



IXL Skill Alignment

Algebra 2 alignment for CPM Core Connections



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Chapter 1

Investigations and Functions

Section 1.1

Textbook section	IXL skills
1.1.1: Solving Puzzles in Teams	Evaluate variable expressions <ol style="list-style-type: none">Evaluate variable expressions involving integers T9JEvaluate variable expressions involving rational numbers JDV Evaluate functions <ol style="list-style-type: none">Evaluate functions PS2 Graph linear functions <ol style="list-style-type: none">Graph a linear function LSG
1.1.2: Using a Graphing Calculator to Explore a Function	<ol style="list-style-type: none">Complete a table for a function graph W5Z
1.1.3: Domain and Range	Domain and range of discrete relations <ol style="list-style-type: none">Domain and range 78A Domain and range of functions <ol style="list-style-type: none">Domain and range of absolute value functions: graphs Y8CDomain and range of polynomials Y86Domain and range of radical functions HR9Domain and range of exponential and logarithmic functions GLL
1.1.4: Points of Intersection in Multiple Representations	<ol style="list-style-type: none">Solve a system of linear and quadratic equations: parabolas HVZ

Section 1.2

Textbook section	IXL skills
1.2.1: Modeling a Geometric Relationship	1. Find values using function graphs FS8
1.2.2: Function Investigation	
1.2.3: The Family of Linear Functions	1. Transformations of linear functions C8G
1.2.4: Function Investigation Challenge	

Chapter 2

Transformations of Parent Graphs

Section 2.1

Textbook section	IXL skills
2.1.1: Modeling Non-Linear Data	
2.1.2: Parabola Investigation	1. Characteristics of quadratic functions: graphs WMS 2. Transformations of quadratic functions KQL
2.1.3: Graphing a Parabola Without a Table	1. Graph quadratic functions in vertex form B83
2.1.4: Rewriting in Graphing Form	Complete the square 1. Complete the square 9MW Graphs of quadratic functions 2. Graph a quadratic function S9G 3. Match quadratic functions and graphs QCE
2.1.5: Mathematical Modeling with Parabolas	1. Write a quadratic function from its zeroes G2Q 2. Write a quadratic function from its vertex and another point URV

Section 2.2

Textbook section	IXL skills
2.2.1: Transforming Other Parent Graphs	1. Transformations of absolute value functions FYJ 2. Function transformation rules R7X 3. Translations of functions F6J 4. Reflections of functions PHV 5. Dilations of functions NNY
2.2.2: Describing (h, k) for Each Family of Functions	1. Transformations of functions RSN
2.2.3: Transformations of Functions	1. Describe function transformations KT8

2.2.4: Transformations of Non-Functions

1. Find the center of a circle U6E
2. Find the radius or diameter of a circle 5Q2
3. Write equations of circles in standard form from graphs ZLA
4. Write equations of circles in standard form using properties SHN
5. Graph circles 2PL

2.2.5: Transforming Piecewise-Defined Functions

Chapter 3

Equivalent Forms

Section 3.1

Textbook section	IXL skills
3.1.1: Equivalent Expressions	<p>Factor a GCF</p> <ol style="list-style-type: none"> Factor out a monomial NMZ <p>Factor quadratics</p> <ol style="list-style-type: none"> Factor quadratics UB5 <p>Factor polynomials</p> <ol style="list-style-type: none"> Factor using a quadratic pattern QKF Factor by grouping HVT Factor polynomials A2W <p>Simplify radical expressions</p> <ol style="list-style-type: none"> Simplify radical expressions with variables I LQX Simplify radical expressions with variables II QGZ <p>Simplify exponential expressions</p> <ol style="list-style-type: none"> Identify equivalent expressions involving exponents I EUF Identify equivalent expressions involving exponents II RKA
3.1.2: Rewriting Expressions and Determining Equivalence	<ol style="list-style-type: none"> Factor quadratics using algebra tiles RHD
3.1.3: Solve by Rewriting	<p>Solve a linear equation for y</p> <ol style="list-style-type: none"> Linear equations: solve for y T5F <p>Solve quadratic equations</p> <ol style="list-style-type: none"> Solve a quadratic equation using the zero product property TRU Solve a quadratic equation by factoring CJC

Section 3.2

Textbook section	IXL skills
3.2.1: Investigating Rational Functions	1. Rational functions: asymptotes and excluded values 7JJ
3.2.2: Simplifying Rational Expressions	1. Simplify rational expressions 37N
3.2.3: Multiplying and Dividing Rational Expressions	1. Multiply and divide rational expressions MG2
3.2.4: Adding and Subtracting Rational Expressions	1. Add and subtract rational expressions FEX
3.2.5: Creating New Functions	1. Add and subtract functions QQD 2. Multiply functions 49K 3. Divide functions 9PH

Chapter 4

Solving and Intersections

Section 4.1

Textbook section	IXL skills
4.1.1: Strategies for Solving Equations	
4.1.2: Solving Equations and Systems Graphically	<ol style="list-style-type: none"> 1. Solve a system of equations by graphing M69 2. Solve radical equations EHE
4.1.3: Finding Multiple Solutions to Systems of Equations	<p>Number of solutions</p> <ol style="list-style-type: none"> 1. Find the number of solutions to a system of equations P5A <p>Solve systems of linear equations</p> <ol style="list-style-type: none"> 2. Solve a system of equations using substitution BW5 3. Solve a system of equations using elimination 2CN 4. Solve a system of equations using any method FT6 <p>Solve systems of linear and quadratic equations</p> <ol style="list-style-type: none"> 5. Solve a system of linear and quadratic equations: parabolas HVZ
4.1.4: Using Systems of Equations to Solve Problems	<ol style="list-style-type: none"> 1. Solve a system of equations by graphing: word problems T86 2. Solve a system of equations using substitution: word problems DKW 3. Solve a system of equations using elimination: word problems ARY 4. Solve a system of equations using any method: word problems ELG

Section 4.2

Textbook section	IXL skills
<p>4.2.1: Solving Inequalities with One or Two Variables</p>	<p>One-variable inequalities</p> <ol style="list-style-type: none"> Solve linear inequalities 98Z Graph solutions to linear inequalities 2H4 <p>Absolute value inequalities</p> <ol style="list-style-type: none"> Solve absolute value inequalities UKU Graph solutions to absolute value inequalities G85 <p>Two-variable inequalities</p> <ol style="list-style-type: none"> Graph a two-variable linear inequality RWU Graph solutions to two-variable absolute value inequalities QYX <p>Quadratic inequalities</p> <ol style="list-style-type: none"> Graph solutions to quadratic inequalities DP9 Solve quadratic inequalities 56V
<p>4.2.2: Use Systems to Solve a Problem</p>	<ol style="list-style-type: none"> Solve systems of linear inequalities by graphing U5D Solve systems of linear and absolute value inequalities by graphing 47Y
<p>4.2.3: Application of Systems of Linear Inequalities</p>	<ol style="list-style-type: none"> Find the vertices of a solution set FRG Linear programming AY7
<p>4.2.4: Using Graphs to Find Solutions</p>	<ol style="list-style-type: none"> Is (x, y) a solution to the system of inequalities? RFY

Chapter 5

Inverses and Logarithms

Section 5.1

Textbook section	IXL skills
5.1.1: "Undo" Equations	<ol style="list-style-type: none"> 1. Solve linear equations SNN 2. Solve equations: complete the solution N83 3. Solve multi-variable equations LZD
5.1.2: Using a Graph to Find an Inverse	<ol style="list-style-type: none"> 1. Find values of inverse functions from graphs Z5C
5.1.3: Finding Inverses and Justifying Algebraically	<ol style="list-style-type: none"> 1. Find values of inverse functions from tables YLX 2. Identify inverse functions 9KT 3. Find inverse functions and relations ZRQ

Section 5.2

Textbook section	IXL skills
5.2.1: Finding the Inverse of an Exponential Function	<ol style="list-style-type: none"> 1. Evaluate logarithms GBR
5.2.2: Defining the Inverse of an Exponential Function	<ol style="list-style-type: none"> 1. Convert between exponential and logarithmic form: rational bases TPA
5.2.3: Investigating the Family of Logarithmic Functions	
5.2.4: Transformations of Logarithmic Functions	<ol style="list-style-type: none"> 1. Evaluate logarithms using a calculator TDF
5.2.5: Investigating Compositions of Functions	<ol style="list-style-type: none"> 1. Composition of linear functions: find a value MFV 2. Composition of linear functions: find an equation RSP 3. Composition of linear and quadratic functions: find a value P9T 4. Composition of linear and quadratic functions: find an equation EKJ

Chapter 6

3-D Graphing and Logarithms

Section 6.1

Textbook section	IXL skills
6.1.1: Creating a Three-Dimensional Model	
6.1.2: Graphing Equations in Three Dimensions	
6.1.3: Systems of Three-Variable Equations	
6.1.4: Solving Systems of Three Equations with Three Unknowns	<ol style="list-style-type: none"> 1. Solve a system of equations in three variables using substitution X8H 2. Solve a system of equations in three variables using elimination 9S5 3. Determine the number of solutions to a system of equations in three variables XAX
6.1.5: Using Systems of Three Equations for Curve Fitting	

Section 6.2

Textbook section	IXL skills
6.2.1: Using Logarithms to Solve Exponential Equations	<ol style="list-style-type: none"> 1. Solve exponential equations using common logarithms 9F2
6.2.2: Investigating the Properties of Logarithms	<ol style="list-style-type: none"> 1. Identify properties of logarithms N59 2. Product property of logarithms CW9 3. Quotient property of logarithms ZNT 4. Power property of logarithms 7T3 5. Properties of logarithms: mixed review 5LL 6. Evaluate logarithms using properties RNH
6.2.3: Writing Equations of Exponential Functions	<ol style="list-style-type: none"> 1. Exponential growth and decay: word problems TYQ 2. Compound interest: word problems YJW



6.2.4: An Application of Logarithms

Chapter 7

Trigonometric Functions

Section 7.1

Textbook section	IXL skills
7.1.1: Introduction to Cyclic Models	
7.1.2: Graphing the Sine Function	1. Special right triangles NUF
7.1.3: Unit Circle Graph	1. Find trigonometric ratios using the unit circle ZF7
7.1.4: Graphing and Interpreting the Cosine Function	1. Pythagorean Theorem and its converse JZF
7.1.5: Defining a Radian	1. Radians and arc length UA5
7.1.6: Building a Unit Circle	1. Sin, cos, and tan of special angles 6H8 2. Reference angles BRP
7.1.7: The Tangent Function	

Section 7.2

Textbook section	IXL skills
7.2.1: Transformations of $y = \sin x$	<p>Sine functions</p> <ol style="list-style-type: none"> Graph sine functions 9NS Graph translations of sine functions LCN <p>Cosine functions</p> <ol style="list-style-type: none"> Graph cosine functions KXG Graph translations of cosine functions M5K <p>Sine and cosine functions</p> <ol style="list-style-type: none"> Graph sine and cosine functions A7V Graph translations of sine and cosine functions 9D7

7.2.2: One More Parameter for a Cyclic Function

7.2.3: Period of a Cyclic Function**Sine functions**

1. Find properties of sine functions 2EK
2. Write equations of sine functions using properties JDH

Cosine functions

3. Find properties of cosine functions F8Y
 4. Write equations of cosine functions using properties N6X
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7.2.4: Graph Equation

1. Write equations of sine functions from graphs FGW
 2. Write equations of cosine functions from graphs 4G8
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Chapter 8

Polynomials

Section 8.1

Textbook section	IXL skills
8.1.1: Sketching Graphs of Polynomial Functions	1. Polynomial vocabulary <small>DYB</small> 2. Find the roots of factored polynomials <small>PVM</small>
8.1.2: More Graphs of Polynomials	
8.1.3: Stretch Factors for Polynomial Functions	1. Match polynomials and graphs <small>XJU</small>

Section 8.2

Textbook section	IXL skills
8.2.1: Introducing Imaginary Numbers	<p>Complex numbers</p> 1. Introduction to complex numbers <small>5VV</small> 2. Add and subtract complex numbers <small>JVF</small>
	<p>Solve quadratic equations</p> 3. Solve a quadratic equation using square roots <small>FG7</small>
8.2.2: Complex Roots	<p>Powers of i</p> 1. Powers of i <small>EUT</small>
	<p>Multiply complex numbers</p> 2. Complex conjugates <small>7U5</small> 3. Multiply complex numbers <small>VZ8</small>
	<p>Write a function from its roots</p> 4. Write a polynomial from its roots <small>BTU</small>
8.2.3: More Complex Numbers and Equations	<p>Complex plane</p> 1. Absolute values of complex numbers <small>UJS</small> 2. Introduction to the complex plane <small>J8S</small> 3. Graph complex numbers <small>ABL</small>

Roots of polynomials

4. Fundamental Theorem of Algebra YS8

Section 8.3

Textbook section	IXL skills
8.3.1: Polynomial Division	1. Divide polynomials using long division YN5
8.3.2: Factors and Integral Roots	1. Factor polynomials A2W 2. Solve polynomial equations ZCH
8.3.3: An Application of Polynomials	1. Factor sums and differences of cubes NJV

Chapter 9

Randomization and Normal Distributions

Section 9.1

Textbook section	IXL skills
9.1.1: Survey Design	1. Identify biased samples CH7
9.1.2: Samples and the Role of Randomness	
9.1.3: Bias in Convenience Samples	

Section 9.2

Textbook section	IXL skills
9.2.1: Testing Cause and Effect with Experiments	1. Experiment design BKR
9.2.2: Conclusions From Studies	

Section 9.3

Textbook section	IXL skills
9.3.1: Relative Frequency Histograms	1. Variance and standard deviation V5H 2. Identify an outlier TMV 3. Identify an outlier and describe the effect of removing it NRJ
9.3.2: The Normal Probability Density Function	1. Find probabilities using the normal distribution I QA9 2. Find probabilities using the normal distribution II 6M9 3. Find values of normal variables 9B3 4. Distributions of sample means 7YZ
9.3.3: Percentiles	

Chapter 10

Series

Section 10.1

Textbook section	IXL skills
10.1.1: Introduction to Arithmetic Series	
10.1.2: More Arithmetic Series	1. Find the sum of an arithmetic series W6A 2. Identify arithmetic and geometric series HS9
10.1.3: General Arithmetic Series	
10.1.4: Summation Notation and Combinations of Series	1. Introduction to sigma notation DHQ

Section 10.2

Textbook section	IXL skills
10.2.1: Geometric Series	1. Find the sum of a finite geometric series 9KQ
10.2.2: Infinite Series	1. Find the value of an infinite geometric series ZVH

Section 10.3

Textbook section	IXL skills
10.3.1: Pascal's Triangle and the Binomial Theorem	<p>Pascal's triangle</p> 1. Pascal's triangle G7Y 2. Pascal's triangle and the Binomial Theorem A7M
	<p>Binomial Theorem</p> 3. Binomial Theorem I CWS 4. Binomial Theorem II NEU
	<p>Combinations and permutations</p> 5. Combinations and permutations UAB



10.3.2: The Number e

1. Continuously compounded interest: word problems 5GU
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Chapter 11

Simulating Sampling Variability

Section 11.1

Textbook section	IXL skills
11.1.1: Simulations of Probability	Basic probability <ol style="list-style-type: none"> 1. Introduction to probability 9QC 2. Calculate probabilities of events QRS Conditional probability <ol style="list-style-type: none"> 3. Find conditional probabilities 2M4 4. Find conditional probabilities using two-way frequency tables HGC
11.1.2: More Simulations of Probability	
11.1.3: Simulating Sampling Variability	

Section 11.2

Textbook section	IXL skills
11.2.1: Statistical Test Using Sampling Variability	
11.2.2: Variability in Experimental Results	
11.2.3: Quality Control	
11.2.4: Statistical Process Control	

Section 11.3

Textbook section	IXL skills
11.3.1: Analyzing Decisions and Strategies	<ol style="list-style-type: none"> 1. Analyze the results of an experiment using simulations RLB

Chapter 12

Analytic Trigonometry

Section 12.1

Textbook section	IXL skills
12.1.1: Analyzing Trigonometric Equations	
12.1.2: Solutions to Trigonometric Equations	
12.1.3: Inverses of Trigonometric Functions	1. Inverses of sin, cos, and tan JVB
12.1.4: Reciprocal Trigonometric Functions	Inverses of reciprocal functions 1. Inverses of csc, sec, and cot NJD Solve trigonometric equations 2. Solve trigonometric equations I CQB 3. Solve trigonometric equations II SNX

Section 12.2

Textbook section	IXL skills
12.2.1: Trigonometric Identities	1. Trigonometric identities I XJJ 2. Trigonometric identities II F8F
12.2.2: Proving Trigonometric Identities	
12.2.3: Angle Sum and Difference Identities	

Appendix A

Sequences

Section A.1

Textbook section	IXL skills
A.1.1: Representing Exponential Growth	1. Evaluate an exponential function D6H
A.1.2: Rebound Ratios	
A.1.3: The Bouncing Ball and Exponential Decay	1. Identify independent and dependent variables N55

Section A.2

Textbook section	IXL skills
A.2.1: Generating and Investigating Sequences	1. Find terms of an arithmetic sequence C8R 2. Find terms of a geometric sequence BHV
A.2.2: Generalizing Arithmetic Sequences	1. Identify arithmetic and geometric sequences X76 2. Evaluate variable expressions for number sequences PMN 3. Write variable expressions for arithmetic sequences 5VF
A.2.3: Recursive Sequences	

Section A.3

Textbook section	IXL skills
A.3.1: Patterns of Growth in Tables and Graphs	1. Identify linear functions from tables F5G 2. Identify linear and exponential functions from tables LZF
A.3.2: Using Multipliers to Solve Problems	1. Write variable expressions for geometric sequences XPC 2. Evaluate recursive formulas for sequences 9YD

3. Write a formula for a recursive sequence KP9

A.3.3: Comparing Sequences to Functions

Appendix B

Exponential Functions

Section B.1

Textbook section	IXL skills
B.1.1: Investigating $y = b^x$	1. Identify linear and exponential functions from graphs UEC
B.1.2: Multiple Representations of Exponential Functions	1. Describe linear and exponential growth and decay KLF
B.1.3: More Applications of Exponential Growth	1. Exponential functions over unit intervals S7D 2. Compound interest: word problems YJW
B.1.4: Exponential Decay	1. Exponential growth and decay: word problems TYQ
B.1.5: Graph Equation	1. Match exponential functions and graphs PCX
B.1.6: Completing the Multiple Representations Web	

Section B.2

Textbook section	IXL skills
B.2.1: Curve Fitting and Fractional Exponents	1. Evaluate rational exponents KJX 2. Roots of rational numbers HNE
B.2.2: More Curve Fitting	1. Negative exponents SCM
B.2.3: Solving a System of Exponential Functions Graphically	

Appendix C

Comparing Single-Variable Data

Section C.1

Textbook section	IXL skills
C.1.1: Investigating Data Representations	Measures of center and spread of data <ol style="list-style-type: none">1. Mean, median, mode, and range MHB2. Calculate quartiles and interquartile range 8H93. Identify an outlier 87L4. Identify an outlier and describe the effect of removing it XGC Scatter plots <ol style="list-style-type: none">5. Interpret a scatter plot 8BS6. Outliers in scatter plots EG5
C.1.2: Comparing Data	
C.1.3: Standard Deviation	<ol style="list-style-type: none">1. Mean absolute deviation A5C2. Variance and standard deviation HX5