

CORRELATION
of
the 10 UNDERSTANDING MATH PLUS PROGRAMS & UNDERSTANDING NUMERATION PLUS PROGRAMS
with
South Carolina MATHEMATICS CURRICULUM STANDARDS
Grades 3 to 5 ALGEBRA

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
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 I. Understand patterns, relations, and functions.

EXPECTATION A. Describe, extend, and make generalizations about geometric and numeric patterns.

3	Understanding Math PLUS and/or Understanding Numerations PLUS	4	Understanding Math PLUS and/or Understanding Numerations PLUS	5	Understanding Math PLUS and/or Understanding Numerations PLUS
1. Describe, create, and extend numeric patterns with and without models and calculators.	NUM+ COUNTING Skill – Skip Counting and Patterns Level C Next by 5s Next by 2s : worksheet #1, #2	1. Using models and calculators, create, extend, and analyze numeric patterns (including decimal patterns through thousandths).	MAT+ Understanding Algebra Topic 3. Patterns, Patterns, Patterns Introduction... Math is Patterns Number Patterns Examples 1, 2, 3, 4, 5, 6	1. Using models and calculators, analyze and extend numeric and geometric patterns such as triangular numbers, perfect squares, and arithmetic sequences.	MAT+ Understanding Algebra Topic 3. Patterns, Patterns, Patterns Geometric Patterns Examples 1, 2, 3, 4, 5, 6, 7, 8 Number Patterns Examples 1, 2, 3, 4, 5, 6 Number and Geometric Patterns Examples 1, 2
				2. Find the missing elements in numeric and nonnumeric patterns.	

EXPECTATION B. Represent and analyze patterns and functions, using words, tables, and graphs.

3	Understanding Math PLUS and/or Understanding Numerations PLUS	4	Understanding Math PLUS and/or Understanding Numerations PLUS	5	Understanding Math PLUS and/or Understanding Numerations PLUS
1. Determine the pattern to identify missing numbers in a sequence and in a table of number pairs.	NUM+ COUNTING Skill – Skip Counting and Patterns Skip Counting to 100 Skip Count by 2s to 100 : worksheet #1, #2 Next by 5s	1. Describe and represent number relationships with tables.	MAT+ Understanding Graphing Topic 2. Statistics In This Topic An Introduction Tally Chart	*1. Represent and analyze patterns and functions using words, tables, and graphs. 2. Analyze, describe, and use function rules to make generalizations.	MAT+ Understanding Graphing Functions Topic 5. Relations, Equations and Functions What is a Function? – Examples 1, 2, 3 Vertical Line Test Examples 1, 2, 3 Function Notation Examples 1, 2 Patterns to Words to Equations Examples 1, 2, 3, 4
*2. Use pattern identification to solve problems.	NUM+ PROBLEM SOLVING Skill – Find a Pattern Johnny’s Pennies	*2. Determine the rule to identify missing numbers in a sequence or a table.			

STANDARD II. Represent and analyze mathematical situations and structures using algebraic symbols.

EXPECTATION A. Identify such properties as commutativity, associativity, and distributivity and use them to compute with whole numbers.

For all three grade levels, refer to these concepts in the “Number and Operations” strand.

EXPECTATION B. Represent the idea of a variable as an unknown quantity using a letter or a symbol.

3	Understanding Math PLUS and/or Understanding Numerations PLUS	4	Understanding Math PLUS and/or Understanding Numerations PLUS	5	Understanding Math PLUS and/or Understanding Numerations PLUS
1. Use concrete or pictorial models and symbols to represent missing addends or factors.	MAT+ <u>Understanding Algebra</u> Topic 2. Tiles and Algebra Area Area... The Concept Area... Examples 1, 2, 3 Introduction to Tiles Tile Representation Like Terms Combinations Squared Terms	1. Use variables to represent an unknown quantity using a letter or a symbol.	MAT+ <u>Understanding Algebra</u> Topic 2. Tiles and Algebra Pictures to Words to Algebraic Expressions Examples 1, 2 Algebraic Expressions to Tiles Examples 1, 2, 3 Combining Opposites Singles Bars Squares	1. Use variables to write a mathematical expression in symbolic form.	MAT+ <u>Understanding Algebra</u> Topic 4. Patterns, Formulas, Substitution Expressions, Terms, Variables Definitions Summary Patterns to Formulas Example... Hockey Standings Example... Counting Money Example... Angles in a Polygon

EXPECTATION C. Express mathematical relationships using equations.

3	Understanding Math PLUS and/or Understanding Numerations PLUS	4	Understanding Math PLUS and/or Understanding Numerations PLUS	5	Understanding Math PLUS and/or Understanding Numerations PLUS
*1. Use concrete or pictorial models and symbols to identify missing addends or factors in equations that express relationships between two quantities.	MAT+ <u>Understanding Equations</u> Topic 1. Tiles, Balances, and Equations Definitions Introduction Summary Parts 1, 2 The Meaning of “Solving an Equation”	*1. Use equations to represent relationships.	MAT+ <u>Understanding Equations</u> Topic 5. Problem Solving Words and Symbols The Translation Machine Examples 1, 2, 3, 4	*1. Use a variable to write an open sentence representing a given mathematical relationship.	MAT+ <u>Understanding Algebra</u> Topic 4. Patterns, Formulas, Substitution Substitution is... Math Scrabble Scrabble 1, 2, 3 Challenge Substitution Examples Examples 1, 2, 3, 4 Practice Questions

STANDARD III. Use mathematical models to represent and understand quantitative relationships.

EXPECTATION A. Model problem situations with objects and use representations such as graphs, tables, and equations to draw conclusions.

3	Understanding Math PLUS and/or Understanding Numerations PLUS	4	Understanding Math PLUS and/or Understanding Numerations PLUS	5	Understanding Math PLUS and/or Understanding Numerations PLUS
*1. Use patterns and relationships in a variety of real-world contexts.	NUM+ <u>PROBLEM SOLVING</u> <i>All Sections</i>			1. Use a single variable to create a problem situation based on a given open sentence.	MAT+ <u>Understanding Algebra</u> Topic 4. Patterns, Formulas, Substitution Patterns to Formulas Example... Hockey Standings Example... Counting Money Example... Angles in a Polygon

STANDARD IV. Analyze change in various contexts.

EXPECTATION A. Investigate how a change in one variable relates to a change in a second variable.

3	Understanding Math PLUS and/or Understanding Numerations PLUS	4	Understanding Math PLUS and/or Understanding Numerations PLUS	5	Understanding Math PLUS and/or Understanding Numerations PLUS
		1. Describe how a rate of growth varies over time.		1. Describe the relationship among distance, speed, and time.	

EXPECTATION B. Identify and describe situations with constant or varying rates of change and compare them.

3	Understanding Math PLUS and/or Understanding Numerations PLUS	4	Understanding Math PLUS and/or Understanding Numerations PLUS	5	Understanding Math PLUS and/or Understanding Numerations PLUS
1. Identify real situations and events that show change.		*1. Using charts and graphs, describe changes over time as increasing, decreasing, and varying.		1. Create charts and graphs to show change over time.	
				2. Represent situations with number tables, graphs, and verbal descriptions. *3. Associate tables, graphs, and stories of the same event.	MAT+ Understanding Graphing Topic 2. Statistics Examples of Data Example 1... Fast Food Earnings Example 2... Infant's Walk Example 3... Canada and U.S.A. Forecast Example 4... King of the Strike Out Example 5... U.S.A. Stake in India Example 6... Allergy Troubles A Summary: Examples