

CORRELATION
of
the Understanding Numeration PLUS & Understanding Math PLUS programs
with
Mathematics Core Curriculum
Grade 2
January 2007

Note: a. The Understanding Math PLUS series of programs consist of 10 programs written for Kindergarten to 10th Grade.

The 10 programs are:

- Understanding Fractions
- Understanding Probability
- Understanding Exponents
- Understanding Algebra
- Understanding Numeration
- Understanding Measurement and Geometry
- Understanding Whole Numbers and Integers
- Understanding Percent
- Understanding Equations
- Understanding Graphing

Note: b. The Understanding Numeration software for K to 3 is set up so that the teacher selects items in the following order:

Concept .. from 5 concepts .. Counting, Comparing & Ordering, Place Value, Operations and Problem Solving.

Skill .. chosen from the list of specific learning expectations

Level .. indicates the levels of development for Kindergarten to 3rd grade.

Level	Upper Range of Number
A	10
B	20
C	100
D	1000

Lesson .. 250 lessons are sequenced to build understanding of concepts.

A detailed Lesson Synopsis on the website www.neufeldmath.com to assist the teacher by stating the lesson contents but also by giving lesson suggestions.

Worksheet .. off computer worksheets are selected from the CD by a code.

Note: c. The remaining 9 Understanding Math programs for 4th to 10th grade are set up so that they can be used in a variety of teaching and learning environments ranging from a teacher centered approach with 1 computer to a student centered lab approach. The lessons can also be used in remediation, tutorial, intervention, resource, fast-tracking.

Each topic has:

- ..an interactive concept introduction, usually with a variety of graphic approaches.
- ..a number of particular examples
- ..practice questions with random questions but particular feedback
- ..a topic test with random questions and tracking
- ..off computer worksheets selected from the website .. www.neufeldmath.com

Standard 1: Students will acquire number sense and perform operations with whole numbers.

Objective 1: Represent whole numbers in a variety of ways.

Expectation or Standard	Understanding Math PLUS and/or Understanding Numeration PLUS Lessons
a. Relate number words to the <i>numerals</i> that represent the quantities 0-100.	<p><u>Understanding NUMERATION PLUS</u> <u>COUNTING</u> Skill – Reading and Printing Numerals Level C Counting 0 to 100 on a Grid</p>
<p>b. Represent <i>whole numbers</i> up to 1,000 in groups of hundreds, tens, and ones using base ten models, and write the numeral representing the set.</p> <p>c. Read and write a three-digit numeral, relating it to a set of objects and a pictorial representation.</p> <p>d. Write a numeral to 999 in <i>expanded form</i> (e.g., 539 is 5 hundreds, 3 tens, 9 ones or 500+30+9).</p> <p>e. Identify the place and the value of a given digit in a three-digit numeral (e.g., the two in 281 means 2 hundreds or 200).</p>	<p><u>Understanding NUMERATION PLUS</u> <u>PLACE VALUE</u> Skill – Identify Place Value Patterns (to 100) Level C Pictures to Numbers #2: worksheet #1, #2 Tens and Ones to Pictures #2: worksheet #1, #2 Numbers to Pictures #2: worksheet #1, #2 2 Digit Numbers – Different Ways worksheet #1</p> <p>Skill – Identify Place Value Patterns (to 1000) Level C/D 3 Digit numbers – Different Ways worksheet #2 Expanded Notation Worksheets #1, #2</p>
f. Demonstrate multiple ways to represent numbers using symbolic representations (e.g., thirty is the same as two groups of 15, the number of pennies in three dimes, or 58-28).	<p><u>Understanding NUMERATION PLUS</u> <u>OPERATIONS</u> Skill – Subtract 3 Digit Numbers...Abstractly Level D Subtraction Without Regrouping: worksheet #1, #2 Subtraction With Regrouping #1: worksheet #1, #2 Subtraction With Regrouping #2: worksheet #1, #2 Subtraction With Regrouping #3: worksheet #1, #2 Subtraction With Regrouping #4: worksheet #1, #2</p>

Objective 2: Identify simple relationships among whole numbers.

Expectation or Standard	Understanding Math PLUS and/or Understanding Numeration PLUS Lessons
<p>a. Identify the number that is one more, one less, ten more, or ten less than any <i>whole number</i> up to 100.</p> <p>b. Write number sentences using the terms “greater than,” “less than,” or “equal to,” to compare numbers.</p> <p>c. Order four whole numbers less than 100 from least to greatest and from greatest to least.</p>	<p><u>Understanding NUMERATION PLUS</u> <u>COMPARING AND ORDERING</u> Skill – Introduce “ Greater Than” & “ Less Than” Level C To the Nearest Ten worksheet #1, #2</p>
<p>d. Use <i>ordinal numbers</i> 1st through 10th.</p>	<p><u>Understanding NUMERATION PLUS</u> <u>COMPARING AND ORDERING</u> Skill – Use Ordinal Numbers Level A/B Ordering Ladybugs The Steps</p>

Objective 3: Model and illustrate meanings of the operations of addition and subtraction and describe how they relate.

Expectation or Standard	Understanding Math PLUS and/or Understanding Numeration PLUS Lessons
<p>a. Demonstrate the joining and separating of sets with eighteen or fewer objects and record the results with pictures or symbols.</p> <p>b. Model three meanings of subtraction: separating of sets (“take away”), comparison of sets (“how many more/fewer”), and missing <i>addends</i> using objects, pictorial representations, and symbols.</p>	<p><u>Understanding NUMERATION PLUS OPERATIONS</u> Skill – Introduce Subtraction Concretely... “take away” Level A Introduction to Subtractions #1: Worksheets #1, #2 Introduction to Subtractions #2: Worksheets #1, #2 Introduction to Subtractions #3: Worksheets #1, #2 Introduction to Subtractions #4: Worksheets #1, #2</p> <p>Skill – Introduce Subtraction Symbolism Level A Introduce Vertical Subtraction : Worksheets #1, #2 Subtraction Sentences</p> <p>Skill – Fact Families...Add & Subtract Level A Doubles – Add and Subtract Relate Addition and Subtraction : Worksheets #1, #2 Fact Families</p> <p>Skill – Fact Families...Add & Subtract Level B Doubles – Add and Subtract Fact Families</p> <p>Skill – Fact Families...Add & Subtract Level C Check Subtraction by Addition</p>
<p>c. Separate a given set of objects into two, three, five, or ten groups of equal size.</p>	<p><u>Understanding NUMERATION PLUS OPERATIONS</u> Skill – Introduce Multiplication Concretely Level C Grouping Eggs into Bowls: Worksheets #1, #2 Grouping Chairs into Rows: Worksheets #1, #2 Eggs in Bowls – Introduce X: Worksheets #1, #2 Chairs and Rows – Introduce X: Worksheets #1, #2 Multiplication – Repeated Addition</p>
<p>d. Model addition and subtraction of two-digit <i>whole numbers</i> in a variety of ways (e.g., <i>expanded form</i>, compensation, partial sums, regrouping).</p>	<p><u>Understanding NUMERATION PLUS OPERATIONS</u> Skill – Add 2 Digit Numbers...Concretely</p>

<p>e. Select an addition or subtraction sentence to solve a problem involving joining or separating of sets with eighteen or fewer objects.</p>	<p>Level C Addition without Regrouping Worksheets #1, #2 Addition with Regrouping Worksheets #1, #2</p> <p>Skill – Subtract 2 Digit Numbers...Concretely Level C Subtraction without Regrouping : worksheets #1, #2 Subtraction with Regrouping: worksheets #1, #2</p>
<p>f. Recognize that addition number sentences have related subtraction sentences (e.g., $8-5=3$, $3+5=8$).</p>	<p><u>Understanding NUMERATION PLUS OPERATIONS</u> Skill – Fact Families...Add & Subtract Level C Check Subtraction by Addition</p>

Objective 4: Use fractions to identify parts of the whole.

<p>Expectation or Standard</p>	<p>Understanding Math PLUS and/or Understanding Numeration PLUS Lessons</p>
<p>a. Separate geometric shapes and sets of objects into halves, thirds, and fourths using a variety of models and illustrations.</p> <p>b. Specify a region of a geometric shape (e.g., as “___ out of ___ equal parts” when given four or fewer equal parts.</p> <p>c. Represent the unit fractions $1/2$, $1/3$, and $1/4$ with objects, pictures, and symbols.</p>	<p><u>Understanding NUMERATION PLUS COUNTING</u> Skill – Introduce Fractions: Equal Parts Level B Two Equal Parts Four Equal Parts One Half One Quarter</p> <p>Skill – Introduce Common Fractions as Parts of a Whole Level B One Half of a Shape Three Quarters of a Shape Cut in Half: Worksheets #1, #2</p>

Objective 5: Solve whole number problems using addition and subtraction in vertical and horizontal notation.

Expectation or Standard	Understanding Math PLUS and/or Understanding Numeration PLUS Lessons
<p>a. Use a variety of methods and tools to facilitate computation (e.g., estimation, mental math strategies, paper and pencil, calculator).</p> <p>b. Compute accurately with basic number combinations for addition and subtraction facts to eighteen.</p>	<p><u>Understanding NUMERATION PLUS OPERATIONS</u> <u>OPERATIONS</u> Skill – Addition Strategies Level A/B Tens and Doubles #1, #2</p> <p>Skill – Fact Families...Add & Subtract Level B Doubles – Add and Subtract Fact Families</p> <p>Skill – Fact Families...Add & Subtract Level C Check Subtraction by Addition</p>
<p>c. Add three <i>whole numbers</i> with <i>sums</i> to eighteen.</p>	<p><u>Understanding NUMERATION PLUS OPERATIONS</u> <u>OPERATIONS</u> Skill – Add 3 or 4 Numbers Level C Magic Squares</p>
<p>d. Find the sum of two-digit whole numbers and describe the process used.</p>	<p><u>Understanding NUMERATION PLUS OPERATIONS</u> <u>OPERATIONS</u> Skill – Add 2 Digit Numbers...Concretely Level C Addition without Regrouping Worksheets #1, #2 Addition with Regrouping Worksheets #1, #2</p>

Standard 2: Students will identify and use patterns and relations to represent mathematical situations.

Objective 1: Recognize and represent patterns having multiple attributes.

Expectation or Standard	Understanding Math PLUS and/or Understanding Numeration PLUS Lessons
a. Sort, classify, and label objects by three or more <i>attributes</i> .	
b. Identify and label <i>repeating</i> and <i>growing patterns</i> using objects, pictures, and symbolic notation (e.g., ABAABBAAABBB . . .).	
c. Identify repeating and growing patterns in the environment.	

Objective 2: Use appropriate techniques and tools to determine measurements.

Expectation or Standard	Understanding Math PLUS and/or Understanding Numeration PLUS Lessons
a. Compare and order objects, using nonstandard units, according to their length, weight, or <i>capacity</i> .	
b. Measure length using inches and feet, weight using pounds, and capacity using cups.	<p>Understanding MATH PLUS Understanding Whole Numbers and Integers Topic 1. An Introduction to Measurement The Ruler Benchmarks Establishing Benchmarks Meter Benchmarks Foot Benchmarks Centimeter Benchmarks Inch Benchmarks Yard Benchmarks</p>
c. Determine the value of a set of up to five coins that total \$1.00 or less (e.g., two quarters and one dime equals 60¢; three dimes, one nickel, and one penny equals 36¢).	<p>Understanding NUMERATION PLUS COUNTING Skill – Counting Using Money Level C Quarters: worksheet #1, #2 Level D Dollars: worksheet #1, #2</p>
d. Read, tell, and write time to the hour and half-hour.	<p>Understanding NUMERATION PLUS COMPARING AND ORDERING Skill – Understand Measurement of Time Level B</p>

	<p>The Clock: An Introduction #1, #2 Times to the Hour: worksheet #1, #2</p> <p>Level B/C</p> <p>Analog and Digital Time to the Half Hour: worksheet #1, #2</p>
<p>e. Use a calendar to determine the day of the week and date. f. Determine the <i>perimeter</i> of a square, triangle, and rectangle by measuring with nonstandard units.</p>	

Standard 5: Students will collect and draw conclusions from data and understand basic concepts of probability.

Objective 1: Collect, organize, and display simple data.

Expectation or Standard	Understanding Math PLUS and/or Understanding Numeration PLUS Lessons
<p>a. Gather data by vote or survey.</p> <p>b. Sort, classify, and organize data in a variety of ways.</p>	<p><u>Understanding MATH PLUS</u> <u>Understanding Graphing</u> Topic 2. Statistics Data... What is it? Examples of Data Example 1... Fast Food Earnings</p>
<p>c. Use a variety of methods to organize, display, and label information, including keys, using <i>pictographs</i>, tallies, bar graphs, and organized tables.</p> <p>d. Report information from a data display.</p>	<p><u>Understanding NUMERATION PLUS</u> <u>OPERATIONS</u> Skill – Given Graphs...Perform Operations Level D Operations with Tally Charts: Worksheets #1, #2 Operations with Pictographs: Worksheets #1, #2 Operations with Bar Graphs: Worksheets #1, #2</p>

Objective 2: Determine the likelihood of an event.

Expectation or Standard	Understanding Math PLUS and/or Understanding Numeration PLUS Lessons
<p>a. Predict events that will be the same in one day or one week.</p> <p>b. Predict the outcome when there are only two possible outcomes (e.g., tossing a coin).</p>	<p><u>Understanding MATH PLUS</u> <u>Understanding Probability</u> Topic 1. Introduction to Probability Impossible to Certain Activity 1 Activity 2 Probability Lines Line 1 Line 2 Possible Outcomes... Examples What are they? 1. Coin 2. Picking One Ball</p>