



IXL Skill Alignment

Algebra 2 alignment for Illustrative Mathematics



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Unit 1

Sequences and Functions

A Towering Sequence

Textbook section	IXL skills
Lesson 1: A Towering Sequence	1. Evaluate recursive formulas for sequences QB9

Sequences

Textbook section	IXL skills
Lesson 2: Introducing Geometric Sequences	1. Find terms of a geometric sequence BHV
Lesson 3: Different Types of Sequences	1. Find terms of an arithmetic sequence C8R
Lesson 4: Using Technology to Work with Sequences	
Lesson 5: Sequences are Functions	1. Evaluate explicit formulas for sequences NV5
Lesson 6: Representing Sequences	1. Write a formula for a recursive sequence ZAH
Lesson 7: Representing More Sequences	1. Sequences: mixed review 2MX

What's the Equation?

Textbook section	IXL skills
Lesson 8: The n^{th} Term	
Lesson 9: What's the Equation?	1. Write a formula for an arithmetic sequence H82 2. Write a formula for a geometric sequence Q5V
Lesson 10: Situations and Sequence Types	1. Classify formulas and sequences 2UZ
Lesson 11: Adding Up	

Unit 2

Polynomials and Rational Functions

What Is a Polynomial?

Textbook section	IXL skills
Lesson 1: Let's Make a Box	
Lesson 2: Funding the Future	
Lesson 3: Introducing Polynomials	1. Polynomial vocabulary DYB 2. Match polynomials and graphs XJU
Lesson 4: Combining Polynomials	1. Add and subtract polynomials 9A3

Working with Polynomials

Textbook section	IXL skills
Lesson 5: Connecting Factors and Zeros	1. Solve a quadratic equation using the zero product property TRU
Lesson 6: Different Forms	
Lesson 7: Using Factors and Zeros	1. Write a quadratic function from its zeroes G2Q 2. Find the roots of factored polynomials PVM
Lesson 8: End Behavior (Part 1)	
Lesson 9: End Behavior (Part 2)	
Lesson 10: Multiplicity	
Lesson 11: Finding Intersections	1. Solve a system of linear and quadratic equations: parabolas HVZ
Lesson 12: Polynomial Division (Part 1)	
Lesson 13: Polynomial Division (Part 2)	1. Divide polynomials using long division YN5

Lesson 14: What Do You Know About Polynomials?

Lesson 15: The Remainder Theorem

Rational Functions

Textbook section

IXL skills

Lesson 16: Minimizing Surface Area

Lesson 17: Graphs of Rational Functions (Part 1)

Lesson 18: Graphs of Rational Functions (Part 2)

1. Rational functions: asymptotes and excluded values 7JJ

Lesson 19: End Behavior of Rational Functions

Rational Equations

Textbook section

IXL skills

Lesson 20: Rational Equations (Part 1)

Lesson 21: Rational Equations (Part 2)

Lesson 22: Solving Rational Equations

1. Solve rational equations CHP

Polynomial Identities

Textbook section

IXL skills

Lesson 23: Polynomial Identities (Part 1)

Lesson 24: Polynomial Identities (Part 2)

1. Multiply two binomials: special cases 9JN

Lesson 25: Summing Up

Lesson 26: Using the Sum

Unit 3

Complex Numbers and Rational Exponents

Exponent Properties

Textbook section	IXL skills
Lesson 1: Properties of Exponents	1. Exponents with integer bases EJ8 2. Identify equivalent expressions involving exponents I EUF 3. Identify equivalent expressions involving exponents II RKA
Lesson 2: Square Roots and Cube Roots	1. Square roots 7PZ 2. Cube roots RNT
Lesson 3: Exponents that are Unit Fractions	
Lesson 4: Positive Rational Exponents	1. Multiplication with rational exponents LMC 2. Division with rational exponents AN5
Lesson 5: Negative Rational Exponents	1. Negative exponents SCM 2. Evaluate rational exponents KJX

Solving Equations with Square and Cube Roots

Textbook section	IXL skills
Lesson 6: Squares and Square Roots	
Lesson 7: Inequivalent Equations	
Lesson 8: Cubes and Cube Roots	
Lesson 9: Solving Radical Equations	1. Solve radical equations EHE

A New Kind of Number

Textbook section	IXL skills
Lesson 10: A New Kind of Number	
Lesson 11: Introducing the Number i	1. Introduction to complex numbers 5VV
Lesson 12: Arithmetic with Complex Numbers	1. Add and subtract complex numbers JVF
Lesson 13: Multiplying Complex Numbers	1. Multiply complex numbers VZ8
Lesson 14: More Arithmetic with Complex Numbers	1. Add, subtract, multiply, and divide complex numbers CEN
Lesson 15: Working Backwards	

Solving Quadratics with Complex Numbers

Textbook section	IXL skills
Lesson 16: Solving Quadratics	1. Solve a quadratic equation by factoring CJC
Lesson 17: Completing the Square and Complex Solutions	1. Complete the square 9MW 2. Solve a quadratic equation by completing the square NPH 3. Solve a quadratic equation using square roots FG7
Lesson 18: The Quadratic Formula and Complex Solutions	1. Solve a quadratic equation using the quadratic formula YQH
Lesson 19: Real and Non-Real Solutions	

Unit 4

Exponential Functions and Equations

Growing and Shrinking

Textbook section	IXL skills
Lesson 1: Growing and Shrinking	1. Describe linear and exponential growth and decay <small>KLF</small>
Lesson 2: Representations of Growth and Decay	1. Evaluate exponential functions <small>LWE</small>

Understanding Non-Integer Inputs

Textbook section	IXL skills
Lesson 3: Understanding Rational Inputs	
Lesson 4: Representing Functions at Rational Inputs	
Lesson 5: Changes over Rational Intervals	
Lesson 6: Writing Equations for Exponential Functions	
Lesson 7: Interpreting and Using Exponential Functions	1. Exponential functions over unit intervals <small>2YT</small> 2. Exponential growth and decay: word problems <small>TYQ</small>

Missing Exponents

Textbook section	IXL skills
Lesson 8: Unknown Exponents	
Lesson 9: What is a Logarithm?	1. Convert between exponential and logarithmic form: rational bases <small>TPA</small>
Lesson 10: Interpreting and Writing Logarithmic Equations	

Lesson 11: Evaluating Logarithmic Expressions

1. Evaluate logarithms GBR

The Constant e **Textbook section****IXL skills****Lesson 12:** The Number e **Lesson 13:** Exponential Functions with Base e **Lesson 14:** Solving Exponential Equations**Evaluate natural logarithms**

1. Evaluate natural logarithms XG9

Solve exponential equations

2. Solve exponential equations using factoring YQY
3. Solve exponential equations using common logarithms 9F2
4. Solve exponential equations using natural logarithms KVL

Logarithmic Functions and Graphs**Textbook section****IXL skills****Lesson 15:** Using Graphs and Logarithms to Solve Problems (Part 1)**Lesson 16:** Using Graphs and Logarithms to Solve Problems (Part 2)**Lesson 17:** Logarithmic Functions

1. Domain and range of exponential and logarithmic functions GLL

Lesson 18: Applications of Logarithmic Functions

Unit 5

Transformations of Functions

Translations, Reflections, and Symmetry

Textbook section	IXL skills
Lesson 1: Matching up to Data	
Lesson 2: Moving Functions	
Lesson 3: More Movement	1. Translations of functions F6J
Lesson 4: Reflecting Functions	Reflections 1. Reflections of functions PHV Mixed transformations 2. Transformations of quadratic functions KQL
Lesson 5: Some Functions Have Symmetry	
Lesson 6: Symmetry in Equations	
Lesson 7: Expressing Transformations of Functions Algebraically	

Scaling Outputs and Inputs

Textbook section	IXL skills
Lesson 8: Scaling the Outputs	Dilations 1. Dilations of functions NNY Mixed transformations 2. Transformations of absolute value functions FYJ 3. Function transformation rules R7X
Lesson 9: Scaling the Inputs	

Putting It All Together

Textbook section	IXL skills
Lesson 10: Combining Functions	1. Add and subtract functions QQD
Lesson 11: Making a Model for Data	

Unit 6

Trigonometric Functions

The Unit Circle

Textbook section	IXL skills
Lesson 1: Moving in Circles	1. Find the center of a circle U6E 2. Find the radius or diameter of a circle 5Q2
Lesson 2: Revisiting Right Triangles	1. Special right triangles NUF 2. Trigonometric ratios: sin, cos, and tan PQJ
Lesson 3: The Unit Circle (Part 1)	
Lesson 4: The Unit Circle (Part 2)	1. Find trigonometric ratios using the unit circle ZF7
Lesson 5: The Pythagorean Identity (Part 1)	
Lesson 6: The Pythagorean Identity (Part 2)	
Lesson 7: Finding Unknown Coordinates on a Circle	

Periodic Functions

Textbook section	IXL skills
Lesson 8: Rising and Falling	1. Symmetry and periodicity of trigonometric functions YBJ
Lesson 9: Introduction to Trigonometric Functions	
Lesson 10: Beyond 2π	
Lesson 11: Extending the Domain of Trigonometric Functions	
Lesson 12: Tangent	

Trigonometry Transformations

Textbook section	IXL skills
Lesson 13: Amplitude and Midline	
Lesson 14: Transforming Trigonometric Functions	<ol style="list-style-type: none"> 1. Graph translations of sine functions LCN 2. Graph translations of cosine functions M5K
Lesson 15: Features of Trigonometric Graphs (Part 1)	<ol style="list-style-type: none"> 1. Write equations of sine functions from graphs FGW 2. Write equations of cosine functions from graphs 4G8
Lesson 16: Features of Trigonometric Graphs (Part 2)	<p>Sine functions</p> <ol style="list-style-type: none"> 1. Write equations of sine functions using properties JDH 2. Find properties of sine functions 2EK <p>Cosine functions</p> <ol style="list-style-type: none"> 3. Find properties of cosine functions F8Y 4. Write equations of cosine functions using properties N6X
Lesson 17: Comparing Transformations	
Lesson 18: Modeling Circular Motion	

Putting It All Together

Textbook section	IXL skills
Lesson 19: Beyond Circles	

Unit 7

Statistical Inferences

Study Types

Textbook section	IXL skills
Lesson 1: Being Skeptical	
Lesson 2: Study Types	
Lesson 3: Randomness in Groups	1. Identify biased samples CH7

Distributions

Textbook section	IXL skills
Lesson 4: Describing Distributions	1. Variance and standard deviation V5H
Lesson 5: Normal Distributions	
Lesson 6: Areas in Histograms	
Lesson 7: Areas under a Normal Curve	<p>Find probabilities</p> <ol style="list-style-type: none"> Find probabilities using the normal distribution I QA9 Find probabilities using the normal distribution II 6M9 <p>Find z-values</p> <ol style="list-style-type: none"> Find z-values PAJ

Not All Samples Are the Same

Textbook section	IXL skills
Lesson 8: Not Always Ideal	
Lesson 9: Variability in Samples	
Lesson 10: Estimating Proportions from Samples	

Lesson 11: Reducing Margin of Error

Lesson 12: Estimating a Population Mean

Distributions of sample means

1. Distributions of sample means 7YZ

Confidence intervals

2. Find confidence intervals for population means JVK
3. Interpret confidence intervals for population means MNM

Analyzing Experimental Data

Textbook section
IXL skills
Lesson 13: Experimenting

1. Experiment design BKR

Lesson 14: Using Normal Distributions for Experiment Analysis

1. Analyze the results of an experiment using simulations RLB

Lesson 15: Questioning Experimenting

Lesson 16: Heart Rates