



**Correlation of the Understanding Numeration 2008© and the Understanding Math 2008© Programs
With the Texas Essential Knowledge and Skills For Mathematics
4th Grade**

The programs are 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.

Organization of the Understanding Numeration 2008© Program

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

Counting Operations Place Value Comparing and Ordering Problem Solving

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 are found on our website (www.neufeldmath.com).

Organization of the Understanding Math 2008© Programs

The Understanding Math 2008© series of programs consists of the following nine programs written for fourth to tenth grade:

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

Each program contains several sections with several topics. Every topic has the following:

- 1) an interactive concept introduction, usually with a variety of graphic approaches;
- 2) a number of particular examples;
- 3) practice questions with random questions, but specific feedback;
- 4) a topic test with random questions and tracking;
- 5) on-line worksheets selected from our website (www.neufeldmath.com).

Teachers may also search for specific topics using our search engine at <http://www.corr.neufeldmath.com>.



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The TEKS have been correlated to the Understanding Numeration 2008© and Understanding Math 2008© programs. The location is listed below:

Number, operation, and quantitative reasoning

- | | |
|---|---------------|
| (1) The student uses place value to represent whole numbers and decimals. | Pages 3 - 6 |
| (2) The student describes and compares fractional parts of whole objects or sets of objects. | Pages 6 - 9 |
| (3) The student adds and subtracts to solve meaningful problems involving whole numbers and decimals. | Pages 9 - 13 |
| (4) The student multiplies and divides to solve meaningful problems involving whole numbers. | Pages 14 - 23 |
| (5) The student estimates to determine reasonable results. | Pages 24 - 24 |

Patterns, relationships, and algebraic thinking

- | | |
|--|---------------|
| (6) The student uses patterns in multiplication and division. | Pages 25 - 26 |
| (7) The student uses organizational structures to analyze and describe patterns and relationships. | Pages 26 - 26 |

Geometry and spatial reasoning

- | | |
|---|---------------|
| (8) The student identifies and describes attributes of geometric figures using formal geometric language. | Pages 27 - 28 |
| (9) The student connects transformations to congruence and symmetry. | Pages 29 - 30 |
| (10) The student recognizes the connection between numbers and their properties and points on a line. | Pages 30 - 31 |

Measurement

- | | |
|--|---------------|
| (11) The student applies measurement concepts. The student is expected to estimate and measure to solve problems involving length (including perimeter) and area. The student uses measurement tools to measure capacity/volume and weight/mass. | Pages 32 - 34 |
| (12) The student applies measurement concepts. The student measures time and temperature (in degrees Fahrenheit and Celsius). | Pages 35 - 36 |

Probability and statistics

- | | |
|--|---------------|
| (13) The student solves problems by collecting, organizing, displaying, and interpreting sets of data. | Pages 37 - 38 |
|--|---------------|

Underlying processes and mathematical tools

- | | |
|---|---------------|
| (14) The student applies Grade 4 mathematics to solve problems connected to everyday experiences and activities in and outside of school. | Pages 39 - 42 |
| (15) The student communicates about Grade 4 mathematics using informal language. | Pages 43 - 43 |
| (16) The student uses logical reasoning. | Pages 44 - 45 |

TEKS that are **not included** in the current Understanding Numeration 2008© and Understanding Math 2008© programs are noted as *not yet correlated*.

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Correlated to Understanding Numeration 2008 © and Understanding Math 2008 ©
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Grade 4... Number, operation, and quantitative reasoning

(1) The student uses place value to represent whole numbers and decimals. The student is expected to:

(A) use place value to read, write, compare, and order whole numbers through 999,999,999; and

Understanding Numeration: Comparing & Ordering

Notes

Skill 4: Working with Whole Numbers > , < , =

Level C 1) Compare Numbers #1

Level D 1) Compare Numbers #2

Do Skill Test - 5 questions (randomly generated)

Understanding Numeration: Place Value

Notes

Skill 4: Identify Place Value Patterns (to 100)

Level C 3) Numbers to Pictures #2

Skill 5: Identify Place Value Patterns (to 1000)

Level D 1) Expanded Notation

Do Skill Test - 5 questions (randomly generated)

Understanding Whole Numbers and Integers 2008

Notes

Section 1: The Meaning of Whole Numbers

Seeing the Number

To Tens- Example 1

To Tens- Example 2

To Hundreds- Example 1

To Hundreds- Example 2

To Thousands- Example 1

To Thousands- Example 2

To Thousands- Example 3

Expanded Notation

To 999- Example 1

To 999- Example 2

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	To 9999- Example 1
	To 9999- Example 2
	Write as Numerals- Example 1
	Write as Numerals- Example 2
Represent Numbers in Many Ways	The number line
	Example 1
	Example 2
	Example 3
	Example 4
	Example 5
Place Value to 999 999	Examples- Example 1
	Examples- Example 2
	Examples- Example 3
	Examples- Example 4
	Examples- Example 5
	The number line- Example 1
	The number line- Example 2
	The number line- Example 3
Millions	Examples- Example 1
	Examples- Example 2
	Examples- Example 3
	Examples- Example 4
	The number line
Billions	Example
Comparing Large Numbers	Example 1
	Example 2
	Example 3
	Example 4
Ordering Large Numbers	Example 1
	Example 2
	Example 3
	Example 4

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(B) use place value to read, write, compare, and order decimals involving tenths and hundredths, including money, using concrete objects and pictorial models.

Understanding Numeration: Counting

Notes

Skill 7: Counting Using Money

Level D 1) Dollars (USA/Canadian)

Do Skill Test - 5 questions (randomly generated)

Understanding Fractions 2008

Notes

Section 5: Introduction to Decimals

Introduction to Decimals

Tenths and Decimals- Example 1
Tenths and Decimals- Example 2
Tenths and Decimals- Example 3
Tenths and Decimals- Example 4
Ones and Tenths- Example 1
Ones and Tenths- Example 2
Ones and Tenths- Example 3
Ones and Tenths- Example 4
Decimals on a number line- Example 1
Decimals on a number line- Example 2
Decimals on a number line- Example 3
Decimals on a number line- Example 4
Decimals on a number line- Example 5
Place Value- Ones and Tenths 1
Place Value- Ones and Tenths 2
Place Value- Tens, Ones and Tenths
Place Value- Decimals on a number line
Place Value- Hundreds and Tenths
Greater and Less Than

Ones, Tenths, Hundredths, Thousandths

Decimals to Tenths- Example 1
Decimals to Tenths- Example 2
Decimals to Hundredths- Example 1
Decimals to Hundredths- Example 2
Decimals to Hundredths- Example 3
Decimals to Hundredths- Example 4
Decimals to Hundredths- Example 5

Understanding Place Value

Example 1
Example 2

Equivalent Decimals

Example 1
Example 2

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Estimation on the Decimal Line	Level 1: 0 to 1 Level 2: 0 to 5
Comparing Decimals	Example 1 Example 2 Example 3 Example 4
Ordering Decimals	Introduction Example 1 Example 2

(2) The student describes and compares fractional parts of whole objects or sets of objects. The student is expected to:

(A) use concrete objects and pictorial models to generate equivalent fractions;

Understanding Fractions 2008		Notes
Section 3: Equivalent Fractions		
Introduction	Square Triangle	
Pattern Blocks	Hexagon 1 Hexagon 2	
Fraction Strips	Concept 1 Concept 2	
The Clock	Introduction 1 Introduction 2	
On a Square Grid	Examples (randomly generated) Example 1 Example 2 Example 3 Example 4 Example 5	
On a Dot Grid	Example 1 Example 2 Example 3 Example 4	

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<p>Slicing</p> <p>An Explanation With Sets</p> <p>Equivalent Fractions on a Number Line</p> <p>Equivalent Fractions in a Multiplication Table</p> <p>One</p> <p>Equivalent Fractions... The Pattern</p> <p>Memory Game</p>	<p>Example 1</p> <p>Example 2</p> <p>Example 3</p> <p>Example 4</p> <p>Example 5</p> <p>Example 6</p> <p>Case 1</p> <p>Case 2</p> <p>Summary</p> <p>Easy Game</p> <p>Instructions</p>
<p>(B) model fraction quantities greater than one using concrete objects and pictorial models;</p>	
<p>Understanding Fractions 2008</p> <p>Section 3: Equivalent Fractions</p> <p>One</p>	<p>Notes</p>
<p>Understanding Fractions 2008</p> <p>Section 13: Improper Fractions and Mixed Numbers</p> <p>The Concept... Packages</p> <p>The Concept... Clock</p> <p>Improper Fractions and Mixed Numbers - What are they?</p> <p>The Concept... Cubes</p> <p>Toothpicks and Paperclips</p>	<p>Notes</p> <p>One Whole- Example 1</p> <p>One Whole- Example 2</p> <p>One Whole- Example 3</p> <p>Represent Mixed Numbers</p> <p>Mixed Numbers to Improper Fractions</p> <p>5 questions (randomly generated)</p>

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(C) compare and order fractions using concrete objects and pictorial models; and		Notes
Understanding Fractions 2008		
Section 1: The Meaning of Fractions		
Comparison of Fractions	The Symbol- Greater Than - Ex 1 The Symbol- Greater Than - Ex 2 The Symbol- Less Than - Ex 1 The Symbol- Less Than - Ex 2 The Symbol- Greater and Less Than - Ex 1 The Symbol- Greater and Less Than - Ex 2 Concept 1 - Fractions Strips Concept 2- Example 1 Concept 2- Example 2 Concept 2- Example 3 Concept 2- Example 4	
Fractions on a Number Line	Halves Thirds Quarters Summary Place Them- Example 1 Place Them- Example 2 Place Them- Example 3 Place Them- Example 4	
Understanding Fractions 2008		
Section 3: Equivalent Fractions		
Comparison of Fractions		Notes
(D) relate decimals to fractions that name tenths and hundredths using concrete objects and pictorial models.		Notes
Understanding Fractions 2008		
Section 5: Introduction to Decimals		
Introduction to Decimals	Tenths and Decimals- Example 1 Tenths and Decimals- Example 2 Tenths and Decimals- Example 3 Tenths and Decimals- Example 4 Ones and Tenths- Example 1 Ones and Tenths- Example 2	

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<p>Ones, Tenths, Hundredths, Thousandths</p>	<p>Ones and Tenths- Example 3 Ones and Tenths- Example 4 Decimals on a number line- Example 1 Decimals on a number line- Example 2 Decimals on a number line- Example 3 Decimals on a number line- Example 4 Decimals on a number line- Example 5 Place Value- Ones and Tenths 1 Place Value- Ones and Tenths 2 Place Value- Tens, Ones and Tenths Place Value- Decimals on a number line Place Value- Hundreds and Tenths Greater and Less Than Decimals to Tenths- Example 1 Decimals to Tenths- Example 2 Decimals to Hundredths- Example 1 Decimals to Hundredths- Example 2 Decimals to Hundredths- Example 3 Decimals to Hundredths- Example 4 Decimals to Hundredths- Example 5</p>
<p>(3) The student adds and subtracts to solve meaningful problems involving whole numbers and decimals. The student is expected to:</p>	
<p>(A) use addition and subtraction to solve problems involving whole numbers; and</p>	
<p>Understanding Numeration: Problem Solving Skill 3: Number Sentence Level A,B,C,D 2) Bill's Ball Skill 4: Make a Table Level A,B,C,D 2) Muffins</p>	<p align="center">Notes</p>

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Understanding Whole Numbers and Integers 2008	Notes
Section 2 : Adding and Subtracting Whole Numbers	
Add... Partial Sums	Example 1 - With Blocks Example 2 - With Blocks Example 3 - Without Blocks Example 4 - Without Blocks Example 5 - Without Blocks Example 6 - Without Blocks
Add... Trade First	Example 1 - With Blocks Example 2 - With Blocks Example 3 - Without Blocks Example 4 - Without Blocks Example 5 - Without Blocks Example 6 - Without Blocks
Add... Right to Left	Example 1 - With Blocks Example 2 - With Blocks Example 3 - Without Blocks Example 4 - Without Blocks Example 5 - Without Blocks Example 6 - Without Blocks
Subtract... Right to Left	Example 1 - With Blocks Example 2 - With Blocks Example 3 - Without Blocks Example 4 - Without Blocks Example 5 - Without Blocks Example 6 - Without Blocks
Subtract... Trade First	Example 1 - With Blocks Example 2 - With Blocks Example 3 - Without Blocks Example 4 - Without Blocks Example 5 - Without Blocks Example 6 - Without Blocks
Subtract... Add Up	Example 1 - With Blocks Example 2 - With Blocks Example 3 - With Blocks Example 4 - With Blocks Example 5 - Without Blocks

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Subtract... Add Up to Zero	Example 6 - Without Blocks Example 1 Example 2 Example 3 Example 4
Whole Numbers Around Us	Example 1 - kilometres Example 2 - quarters Example 3 - baseball cards Example 4 - dollars Example 5 - pennies Example 6 - water in a jug Example 7 - coins Example 8 - jelly beans Example 9 - photographs Example 10 - minutes walking
(B) add and subtract decimals to the hundredths place using concrete objects and pictorial models.	
Understanding Numeration: Problem Solving	Notes
Skill 3: Number Sentence Level A,B,C,D 2) Bill's Ball	
Skill 4: Make a Table Level A,B,C,D 2) Muffins	
Understanding Fractions 2008 Section 14: Addition and Subtraction of Decimals	Notes
Adding Decimals	Click and Drag- 5 questions (randomly generated) Tenths -The Pencil- Example 1 Tenths -The Pencil- Example 2 Tenths -The Pencil- Example 3 Tenths -The Pencil- Example 4 Tenths -The Pencil- Example 5 Tenths -The Line- Example 1

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Subtracting Decimals

Tenths -The Line- Example 2
 Tenths -The Line- Example 3
 Tenths -The Line- Example 4
 Hundredths -The Town- Example 1 (randomly generated maps)
 Hundredths -The Town- Example 2 (randomly generated maps)
 Hundredths -The Town- Example 3 (randomly generated maps)
 Hundredths -The Town- Example 4 (randomly generated maps)
 Method 1 -Partial Sums- Example 1 -With Grids
 Method 1 -Partial Sums- Example 2 -With Grids
 Method 1 -Partial Sums- Example 3 -Without Grids
 Method 1 -Partial Sums- Example 4 -Without Grids
 Method 2 -Columns- Example 1 -With Grids
 Method 2 -Columns- Example 2 -With Grids
 Method 2 -Columns- Example 3 -Without Grids
 Method 2 -Columns- Example 4 -Without Grids
 Method 2 -Columns- Example 5 -Without Grids
 Method 2 -Columns- Example 6 -Without Grids
 Method 3 -Right to Left- Example 1 -With Grids
 Method 3 -Right to Left- Example 2 -With Grids
 Method 3 -Right to Left- Example 3 -Without Grids
 Method 3 -Right to Left- Example 4 -Without Grids
 Method 3 -Right to Left- Example 5 -Without Grids
 Method 3 -Right to Left- Example 6 -Without Grids
 Click and Drag- 5 questions (randomly generated)
 Tenths - The Pencil- Example 1
 Tenths - The Pencil- Example 2
 Tenths - The Pencil- Example 3
 Tenths - The Pencil- Example 4
 Tenths - The Pencil- Example 5
 Hundredths - The Field- Example 1
 Hundredths - The Field- Example 2
 Hundredths - The Field- Example 3
 Hundredths - The Field- Example 4
 Method 1 - Right to Left- Example 1 -With Grids
 Method 1 - Right to Left- Example 2 -With Grids
 Method 1 - Right to Left- Example 3 -Without Grids
 Method 1 - Right to Left- Example 4 -Without Grids

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Decimals Around Us

Method 1 - Right to Left- Example 5 -Without Grids
 Method 1 - Right to Left- Example 6 -Without Grids
 Method 2 - Trade First- Example 1 -With Grids
 Method 2 - Trade First- Example 2 -With Grids
 Method 2 - Trade First- Example 3 -Without Grids
 Method 2 - Trade First- Example 4 -Without Grids
 Method 2 - Trade First- Example 5 -Without Grids
 Method 2 - Trade First- Example 6 -Without Grids
 Method 3 - Add Up- Example 1 -With Grids
 Method 3 - Add Up- Example 2 -With Grids
 Method 3 - Add Up- Example 3 -With Grids
 Method 3 - Add Up- Example 4 -With Grids
 Method 3 - Add Up- Example 5 -Without Grids
 Method 3 - Add Up- Example 6 -Without Grids
 Method 4 - Add Up to Zero- Example 1
 Method 4 - Add Up to Zero- Example 2
 Length in Metric Units- Tools
 Length in Metric Units- Example 1
 Length in Metric Units- Example 2
 Length in Metric Units- Example 3
 Length in Metric Units- Example 4
 Length in Metric Units- Example 5
 Pencils- Example 1
 Pencils- Example 2
 Pencils- Example 3
 Pencils- Example 4
 Pencils- Example 5
 Money- Example 1
 Money- Example 2
 Money- Example 3
 Money- Example 4
 Money- Example 5
 School Supplies

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(4) The student multiplies and divides to solve meaningful problems involving whole numbers. The student is expected to:

(A) model factors and products using arrays and area models;

Understanding Numeration: Operations

Notes

Skill 30: Patterns in Multiplication

- Level C
- 1) \times table - Groups of 2
 - 2) \times table - Groups of 3
 - 3) \times table - Groups of 4
 - 4) \times table - Groups of 5
 - 5) \times table - Groups of 5 to 0
- Do Skill Test - 10 questions (randomly generated)
- Level D
- 1) \times table - Groups of 6
 - 2) \times table - Groups of 7
 - 3) \times table - Groups of 8
 - 4) \times table - Groups of 9
- Do Skill Test - 10 questions (randomly generated)

Skill 31: Introduction to Arrays

- Level C
- 1) Introduction to Arrays
 - 2) Build Arrays
 - 3) Introduction to Arrays with Multiplication
 - 4) Build Arrays with Multiplication
- Do Skill Test - 10 questions (randomly generated)

Skill 32: Demonstrate the Commutative Property

- Level C
- 1) Multiplication - Any Order
- Do Skill Test - 5 questions (randomly generated)

Skill 33: Note Patterns in a 10 \times 10 Multiplication Table

- Level D
- 1) \times table - Patterns in Rows
 - 2) \times table - Patterns in Columns
 - 3) \times table - Other Patterns

Understanding Whole Numbers and Integers 2008

Notes

Section 3: Multiplying and Dividing Whole Numbers

- | | |
|---------------------------------------|--|
| Multiply by a Single Digit Multiplier | Partial Products - Area- Example 1 - With Blocks |
| | Partial Products - Area- Example 2 - With Blocks |
| | Partial Products - Area- Example 3 - With Blocks |

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Multiply by a Two Digit Multiplier	Partial Products - Area- Example 4 - Without Blocks Partial Products - Area- Example 5 - Without Blocks Partial Products - Area- Example 6 - Without Blocks Partial Products - Area- Question 1 Partial Products - Area- Question 2 Partial Products - Area- Question 3 Partial Product - Area- Example 1 - With Blocks Partial Product - Area- Example 2 - With Blocks Partial Product - Area- Example 3 - With Blocks Partial Product - Area- Example 4 - Without Blocks Partial Product - Area- Example 5 - Without Blocks Partial Product - Area- Example 6 - Without Blocks Partial Product - Area- Question 1 Partial Product - Area- Question 2 Partial Product - Area- Question 3	
Understanding Whole Numbers and Integers 2008		Notes
Section 8: Dividing Integers		
Division to Multiplication		
The Division Table	Instructions Patterns Practice (10 questions randomly generated)	
Understanding Fractions 2008		Notes
Section 2: Products, Multiples, Factors		
Factors	Introduction- Factors of 8 Introduction- Factors of 12 Introduction- Factors of 16 Introduction- Factors of 20 Introduction- Factors of 5 Introduction- Factors of 15 Introduction- Factors of 18 Prime Numbers- 2 Prime Numbers- 3 Prime Numbers- 5 Prime Numbers- 7 Prime Numbers- 11 Prime Numbers- 13	

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Prime Numbers- 17
Prime Numbers- 19
Composite Numbers

(B) represent multiplication and division situations in picture, word, and number form;

Understanding Numeration: Operations

Notes

Skill 25: Introduce Multiplication Concretely

- Level C
- 1) Grouping Eggs in Bowls
 - 2) Grouping Chairs in Rows
 - 3) Eggs in Bowls... Introduce \times

Skill 27: Introduce Multiplication Facts... 2, 3, 4, 5

- Level C
- 1) Multiplication: Groups of 2
 - 2) Multiplication: Groups of 3
 - 3) Multiplication: Groups of 4
 - 4) Multiplication: Groups of 5
- Do Skill Test - 5 questions (randomly generated)

Skill 28: Introduce Multiplication by 1 and by 0

- Level C
- 1) Multiplication: Groups of 1
 - 2) Multiplication: Groups of 0
- Do Skill Test - 5 questions (randomly generated)

Skill 29: Introduce Multiplication Facts... 6, 7, 8, 9

- Level D
- 1) Multiplication: Groups of 6
 - 2) Multiplication: Groups of 7
 - 3) Multiplication: Groups of 8
 - 4) Multiplication: Groups of 9
- Do Skill Test - 10 questions (randomly generated)

Skill 30: Patterns in Multiplication

- Level C
- 1) \times table - Groups of 2
 - 2) \times table - Groups of 3
 - 3) \times table - Groups of 4
 - 4) \times table - Groups of 5

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- 5) x table - Groups of 5 to 0
Do Skill Test - 10 questions (randomly generated)
- Level D
- 1) x table - Groups of 6
 - 2) x table - Groups of 7
 - 3) x table - Groups of 8
 - 4) x table - Groups of 9
 - 5) x table - Groups of 10
- Do Skill Test - 10 questions (randomly generated)

Skill 35: Introduction Division Facts... 2, 3, 4, 5

- Level C
- 1) Division -Groups of 2
 - 2) Division -Groups of 3
 - 3) Division -Groups of 4
 - 4) Division -Groups of 5
- Do Skill Test - 10 questions (randomly generated)

Skill 36: Introduction Division Facts... 6, 7, 8, 9

- Level D
- 1) Division -Groups of 6
 - 2) Division -Groups of 7
 - 3) Division -Groups of 8
 - 4) Division -Groups of 9
- Do Skill Test - 10 questions (randomly generated)

Understanding Numeration: Place Value

Skill 1: Break Numbers into Groups

- Level C
- 1) Break 12 into Groups
 - 2) Break 15 into Groups
 - 3) Break 27 into Groups
 - 4) Breaking into Groups of Ten
 - 5) Groups of Items
- Do Skill Test - 10 questions (randomly generated)

Notes

Understanding Whole Numbers and Integers 2008

Section 3: Multiplying and Dividing Whole Numbers

- Multiplication Facts
- Groups of 6
 - Groups of 7
 - Groups of 8
 - Groups of 9

Notes

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Patterns in Multiplication	<p>Patterns in Multiplication by 10 Patterns in Multiplication by 100 Patterns in Multiplication by 1000 Example 1 Example 2 Example 3</p>
Multiply by a Single Digit Multiplier	<p>Repeated Addition- Example 1 - With Blocks Repeated Addition- Example 2 - With Blocks Repeated Addition- Example 3 - Without Blocks Repeated Addition- Example 4 - Without Blocks Partial Products - Area- Example 1 - With Blocks Partial Products - Area- Example 2 - With Blocks Partial Products - Area- Example 3 - With Blocks Partial Products - Area- Example 4 - Without Blocks Partial Products - Area- Example 5 - Without Blocks Partial Products - Area- Example 6 - Without Blocks Partial Products - Area- Question 1 Partial Products - Area- Question 2 Partial Products - Area- Question 3 The Distributive Method- Example 1 The Distributive Method- Example 2 The Distributive Method- Example 3 The Distributive Method- Question 1 The Distributive Method- Question 2 The Distributive Method- Question 3 The Lattice Method- Example 1 The Lattice Method- Example 2 The Lattice Method- Example 3 The Lattice Method- Question 1 The Lattice Method- Question 2 The Lattice Method- Question 3 The Standard Method- Example 1 The Standard Method- Example 2 The Standard Method- Example 3 The Standard Method- Question 1 The Standard Method- Question 2 The Standard Method- Question 3</p>

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Multiply by a Two Digit Multiplier	Partial Product - Area- Example 1 - With Blocks Partial Product - Area- Example 2 - With Blocks Partial Product - Area- Example 3 - With Blocks Partial Product - Area- Example 4 - Without Blocks Partial Product - Area- Example 5 - Without Blocks Partial Product - Area- Example 6 - Without Blocks Partial Product - Area- Question 1 Partial Product - Area- Question 2 Partial Product - Area- Question 3 The Distributive Method- Example 1 The Distributive Method- Example 2 The Distributive Method- Example 3 The Distributive Method- Question 1 The Distributive Method- Question 2 The Distributive Method- Question 3 The Lattice Method- Example 1 The Lattice Method- Example 2 The Lattice Method- Example 3 The Lattice Method- Question 1 The Lattice Method- Question 2 The Lattice Method- Question 3 The Standard Method- Example 1 The Standard Method- Example 2 The Standard Method- Example 3 The Standard Method- Question 1 The Standard Method- Question 2 The Standard Method- Question 3
Division by a Single Digit Divisor	Fair Sharing- Example 1 - With Blocks Fair Sharing- Example 2 - Without Blocks Fair Sharing- Question 1 Fair Sharing- Question 2 Fair Sharing- Question 3 Fair Sharing- Question 4 Fair Sharing- Question 5 Fair Sharing- Question 6
Divide by a Partial Quotient	Partial Quotient - Example 1 Partial Quotient - Example 2

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Whole Numbers Around Us	Partial Quotient - Example 3 Partial Quotient - Example 4 Example 1 - Oranges Example 2 - Bananas Example 3 - Cycling Example 4 - Baseball Cards Example 5 - Cookies Example 6 - Running Example 7 - Apples Example 8 - Savings Example 9 - Sit-ups Example 10 - Taxi Example 11 - Skipping	
(C) recall and apply multiplication facts through 12 x 12;		
Understanding Whole Numbers and Integers 2008		Notes
Section 3: Multiplying and Dividing Whole Numbers		
Multiplication Facts	Groups of 6 Groups of 7 Groups of 8 Groups of 9	
Commutative Property	$5 \times 1 = 1 \times 5$ $5 \times 2 = 2 \times 5$ $5 \times 3 = 3 \times 5$ $4 \times 3 = 3 \times 4$	
The 10 x 10 Multiplication Table	User Picks Computer Picks	
The 12 x 12 Multiplication Table		
Associative Property	Example 1 Example 2	
Patterns in Multiplication	Patterns in Multiplication by 10	
Understanding Whole Numbers and Integers 2008		Notes
Section 4: The Meaning of Integers		
Number Sentence Factory	Control Room - Length of Timer Training Room	

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	<p>Training Room Training Room Factory Floor- 5 questions (randomly generated)</p>	
Understanding Fractions 2008		Notes
Section 2: Products, Multiples, Factors		
Multiplication Table... Patterns to 9×9		
Multiplication Table... User Picks to 9×9		
Multiplication Table... Computer Picks to 9×9		
Multiplication Table... to 10×10	User Picks Computer Picks	
Multiplication Table... to 12×12		
Multiples	The Concept Example 1 Example 2 Example 3	
Factors	Introduction- Factors of 8 Introduction- Factors of 12 Introduction- Factors of 16 Introduction- Factors of 20 Introduction- Factors of 5 Introduction- Factors of 15 Introduction- Factors of 18 Factor Trees- Example 1 Factor Trees- Example 2 Factor Trees- Example 3 Factor Trees- Example 4	
(D) use multiplication to solve problems (no more than two digits times two digits without technology); and		
Understanding Whole Numbers and Integers 2008		Notes
Section 3: Multiplying and Dividing Whole Numbers		
Multiply by a Single Digit Multiplier	Repeated Addition- Example 1 - With Blocks Repeated Addition- Example 2 - With Blocks Repeated Addition- Example 3 - Without Blocks Repeated Addition- Example 4 - Without Blocks Partial Products - Area- Example 1 - With Blocks Partial Products - Area- Example 2 - With Blocks	

**Correlation of the Understanding Numeration 2008© and the Understanding Math 2008© Programs
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Multiply by a Two Digit Multiplier

- Partial Products - Area- Example 3 - With Blocks
- Partial Products - Area- Example 4 - Without Blocks
- Partial Products - Area- Example 5 - Without Blocks
- Partial Products - Area- Example 6 - Without Blocks
- Partial Products - Area- Question 1
- Partial Products - Area- Question 2
- Partial Products - Area- Question 3
- The Distributive Method- Example 1
- The Distributive Method- Example 2
- The Distributive Method- Example 3
- The Distributive Method- Question 1
- The Distributive Method- Question 2
- The Distributive Method- Question 3
- The Lattice Method- Example 1
- The Lattice Method- Example 2
- The Lattice Method- Example 3
- The Lattice Method- Question 1
- The Lattice Method- Question 2
- The Lattice Method- Question 3
- The Standard Method- Example 1
- The Standard Method- Example 2
- The Standard Method- Example 3
- The Standard Method- Question 1
- The Standard Method- Question 2
- The Standard Method- Question 3
- Partial Product - Area- Example 1 - With Blocks
- Partial Product - Area- Example 2 - With Blocks
- Partial Product - Area- Example 3 - With Blocks
- Partial Product - Area- Example 4 - Without Blocks
- Partial Product - Area- Example 5 - Without Blocks
- Partial Product - Area- Example 6 - Without Blocks
- Partial Product - Area- Question 1
- Partial Product - Area- Question 2
- Partial Product - Area- Question 3
- The Distributive Method- Example 1
- The Distributive Method- Example 2
- The Distributive Method- Example 3

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<p>Whole Numbers Around Us</p>	<p>The Distributive Method- Question 1 The Distributive Method- Question 2 The Distributive Method- Question 3 The Lattice Method- Example 1 The Lattice Method- Example 2 The Lattice Method- Example 3 The Lattice Method- Question 1 The Lattice Method- Question 2 The Lattice Method- Question 3 The Standard Method- Example 1 The Standard Method- Example 2 The Standard Method- Example 3 The Standard Method- Question 1 The Standard Method- Question 2 The Standard Method- Question 3 Example 1 - Oranges Example 2 - Bananas Example 3 - Cycling Example 7 - Apples Example 9 - Sit-ups</p>
<p>(E) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology).</p>	
<p>Understanding Whole Numbers and Integers 2008 Section 3: Multiplying and Dividing Whole Numbers Whole Numbers Around Us</p>	<p align="right">Notes</p> <p>Example 4 - Baseball Cards Example 5 - Cookies Example 6 - Running Example 8 - Savings Example 10 - Taxi Example 11 - Skipping</p>

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(5) The student estimates to determine reasonable results. The student is expected to:

(A) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations; and

Understanding Whole Numbers and Integers 2008

Notes

Section 1: The Meaning of Whole Numbers

Rounding Large Numbers

Example 1

Example 2

Example 3

Example 4

(B) use strategies including rounding and compatible numbers to estimate solutions to multiplication and division problems.

Not yet correlated

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<p>Patterns in the Multiplication Table Patterns With 9</p>	<p>Factors of 15 Factors of 18</p>
<p>(B) use patterns to multiply by 10 and 100.</p>	
<p>Understanding Whole Numbers and Integers 2008 Section 3: Multiplying and Dividing Whole Numbers Patterns in Multiplication</p>	<p>Notes Patterns in Multiplication by 10 Patterns in Multiplication by 100</p>
<p>(7) The student uses organizational structures to analyze and describe patterns and relationships. The student is expected to</p>	
<p>describe the relationship between two sets of related data such as ordered pairs in a table.</p>	
<p>Understanding Algebra 2008 Section 3: Patterns, Patterns, Patterns Number Patterns</p>	<p>Notes Example 1 Example 2 Example 3 Example 4 Example 5 Example 6 Example 1 Example 2 Example 1 Example 4 Example 5</p>
<p>Understanding Algebra 2008 Section 4: Patterns, Formulas, Substitution Patterns... Squares - Perimeter and Area</p>	<p>Notes</p>

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Grade 4... Geometry and spatial reasoning

(8) The student identifies and describes attributes of geometric figures using formal geometric language. The student is expected to:

(A) identify and describe right, acute, and obtuse angles;

Understanding Measurement and Geometry 2008

Section 5: Angles and Their Measure

Classify Angles

Classification

Memory Game

Notes

(B) identify and describe parallel and intersecting (including perpendicular) lines using concrete objects and pictorial models; and

Understanding Measurement and Geometry 2008

Section 6: Angles and Polygons

In This Topic

Parallel Lines

Examples with Parallel Lines

Example 1

Example 2

Notes

Understanding Measurement and Geometry 2008

Section 7: Constructions

Perpendicular Bisector

Construction Steps

Summary

Perpendicular to a Point on the Line

Construction Steps

Summary

Perpendicular to a Point Off the Line

Construction Steps

Summary

Draw a Line Parallel to Another Line Lesson

Notes

Understanding Graphing 2008

Section 7: Slope of a Line

Parallel Lines

Introduction

Example 1

Example 2

Example 3

Notes

**Correlation of the Understanding Numeration 2008© and the Understanding Math 2008© Programs
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Perpendicular Lines	Introduction Example 1 Example 2 Example 3	
(C) use essential attributes to define two- and three-dimensional geometric figures.		
Understanding Measurement and Geometry 2008 Section 2: Perimeter and Area of Polygons Polygons... What are They?		Notes
	Concept A Triangle is A Quadrilateral is A Pentagon is A Hexagon is An Octagon is Classify Polygons	
Classify Polygons with Venn Diagrams		
Understanding Measurement and Geometry 2008 Section 4: Solids.. Volume and Surface Area Classifying Solids		Notes
	A Solid is... Recall Polygons A Polyhedron is... A Prism is... Some Special Prisms A Pyramid is... Some Special Pyramids A Cylinder is... A Cone is...	

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(9) The student connects transformations to congruence and symmetry. The student is expected to:

(A) demonstrate translations, reflections, and rotations using concrete models;

Understanding Graphing 2008	Notes
Section 4: Transformations	
What is a Transformation?	
Introduction to Common Transformations	
Translations - An Introduction	Slide #1
	Slide #2
	Slide #3
	Slide #4
Reflections - An Introduction	Flip #1
	Flip #2
	Flip #3
Rotation - An Introduction	Turn #1
	Turn #2
	Turn #3
	Turn #4
	Turn #5
Transformation Machine	Example 1
	Example 2
	Example 3
	Example 4
	Example 5
Tessellations	Introductions
	Examples- Example 1
	Examples- Example 2
	Examples- Example 4
	Examples- Example 5
	Examples- Example 6

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<p>Understanding Fractions 2008 Section 1: The Meaning of Fractions Fractions on a Number Line</p> <p>Estimation on the number line</p>	<p>Halves Thirds Quarters Summary Place Them- Example 1 Place Them- Example 2 Place Them- Example 3 Place Them- Example 4 10 questions (randomly generated)</p>	<p>Notes</p>
<p>Understanding Fractions 2008 Section 5: Introduction to Decimals Introduction to Decimals</p> <p>Estimation on the Decimal Line</p>	<p>Decimals on a number line- Example 1 Decimals on a number line- Example 2 Decimals on a number line- Example 3 Decimals on a number line- Example 4 Decimals on a number line- Example 5 Place Value- Decimals on a number line Greater and Less Than Level 1: 0 to 1 Level 2: 0 to 5</p>	<p>Notes</p>

**Correlation of the Understanding Numeration 2008© and the Understanding Math 2008© Programs
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Grade 4... Measurement

(11) The student applies measurement concepts. The student is expected to estimate and measure to solve problems involving length (including perimeter) and area. The student uses measurement tools to measure capacity/volume and weight/mass. The student is expected to:

(A) estimate and use measurement tools to determine length (including perimeter), area, capacity and weight/mass using standard units SI (metric) and customary;

Understanding Measurement and Geometry 2008

Notes

Section 1: An Introduction to Measurement

Measurement In The News

A Glimpse Into The Past

Distance: Guess and Measure #1

4 questions (randomly generated)

Distance: Guess and Measure #2

4 questions (randomly generated)

Distance: Fractional Units

4 questions (randomly generated)

Measurement with a Ruler - Centimeters

A Pencil... An Introduction- Example 1

A Pencil... An Introduction- Example 2

Ruler - Click on the Point- 10 questions (randomly generated)

Ruler - Click and Drag- 10 questions (randomly generated)

Calculating Distances - Introduction- 10 questions (randomly generated)

Calculating Distances - Distances- Example 1

Calculating Distances - Distances- Example 2

Calculating Distances - Distances- Example 3

Calculating Distances - Distances- Example 4

Calculating Distances - Distances- Example 5

Calculating Distances - Distances- Example 6

Scale - Example - 1

Scale - Example - 2

Scale - Example - 3

Measurement with a Ruler - Inches

A Pencil... An Introduction- Example 1

A Pencil... An Introduction- Example 2

Ruler - Click on the Point- 10 questions (randomly generated)

Ruler - Click and Drag- 10 questions (randomly generated)

Calculating Distances - Introduction- 10 questions (randomly generated)

Calculating Distances - Distances- Example 1

Calculating Distances - Distances- Example 2

**Correlation of the Understanding Numeration 2008© and the Understanding Math 2008© Programs
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Metric Conversions - Length	Calculating Distances - Distances- Example 3 Calculating Distances - Distances- Example 4 Calculating Distances - Distances- Example 5 Calculating Distances - Distances- Example 6 Scale - Example - 1 Scale - Example - 2 Scale - Example - 3 Introduction - Off Computer Understanding Metric Prefixes Metric Prefixes at Work Metric Match - Introduction Metric Match - Examples- 3 questions (randomly generated)	
US Standard Conversions - Length	Converting Introduction - Off Computer	
Benchmarks - Metric	Converting Introduction Examples- 4 questions (randomly generated)	
Benchmarks - US Standard	Introduction Practice- 4 questions (randomly generated)	
Measurement and Your Body - US Standard	Golden Ratio- Part 2	
My Body - Metric and US Standard		
Rudy's Run Metric and US Standard		
Practice Questions	Metric- 10 questions (randomly generated) US Standard- 10 questions (randomly generated)	
Understanding Measurement and Geometry 2008		Notes
Section 2: Perimeter and Area of Polygons		
Walk Around a Polygon	Joan Walks Perimeter of Various Shapes- Example - 1 Perimeter of Various Shapes- Example - 2 Perimeter of Various Shapes- Example - 3 Length of the Metal Strip Find the Perimeter - 3 Examples	
Introduction to Area	Units Estimate- Example 1 Estimate- Example 2 Estimate- Example 3	

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Areas of Polygons	Area of a Rectangle- Concept Area of a Rectangle- Example 1 Area of a Rectangle- Example 2 Area of a Rectangle- Example 3	
(B) perform simple conversions between different units of length, between different units of capacity, and between different units of weight within the customary measurement system;		
Understanding Measurement and Geometry 2008 Section 1: An Introduction to Measurement Metric Conversions - Length US Standard Conversions - Length		Notes Introduction - Off Computer Understanding Metric Prefixes Metric Prefixes at Work Metric Match - Introduction Metric Match - Examples- 3 questions (randomly generated) Converting Introduction - Off Computer Converting
(C) use concrete models of standard cubic units to measure volume;		
Understanding Measurement and Geometry 2008 Section 4: Solids.. Volume and Surface Area Volume of a Solid		Notes Volume of a Prism: Example 1 Volume of a Prism: Example 2
(D) estimate volume in cubic units; and		
Not yet correlated		
(E) explain the difference between weight and mass.		
Not yet correlated		

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Skill 11: Describe Elapsed Time... Minutes

- Level D 1) Elapsed Time - Minutes... #1
2) Elapsed Time - Minutes... #2
Do Skill Test - 5 questions (randomly generated)

Skill 12: Describe Back in Time... Hours, 5 Minutes

- Level C 1) Back in Time in Hours... #1
2) Back in Time in Hours... #2
Do Skill Test - 10 questions (randomly generated)
- Level D 1) Back in Time - 5 Minutes... #1
2) Back in Time - 5 Minutes... #2
3) Early and Late
Do Skill Test - 5 questions (randomly generated)

Skill 13: Describe Back in Time... Minutes

- Level D 1) Elapsed Time - Minutes... #1
2) Elapsed Time - Minutes... #2
Do Skill Test - 5 questions (randomly generated)

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Grade 4... Probability and statistics

(13) The student solves problems by collecting, organizing, displaying, and interpreting sets of data. The student is expected to:

(A) use concrete objects or pictures to make generalizations about determining all possible combinations of a given set of data or of objects in a problem situation; and

Understanding Probability 2008

Notes

Section 1: Introduction to Probability

Possible Outcomes

What Are They?

1. Coins
2. Pick 1 Ball
3. Pick 2 Balls
4. Eye Test
5. Travel

Experiment with Spinners

- Experiment 1
- Experiment 2
- Experiment 3
- Experiment 4

Tree Diagrams

- Coin and Die
- Meals
- Socks
- Rabbits

Problem Solving - Logic and Probability

- Forest
- Introduction
- Demonstration
- Level 1

(B) interpret bar graphs.

Understanding Graphing 2008

Notes

Section 1: Reading And Sketching Graphs

Graphs With a Scale

- Example 2... Books and Days
- Example 3... The Travel Log



Correlation of the Understanding Numeration 2008© and the Understanding Math 2008© Programs
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Understanding Graphing 2008	Notes
Section 2: Statistics	
An Introduction	Bar Graph #1
	Bar Graph #2
Presenting Data	Bar Graph- Example 1... Energy
	Bar Graph- Example 2... Lengths of Rivers



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Grade 4... Underlying processes and mathematical tools

(14) The student applies Grade 4 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to:

(A) identify the mathematics in everyday situations;

Identifying mathematics in everyday situations is embedded in Understanding Numeration 2008© and Understanding Math 2008© programs. The programs emphasize understanding, learning from the concrete to the abstract, and thinking and doing rather than memorizing by rote. A mistake is an opportunity to learn.

The following are some examples:

Understanding Whole Numbers and Integers 2008

Notes

Section 4: The Meaning of Integers

Integers Around Us

Temperature

Helicopter

Submarine

Elevator

Understanding Measurement and Geometry 2008

Notes

Section 1: An Introduction to Measurement

Measurement In The News

Understanding Fractions 2008

Notes

Section 1: The Meaning of Fractions

Fractions in the News

**Correlation of the Understanding Numeration 2008© and the Understanding Math 2008© Programs
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(B) solve problems that incorporate understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;	
Solving problems that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness is embedded in Understanding Numeration 2008© and Understanding Math 2008© programs. The programs emphasize understanding, learning from the concrete to the abstract, and thinking and doing rather than memorizing by rote. A mistake is an opportunity to learn.	
The following are some examples:	
Understanding Numeration: Problem Solving	Notes
Skill 7: Birthday Party Level A,B,C,D 1) Birthday Party	
Skill 8: Brick Path Level A,B,C,D 1) Brick Path	
Skill 9: Step Up Level A,B,C,D 1) Step Up	
Skill 10: The Track Team Level A,B,C,D 1) The Track Team	
Understanding Whole Numbers and Integers 2008	Notes
Section 3: Multiplying and Dividing Whole Numbers	
Whole Numbers Around Us	Example 7 - Apples Example 8 - Savings
Understanding Algebra 2008	Notes
Section 3: Patterns, Patterns, Patterns	
Number and Geometric Patterns	Example 1 Example 2
(C) select or develop an appropriate problem-solving plan or strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and	
Understanding Numeration: Problem Solving	Notes
Skill 1: Draw a Picture	
Level A,B,C,D 1) Eating Apples	
2) A Trip To School	

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Skill 2: Find a Pattern

- Level A,B,C,D 1) Johnny's Pennies
- 2) Toy Animals

Skill 3: Number Sentence

- Level A,B,C,D 1) Oranges
- 2) Bill's Ball

Skill 4: Make a Table

- Level A,B,C,D 1) Johnny's Pennies
- 2) Muffins

Skill 5: Make a Graph

- Level A,B,C,D 1) Classroom Shoes
- 2) Animals

Skill 6: Guess and Check

- Level A,B,C,D 1) The Camp
- 2) The Gravy Spill

Skill 8: Brick Path

- Level A,B,C,D 1) Brick Path

Skill 9: Step Up

- Level A,B,C,D 1) Step Up

(D) use tools such as real objects, manipulatives, and technology to solve problems.

Using tools such as real objects, manipulatives, and technology to solve problems is embedded in Understanding Numeration 2008© and Understanding Math 2008© programs. The programs emphasize understanding, learning from the concrete to the abstract, and thinking and doing rather than memorizing by rote. A mistake is an opportunity to learn.

The following are some examples:

Understanding Measurement and Geometry 2008

Notes

Section 1: An Introduction to Measurement

- | | |
|--|--|
| Distance: Guess and Measure #1 | 4 questions (randomly generated) |
| Measurement with a Ruler - Centimeters | A Pencil... An Introduction- Example 2 |

**Correlation of the Understanding Numeration 2008© and the Understanding Math 2008© Programs
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Measurement with a Ruler - Inches	Ruler - Click on the Point- 10 questions (randomly generated) Calculating Distances - Introduction- 10 questions (randomly generated) Calculating Distances - Distances- Example 5 Scale - Example - 1 A Pencil... An Introduction- Example 1 Ruler - Click on the Point- 10 questions (randomly generated) Calculating Distances - Introduction- 10 questions (randomly generated) Calculating Distances - Distances- Example 1 Calculating Distances - Distances- Example 3 Scale - Example - 1	
Benchmarks - Metric	Introduction Examples- 4 questions (randomly generated)	
Benchmarks - US Standard	Introduction Practice- 4 questions (randomly generated)	
Understanding Measurement and Geometry 2008		Notes
Section 2: Perimeter and Area of Polygons		
Introduction to Area	Estimate- Example 1	
Areas of Polygons	Area of a Trapezoid- Introduction	
Fractions of a Square	Part 1- One Quarter Part 2- Example 1	

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(15) The student communicates about Grade 4 mathematics using informal language. The student is expected to:

(A) explain and record observations using objects, words, pictures, numbers, and technology; and

Explaining and recording observations using objects, words, pictures, numbers, and technology is embedded in Understanding Numeration 2008© and Understanding Math 2008© programs strategies such as the Flight Plan located on our website (<http://www.neufeldmath.com/strategies/index.html>)

(B) relate informal language to mathematical language and symbols.

Relating everyday language to mathematical language and symbols is embedded in Understanding Numeration 2008© and Understanding Math 2008© programs. The programs emphasize understanding, learning from the concrete to the abstract, and thinking and doing rather than memorizing by rote. A mistake is an opportunity to learn. Our Word Bank located on our website supports this standard (http://www.neufeldmath.com/wordbank/index.html)

The following are some examples:

Understanding Measurement and Geometry 2008

Notes

Section 2: Perimeter and Area of Polygons

Polygons... What are They?

Concept
A Triangle is
A Quadrilateral is
A Pentagon is
A Hexagon is
An Octagon is
Joan Walks
Units

Walk Around a Polygon
Introduction to Area

Understanding Fractions 2008

Notes

Section 1: The Meaning of Fractions

Parts of a Fraction
Comparison of Fractions

The Symbol- Greater Than - Ex 1
Concept 2- Example 3
Concept 2- Example 4

Correlation of the Understanding Numeration 2008© and the Understanding Math 2008© Programs
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(16) The student uses logical reasoning. The student is expected to:

(A) make generalizations from patterns or sets of examples and nonexamples; and

Making generalizations from patterns or sets of examples and nonexamples is embedded in Understanding Math 2008© and Understanding Numeration 2008©. The programs emphasize understanding, learning from the concrete to the abstract, and thinking and doing rather than memorizing by rote. A mistake is an opportunity to learn.

The following are some examples:

Understanding Whole Numbers and Integers 2008

Notes

Section 1: The Meaning of Whole Numbers

Rounding Large Numbers

Example 1

Example 3

Understanding Fractions 2008

Notes

Section 5: Introduction to Decimals

Rounding Decimals

Example 1

Example 2

Summary

Understanding Algebra 2008

Notes

Section 3: Patterns, Patterns, Patterns

Number and Geometric Patterns

Example 1

Example 2

(B) justify why an answer is reasonable and explain the solution process.

Justifying his or her thinking using objects, words, pictures, numbers, and technology is embedded in Understanding Numeration 2008© and Understanding Math 2008© programs. The programs emphasize understanding, learning from the concrete to the abstract, and thinking and doing rather than memorizing by rote. A mistake is an opportunity to learn.

The following are some examples:

Understanding Measurement and Geometry 2008

Notes

Section 2: Perimeter and Area of Polygons

Introduction to Area

Units

Estimate- Example 1

Estimate- Example 2

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Areas of Polygons	Estimate- Example 3 Area of a Rectangle- Concept Area of a Rectangle- Example 1 Area of a Rectangle- Example 2	
Understanding Fractions 2008		Notes
Section 1: The Meaning of Fractions		
Parts of a Fraction		
Part of a Whole	One Half One Third One Quarter	
Parts of a Whole	Two Fifths Three Eighths	
Write the Fraction	Seven Tens Question 1 Question 2	
Understanding Fractions 2008		Notes
Section 5: Introduction to Decimals		
Introduction to Decimals	Place Value- Ones and Tenths 1 Place Value- Tens, Ones and Tenths	
Ones, Tenths, Hundredths, Thousandths	Decimals to Tenths- Example 1 Decimals to Tenths- Example 2 Decimals to Hundredths- Example 1 Decimals to Hundredths- Example 2	