



# IXL Skill Alignment

Algebra 2 alignment for HMH Common Core Curriculum



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# Module 1

## Analyzing Functions

Textbook section	IXL skills
<b>1.1:</b> Domain, Range, and End Behavior	
<b>1.2:</b> Characteristics of Function Graphs	<ol style="list-style-type: none"><li>1. Linear functions over unit intervals XGR</li><li>2. Average rate of change PHD</li><li>3. Find the equation of a regression line D9Y</li></ol>
<b>1.3:</b> Transformations of Function Graphs	<ol style="list-style-type: none"><li>1. Function transformation rules R7X</li></ol>
<b>1.4:</b> Inverses of Functions	<ol style="list-style-type: none"><li>1. Identify inverse functions 9KT</li><li>2. Find values of inverse functions from tables YLX</li></ol>

## Module 2

### Absolute Value Functions, Equations, and Inequalities

Textbook section	IXL skills
<b>2.1:</b> Graphing Absolute Value Functions	
<b>2.2:</b> Solving Absolute Value Equations	<ol style="list-style-type: none"><li>1. Solve absolute value equations 2JZ</li><li>2. Graph solutions to absolute value equations 39B</li></ol>
<b>2.3:</b> Solving Absolute Value Inequalities	<ol style="list-style-type: none"><li>1. Solve absolute value inequalities UKU</li><li>2. Graph solutions to absolute value inequalities G85</li></ol>

# Module 3

## Quadratic Equations

Textbook section	IXL skills
<b>3.1:</b> Solving Quadratic Equations by Taking Square Roots	1. Solve a quadratic equation using square roots FG7
<b>3.2:</b> Complex Numbers	1. Add and subtract complex numbers JVF 2. Multiply complex numbers VZ8
<b>3.3:</b> Finding Complex Solutions of Quadratic Equations	1. Solve a quadratic equation using the quadratic formula YQH

# Module 4

## Quadratic Relations and Systems of Equations

Textbook section	IXL skills
<b>4.1:</b> Circles	<ol style="list-style-type: none"><li>1. Write equations of circles in standard form from graphs ZLA</li><li>2. Write equations of circles in standard form using properties SHN</li><li>3. Convert equations of circles from general to standard form D2H</li><li>4. Find properties of circles from equations in general form 2PA</li><li>5. Graph circles 2PL</li></ol>
<b>4.2:</b> Parabolas	<ol style="list-style-type: none"><li>1. Find the focus or directrix of a parabola TNG</li><li>2. Find properties of a parabola from equations in general form B7U</li></ol>
<b>4.3:</b> Solving Linear-Quadratic Systems	<ol style="list-style-type: none"><li>1. Solve a system of linear and quadratic equations: parabolas HVZ</li></ol>
<b>4.4:</b> Solving Linear Systems in Three Variables	<ol style="list-style-type: none"><li>1. Solve a system of equations in three variables using substitution X8H</li><li>2. Solve a system of equations in three variables using elimination 9S5</li><li>3. Solve a system of equations using augmented matrices RCS</li><li>4. Solve a system of equations using augmented matrices: word problems QX5</li></ol>

# Module 5

## Polynomial Functions

Textbook section	IXL skills
5.1: Graphing Cubic Functions	
5.2: Graphing Polynomial Functions	1. Match polynomials and graphs XJU

# Module 6

## Polynomials

Textbook section	IXL skills
<b>6.1:</b> Adding and Subtracting Polynomials	1. Add and subtract polynomials 9A3
<b>6.2:</b> Multiplying Polynomials	1. Multiply polynomials 8GN
<b>6.3:</b> The Binomial Theorem	1. Pascal's triangle G7Y 2. Pascal's triangle and the Binomial Theorem A7M 3. Binomial Theorem I CWS
<b>6.4:</b> Factoring Polynomials	1. Factor by grouping HVT 2. Factor sums and differences of cubes NJV 3. Factor polynomials A2W
<b>6.5:</b> Dividing Polynomials	1. Divide polynomials using long division YN5 2. Divide polynomials using synthetic division D6D 3. Evaluate polynomials using synthetic division CHC

# Module 7

## Polynomial Equations

Textbook section	IXL skills
<b>7.1:</b> Finding Rational Solutions of Polynomial Equations	<ol style="list-style-type: none"><li>1. Find the roots of factored polynomials PVM</li><li>2. Rational root theorem FCX</li></ol>
<b>7.2:</b> Finding Complex Solution of Polynomial Equations	<ol style="list-style-type: none"><li>1. Solve polynomial equations ZCH</li><li>2. Write a polynomial from its roots BTU</li></ol>



# Module 8

## Rational Functions

Textbook section	IXL skills
<b>8.1:</b> Graphing Simple Rational Functions	
<b>8.2:</b> Graphing More Complicated Rational Functions	1. Rational functions: asymptotes and excluded values 7JJ

# Module 9

## Rational Expressions and Equations

Textbook section	IXL skills
<b>9.1:</b> Adding and Subtracting Rational Expressions	1. Add and subtract rational expressions FEX
<b>9.2:</b> Multiplying and Dividing Rational Expressions	1. Multiply and divide rational expressions MG2
<b>9.3:</b> Solving Rational Equations	1. Solve rational equations CHP

# Module 10

## Radical Functions

Textbook section	IXL skills
<b>10.1:</b> Inverses of Simple Quadratic and Cubic Functions	
<b>10.2:</b> Graphing Square Root Functions	1. Domain and range of radical functions HR9
<b>10.3:</b> Graphing Cube Root Functions	

# Module 11

## Radical Expressions and Equations

Textbook section	IXL skills
<b>11.1:</b> Radical Expressions and Rational Exponents	<ol style="list-style-type: none"><li>1. Evaluate rational exponents KJX</li><li>2. Power rule V2J</li></ol>
<b>11.2:</b> Simplifying Radical Expressions	<ol style="list-style-type: none"><li>1. Simplify radical expressions with variables I LQX</li><li>2. Simplify radical expressions with variables II QGZ</li><li>3. Multiply radical expressions PUM</li><li>4. Divide radical expressions CCU</li><li>5. Simplify expressions involving rational exponents I 2VX</li><li>6. Simplify expressions involving rational exponents II U96</li></ol>
<b>11.3:</b> Solving Radical Equations	<ol style="list-style-type: none"><li>1. Solve radical equations EHE</li></ol>

# Module 12

## Sequences and Series

Textbook section	IXL skills
<b>12.1:</b> Arithmetic Sequences	<ol style="list-style-type: none"><li>1. Find terms of an arithmetic sequence C8R</li><li>2. Write a formula for an arithmetic sequence H82</li></ol>
<b>12.2:</b> Geometric Sequences	<ol style="list-style-type: none"><li>1. Classify formulas and sequences 2UZ</li><li>2. Write a formula for a geometric sequence Q5V</li><li>3. Write a formula for a recursive sequence ZAH</li></ol>
<b>12.3:</b> Geometric Series	<ol style="list-style-type: none"><li>1. Partial sums of geometric series 9JU</li></ol>

# Module 13

## Exponential Functions

Textbook section	IXL skills
<b>13.1:</b> Exponential Growth Functions	1. Compound interest: word problems YJW
<b>13.2:</b> Exponential Decay Functions	1. Match exponential functions and graphs PCX 2. Exponential growth and decay: word problems TYQ
<b>13.3:</b> The Base e	
<b>13.4:</b> Compound Interest	1. Compound interest: word problems YJW 2. Continuously compounded interest: word problems 5GU

# Module 14

## Modeling with Exponential and Other Functions

Textbook section	IXL skills
14.1: Fitting Exponential Functions to Data	
14.2: Choosing Among Linear, Quadratic, and Exponential Models	

# Module 15

## Logarithmic Functions

### Textbook section

### IXL skills

**15.1:** Defining and Evaluating a Logarithmic Function

1. Convert between exponential and logarithmic form: rational bases TPA
2. Domain and range of exponential and logarithmic functions GLL

**15.2:** Graphing Logarithmic Functions



# Module 16

## Logarithmic Properties and Exponential Equations

### Textbook section

### IXL skills

#### 16.1: Properties of Logarithms

1. Change of base formula J2R
2. Identify properties of logarithms N59
3. Product property of logarithms CW9
4. Quotient property of logarithms ZNT
5. Power property of logarithms 7T3
6. Properties of logarithms: mixed review 5LL
7. Evaluate logarithms using properties RNH

#### 16.2: Solving Exponential Equations

1. Solve exponential equations using common logarithms 9F2
2. Solve exponential equations using natural logarithms KVL

# Module 17

## Unit-Circle Definition of Trigonometric Functions

Textbook section	IXL skills
<b>17.1:</b> Angles of Rotation and Radian Measure	<ol style="list-style-type: none"><li>1. Convert between radians and degrees EDC</li><li>2. Coterminal angles 7CV</li></ol>
<b>17.2:</b> Defining and Evaluating the Basic Trigonometric Functions	<ol style="list-style-type: none"><li>1. Special right triangles NUF</li><li>2. Sin, cos, and tan of special angles 6H8</li><li>3. Find trigonometric functions using a calculator SPL</li></ol>
<b>17.3:</b> Using a Pythagorean Identity	

# Module 18

## Graphing Trigonometric Functions

Textbook section	IXL skills
<b>18.1:</b> Stretching, Compressing, and Reflecting Sine and Cosine Graphs	<ol style="list-style-type: none"><li>1. Find properties of sine functions 2EK</li><li>2. Find properties of cosine functions F8Y</li></ol>
<b>18.2:</b> Stretching, Compressing, and Reflecting Tangent Graphs	
<b>18.3:</b> Translating Trigonometric Graphs	<ol style="list-style-type: none"><li>1. Write equations of sine functions from graphs FGW</li><li>2. Write equations of cosine functions from graphs 4G8</li><li>3. Graph sine and cosine functions A7V</li></ol>
<b>18.4:</b> Fitting Sine Functions to Data	

# Module 19

## Introduction to Probability

Textbook section	IXL skills
<b>19.1:</b> Probability and Set Theory	1. Calculate probabilities of events QRS
<b>19.2:</b> Permutations and Probability	1. Counting principle ZUV
<b>19.3:</b> Combinations and Probability	1. Combinations and permutations UAB 2. Find probabilities using combinations and permutations SVX
<b>19.4:</b> Mutually Exclusive and Overlapping Events	1. Find probabilities using two-way frequency tables HGA

# Module 20

## Conditional Probability and Independence of Events

Textbook section	IXL skills
<b>20.1:</b> Conditional Probability	<ol style="list-style-type: none"><li>1. Find conditional probabilities 2M4</li><li>2. Find conditional probabilities using two-way frequency tables HGC</li></ol>
<b>20.2:</b> Independent Events	<ol style="list-style-type: none"><li>1. Independence and conditional probability AJC</li></ol>
<b>20.3:</b> Dependent Events	<ol style="list-style-type: none"><li>1. Identify independent events RTZ</li><li>2. Probability of independent and dependent events X5U</li></ol>

# Module 21

## Probability and Decision Making

Textbook section	IXL skills
<b>21.1:</b> Using Probability to Make Fair Decisions	
<b>21.2:</b> Analyzing Decisions	

# Module 22

## Gathering and Displaying Data

Textbook section	IXL skills
<b>22.1:</b> Data-Gathering Techniques	1. Identify biased samples CH7
<b>22.2:</b> Shape, Center, and Spread	

# Module 23

## Data Distributions

Textbook section	IXL skills
<b>23.1:</b> Probability Distributions	<ol style="list-style-type: none"><li>1. Identify discrete and continuous random variables ETC</li><li>2. Write a discrete probability distribution RH6</li><li>3. Find probabilities using the binomial distribution ZGX</li></ol>
<b>23.2:</b> Normal Distributions	<ol style="list-style-type: none"><li>1. Find probabilities using the normal distribution I QA9</li><li>2. Find probabilities using the normal distribution II 6M9</li><li>3. Find z-values PAJ</li></ol>
<b>23.3:</b> Sampling Distributions	<ol style="list-style-type: none"><li>1. Distributions of sample means 7YZ</li></ol>



# Module 24

## Making Inferences from Data

Textbook section	IXL skills
<b>24.1:</b> Confidence Intervals and Margins of Error	<ol style="list-style-type: none"><li>1. Find confidence intervals for population means JVK</li><li>2. Find confidence intervals for population proportions QAD</li><li>3. Interpret confidence intervals for population means MNM</li></ol>
<b>24.2:</b> Surveys, Experiments, and Observational Studies	<ol style="list-style-type: none"><li>1. Experiment design BKR</li></ol>
<b>24.3:</b> Determining the Significance of Experimental Results	<ol style="list-style-type: none"><li>1. Analyze the results of an experiment using simulations RLB</li></ol>