set of Data To guide children as they sort numerical data and arrange data in ascending or descending order, and as they find the middle value (median) for a set of numerical data.	<i>NOT INCLUDED</i>	
7.8 Frequency Distributions To guide children as they make a frequency table, line plot, and bar graph for a set of data; and as they find the median of a set of data.	<i>NOT INCLUDED</i>	
7.9 Progress Check 7 To assess children's progress on mathematical content through the end of Unit 7.		



Unit 8. Fractions

Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
<p>8.1 Equal Parts of ONE To review basic fraction concepts.</p>	<p>COUNTING Introduce Common Fractions... Parts of a Whole B... One Half of a Shape: Worksheet #1 B... Two Thirds of a Shape: Worksheet #1 B... Three Quarters of a Shape: Worksheet #1 B... Cut in Half Worksheet #1, Worksheet #2 B... Fifths to Tenths #1: Worksheet #1 B... Do Skill Test - 10 questions (randomly generated) C... Fifths to Tenths #2: Worksheet #1 C... Write the Fraction #1: Worksheet #1 C... Write the Fraction #2: Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>8.2 EXPLORATIONS: Exploring Fractions, Multiplication and Division, and Volume To guide children as they explore the link of a fraction amount to the size of the ONE, or whole; to prepare for multiplication and division; and to introduce the concept of volume.</p> <p>8.3 Collections of Things To guide children as they use fractions to name parts of collections.</p>	<p>COUNTING Introduce Fraction of a Set C... Fraction of a set: Worksheet #1, Worksheet #2 C... Do Skill Test - 10 questions (randomly generated)</p>	
<p>8.4 Equivalent Fractions To provide experiences with the idea that many different fractions can name the same fractional part of a whole.</p>	<p>NOT INCLUDED</p>	
<p>8.5 Equivalent Fractions Using Fraction Cards To guide children as they find pairs of equivalent fractions by using region models.</p>	<p>NOT INCLUDED</p>	
<p>8.6 Comparing Fractions To guide children as they compare fractions by using region models.</p> <p>8.7 Fraction Number Stories To provide experiences with number stories involving fractions.</p>	<p>COMPARING AND ORDERING Compare Fractions D... Compare Fractions : Worksheet #1 D... Do Skill Test - 5 questions (randomly generated)</p>	
<p>8.8 Progress Check 8 To assess children's progress on mathematical content through the end of Unit 8.</p>		



Unit 9. Measurement

Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
9.1 Measuring with Yards and Meters To provide review for the concept of nonstandard units of measure; and to introduce yard and meter.	NOT INCLUDED	
9.2 Linear Measures To provide review for measuring with inches, feet, centimeters, and decimeters; and to guide children as they begin a table of equivalent linear measures.	NOT INCLUDED	
9.3 Fractional Units of Length To guide children as they investigate the idea of accuracy, explore $\frac{1}{8}$ inch, $\frac{1}{16}$ inch, and $\frac{1}{2}$ centimeter on a ruler, and explore measuring to the nearest half –inch and half-centimeter.	NOT INCLUDED	
9.4 Perimeter To provide experiences with finding perimeters by measuring to the nearest centimeter or inch.	OPERATIONS Finding the Perimeter of a Shape C... Perimeter of a Rectangle: Worksheet #1, Worksheet #2 C... Do Skill Test - 5 questions (randomly generated)	
9.5 Measuring Longer Distances To provide experiences with identifying the mile and kilometer as standard units for longer distances and solving problems about road-map distances.	UNDERSTANDING MATH Understanding Measurement and Geometry	
9.6 EXPLORATIONS: Exploring Capacity, Area, and Measures To guide children as they explore the capacities of cylinders, find the areas of shapes buy using inch and centimeter grids, and explore measuring tools and units of measure. 9.7 Area To provide experiences with the concept of area, distinguishing between area and perimeter, and finding areas of rectangular figures by counting squares.	OPERATIONS Finding the Area of a Shape D... Area of a Shaded Region #1: Worksheet #1, Worksheet #2 D... Area of a Shaded Region #2: Worksheet #1, Worksheet #2 D... Do Skill Test - 5 questions (randomly generated)	



Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
9.8 Capacity To provide experiences with relationships among units of capacity and identifying equivalent measures of capacity.	<i>NOT INCLUDED</i>	
9.9 Weight To guide children as they compare weights by feel, identify purposes of various scales, explore with units of weight and equivalent measures, and weigh objects.	<i>NOT INCLUDED</i>	
9.10 Progress Check 9 To assess children's progress on mathematical content through the end of Unit 9.		

Unit 10. Decimals and Place Value

Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
10.1 Money To review notation and equivalencies for money amounts. 10.2 Decimal Notation for Pennies and Dimes To review estimation, dollars-and-cents notation, and names for a dollar, a dime, and a penny.	COUNTING Counting Using Money D... Do Skill Test - 5 questions (randomly generated) USA	
10.3 Money Amounts with a Calculator To guide children as they enter money amounts into a calculator and interpret calculator displays.	<i>NOT INCLUDED</i>	
10.4 Using a Calculator to Solve Problems with Money To provide experiences with comparing prices and solving problems about price differences.	<i>NOT INCLUDED</i>	
10.5 Estimating and Finding Exact Costs To provide experiences with estimating costs and then calculating exact costs.	<i>NOT INCLUDED</i>	
10.6 Making Change To provide experience making change by counting up and estimating totals by rounding to the nearest 10 cents.	<i>NOT INCLUDED</i>	



Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
<p>10.7 EXPLORATIONS: Exploring Area, Polygons, and Geoboard Fractions To guide children as they explore finding areas of irregular shapes, make polygons with trapezoids, and form fractions on a geoboard.</p>	<p>OPERATIONS Finding the Area of a Shape D... Area of a Shaded Region #1: Worksheet #1, Worksheet #2 D... Area of a Shaded Region #2: Worksheet #1, Worksheet #2 D... Do Skill Test - 5 questions (randomly generated)</p>	
<p>10.8 Place Value To develop place-value concepts, and connect place value in money with place value in base-10 blocks.</p> <p>10.9 Place-Value Tools To develop place-value concepts by using place-value tools.</p>	<p>PLACE VALUE Identify Place Value Patterns (to 100) C... Pictures to Numbers #2: Worksheet #1, Worksheet #2 C... Tens & Ones to Pictures #2: Worksheet #1, Worksheet #2 C... Numbers to Pictures #2: Worksheet #1, Worksheet #2 C... 2 Digit Numbers – Different Ways: Worksheet #1, Worksheet #2 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>10.10 Place-Value Notation for Ten-Thousands To provide experiences with place-value concepts to ten-thousands.</p>	<p>PLACE VALUE Identify Place Value Patterns (to 1000) D... Expanded Notation Worksheet #1, Worksheet #2 D... Do Skill Test - 5 questions (randomly generated)</p>	
<p>10.11 Grouping with Parentheses To introduce the use of parentheses in number models.</p>	<p>NOT INCLUDED</p>	
<p>10.12 Progress Check 10 To assess children's progress on mathematical content through the end of Unit 10.</p>		



Unit 11. Whole Number Operations Revisited

Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
11.1 Addition Number Stores with Dollars and Cents To guide children as they review finding estimates for sums of money, and calculate values of coin and bill combinations in number stories.	<i>NOT INCLUDED</i>	
11.2 Subtraction Number Stories with Dollars and Cents To guide children as they review making change by counting up, and solve comparison number stories with money.	<i>NOT INCLUDED</i>	
11.3 The Trade-First Subtraction Algorithm To introduce and provide practice with the trade-first subtraction algorithm.	<i>NOT INCLUDED</i>	
11.4 Multiples of Equal Groups To provide experiences with finding the total number of items in several equal groups by multiplying.	OPERATIONS Patterns in Multiplication C... × table – Groups of 2: Worksheet #1 C... × table – Groups of 3: Worksheet #1 C... × table – Groups of 4: Worksheet #1 C... × table – Groups of 5: Worksheet #1 C... × table – Groups of 5 to 0: Worksheet #1 C... Do Skill Test - 10 questions (randomly generated)	
11.5 Division Number Models To provide experiences with solving division number stories; and to introduce number models for division stories.	OPERATIONS Introduction Division Facts... 2, 3, 4, 5 C... Division –Groups of 2: Worksheet #1 C... Division –Groups of 3: Worksheet #1 C... Division –Groups of 4: Worksheet #1 C... Division –Groups of 5: Worksheet #1 C... Do Skill Test - 10 questions (randomly generated)	
11.6 Multiplication Facts To introduce multiplication facts; and to provide review and practice with multiplying by 2, 5, and 10.	OPERATIONS Introduce Multiplication Facts... 2, 3, 4, 5 C... Multiplication: Groups of 2 Worksheet #1 C... Multiplication: Groups of 3 Worksheet #1 C... Multiplication: Groups of 4 Worksheet #1 C... Multiplication: Groups of 5 Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)	



Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
<p>11.7 Products Table To introduce 1s and 0s multiplication facts; and to guide children as they discover patterns in multiplication facts.</p>	<p>OPERATIONS Introduce Multiplication by 1 and by 0 C... Multiplication: Groups of 1: Worksheet #1 C... Multiplication: Groups of 0: Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)</p>	
<p>11.8 Multiplication/Division Fact Families To introduce multiplication and division fact families; and to provide practice with multiplication and division facts.</p>	<p>NOT INCLUDED</p>	
<p>11.9 Multiplication/Division Fact Practice To provide practice with multiplication and division facts.</p>	<p>OPERATIONS Introduce Multiplication Facts... 2, 3, 4, 5 C... Do Skill Test - 5 questions (randomly generated) Introduction Division Facts... 2, 3, 4, 5 C... Division –Groups of 2: Worksheet #1 C... Division –Groups of 3: Worksheet #1 C... Division –Groups of 4: Worksheet #1 C... Division –Groups of 5: Worksheet #1 C... Do Skill Test - 10 questions (randomly generated)</p>	
<p>11.10 Progress Check 11 To assess children's progress on mathematical content through the end of Unit 11.</p>		



Unit 12. Year-End Reviews and Extensions

Title & Activity Number	Understanding Numeration 2008© Concept/Skill/Level/Lessons	Curriculum Lesson
12.1 Review: The Calendar To guide children as they review time equivalencies and calendar facts.	<i>NOT INCLUDED</i>	
12.2 Review: Clock Skills To guide children as they review reading times in different ways, show time to the nearest five minutes on a clock face, and calculate times relative to a given time.	COMPARING AND ORDERING Understand Measurement of Time C... Times to Five Minutes: Worksheet #1 C... Do Skill Test - 5 questions (randomly generated)	
12.3 Timelines To provide experiences with events on a timeline.	<i>NOT INCLUDED</i>	
12.4 Practice Multiplication Facts To provide review and extend shortcuts and strategies for learning multiplication facts; and to provide practice for multiplication facts.	OPERATIONS Patterns in Multiplication C... Do Skill Test - 10 questions (randomly generated)	
12.5 Division from Multiplication To guide children as they review multiplication/division fact families, and investigate the relationship between multiplication and division.	<i>NOT INCLUDED</i>	
12.6 Graphs: Comparing Speeds of Animals and People To provide experience with reading, creating, and interpreting bar graphs; and to guide children as they find the range and middle value (median) of a data set.	PROBLEM SOLVING Strategies Make a Graph... Classroom Shoes: Worksheet #1 Make a Graph... Animals: Worksheet #1	
12.7 The Mode of a Set of Data To guide children as they organize a set of data with a line plot and frequency table, display a set of data with a bar graph, and identify the median and mode.	OPERATIONS Given Graph... Perform Operations C... Operations with Tally Charts: Worksheet #1, Worksheet #2 C... Operations with Pictographs: Worksheet #1, Worksheet #2 C... Operations with Bar Graphs: Worksheet #1, Worksheet #2 C... Do Skill Test - 10 questions (randomly generated)	
12.8 Progress Check 12 To assess children's progress on mathematical content through the end of Unit 12.		

