



**Correlation of the Understanding Math 2008© Programs
With the Texas Essential Knowledge and Skills For Mathematics
Algebra 1**

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 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 Measurement and Geometry
Understanding Fractions
Understanding Graphing
Understanding Percent

Understanding Equations
Understanding Probability
Understanding Algebra
Understanding Exponents

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>.





**Understanding
Math**
**Correlation of the Understanding Math 2008© Programs
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The TEKS have been correlated to the Understanding Math 2008© programs. The location is listed below:

Foundations for functions

- | | |
|---|---------------|
| (1) The student understands that a function represents a dependence of one quantity on another and can be described in a variety of ways. | Pages 3 - 8 |
| (2) The student uses the properties and attributes of functions. | Pages 9 - 11 |
| (3) The student understands how algebra can be used to express generalizations and recognizes and uses the power of symbols to represent situations. | Pages 12 - 14 |
| (4) The student understands the importance of the skills required to manipulate symbols in order to solve problems and uses the necessary algebraic skills required to simplify algebraic expressions and solve equations and inequalities in problem situations. | Pages 15 - 20 |

Linear functions

- | | |
|--|---------------|
| (5) The student understands that linear functions can be represented in different ways and translates among their various representations. | Pages 21 - 22 |
| (6) The student understands the meaning of the slope and intercepts of the graphs of linear functions and zeros of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations. | Pages 23 - 28 |
| (7) The student formulates equations and inequalities based on linear functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation. | Pages 29 - 32 |
| (8) The student formulates systems of linear equations from problem situations, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation. | Pages 33 - 35 |

Quadratic and other nonlinear functions

- | | |
|---|---------------|
| (9) The student understands that the graphs of quadratic functions are affected by the parameters of the function and can interpret and describe the effects of changes in the parameters of quadratic functions. | Pages 36 - 37 |
| (10) The student understands there is more than one way to solve a quadratic equation and solves them using appropriate methods. | Pages 38 - 39 |
| (11) The student understands there are situations modeled by functions that are neither linear nor quadratic and models the situations. | Pages 39 - 42 |

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



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Correlated to Understanding Math 2008 ©
Algebra 1**

Algebra I... Foundations for functions

(1) The student understands that a function represents a dependence of one quantity on another and can be described in a variety of ways. The student is expected to:

(A) describe independent and dependent quantities in functional relationships;

Understanding Graphing 2008

Notes

Section 1: Reading And Sketching Graphs

In This Topic

Graphs Without a Scale

- Concept... Age and Weight
- Example 1... Height and Weight
- Example 2... Errors and Years
- Example 3... Pushups and Situps
- Example 4... Nelia's Bike Ride
- Example 5... Temperature and Time
- Example 6... Melissa Eating Popcorn (situations are randomly generated)
- Example 7... Glasses of Water
- Example 8... Bottles of Water
- Example 9... Bottles of Water... Matching
- Example 10... Age and Height
- Example 11... The Bathtub #1
- Example 12... The Bathtub #2
- Example 13... The Hot Tub

Graphs With a Scale

- Concept... Distance and Time
- Example 1... Wins in Soccer
- Example 2... Books and Days
- Example 3... The Travel Log
- Example 4... Winning in Baseball
- Example 5... Cost and Distance

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<p>Discrete Data</p> <p>Understanding Graphing 2008 Section 5 : Relations, Equations and Functions Relations</p>	<p>Example 6... Ivan's Ride to the Party Example 7... The Cyclists Example 8... Baseball (situations are randomly generated) Example 9... The Beach Example 10... Rate Example 11... Villeneuve Example 12... Volume and Time Example 13... The River Problem Example 14... Angelo's Walk</p> <p>What is a Relation? Domain and Range Example 1: Triangle- Display the Relation</p>	<p align="right">Notes</p>
<p>(B) gather and record data and use data sets to determine functional relationships between quantities;</p>		
<p>Understanding Graphing 2008 Section 5 : Relations, Equations and Functions Functions</p> <p>Vertical Line Test</p> <p>Function Notation</p> <p>Patterns to Words to Equations</p> <p>Practice Questions</p>	<p>What is a Function? Example 1 Example 2 Example 3</p> <p>Example 1 Example 2 Example 3</p> <p>Example 1 Example 2</p> <p>Example 1 Example 2 Example 3 Example 4</p> <p>10 questions (randomly generated)</p>	<p align="right">Notes</p>

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<p>Understanding Graphing 2008 Section 6: Linear Relations</p> <p>The Taxi Example</p> <p>The Elastic Example</p> <p>Lightning Example</p> <p>Baseball Example</p>	<p>Setup Equations Graph Equations</p> <p>Setup Equations Graph</p> <p>Setup Equations Graph</p> <p>Setup Equations Graph</p>	<p>Notes</p>
<p>(C) describe functional relationships for given problem situations and write equations or inequalities to answer questions arising from the situations;</p>		
<p>Understanding Graphing 2008 Section 5 : Relations, Equations and Functions</p> <p>Patterns to Words to Equations</p>	<p>Example 1 Example 2 Example 3 Example 4</p>	<p>Notes</p>
<p>Understanding Graphing 2008 Section 6: Linear Relations</p> <p>The Taxi Example</p> <p>The Elastic Example</p> <p>Lightning Example</p> <p>Baseball Example</p>	<p>Setup Equations Graph Equations</p> <p>Setup Equations Graph</p> <p>Setup Equations Graph</p> <p>Setup Equations Graph</p>	<p>Notes</p>
<p>Understanding Graphing 2008 Section 8: Equation of a Straight Line</p> <p>Word Problems-Applications</p>	<p>The Taxi - Case 1- Task 1: Find the Equation The Taxi - Case 1- Task 2: Graph the Equation The Taxi - Case 1- Task 3: Interpret the Equation The Taxi - Case 2- Task 1: Find the Equation The Taxi - Case 2- Task 2: Graph the Equation</p>	<p>Notes</p>

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	<p>The Taxi - Case 2- Task 3: Interpret the Equation The Taxi - Summary The Walker The Basketball Food</p>	
Understanding Equations 2008		Notes
Section 7: Solving Inequalities		
Graphing Linear Inequalities in Two Variables	<p>Concept 1 Concept 2 Example 1 Example 2 Example 3</p>	
Solving Systems of Linear Inequalities by Graphing	<p>Example 1</p>	
Linear Programming	<p>Example 2 What is it? A Fund Raising Example The Objective Function- What is it? The Objective Function- Example 1 The Objective Function- Example 2</p>	
(D) represent relationships among quantities using concrete models, tables, graphs, diagrams, verbal descriptions, equations, and inequalities; and		
Understanding Graphing 2008		Notes
Section 8: Equation of a Straight Line		
Word Problems-Applications	<p>The Taxi - Case 1- Task 1: Find the Equation The Taxi - Case 1- Task 2: Graph the Equation The Taxi - Case 1- Task 3: Interpret the Equation The Taxi - Case 2- Task 1: Find the Equation The Taxi - Case 2- Task 2: Graph the Equation The Taxi - Case 2- Task 3: Interpret the Equation The Taxi - Summary The Walker The Basketball Food</p>	

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<p>Understanding Equations 2008 Section 7: Solving Inequalities Graphing Linear Inequalities in Two Variables</p>	<p>Concept 1 Concept 2 Example 1 Example 2 Example 3 Linear Programming What is it? A Fund Raising Example The Objective Function- What is it? The Objective Function- Example 1 The Objective Function- Example 2</p>	<p>Notes</p>
<p>Understanding Algebra 2008 Section 3: Patterns, Patterns, Patterns Patterns to Formulas</p>	<p>Example 1 Example 3 Example 4 Example 5</p>	<p>Notes</p>
<p>(E) interpret and make decisions, predictions, and critical judgments from functional relationships.</p>		
<p>Understanding Graphing 2008 Section 1: Reading And Sketching Graphs Graphs With a Scale</p>	<p>Concept... Distance and Time Example 1... Wins in Soccer Example 2... Books and Days Example 3... The Travel Log Example 4... Winning in Baseball Example 5... Cost and Distance Example 6... Ivan's Ride to the Party Example 7... The Cyclists Example 8... Baseball (situations are randomly generated) Example 9... The Beach Example 10... Rate Example 11... Villeneuve Example 12... Volume and Time</p>	<p>Notes</p>

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Extrapolation	Example 13... The River Problem Example 14... Angelo's Walk	
Understanding Graphing 2008 Section 5 : Relations, Equations and Functions		Notes
Relations	Example 4 Running- Predict New Information	
Understanding Graphing 2008 Section 6: Linear Relations		Notes
The Taxi Example	Setup Equations Graph Equations	
The Elastic Example	Setup Equations Graph	
Lightning Example	Setup Equations Graph	
Baseball Example	Setup Equations Graph	
Understanding Graphing 2008 Section 8: Equation of a Straight Line		Notes
Word Problems-Applications	The Taxi - Case 1- Task 1: Find the Equation The Taxi - Case 1- Task 2: Graph the Equation The Taxi - Case 1- Task 3: Interpret the Equation The Taxi - Case 2- Task 1: Find the Equation The Taxi - Case 2- Task 2: Graph the Equation The Taxi - Case 2- Task 3: Interpret the Equation The Taxi - Summary The Walker The Basketball Food	
Match: Graph, Equation, Points, Story (randomly generated)		
Understanding Equations 2008 Section 6: Solving Linear Systems		Notes
Solving Problems Using Linear Systems	Example 1- Beginning of Question Example 1- Draw Graph Example 2- Beginning of Question Example 2- Draw Graph	

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(2) The student uses the properties and attributes of functions. The student is expected to:

(A) identify and sketch the general forms of linear ($y = x$) and quadratic ($y = x^2$) parent functions;

Understanding Graphing 2008

Section 6: Linear Relations

What is a Linear Relation?

Graphs of Linear Relations

Concept

Examples- Example 1

Examples- Example 2

Examples- Example 3

Examples- Example 4

Examples- Example 5

Examples- Example 6

The Elastic Example

Setup Equations

Graph

Lightning Example

Setup Equations

Graph

Notes

(B) identify mathematical domains and ranges and determine reasonable domain and range values for given situations, both continuous and discrete;

Understanding Graphing 2008

Section 1: Reading And Sketching Graphs

Graphs With a Scale

Concept... Distance and Time

Example 1... Wins in Soccer

Example 2... Books and Days

Example 3... The Travel Log

Example 4... Winning in Baseball

Example 5... Cost and Distance

Example 6... Ivan's Ride to the Party

Example 7... The Cyclists

Example 8... Baseball (situations are randomly generated)

Example 9... The Beach

Example 10... Rate

Example 11... Villeneuve

Example 12... Volume and Time

Example 13... The River Problem

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<p>Discrete Data Continuous Data</p> <p>Understanding Graphing 2008 Section 5 : Relations, Equations and Functions In This Topic Relations Functions</p>	<p>Example 14... Angelo's Walk</p> <p>What is a Relation? Domain and Range What is a Function? Example 1 Example 2 Example 3</p>	<p align="right">Notes</p>
<p>(C) interpret situations in terms of given graphs or creates situations that fit given graphs;</p>		
<p>Understanding Graphing 2008 Section 1: Reading And Sketching Graphs Graphs With a Scale</p> <p>Understanding Graphing 2008 Section 8: Equation of a Straight Line Match: Graph, Equation, Points, Story (randomly generated)</p>	<p>Concept... Distance and Time Example 5... Cost and Distance Example 6... Ivan's Ride to the Party Example 7... The Cyclists Example 8... Baseball (situations are randomly generated) Example 9... The Beach Example 10... Rate Example 11... Villeneuve Example 12... Volume and Time Example 13... The River Problem Example 14... Angelo's Walk</p>	<p align="right">Notes</p> <p align="right">Notes</p>

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(D) collect and organize data, make and interpret scatterplots (including recognizing positive, negative, or no correlation for data approximating linear situations), and model, predict, and make decisions and critical judgments in problem situations.

Understanding Graphing 2008

Notes

Section 2: Statistics

Data... What is it?

Examples of Data

Example 1... Fast Food Earnings

Example 2... Infants Walk

Example 3... Canada and U.S.A. Forecast

Example 4... King of the Strike Out

Example 5... U.S. Stake in India

Example 6... Allergy Troubles

A Summary: Examples

Statistics... What is it?

Collecting Data

Throw A Die

Throw 2 Dice

Voting

Primary Data-Gathering Methods

Secondary Data-Gathering Methods

Presenting Data

Scatter Plot- Example 1... The T-Shirt Tailor

Scatter Plot- Example 2... Matching

Understanding Graphing 2008

Notes

Section 6: Linear Relations

Line of Best Fit

Example 1

Example 2

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(3) The student understands how algebra can be used to express generalizations and recognizes and uses the power of symbols to represent situations. The student is expected to:

(A) use symbols to represent unknowns and variables;

Understanding Equations 2008		Notes
Section 5: Problem Solving		
Words and Symbols		
The Translation Machine	Example 1	
	Example 2	
	Example 3	
	Example 4	
The Trick Machine	Instructions	
	The Machine	
	Explanations with Pictures	
	Explanation with Symbols	
Expressions - The Language of Algebra	Example 1	
	Example 2	
	Example 3	
Understanding Algebra 2008		Notes
Section 2: Tiles & Algebra		
Pictures to Words to Algebraic Expressions	Example 1	
	Example 2	
Algebraic expressions to Tiles	Example 1	
	Example 2	
	Example 3	
Understanding Algebra 2008		Notes
Section 3: Patterns, Patterns, Patterns		
Patterns to Formulas	Example 1	
	Example 2	
	Example 3	
	Example 4	
	Example 5	

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Understanding Algebra 2008	Notes
Section 4: Patterns, Formulas, Substitution	
Introduction... Math is Patterns Expressions, Terms, Variables	Definitions Summary
Substitution is... Math Scrabble 1	Scrabble 1 Scrabble 2 Scrabble 3 Challenge
Patterns... Squares - Perimeter and Area Patterns... Toothpicks	Introduction Exploration To Formula- Pattern 1 To Formula- Pattern 2 To Formula- Pattern 3 To Formula- Pattern 4 Summary
Patterns... Counting Money	The Pattern... Method 1 The Pattern... Method 2 The Pattern... In General Summary
Patterns... Angles in a Polygon	Interior Angles The Pattern Summary
Patterns... The Bridge	Introduction Exploration To Formula- Pattern 1 To Formula- Pattern 2 To Formula- Pattern 3 Summary

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(B) look for patterns and represent generalizations algebraically.

Understanding Algebra 2008

Notes

Section 4: Patterns, Formulas, Substitution

Patterns... Hockey Standings

Patterns... Squares - Perimeter and Area

Patterns... Toothpicks

Introduction

Exploration

To Formula- Pattern 1

To Formula- Pattern 2

To Formula- Pattern 3

To Formula- Pattern 4

Summary

Patterns... Counting Money

The Pattern... Method 1

The Pattern... Method 2

The Pattern... In General

Summary

Patterns... Angles in a Polygon

Interior Angles

The Pattern

Summary

Patterns... The Bridge

Introduction

Exploration

To Formula- Pattern 1

To Formula- Pattern 2

To Formula- Pattern 3

Summary

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(4) The student understands the importance of the skills required to manipulate symbols in order to solve problems and uses the necessary algebraic skills required to simplify algebraic expressions and solve equations and inequalities in problem situations. The student is expected to:

(A) find specific function values, simplify polynomial expressions, transform and solve equations, and factor as necessary in problem situations;

Understanding Equations 2008		Notes
Section 1: Tiles, Balances and Equations		
Definitions	Introduction Summary 1 Summary 2	
The Meaning of "Solving an Equation"		
Solve by Systematic Trials		
Recall Tile Concepts		
Balances... An Introduction		
Tiles, Balances, Equations		
Practice Questions	5 questions (randomly generated)	
Understanding Equations 2008		
Section 2: Solving One-Step Equations		
Our Problem		
Concept - Examples with Tiles	Example 1 Example 2 Example 3 Example 4 Example 5	
Concept - Examples without Tiles	Example 1 Example 2 Example 3 Example 4 Example 5	
Practice Questions	10 questions (randomly generated)	
Understanding Equations 2008		
Section 3: Solving Two-Step Equations		
Our Problem		
Concept - Examples with Tiles	Example 1 Example 2	

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	Example 3	
	Example 4	
Concept - Examples without Tiles	Example 1	
	Example 2	
	Example 3	
	Example 4	
	Example 5	
	Example 6	
Practice Questions	10 questions (randomly generated)	
Understanding Equations 2008		Notes
Section 4: Solving Multi-Step Equations		
Our Problem		
Concept - Examples with Tiles		
Concept - Examples without Tiles	Example 1	
	Example 2	
	Example 3	
	Example 4	
	Example 5	
Summary		
Understanding Algebra 2008		Notes
Section 4: Patterns, Formulas, Substitution		
Substitution is... Math Scrabble 1	Scrabble 1	
	Scrabble 2	
	Scrabble 3	
	Challenge	
Patterns... Hockey Standings		
Understanding Algebra 2008		Notes
Section 5: Adding Expressions		
Our Problem		
Adding Expressions with X and Y Tiles	Example 1	
	Example 2	
	Example 3	
Adding Expressions with X-Squared Tiles	Example 1	
	Example 2	
	Example 3	

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Adding Expressions without Tiles	Example 1	
	Example 2	
Practice Questions With Tiles	3 questions (randomly generated)	
Practice Questions Without Tiles	10 questions (randomly generated)	
Understanding Algebra 2008		Notes
Section 6: Subtracting Expressions		
Our Problem		
Subtracting Expressions With X and Y Tiles	Concept	
	Example 1	
	Example 2	
Subtracting Expressions With X-Squared Tiles	Example 1	
	Example 2	
Subtracting Expressions Without Tiles		
Practice Questions With Tiles	3 questions (randomly generated)	
Practice Questions Without Tiles	10 questions (randomly generated)	
Understanding Algebra 2008		Notes
Section 7: Multiplying Expressions		
Our Problem		
Recall Tile Concept		
Multiplying Monomials	Powers- Concept	
	Powers- Example 1	
	Powers- Example 2	
	Powers- Example 3	
	Powers- Example 4	
	With Tiles- Example 1	
	With Tiles- Example 2	
	With Tiles- Example 3	
	Without Tiles	
Multiplying Monomials and Binomials	With Tiles- Example 1	
	With Tiles- Example 2	
	With Tiles- Example 3	
	With Tiles- Example 4	
	Without Tiles	

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Understanding Algebra 2008	Notes
Section 8: Factoring Expressions	
Our Problem Common Factoring	With Tiles- Example 1 - Method 1 With Tiles- Example 1 - Method 2 With Tiles- Example 1 - Method 1 With Tiles- Example 2 - Method 2 Without Tiles- Greatest Common Factor Without Tiles- Example 1 Without Tiles- Example 2
Factoring by Grouping	Concept Example 1 Example 2 Example 3 Example 4 Example 5
Understanding Algebra 2008	Notes
Section 9: Dividing Expressions	
Dividing a Monomial by a Monomial	Example 1 Example 2 Example 3 Example 4
Dividing a Polynomial by a Monomial	Concept Example 1 Example 2 Example 3 Summary
(B) use the commutative, associative, and distributive properties to simplify algebraic expressions; and	
Understanding Whole Numbers and Integers 2008	Notes
Section 3: Multiplying and Dividing Whole Numbers	
Commutative Property	$5 \times 1 = 1 \times 5$ $5 \times 2 = 2 \times 5$ $5 \times 3 = 3 \times 5$ $4 \times 3 = 3 \times 4$

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Associative Property	Example 1 Example 2	
Multiply by a Single Digit Multiplier	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	
Multiply by a Two Digit Multiplier	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	
Understanding Algebra 2008 Section 4: Patterns, Formulas, Substitution		Notes
Substitution is... Math Scrabble 1	Scrabble 1 Scrabble 2 Scrabble 3 Challenge	
Understanding Algebra 2008 Section 5: Adding Expressions		Notes
Adding Expressions without Tiles	Example 1 Example 2	
Practice Questions Without Tiles	10 questions (randomly generated)	
Understanding Algebra 2008 Section 6: Subtracting Expressions		Notes
Subtracting Expressions Without Tiles		
Practice Questions Without Tiles	10 questions (randomly generated)	
Understanding Algebra 2008 Section 7: Multiplying Expressions		Notes
Multiplying Monomials	Without Tiles	
Multiplying Monomials and Binomials	Without Tiles	

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<p>Understanding Algebra 2008</p>	<p>Notes</p>
<p>Section 9: Dividing Expressions Dividing a Polynomial by a Monomial</p>	<p>Concept Example 1 Example 2 Example 3 Summary</p>
<p>(C) connect equation notation with function notation, such as $y = x + 1$ and $f(x) = x + 1$.</p>	
<p>Understanding Graphing 2008</p>	<p>Notes</p>
<p>Section 5 : Relations, Equations and Functions Relations Function Notation</p>	<p>What is a Relation? Domain and Range Example 1 Example 2</p>

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Algebra I... Linear functions

(5) The student understands that linear functions can be represented in different ways and translates among their various representations. The student is expected to:

(A) determine whether or not given situations can be represented by linear functions;

Understanding Graphing 2008

Notes

Section 6: Linear Relations

The Taxi Example	Setup Equations Graph Equations
The Elastic Example	Setup Equations Graph
Lightning Example	Setup Equations Graph
Baseball Example	Setup Equations Graph

(B) determine the domain and range for linear functions in given situations; and

Understanding Graphing 2008

Notes

Section 5 : Relations, Equations and Functions

Relations	What is a Relation? Domain and Range Example 1: Triangle- Display the Relation
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(C) use, translate, and make connections among algebraic, tabular, graphical, or verbal descriptions of linear functions.

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Section 6: Linear Relations

The Taxi Example	Setup Equations Graph Equations
The Elastic Example	Setup Equations

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Lightning Example	Graph Setup Equations	Notes
Baseball Example	Graph Setup Equations Graph	
Understanding Algebra 2008 Section 3: Patterns, Patterns, Patterns Patterns to Formulas	Example 1 Example 4 Example 5	

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(6) The student understands the meaning of the slope and intercepts of the graphs of linear functions and zeros of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations. The student is expected to:

(A) develop the concept of slope as rate of change and determine slopes from graphs, tables, and algebraic representations;

Understanding Graphing 2008		Notes
Section 7: Slope of a Line		
Introductions to Slope	Slope When Driving A Ski Slope Slope of a Roof	
Slope	Order Steepness Factor Definition	
Introductory Examples	Example 1 Example 2 Example 3 Example 4	
Formula		
Parallel Lines	Introduction Example 1 Example 2 Example 3	
Perpendicular Lines	Introduction Example 1 Example 2 Example 3	
Positive and negative Slope	Example 1 Example 2 Example 3 Example 4	
Special Slopes	Pattern Example 1 Example 2 Example 3 Example 4 Pattern	

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Sketch Line, Given Point and Slope	Example 1 Example 2 Example 3 Example 4	Notes
Understanding Graphing 2008 Section 8: Equation of a Straight Line	Example 1 Example 2 Example 3 Example 4 Patterns to Summary Example 5 Example 6 Example 7 Example 8	
Graph $y = mx + b$	Concept Example 1 Example 2 Example 3 Example 4	Notes
Slope, Y-intercept Equations	Concept Example 1 Example 2 Example 3 Example 4	
Exercise: Slope, Y-intercept	Concept Example 1 Example 2 Example 3 Example 4	
Understanding Algebra 2008 Section 3: Patterns, Patterns, Patterns	Example 1 Example 4 Example 5	
Patterns to Formulas		

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(B) interpret the meaning of slope and intercepts in situations using data, symbolic representations, or graphs;		
Understanding Graphing 2008		Notes
Section 6: Linear Relations		
The Taxi Example	Setup Equations Graph Equations	
The Elastic Example	Setup Equations Graph	
Lightning Example	Setup Equations Graph	
Understanding Graphing 2008		Notes
Section 8: Equation of a Straight Line		
Slope, Y-intercept Equations	Concept Example 1 Example 2 Example 3 Example 4	
Exercise: Slope, Y-intercept	Concept Example 1 Example 2 Example 3 Example 4	
Word Problems-Applications	The Taxi - Case 1- Task 1: Find the Equation The Taxi - Case 1- Task 2: Graph the Equation The Taxi - Case 1- Task 3: Interpret the Equation The Taxi - Case 2- Task 1: Find the Equation The Taxi - Case 2- Task 2: Graph the Equation The Taxi - Case 2- Task 3: Interpret the Equation The Taxi - Summary The Walker The Basketball	

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(C) investigate, describe, and predict the effects of changes in m and b on the graph of $y = mx + b$;			Notes
Understanding Graphing 2008 Section 8: Equation of a Straight Line Exercise: Slope, Y-intercept	Concept		
(D) graph and write equations of lines given characteristics such as two points, a point and a slope, or a slope and y intercept;			Notes
Understanding Graphing 2008 Section 8: Equation of a Straight Line Slope, Y-intercept Equations	Concept Example 1 Example 2 Example 3 Example 4		
Exercise: Slope, Y-intercept	Concept Example 1 Example 2 Example 3 Example 4		
Slope-Point Form of the Equation	Example 1- Solution 1 Example 1- Solution 2 Example 2- Solution 1 Example 2- Solution 2 Example 2- Solution 3 Example 2- Solution 4		
(E) determine the intercepts of the graphs of linear functions and zeros of linear functions from graphs, tables, and algebraic representations;			Notes
Understanding Graphing 2008 Section 8: Equation of a Straight Line Graph $y = mx + b$	Example 1 Example 2 Example 3		

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Slope, Y-intercept Equations	Example 4 Patterns to Summary Example 5 Example 6 Example 7 Example 8 Concept Example 1 Example 2 Example 3 Example 4	
Exercise: Slope, Y-intercept	Concept Example 1 Example 2 Example 3 Example 4	
Word Problems-Applications	The Taxi - Case 1- Task 1: Find the Equation The Taxi - Case 1- Task 2: Graph the Equation The Taxi - Case 1- Task 3: Interpret the Equation The Taxi - Case 2- Task 1: Find the Equation The Taxi - Case 2- Task 2: Graph the Equation The Taxi - Case 2- Task 3: Interpret the Equation The Taxi - Summary The Walker	
(F) interpret and predict the effects of changing slope and y-intercept in applied situations; and		
Understanding Graphing 2008 Section 8: Equation of a Straight Line Slope, Y-intercept Equations	Concept	Notes

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(G) relate direct variation to linear functions and solve problems involving proportional change.

Understanding Graphing 2008

Section 6: Linear Relations

The Taxi Example

Setup Equations

Graph Equations

The Elastic Example

Setup Equations

Graph

Lightning Example

Setup Equations

Graph

Notes

Understanding Graphing 2008

Section 8: Equation of a Straight Line

Word Problems-Applications

The Taxi - Case 1- Task 1: Find the Equation

The Taxi - Case 1- Task 2: Graph the Equation

The Taxi - Case 1- Task 3: Interpret the Equation

The Taxi - Case 2- Task 1: Find the Equation

The Taxi - Case 2- Task 2: Graph the Equation

The Taxi - Case 2- Task 3: Interpret the Equation

The Taxi - Summary

The Walker

Notes

**Correlation of the Understanding Math 2008© Programs
With the Texas Essential Knowledge and Skills For Mathematics
Algebra 1**

(7) The student formulates equations and inequalities based on linear functions, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation. The student is expected to:

(A) analyze situations involving linear functions and formulate linear equations or inequalities to solve problems;

Understanding Graphing 2008		Notes
Section 5 : Relations, Equations and Functions		
Relations	Example 2: Tiles, Part 1	
Understanding Graphing 2008		Notes
Section 6: Linear Relations		
The Taxi Example	Setup Equations	
The Elastic Example	Setup Equations	
Lightning Example	Setup Equations	
Understanding Graphing 2008		Notes
Section 8: Equation of a Straight Line		
Word Problems-Applications	The Taxi - Case 1- Task 1: Find the Equation	
	The Taxi - Case 2- Task 1: Find the Equation	
Understanding Algebra 2008		Notes
Section 3: Patterns, Patterns, Patterns		
Patterns to Formulas	Example 1	
	Example 3	
	Example 4	
	Example 5	

(B) investigate methods for solving linear equations and inequalities using concrete models, graphs, and the properties of equality, select a method, and solve the equations and inequalities; and

Understanding Graphing 2008		Notes
Section 6: Linear Relations		
The Taxi Example	Graph Equations	
The Elastic Example	Setup Equations	
	Graph	
Lightning Example	Setup Equations	
	Graph	
Baseball Example	Setup Equations	

**Correlation of the Understanding Math 2008© Programs
With the Texas Essential Knowledge and Skills For Mathematics
Algebra 1**

Understanding Graphing 2008	Notes
Section 8: Equation of a Straight Line	
Graph $y = mx + b$	Example 1 Example 2 Example 3 Example 4 Patterns to Summary
Slope, Y-intercept Equations	Example 5 Example 6 Example 7 Example 8 Concept Example 1 Example 2 Example 3 Example 4
Exercise: Slope, Y-intercept	Concept Example 1 Example 2 Example 3
Slope-Point Form of the Equation	Example 1- Solution 1 Example 1- Solution 2 Example 2- Solution 1 Example 2- Solution 2 Example 2- Solution 3 Example 2- Solution 4
Word Problems-Applications	The Taxi - Case 1- Task 1: Find the Equation The Taxi - Case 1- Task 2: Graph the Equation The Taxi - Case 1- Task 3: Interpret the Equation The Taxi - Case 2- Task 1: Find the Equation The Taxi - Case 2- Task 2: Graph the Equation The Taxi - Case 2- Task 3: Interpret the Equation The Taxi - Summary The Walker

**Correlation of the Understanding Math 2008© Programs
 With the Texas Essential Knowledge and Skills For Mathematics
 Algebra 1**

Understanding Equations 2008		Notes
Section 7: Solving Inequalities		
Inequalities	What Are They? Inequalities vs. Equations Summary of Relationships	
Inequalities on a Number Line	Example 1 Example 2 Example 3 Example 4	
Solving Inequalities	Example 1 Example 2 Example 3 Example 4 Example 5 Example 6	
Solving Compound Inequalities	Example 1 Example 2	
Graphing Linear Inequalities in Two Variables	Concept 1 Concept 2 Example 1 Example 2 Example 3	
(C) interpret and determine the reasonableness of solutions to linear equations and inequalities.		
Understanding Graphing 2008		Notes
Section 8: Equation of a Straight Line		
Graph $y = mx + b$	Example 1 Example 2 Example 3 Example 4 Patterns to Summary Example 5 Example 6 Example 7 Example 8	

**Correlation of the Understanding Math 2008© Programs
 With the Texas Essential Knowledge and Skills For Mathematics
 Algebra 1**

Slope, Y-intercept Equations	Concept Example 1 Example 2 Example 3 Example 4
Exercise: Slope, Y-intercept	Concept Example 1 Example 2 Example 3 Example 4
Slope-Point Form of the Equation	Example 1- Solution 1 Example 1- Solution 2 Example 2- Solution 1 Example 2- Solution 2 Example 2- Solution 3 Example 2- Solution 4
Word Problems-Applications	The Taxi - Case 1- Task 1: Find the Equation The Taxi - Case 1- Task 2: Graph the Equation The Taxi - Case 1- Task 3: Interpret the Equation The Taxi - Case 2- Task 1: Find the Equation The Taxi - Case 2- Task 2: Graph the Equation The Taxi - Case 2- Task 3: Interpret the Equation The Taxi - Summary The Walker
Match: Graph, Equation, Points, Story (randomly generated)	

**Correlation of the Understanding Math 2008© Programs
With the Texas Essential Knowledge and Skills For Mathematics
Algebra 1**

(8) The student formulates systems of linear equations from problem situations, uses a variety of methods to solve them, and analyzes the solutions in terms of the situation. The student is expected to:

(A) analyze situations and formulate systems of linear equations in two unknowns to solve problems;

Understanding Equations 2008

Notes

Section 6: Solving Linear Systems

About This Topic

The Meaning of a Linear System

The Meaning of Solving a Linear System

Solving a Linear System by Graphing

Example 2: Intersecting Lines

(B) solve systems of linear equations using concrete models, graphs, tables, and algebraic methods; and

Understanding Equations 2008

Notes

Section 6: Solving Linear Systems

Solving a Linear System by Graphing

Example 1: Intersecting Lines

Example 2: Intersecting Lines

Example 3: Intersecting Lines Involving Fractions

Example 4: Intersecting Lines Involving Fractions

Example 5: Parallel Lines

Example 6: Coincidental Lines

Solving a Linear System by Substitution

Example 1: Intersecting Lines

Example 2: Intersecting Lines

Example 3: Intersecting Lines Involving Fractions

Example 4: Intersecting Lines Involving Fractions

Example 5: Parallel Lines

Example 6: Coincidental Lines

Solving a Linear System by Elimination

Example 1: Intersecting Lines

Example 2: Intersecting Lines

Example 3: Intersecting Lines Involving Fractions

Example 4: Intersecting Lines Involving Fractions

Example 5: Parallel Lines

Example 6: Coincidental Lines

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

Algebra 1

Solving a Linear System by Comparison	Example 1: Intersecting Lines Example 2: Intersecting Lines Example 3: Intersecting Lines Involving Fractions Example 4: Intersecting Lines Involving Fractions Example 5: Parallel Lines Example 6: Coincidental Lines
Solving Problems Using Linear Systems	Example 1- Beginning of Question Example 1- Draw Graph Example 2- Beginning of Question Example 2- Draw Graph
Practice Questions	10 questions (randomly generated)

(C) interpret and determine the reasonableness of solutions to systems of linear equations.

Understanding Equations 2008	Notes
Section 6: Solving Linear Systems	
About This Topic	
The Meaning of a Linear System	
The Meaning of Solving a Linear System	
Solving a Linear System by Graphing	Example 1: Intersecting Lines Example 2: Intersecting Lines Example 3: Intersecting Lines Involving Fractions Example 4: Intersecting Lines Involving Fractions Example 5: Parallel Lines Example 6: Coincidental Lines
Solving a Linear System by Substitution	Example 1: Intersecting Lines Example 2: Intersecting Lines Example 3: Intersecting Lines Involving Fractions Example 4: Intersecting Lines Involving Fractions Example 5: Parallel Lines Example 6: Coincidental Lines
Solving a Linear System by Elimination	Example 1: Intersecting Lines Example 2: Intersecting Lines

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

Algebra 1

Solving a Linear System by Comparison	Example 3: Intersecting Lines Involving Fractions Example 4: Intersecting Lines Involving Fractions Example 5: Parallel Lines Example 6: Coincidental Lines
Solving Problems Using Linear Systems	Example 1: Intersecting Lines Example 2: Intersecting Lines Example 3: Intersecting Lines Involving Fractions Example 4: Intersecting Lines Involving Fractions Example 5: Parallel Lines Example 6: Coincidental Lines Example 1- Beginning of Question Example 1- Draw Graph Example 2- Beginning of Question Example 2- Draw Graph
Practice Questions	10 questions (randomly generated)

**Correlation of the Understanding Math 2008© Programs
 With the Texas Essential Knowledge and Skills For Mathematics
 Algebra 1**

Algebra I... Quadratic and other nonlinear functions

(9) The student understands that the graphs of quadratic functions are affected by the parameters of the function and can interpret and describe the effects of changes in the parameters of quadratic functions. The student is expected to:

(A) determine the domain and range for quadratic functions in given situations;

Understanding Graphing 2008

Section 5 : Relations, Equations and Functions

Relations	Domain and Range
Functions	What is a Function?
	Example 1
	Example 2
	Example 3
Vertical Line Test	Example 1
	Example 2
	Example 3

Notes

Understanding Graphing 2008

Section 9: Quadratic Function

Introductory Examples	Example 1
	Example 2
	Summary- Example 1
	Summary- Example 2
Definitions	Parabolas
	Quadratic Functions

Notes

(B) investigate, describe, and predict the effects of changes in a on the graph of $y = ax^2 + c$;

Understanding Graphing 2008

Section 9: Quadratic Function

The Role of a	The Plan
	a = 1,2,3
	a = -1,-2,-3
	Parabolas with the Same Width
	Summary

Notes

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

Algebra 1

(C) investigate, describe, and predict the effects of changes in c on the graph of $y = ax^2 + c$; and		Notes
Understanding Graphing 2008 Section 9: Quadratic Function The Role of c		
	The Plan Increase c Summary	
(D) analyze graphs of quadratic functions and draw conclusions.		Notes
Understanding Graphing 2008 Section 9: Quadratic Function Maximize Cage Area Maximize Potato Income Bob's Beach ball Hit the Brakes		
	Conclusions By Quadratic Function: Summary Summary Summary	
<p>(10) The student understands there is more than one way to solve a quadratic equation and solves them using appropriate methods. The student is expected to:</p>		
(A) solve quadratic equations using concrete models, tables, graphs, and algebraic methods;		Notes
Understanding Graphing 2008 Section 9: Quadratic Function Completing the Square - With Tiles		
	Recall - Squaring a Binomial Recall - Factoring a Perfect Square Trinomial Examples- Example 1 Examples- Example 2	
Completing the Square - The Pattern Completing the Square - Examples	Example 1 Example 2	

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Algebra 1

Maximize Potato Income	By Trial and Error By Quadratic Function By Quadratic Function: Graph By Quadratic Function: Summary
Bob's Beach ball	Find Maximum Height Graph Equation Summary
Hit the Brakes	Derive Equation Graph Equation Summary

(11) The student understands there are situations modeled by functions that are neither linear nor quadratic and models the situations. The student is expected to:

(A) use patterns to generate the laws of exponents and apply them in problem-solving situations;

Understanding Exponents 2008

Section 1: The Meaning of Exponents

Notes

Introduction... The Money Game	Money Grab Game Show Graphs... Game Show Results Graphs... Compare The Two Results
Introduction... Bacteria Doubling	
Introduction... Paper Folding	Experiment Pattern
Exponents, Powers, Bases	
Powerful Explosions	
Introductory Examples	Example 1 Example 2 Example 3 Example 4 Example 5

**Correlation of the Understanding Math 2008© Programs
 With the Texas Essential Knowledge and Skills For Mathematics
 Algebra 1**

Examples - Substitution	Example 1 Example 2 Example 3 Example 4	
Examples - Order of Operation	Example 1 Example 2 Example 3	
Practice Questions	10 questions (randomly generated)	
Understanding Exponents 2008 Section 2 : Exponents in Formulas		Notes
The Power Key	An Introduction Power with a Positive Base Power with a Negative Base Adding Two Powers: Long Way Adding Two Powers: Short Way	
An Introduction to Formulas		
Area Formulas Involving Exponents		
Volume Formulas Involving Exponents		
Examples with Area Formulas	Example 1 Example 2 Example 3	
Examples with Volume Formulas	Example 1 Example 2 Example 3	
Practice Questions	5 questions (randomly generated)	
Understanding Exponents 2008 Section 3: Exponent Rules		Notes
In The Topic		
Multiplication of Powers with the Same Base	Expanding the Exponents The Pattern In General	
Division of Powers with the Same Base	Expanding the Exponents The Pattern In General	
Raising a Power to an Exponent	Expanding the Exponents The Pattern	

**Correlation of the Understanding Math 2008© Programs
 With the Texas Essential Knowledge and Skills For Mathematics
 Algebra 1**

Raising a Product to an Exponent	In General Expand the Exponent
A Power with Exponent 0	In General Explanation with b Explanation with a Summary
A Power with a NEGATIVE Exponent	Method 1 - Explanation with b Method 1 - Explanation with k Method - Bacteria Doubling Summary
Summary of Exponent Rules Powers with Rational Bases	Example 1 Example 2 Example 3
Example Questions	In General Example 1 Example 2 Example 3 Example 4 Example 5 Example 6 Example 7 Example 8 Example 9 Example 10 Example 11
Practice Questions	10 questions (randomly generated)
(B) analyze data and represent situations involving inverse variation using concrete models, tables, graphs, or algebraic methods; and	
Not yet correlated	

**Correlation of the Understanding Math 2008© Programs
With the Texas Essential Knowledge and Skills For Mathematics
Algebra 1**

(C) analyze data and represent situations involving exponential growth and decay using concrete models, tables, graphs, or algebraic methods.		
Understanding Percent 2008		Notes
Section 7: Percent in Business		
Compound Interest	What is it? Complete the Table Formula Spreadsheet Interest Calculator Bank Interest Car Depreciation Mortgage	
Understanding Algebra 2008		Notes
Section 4: Patterns, Formulas, Substitution		
Patterns... Tower of Hanoi	Introduction Exploration To Formula Summary	
Understanding Exponents 2008		Notes
Section 1: The Meaning of Exponents		
Introduction... The Money Game	Money Grab Game Show Graphs... Game Show Results Graphs... Compare The Two Results	
Introduction... Bacteria Doubling		
Introduction... Paper Folding	Experiment Pattern	