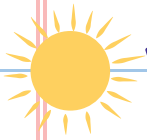# Summer Learning

Algebra 1

The Thinkwell summer learning series takes an entire year's worth of learning materials and makes it available throughout the summer so that your kids can recall what they've learned, catch up on what they haven't, and get prepared for the year ahead.

WHAT YOU'LL GET AND HOW IT WORKS:

- Students get individual logins and work at their own pace.

- Lessons are presented in a sequential order, in small, manageable chunks.

- Students can skip through the content or repeat lessons as many times as they need.

- Practice exercises and tests are automatically graded with step-by-step answer feedback.

- The courses are entirely web-based – no software to download, no CDs and nothing more to purchase.

8-WEEK PLAN FOR ALGEBRA 1

- Week 1 - Foundations for Algebra
- Week 2 - Equations, Proportions, & Percent
- Week 3 - Inequalities & Functions
- Week 4 - Linear Functions & Midterm
- Week 5 - Systems of Equations Inequalities & Exponents
- Week 6 - Polynomials & Factoring Polynomials
- Week 7 - Quadratic Functions and Equations
- Week 8 - Data Analysis and Probability & Final Exam

Algebra 1

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8-WEEK SUMMER LESSON PLAN FOR ALGEBRA 1

WEEK 1 - CHAPTER 1 FOUNDATIONS FOR ALGEBRA

Chapter 1 Pre-Test

FAST-TRACK IDEA! TAKE THE PRE-TEST LIKE A DIAGNOSTIC AND ONLY VIEW THE TOPICS YOU NEED TO BASED ON THE QUESTIONS YOU MISSED!

1.1 The Language of Algebra
- 1.1.1 Variables and Expressions
- 1.1.2 Adding and Subtracting Real Numbers
- 1.1.3 Multiplying and Dividing Real Numbers
- 1.1.4 Powers and Exponents
- 1.1.5 Square Roots and Real Numbers

1.2 Tools of Algebra
- 1.2.1 Set Theory
- 1.2.2 Order of Operations
- 1.2.3 Simplifying Expressions
- 1.2.4 Introduction to Functions
- Chapter 1 Test

WEEK 2 - CHAPTER 2 EQUATIONS, PROPORTIONS, AND PERCENT

Chapter 2 Pre-Test

2.1 Solving Equations
- 2.1.1 Addition and Subtraction Equations
- 2.1.2 Multiplication and Division Equations
- 2.1.3 Solving Two-Step Equations
- 2.1.4 Solving Multi-Step Equations
- 2.1.5 Solving Equations w/ Variables on Both Sides

2.2 Proportion and Percent
- 2.2.1 Rates, Ratios, and Proportions
- 2.2.2 Applications of Proportion
- 2.2.3 Percents
- 2.2.4 Applications of Percent
- 2.2.5 Percent Increase and Decrease
- Chapter 2 Test

WEEK 3 - CHAPTERS 3 INEQUALITIES & CHAPTER 4 FUNCTIONS

Chapter 3 Pre-Test

3.1 Introduction to Inequalities
- 3.1.1 Graphing and Writing Inequalities
- 3.1.2 Solving Inequalities by Adding or Subtracting
- 3.1.3 Solving Inequalities by Multiplying or Dividing

3.2 Multi-Step and Compound Inequalities
- 3.2.1 Solving Two-Step and Multi-Step Inequalities
- 3.2.2 Solving Inequalities w/ Variables on Both Sides
- 3.2.3 Solving Compound Inequalities
- Chapter 3 Test

Chapter 4 Pre-Test

4.1 Introduction to Functions
- 4.1.1 Graphing Relationships
- 4.1.2 Relations and Functions
- 4.1.3 Writing Function Rules

4.2 Applying Functions
- 4.2.1 Graphing Functions
- 4.2.2 Scatter Plots and Trend Lines
- Chapter 4 Test

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8-WEEK SUMMER LESSON PLAN FOR ALGEBRA 1

WEEK 4: CHAPTER 5 LINEAR FUNCTIONS & MIDTERM

Chapter 5 Pre-Test
5.1 Characteristics of Linear Functions
     5.1.1   Identifying Linear Functions
     5.1.2   Using Intercepts
     5.1.3   Rate of Change and Slope
     5.1.4   The Slope Formula

5.2 Using Linear Functions
     5.2.1   Slope-Intercept Form
     5.2.2   Point-Slope Form
     5.2.3   Slopes of Parallel and Perpendicular Lines
     5.2.4   Transforming Linear Functions
     Chapter 5 Test

Practice Midterm & Midterm

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WEEK 5 – CHAPTER 6 SYSTEMS OF EQUATIONS AND INEQUALITIES & 7.1 EXPONENTS

Chapter 6 Pre-Test
6.1 Systems of Linear Equations
     6.1.1   Solving Systems by Graphing
     6.1.2   Solving Systems by Substitution
     6.1.3   Solving Systems by Elimination
     6.1.4   Solving Special Systems
     6.1.5   Applying Systems
6.2 Linear Inequalities
     6.2.1   Graphing Linear Inequalities
     6.2.2   Solving Systems of Linear Inequalities
     Chapter 6 Test

Chapter 7 Pre-Test
7.1 Exponents
     7.1.1   Product & Power Properties of Exponents
     7.1.2   Integer Exponents
     7.1.3   Quotient Properties of Exponents
     7.1.4   An Application of Exponents: Scientific Notation

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WEEK 6 – SUBCHAPTER 7.2 POLYNOMIALS & CHAPTER 8 FACTORING POLYNOMIALS

7.2 Polynomials
     7.2.1   Polynomials
     7.2.2   Adding and Subtracting Polynomials
     7.2.3   Multiplying Polynomials by Monomials
     7.2.4   Multiplying Binomials
     Chapter 7 Test

Chapter 8 Pre-Test
8.1 Factoring Methods
     8.1.1   Factors and Greatest Common Factors
     8.1.2   Factoring by GCF
     8.1.3   Factoring $x^2 + bx + c$
     8.1.4   Factoring $ax^2 + bx + c$
8.2 Applying Factoring Methods
     8.2.1   Factoring Special Products
     8.2.2   Choosing a Factoring Method
     Chapter 8 Test

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WEEK 7 – CHAPTER 9 QUADRATIC FUNCTIONS AND EQUATIONS

Chapter 9 Pre-Test

9.1 Quadratic Functions
- 9.1.1 Identifying Quadratic Functions
- 9.1.2 Characteristics of Quadratic Functions
- 9.1.3 Graphing Quadratic Functions
- 9.1.4 Transforming Quadratic Functions

9.2 Solving Quadratic Equations
- 9.2.1 Solving Quadratic Equations by Graphing
- 9.2.2 Solving Quadratic Equations by Factoring
- 9.2.3 Solving Quadratic Equations by Using Square Roots

- 9.2.4 Completing the Square
- 9.2.5 The Quadratic Formula
- 9.2.6 The Discriminant

Chapter 9 Test

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WEEK 8 – CHAPTER 10 DATA ANALYSIS AND PROBABILITY & FINAL EXAM

Chapter 10 Pre-Test

10.1 Probability
- 10.1.1 Experimental Probability
- 10.1.2 Theoretical Probability
- 10.1.3 Independent and Dependent Events
- 10.1.4 Combinations and Permutations

10.2 Data Analysis
- 10.2.1 Bar, Circle, and Line Graphs
- 10.2.2 Stem-and-Leaf Plots and Histograms
- 10.2.3 Mean, Median, Mode, and Range
- 10.2.4 Box-and-Whisker Plots

Chapter 10 Test

Practice Final & Final Exam

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Call or email Thinkwell technical support at any time.
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