

**CORRELATION**  
**of**  
**the 10 UNDERSTANDING MATH PLUS PROGRAMS**  
**with**  
**Atlantic Provinces Math Outcomes**

**Grade 2**

**Note: a.** The Understanding Math PLUS series of programs consist of 10 programs written for Kindergarten to 10<sup>th</sup> 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 3<sup>rd</sup> 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](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 4<sup>th</sup> to 10<sup>th</sup> 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)

<b>Grade 2 Math Outcomes</b>	
<b>GCO A Students will demonstrate number sense and apply number theory concepts.</b>	
A1 order numbers and use ordinal language	<b>NUM+ - Counting</b> <u>Use Ordinal Numbers</u> The Steps, B
A2 count in a variety of ways	<b>NUM+ – Counting</b> <u>Counting Using Money</u> Quarters, C  <b>NUM+ – Comparing and Ordering</b> <u>Skip Counting and Patterns</u> Skip Count by 2s to 100, C Skip Counting to 100, C
A3 estimate the size of numbers to the nearest multiple of 10	
A4 identify simple fractions using models	<b>NUM+ – Counting</b> <u>Introduce Fraction of a Set</u> Fractions of a Set, C
A5 describe numbers in a variety of ways	
A6 demonstrate an understanding of base -10 groupings	<b>NUM+ – Place Value</b> <u>Model Numbers Grouped in Packages</u> Ones and Groups of Ten, C
A7 model numbers to three places	<b>NUM+ – Place Value</b> <u>Identify Place Value Patterns (to 100)</u> Numbers to Pictures #2, C
A8 compare and order numbers by size	<b>NUM+ - Comparing and Ordering</b> <u>Working with Whole Numbers Greater Than, Less Than, Equal To</u> Compare Numbers #1, C
A9 recognize, extend, and create simple place-value patterns	<b>NUM+ – Place Value</b> <u>Identify Place Value Patterns (to 20)</u> Pictures to Numbers #1, C
<b>GCO B Students will demonstrate operation sense and apply operation principles and procedures in both numeric and algebraic situations.</b>	
B1 recognize that multiplication can be used to determine the total amount in groups of equal size	<b>NUM+ – Operations</b> <u>Introduce Multiplication Sentences</u> Multiplication Sentences #1, C <u>Introduce Multiplication by 1 and by 0 (through to 10)</u> Multiplication 1 through 10
B2 recognize that division can mean determining how many groups of a fixed size are in a larger group or fair sharing	<b>NUM+ – Operations</b> <u>Introduce Division Facts... 2-10</u> Division Groups of 2-10, C
B3 demonstrate an understanding that addition can be used to solve subtraction problems and vice	<b>NUM+ - Operations</b> <u>Fact Families... Add and Subtract</u> Check Subtraction with Additions, C

	versa	
B4	create word problems involving addition and subtraction	<b>NUM+ – Problem Solving</b> <i>All Sections</i>
B5	develop and apply strategies to learn addition and subtraction facts	<b>NUM+ – Operations</b> <u>Add 2 Digit Numbers... Concretely</u> Addition With Regrouping - 2 Digit (Concrete), C
B6	recall addition facts involving two addends, each less than 10, and the related subtraction facts	<b>NUM+ – Operations</b> <u>Demonstrate Addition Facts... Making 10</u> <i>All Sections 1-10, A</i>
B7	demonstrate an understanding of basic principles of addition	
B8	add 3 single-digit numbers	<b>NUM+ – Operations</b> <u>Add 3 or 4 Numbers</u> Add 3 Numbers - Chain Addition... #2, B Add 3 Numbers Horizontally... #2, B Add 3 Numbers Vertically... #2, B
B9	model and perform the addition of two 2-digit numbers, with and without regrouping	<b>NUM+ – Operations</b> <u>Add 2 Digit Numbers... Concretely/Abstractly</u> Addition With/Without Regrouping - 2 Digit (Concrete/Abstract)
B10	model and perform the subtraction of two 2-digit numbers, with and without regrouping	<b>NUM+ – Operations</b> <u>Subtract 2 Digit Numbers... Concretely/Abstractly</u> Addition With/Without Regrouping - 2 Digit (Concrete/Abstract)
B11	estimate the sum or difference of two 2-digit numbers	
B12	use technology to solve problems involving sums or differences of larger numbers	<b>NUM+ – Problem Solving</b> <i>All Sections</i>
	<b>GCO C Students will explore, recognize, represent, and apply patterns and relationships, both informally and formally.</b>	
C1	compare and contrast patterns	<b>NUM+ – Operations</b> <u>Demonstrate Addition Facts... Patterns</u> Patterns in Addition, C
C3	identify and use patterns in an addition table	
C2	demonstrate an understanding that there are often many ways to continue a pattern, unless a pattern rule is provided	
C4	identify and extend place-value patterns	<b>NUM+ – Place Value</b> <u>Identify Place Value Patterns (to 20)</u> Numbers to Picture #1, #2, C (vice versa)
		<b>NUM+ – Place Value</b> <u>Identify Place Value Patterns (to 20)</u> Numbers to Picture #1, #2, C (vice versa)
C5	represent patterns using their own	

	notation or symbolism	
C6	solve simple open sentences involving addition and subtraction facts	<b>NUM+ – Problem Solving</b> <i>All Sections</i>
<b>GCO D Students will demonstrate an understanding of and apply concepts and skills associated with measurement.</b>		
D1	identify procedures not involving units to be used to compare areas	
D2	demonstrate a sense of how long 1cm and 1m are	<b><u>MAT+ Understanding Measurement and Geometry</u></b> <u>Topic 1: An Introduction to Measurement</u>
D3	estimate and measure length in non-standard and standard units	<b><u>MAT+ Understanding Measurement and Geometry</u></b> <u>Topic 1: An Introduction to Measurement</u>
D4	recognize and explain why standard units are used	<b><u>MAT+ Understanding Measurement and Geometry</u></b> <u>Topic 1: An Introduction to Measurement</u> Metric and U.S.A. Standard Measurement Systems
D5	demonstrate a sense of how much 1L is	
D6	estimate and measure capacity in non-standard and standard units	
D7	demonstrate a sense of how much 1kg is	
D8	estimate and measure mass using non-standard and standard units	
D9	estimate and measure time using non-standard units	
D10	read hours and half-hours on a clock	<b>NUM+ - Comparing and Ordering</b> <u>Times to the Half Hour</u>
D11	explore properties of the calendar	
D12	choose appropriate units with which to estimate and measure, and perform the measurements	
D13	demonstrate an understanding that the size of the unit used affects the number describing the measurement	
D14	demonstrate an understanding that 100cm make up 1m	<b><u>MAT+ Understanding Measurement and Geometry</u></b> <u>Topic 1: An Introduction to Measurement</u>
<b>GCO E Students will demonstrate spatial sense and apply geometric concepts, properties, and relationships.</b>		
E1	develop aspects of spatial sense, including perceptual	

	constancy, perception of spatial relationships, and visual discrimination	
E2	recognize 3-D shapes from drawings and from alternative perspectives	<b><u>MAT+ Understanding Measurement and Geometry</u></b> Topic 2: Perimeter and Area of Polygons Polygons...What are They?
E3	sort, build, and pattern with 2-D and 3-D shapes	Topic 4: Solids...Volume and Surface Area Classifying Solids
E4	recognize, name, and represent parallel lines and right angles	<b><u>MAT+ Understanding Measurement and Geometry</u></b> Topic 6: Angles and Polygons Parallel Lines
E5	recognize, name, describe, and represent parallelograms	
E6	recognize, name, describe, and represent triangular, square, and rectangular prisms and pyramids	
E7	cut and assemble nets of cubes and triangular, square, and rectangular prisms and pyramids	
E8	recognize surfaces and faces of 3-D shapes	<b><u>MAT+ Understanding Measurement and Geometry</u></b> Topic 2: Perimeter and Area of Polygons Polygons...What are They?
E9	sort, build, and pattern with 2-D and 3-D shapes	Topic 4: Solids...Volume and Surface Area Classifying Solids
E10	subdivide and change 2-D figures	
E11	recognize, identify, describe, and represent reflective symmetry in 2-D shapes	<b><u>MAT+ Understanding Graphing</u></b> Topic 4: Transformations Lines of Symmetry – An Introduction
E12	recognize and identify reflective symmetry in the environment	
E13	make the connection between reflective symmetry and one-half using squares, rectangles, and circles	
E14	make the connection between even/odd numbers and rectangles	
	<b>GCO F      Students will solve problems involving the collection, display, and analysis of data.</b>	
F1	conduct simple surveys and record data	
F2	create and interpret pictographs and symbolic bar graphs	
F3	develop and modify predictions with respect to data collected or presented to them	

<b>GCO G</b> <b>Students will represent and solve problems involving uncertainty.</b>	
G1      demonstrate an understanding that some events are more likely than others	<b>MAT+ <u>Understanding Probability</u></b> Topic 1: <u>What's Possible?</u> The Language of Chance Possible Outcomes...What are They?
G2      demonstrate an understanding that probability predictions need not always come true	