



# IXL Skill Alignment

Alg 2 alignment for HMH Texas

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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	<b>D.9</b> Linear functions over unit intervals >> <b>D.10</b> Average rate of change >> <b>EE.6</b> Find the equation of a regression line >>
<b>1.3:</b> Transformations of Function Graphs	<b>P.1</b> Function transformation rules >>
<b>1.4:</b> Inverses of Functions	<b>O.8</b> Identify inverse functions >> <b>O.9</b> Find values of inverse functions from tables >>

## 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	<b>B.4</b> Solve absolute value equations >> <b>B.5</b> Graph solutions to absolute value equations >>
<b>2.3:</b> Solving Absolute Value Inequalities	<b>C.6</b> Solve absolute value inequalities >> <b>C.7</b> Graph solutions to absolute value inequalities >>

# Module 3

## Quadratic Functions

Textbook section	IXL skills
<b>3.1:</b> Quadratic Functions in Vertex Form	
<b>3.2:</b> Writing Quadratic Functions	
<b>3.3:</b> Fitting Quadratic Functions	

# Module 4

## Quadratic Equations

Textbook section	IXL skills
<b>4.1:</b> Solving Quadratic Equations by Taking Square Roots	<b>J.4</b> Solve a quadratic equation using square roots >>
<b>4.2:</b> Complex Numbers	<b>H.2</b> Add and subtract complex numbers >> <b>H.4</b> Multiply complex numbers >>
<b>4.3:</b> Finding Complex Solutions of Quadratic Equations	<b>J.8</b> Solve a quadratic equation by completing the square >> <b>J.9</b> Solve a quadratic equation using the quadratic formula >> <b>J.10</b> Using the discriminant >>
<b>4.4:</b> Solving Quadratic Inequalities	<b>C.10</b> Graph solutions to quadratic inequalities >> <b>C.11</b> Solve quadratic inequalities >>

# Module 5

## Quadratic Relations and Systems of Equations and Inequalities

Textbook section	IXL skills
<b>5.1:</b> Parabolas	<p><b>T.3</b> Find the focus or directrix of a parabola &gt;&gt;</p> <p><b>T.8</b> Find properties of a parabola from equations in general form &gt;&gt;</p>
<b>5.2:</b> Solving Linear-Quadratic Systems	<b>E.15</b> Solve a system of linear and quadratic equations >>
<b>5.2:</b> Solving Linear Systems in Three Variables	<b>E.12</b> Solve a system of equations in three variables using substitution >>
<b>5.3:</b> Solving Linear Systems in Three Variables	<p><b>E.13</b> Solve a system of equations in three variables using elimination &gt;&gt;</p> <p><b>G.18</b> Solve a system of equations using augmented matrices &gt;&gt;</p> <p><b>G.19</b> Solve a system of equations using augmented matrices: word problems &gt;&gt;</p>
<b>5.4:</b> Solving Systems of Linear Inequalities	<b>F.2</b> Solve systems of linear inequalities by graphing >>

# Module 6

## Polynomial Functions

Textbook section	IXL skills
6.1: Graphing Cubic Functions	
6.2: Graphing Polynomial Functions	<b>K.14</b> Match polynomials and graphs >>

# Module 7

## Polynomials

Textbook section	IXL skills
<b>7.1:</b> Adding and Subtracting Polynomials	<b>K.2</b> Add and subtract polynomials >>
<b>7.2:</b> Multiplying Polynomials	<b>K.3</b> Multiply polynomials >>
<b>7.3:</b> Factoring Polynomials	<b>I.5</b> Factor by grouping >>
	<b>I.6</b> Factor sums and differences of cubes >>
	<b>I.7</b> Factor polynomials >>
<b>7.4:</b> Dividing Polynomials	<b>K.4</b> Divide polynomials using long division >>
	<b>K.5</b> Divide polynomials using synthetic division >>
	<b>K.6</b> Evaluate polynomials using synthetic division >>



# Module 8

## Polynomial Equations

Textbook section	IXL skills
<b>8.1:</b> Finding Rational Solutions of Polynomial Equations	<b>K.8</b> Find the roots of factored polynomials >> <b>K.10</b> Rational root theorem >>
<b>8.2:</b> Finding Complex Solution of Polynomial Equations	<b>K.7</b> Solve polynomial equations >> <b>K.9</b> Write a polynomial from its roots >>

# Module 9

## Rational Functions

Textbook section	IXL skills
<b>9.1:</b> Inverse Variation	
<b>9.2:</b> Graphing Simple Rational Functions	
<b>9.3:</b> Graphing More Complicated Rational Functions	<b>N.1</b> Rational functions: asymptotes and excluded values >>

# Module 10

## Rational Expressions and Equations

Textbook section	IXL skills
<b>10.1:</b> Adding and Subtracting Rational Expressions	<b>N.6</b> <a href="#">Add and subtract rational expressions &gt;&gt;</a>
<b>10.2:</b> Multiplying and Dividing Rational Expressions	<b>N.5</b> <a href="#">Multiply and divide rational expressions &gt;&gt;</a>
<b>10.3:</b> Solving Rational Equations	<b>N.7</b> <a href="#">Solve rational equations &gt;&gt;</a>

# Module 11

## Radical Functions

Textbook section	IXL skills
<b>11.1:</b> Inverses of Simple Quadratic and Cubic Functions	
<b>11.2:</b> Graphing Square Root Functions	<b>L.12</b> Domain and range of radical functions >>
<b>11.3:</b> Fitting Square Root Functions to Data	
<b>11.4:</b> Graphing Cube Root Functions	

# Module 12

## Radical Expressions and Equations

Textbook section	IXL skills
<b>12.1:</b> Radical Expressions and Rational Exponents	<b>M.1</b> Evaluate rational exponents >> <b>M.4</b> Power rule >>
<b>12.2:</b> Simplifying Radical Expressions	<b>L.4</b> Simplify radical expressions with variables I >> <b>L.5</b> Simplify radical expressions with variables II >> <b>L.7</b> Multiply radical expressions >> <b>L.8</b> Divide radical expressions >> <b>M.5</b> Simplify expressions involving rational exponents I >> <b>M.6</b> Simplify expressions involving rational exponents II >>
<b>12.3:</b> Solving Radical Equations	<b>L.13</b> Solve radical equations >>

# Module 13

## Exponential Functions

Textbook section	IXL skills
<b>13.1:</b> Geometric Sequences	<b>BB.5</b> Classify formulas and sequences >> <b>BB.7</b> Write a formula for a geometric sequence >> <b>BB.8</b> Write a formula for a recursive sequence >>
<b>13.2:</b> Exponential Growth Functions	<b>S.13</b> Compound interest: word problems >>
<b>13.3:</b> Exponential Decay Functions	<b>S.3</b> Match exponential functions and graphs >> <b>S.12</b> Exponential growth and decay: word problems >>
<b>13.4:</b> The Base e	

# 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
<b>15.1:</b> Defining and Evaluating a Logarithmic Function	<b>R.1</b> Convert between exponential and logarithmic form: rational bases >> <b>R.4</b> Evaluate logarithms >>
<b>15.2:</b> Graphing Logarithmic Functions	<b>S.1</b> Domain and range of exponential and logarithmic functions >>



# Module 16

## Logarithmic Properties and Exponential Equations

Textbook section	IXL skills
<b>16.1:</b> Properties of Logarithms	<b>R.6</b> Change of base formula >>
	<b>R.7</b> Identify properties of logarithms >>
	<b>R.8</b> Product property of logarithms >>
	<b>R.9</b> Quotient property of logarithms >>
	<b>R.10</b> Power property of logarithms >>
	<b>R.11</b> Properties of logarithms: mixed review >>
	<b>R.12</b> Evaluate logarithms: mixed review >>
<b>16.2:</b> Solving Exponential Equations	<b>S.5</b> Solve exponential equations using common logarithms >>
	<b>S.6</b> Solve exponential equations using natural logarithms >>
<b>16.3:</b> Solving Logarithmic Equations	<b>S.7</b> Solve logarithmic equations I >>
	<b>S.8</b> Solve logarithmic equations II >>