

**CORRELATION  
of  
the Understanding Numeration PLUS & Understanding Math PLUS programs  
with  
Mathematics Core Curriculum  
Kindergarten  
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 Whole Numbers and Integers
Understanding Probability	Understanding Percent
Understanding Exponents	Understanding Equations
Understanding Algebra	Understanding Graphing
Understanding Numeration	
Understanding Measurement and Geometry	

**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
<b>A</b>	<b>10</b>
<b>B</b>	<b>20</b>
<b>C</b>	<b>100</b>
<b>D</b>	<b>1000</b>

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

A detailed Lesson Synopsis on the website [www.neufeldmath.com](http://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](http://www.neufeldmath.com)

**Standard 1: Students will understand simple number concepts and relationships.**

Objective 1: Identify and use whole numbers.

Expectation or Standard	Understanding Math PLUS and/or Understanding Numeration PLUS Lessons
a. Relate a <i>numeral</i> to the number of objects in a set (e.g., $~~~ = 3$ ).	<p><b><u>Understanding NUMERATION PLUS</u></b>  <b><u>COUNTING</u></b>  <b>Skill – Reading and Printing Numerals</b>  <b>Level A</b>                      Introduction : Counting 1 to 10: worksheet #1, #2                      Things in a Square #1                      Join up to 10 Dots                      Building a Number Line                      Building a Vertical Number Line</p>
b. Construct models of numbers to 10 with physical objects or manipulatives.	<p><b><u>Understanding NUMERATION PLUS</u></b>  <b><u>COUNTING</u></b>  <b>Skill – Associating Numbers in a Real World Context</b>  <b>Level A</b>                      The Street Scene: Worksheets #1, #2                      The Zoo</p>
c. Make pictorial representations of numbers to 10 (e.g., draw four circles, draw six squares).  d. Recognize and write numerals from 0 to 10.	<p><b><u>Understanding NUMERATION PLUS</u></b>  <b><u>COUNTING</u></b>  <b>Skill – Reading and Printing Numerals</b>  <b>Level A</b>                      Introduction : Counting 1 to 10: worksheet #1, #2                      Things in a Square #1                      Join up to 10 Dots                      Building a Number Line                      Building a Vertical Number Line</p>
e. Manipulate objects to demonstrate and describe multiple ways of representing a number (e.g., 5 can be 3 and 2 more, 5 can also be 2 and 2 and 1).	<p><b><u>Understanding NUMERATION PLUS</u></b>  <b><u>OPERATIONS</u></b>  <b>Skill – Introduce Addition...concretely... “in all” &amp; “together”</b>  <b>Level A</b>                      Addition Using Gumballs #1: Worksheets #1, #2                      Addition Using Beans #1: Worksheets #1, #2                      Add Number of Sides of Shapes #1: Worksheets #1, #2  <b>Skill – Introduce Addition Concretely... “and”</b>  <b>Level A</b>                      Addition Using Gumballs #2: Worksheets #1, #2                      Addition Using Beans #2: Worksheets #1, #2                      Add Number of Sides of Shapes #2: Worksheets #1, #2</p>

Objective 2: Identify simple relationships among whole numbers.

Expectation or Standard	Understanding Math PLUS and/or Understanding Numeration PLUS Lessons
a. Develop strategies for <i>one-to-one correspondence</i> and keeping track of quantities.	<p><b><u>Understanding NUMERATION PLUS COUNTING</u></b>  <b>Skill – 1 to 1 Correspondence of # to Objects</b>  <b>Level A</b>                      Keep Track by Marking: Worksheets #1, #2</p>
b. Compare two sets of objects to determine whether they have the same, fewer, or more elements.	<p><b><u>Understanding NUMERATION PLUS COMPARING AND ORDERING</u></b>  <b>Skill – Introduce “ Greater Than” &amp; “ Less Than”</b>  <b>Level A</b>                      Greater Than                      Less Than                      “Greater Than, Less Than” #1                      “Greater Than, Less Than, Equal To”</p> <p><b>Skill – Working with Whole Numbers &gt;, &lt;, =</b>  <b>Level A</b>                      &gt; and &lt; on a Numberline #1                      Make it True</p>
c. Order sets of objects from 1 to 9.	<p><b><u>Understanding NUMERATION PLUS COMPARING AND ORDERING</u></b>  <b>Skill – Locate Numbers on a Number Line</b>  <b>Level A</b>                      Find One Missing Number                      Find Two Missing Numbers</p>
d. Estimate quantities less than 10.	<p><b><u>Understanding NUMERATION PLUS COUNTING</u></b>  <b>Skill – Estimating the Number of Objects and Reasonableness</b>  <b>Level A</b>                      Estimate the Handful                      Dot Flash Cards</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 objects to solve problems.</p> <p>b. Describe the joining or separating of sets with informal language when using models.</p> <p>c. Record pictorially the results from the joining or separating of sets.</p>	<p><b>Understanding NUMERATION PLUS</b>  <b>Skill – Introduce the Symbolism...# + # =</b>  <b>Level A</b>            Addition Using Gumballs #3: Worksheets #1, #2            Addition Using Beans #3: Worksheets #1, #2            Add Number of Sides of Shapes #3: Worksheets #1, #2</p> <p><b>Skill – Introduce the words... “plus” and “equals”</b>  <b>Level A</b>            Addition Using Gumballs #4: Worksheets #1, #2            Addition Using Beans #4: Worksheets #1, #2            Add Number of Sides of Shapes #4: Worksheets #1, #2</p> <p><b>Skill – Introduce Subtraction Concretely... “take away”</b>  <b>Level A</b>            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><b>Skill – Introduce Subtraction Symbolism</b>  <b>Level A</b>            Introduce Vertical Subtraction : Worksheets #1, #2            Subtraction Sentences</p> <p><b>Skill – Demonstrate Addition Facts: Patterns</b>  <b>Level A</b>            Bar Machine worksheet #1, #2            Decomposition Tree worksheet #1, #2</p>

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

Objective 1: Identify and sort objects according to common attributes.

<b>Expectation or Standard</b>	<b>Understanding Math PLUS and/or Understanding Numeration PLUS Lessons</b>
a. Sort objects into groups by color, shape, size, number, or other <i>attributes</i> .	
b. Identify which attribute was used to sort objects into a group.	
c. Find multiple ways to sort and classify a group of objects.	

Objective 2: Identify and use patterns to describe numbers or objects.

<b>Expectation or Standard</b>	<b>Understanding Math PLUS and/or Understanding Numeration PLUS Lessons</b>
a. Use patterns to count orally from 1 to 20 and backward from 10 to 0.	<p><b><u>Understanding NUMERATION PLUS COUNTING</u></b>  <b>Skill – Counting Backwards</b>  <b>Level A/B</b>            Counting Backwards            Counting Up and Down #1, #2</p>
b. Identify simple patterns in the environment.  c. Predict what comes next in an established pattern and justify thinking.  d. Duplicate, extend, and create simple patterns using objects and pictorial representations.	<p><b><u>Understanding NUMERATION PLUS COMPARING AND ORDERING</u></b>  <b>Skill – Locate Numbers on a Number Line</b>  <b>Level A</b>            Find One Missing Number            Find Two Missing Numbers</p>

**Standard 3: Students will identify and create simple geometric shapes and describe spatial relationships**

Objective 1: Identify and create simple geometric shapes.

<b>Expectation or Standard</b>	<b>Understanding Math PLUS and/or Understanding Numeration PLUS Lessons</b>
<p>a. Identify circles, triangles, rectangles, and squares.</p> <p>b. Combine shapes to create <i>two-dimensional</i> objects (e.g., using a triangle and square to create a picture of a house).</p> <p>c. Draw circles, triangles, rectangles, and squares.</p> <p>d. Recognize circles, triangles, rectangles, and squares in the students' environment.</p>	<p><b><u>Understanding NUMERATION PLUS</u></b>  <b><u>COUNTING</u></b>  <b>Skill – Recognize and Count Two-Dimensional Figures</b>  <b>Level B/C</b>                      Counting 2-D Figures #1, #2</p>

Objective 2: Describe simple spatial relationships.

<b>Expectation or Standard</b>	<b>Understanding Math PLUS and/or Understanding Numeration PLUS Lessons</b>
<p>a. Visualize how to fit a shape into a design.</p>	
<p>b. Use and demonstrate words to describe position with objects (i.e., on, over, under, above, below, top, bottom, up, down, in front of, behind, next to, beside).</p>	
<p>c. Use and demonstrate words to describe distance with objects (i.e., far, near).</p>	

**Standard 4: Students will understand and use simple measurement tools and techniques.**

Objective 1: Identify measurable attributes of objects and units of measurement.

<b>Expectation or Standard</b>	<b>Understanding Math PLUS and/or Understanding Numeration PLUS Lessons</b>
a. Identify clocks and calendars as tools that measure time.	<u>Understanding NUMERATION PLUS</u> <u>COMPARING AND ORDERING</u> Skill – Understand Measurement of Time Level B The Clock: An Introduction #1, #2
b. Identify a day, week, and month on a calendar.	
c. Identify pennies, nickels, dimes, and quarters as units of money.	<u>Understanding NUMERATION PLUS</u> <u>COUNTING</u> Skill – Counting Using Money Level B “Pennies, Nickels, Dimes”: worksheet #1, #2

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

<b>Expectation or Standard</b>	<b>Understanding Math PLUS and/or Understanding Numeration PLUS Lessons</b>
a. Compare two objects (e.g., shorter/longer, heavier/lighter, larger/smaller, more/less).	<u>Understanding NUMERATION PLUS</u> Skill – Understand “More” and “Less” Level A More, More!! Worksheets #1, #2 Less, Less!! Worksheets #1, #2 More or Less...Dots Worksheets #1, #2 More or Less on a Number Line: Worksheets #1, #2
b. Find the length of an object using nonstandard units (e.g., pencils, paper clips).	
c. Name the days of the week in order.	
d. Sort pennies, nickels, dimes, and quarters.	<u>Understanding NUMERATION PLUS</u> <u>COUNTING</u> Skill – Counting Using Money Level B “Pennies, Nickels, Dimes”: worksheet #1, #2

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

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

<b>Expectation or Standard</b>	<b>Understanding Math PLUS and/or Understanding Numeration PLUS Lessons</b>
a. Collect, organize, and record data using objects and pictures.	<p><b><u>Understanding NUMERATION PLUS COUNTING</u></b>  <b>Skill – 1 to 1 Correspondence of # to Objects</b>  <b>Level A</b>                      Keep Track by Marking: Worksheets #1, #2</p>
b. Represent data in a variety of ways (e.g., graphs made from people, <i>pictographs</i> , bar graphs) and interpret the data (e.g., more people like red than blue).	<p><b><u>Understanding NUMERATION PLUS OPERATIONS</u></b>  <b>Skill – Given Graphs...Perform Operations</b>  <b>Level D</b>                      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 events.

<b>Expectation or Standard</b>	<b>Understanding Math PLUS and/or Understanding Numeration PLUS Lessons</b>
a. Describe events encountered in books read as possible or not possible.	
b. Describe events as likely or unlikely (e.g., It is likely to snow today. It is unlikely an elephant will be in school).	