



# IXL Skill Alignment

Integrated 3 alignment for HMH Integrated Math



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# Module 1

## Constructions

Textbook section	IXL skills
<b>1.1:</b> Proving Lines Are Parallel	<ol style="list-style-type: none"><li>1. Proofs involving parallel lines I CUV</li><li>2. Proofs involving parallel lines II 5U8</li></ol>
<b>1.2:</b> Perpendicular Lines	<ol style="list-style-type: none"><li>1. Perpendicular Bisector Theorem BKS</li><li>2. Proofs involving angles HV9</li><li>3. Construct a perpendicular line BZR</li></ol>
<b>1.3:</b> Justifying Constructions	<ol style="list-style-type: none"><li>1. Construct the midpoint or perpendicular bisector of a segment HDT</li></ol>
<b>1.4:</b> Properties of Parallelograms	<ol style="list-style-type: none"><li>1. Properties of parallelograms LLK</li><li>2. Proving a quadrilateral is a parallelogram H89</li></ol>

# Module 2

## Coordinate Proof Using Slope and Distance

Textbook section	IXL skills
<b>2.1:</b> Slope and Parallel Lines	1. Graph quadrilaterals M5F
<b>2.2:</b> Slope and Perpendicular Lines	1. Slopes of parallel and perpendicular lines 6K2 2. Equations of parallel and perpendicular lines VEB
<b>2.3:</b> Coordinate Proof Using Distance with Segments and Triangles	1. Midpoint formula: find the midpoint 2YG 2. Distance formula 59F
<b>2.4:</b> Coordinate Proof Using Distance with Quadrilaterals	
<b>2.5:</b> Perimeter and Area on the Coordinate Plane	1. Area and perimeter in the coordinate plane I QWZ 2. Area and perimeter in the coordinate plane II MHQ
<b>2.6:</b> Subdividing a Segment in a Given Ratio	

# Module 3

## Visualizing Solids

Textbook section	IXL skills
<b>3.1:</b> Cross Sections and Solids of Revolution	<ol style="list-style-type: none"><li>1. Nets and drawings of three-dimensional figures <small>PKE</small></li><li>2. Cross sections of three-dimensional figures <small>7Z4</small></li><li>3. Solids of revolution <small>LKT</small></li></ol>
<b>3.2:</b> Surface Area of Prisms and Cylinders	<ol style="list-style-type: none"><li>1. Surface area of prisms and cylinders <small>SWV</small></li></ol>
<b>3.3:</b> Surface Area of Pyramids and Cones	<ol style="list-style-type: none"><li>1. Surface area of pyramids and cones <small>8WX</small></li></ol>
<b>3.4:</b> Surface Area of Spheres	

# Module 4

## Modeling and Problem Solving

Textbook section	IXL skills
<b>4.1:</b> Scale Factor	<ol style="list-style-type: none"><li>1. Area and perimeter of similar figures 6J7</li><li>2. Surface area and volume of similar solids N9X</li></ol>
<b>4.2:</b> Modeling and Density	
<b>4.3:</b> Problem Solving with Constraints	<ol style="list-style-type: none"><li>1. Minimum and maximum area and volume VX7</li></ol>

# Module 5

## Polynomial Functions

Textbook section	IXL skills
<b>5.1:</b> Transformations of Function Graphs	1. Function transformation rules R7X
<b>5.2:</b> Inverses of Functions	1. Find inverse functions and relations DST
<b>5.3:</b> Graphing Cubic Functions	
<b>5.4:</b> Graphing Polynomial Functions	1. Find the roots of factored polynomials PVM

# 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 4. Binomial Theorem II NEU
<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	1. Rational root theorem FCX
<b>7.2:</b> Finding Complex Solutions of Polynomial Equations	1. Solve polynomial equations ZCH 2. Write a polynomial from its roots BTU 3. Complex conjugate theorem 5WU 4. Fundamental Theorem of Algebra YS8



# Module 8

## Rational Functions

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

# Module 9

## Rational Expressions and Equations

Textbook section	IXL skills
<b>9.1:</b> Adding and Subtracting Rational Expressions	<ol style="list-style-type: none"><li>1. Simplify rational expressions 37N</li><li>2. Add and subtract rational expressions FEX</li></ol>
<b>9.2:</b> Multiplying and Dividing Rational Expressions	<ol style="list-style-type: none"><li>1. Multiply and divide rational expressions MG2</li></ol>
<b>9.3:</b> Solving Rational Equations	<ol style="list-style-type: none"><li>1. Solve rational equations (Algebra 2) CHP</li><li>2. Solve rational equations (Precalculus) 8UN</li></ol>

# Module 10

## Radical Functions

Textbook section	IXL skills
<b>10.1:</b> Inverses of Simple Quadratic and Cubic Functions	1. Identify inverse functions 2Y8
<b>10.2:</b> Graphing Square Root Functions	1. Domain and range of radical functions VY8
<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 26H</li><li>2. Operations with rational exponents NQB</li></ol>
<b>11.2:</b> Simplifying Radical Expressions	<ol style="list-style-type: none"><li>1. Simplify radical expressions with variables 9LT</li><li>2. Simplify expressions involving rational exponents 7TC</li></ol>
<b>11.3:</b> Solving Radical Equations	<ol style="list-style-type: none"><li>1. Solve radical equations 2G6</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. Find terms of a geometric sequence BHV</li><li>2. Classify formulas and sequences 2UZ</li><li>3. Write a formula for a geometric sequence Q5V</li></ol>
<b>12.3:</b> Geometric Series	

# Module 13

## Exponential Functions

Textbook section	IXL skills
<b>13.1:</b> Exponential Growth Functions	
<b>13.2:</b> Exponential Decay Functions	1. Exponential growth and decay: word problems 7SH
<b>13.3:</b> The Base e	
<b>13.4:</b> Compound Interest	1. Continuously compounded interest: word problems 5GU 2. Compound interest: word problems 2WU

# Module 14

## Modeling with Exponential and Other Functions

### Textbook section

### IXL skills

**14.1:** Fitting Exponential Function to Data

**14.2:** Choosing Among Linear, Quadratic, and Exponential Models

1. Identify linear, quadratic, and exponential functions from graphs DHB
2. Identify linear, quadratic, and exponential functions from tables SP5
3. Write linear, quadratic, and exponential functions AFA

# 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. Evaluate logarithms GBR
3. Domain and range of exponential and logarithmic functions GLL

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**15.2:** Graphing Logarithmic Functions

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# 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

#### 16.2: Solving Exponential Equations

1. Solve exponential equations using factoring YQY
2. Solve exponential equations using common logarithms 9F2

# Module 17

## Trigonometry with All Triangles

Textbook section	IXL skills
<b>17.1:</b> Problem Solving with Trigonometry	<ol style="list-style-type: none"><li>1. Solve a right triangle ET7</li><li>2. Area of a triangle: sine formula JU5</li></ol>
<b>17.2:</b> Law of Sines	<ol style="list-style-type: none"><li>1. Law of Sines MXX</li></ol>
<b>17.3:</b> Law of Cosines	<ol style="list-style-type: none"><li>1. Law of Cosines 6MW</li></ol>

# Module 18

## Unit-Circle Definition of Trigonometric Functions

Textbook section	IXL skills
<b>18.1:</b> Angles of Rotation and Radian Measure	<ol style="list-style-type: none"><li>1. Convert between radians and degrees KEV</li><li>2. Coterminal and reference angles PLQ</li></ol>
<b>18.2:</b> Defining and Evaluating the Basic Trigonometric Functions	<ol style="list-style-type: none"><li>1. Quadrants CTR</li></ol>
<b>18.3:</b> Using a Pythagorean Identity	

# Module 19

## Graphing Trigonometric Functions

### Textbook section

### IXL skills

**19.1:** Stretching, Compressing, and Reflecting Sine and Cosine Graphs

1. Find properties of sine functions NVY
2. Write equations of sine functions using properties SMV
3. Find properties of cosine functions JZV
4. Write equations of cosine functions using properties KVG

**19.2:** Stretching, Compressing, and Reflecting Tangent Graphs

**19.3:** Translating Trigonometric Graphs

1. Write equations of sine functions from graphs TJH
2. Write equations of cosine functions from graphs 7MS
3. Graph sine and cosine functions C8N

**19.4:** Fitting Sine Functions to Data

# Module 20

## Gathering and Displaying Data

Textbook section	IXL skills
<b>20.1:</b> Data-Gathering Techniques	
<b>20.2:</b> Shape, Center, and Spread	<ol style="list-style-type: none"><li>1. Mean, median, mode, and range MHB</li><li>2. Calculate quartiles and interquartile range 8H9</li></ol>

# Module 21

## Data Distributions

Textbook section	IXL skills
<b>21.1:</b> Probability Distributions	<ol style="list-style-type: none"><li>1. Expected values of random variables YFY</li><li>2. Write the probability distribution for a game of chance 42D</li><li>3. Expected values for a game of chance QXE</li><li>4. Find probabilities using the binomial distribution 9UZ</li></ol>
<b>21.2:</b> Normal Distributions	<ol style="list-style-type: none"><li>1. Find probabilities using the normal distribution I SSW</li><li>2. Find z-values 9PK</li><li>3. Find values of normal variables 87N</li></ol>
<b>21.3:</b> Sampling Distributions	<ol style="list-style-type: none"><li>1. Distributions of sample means 8R5</li></ol>

# Module 22

## Making Inferences from Data

Textbook section	IXL skills
<b>22.1:</b> Confidence Intervals and Margins of Error	<ol style="list-style-type: none"><li>1. Find confidence intervals for population means 8G2</li><li>2. Find confidence intervals for population proportions XWT</li><li>3. Interpret confidence intervals for population means HL7</li></ol>
<b>22.2:</b> Surveys, Experiments, and Observational Studies	<ol style="list-style-type: none"><li>1. Experiment design RV2</li></ol>
<b>22.3:</b> Determining the Significance of Experimental Results	<ol style="list-style-type: none"><li>1. Analyze the results of an experiment using simulations DTJ</li></ol>

# Module 23

## Probability and Decision Making

Textbook section	IXL skills
<b>23.1:</b> Using Probability to Make Fair Decisions	1. Calculate probabilities of events 74H
<b>23.2:</b> Analyzing Decisions	



# Module 24

## Angles and Segments in Circles

Textbook section	IXL skills
<b>24.1:</b> Central Angles and Inscribed Angles	<ol style="list-style-type: none"><li>1. Central angles and arc measures VZX</li><li>2. Inscribed angles 98U</li></ol>
<b>24.2:</b> Angles in Inscribed Quadrilaterals	<ol style="list-style-type: none"><li>1. Angles in inscribed quadrilaterals I 24Y</li><li>2. Angles in inscribed quadrilaterals II 2Y5</li></ol>
<b>24.3:</b> Tangents and Circumscribed Angles	<ol style="list-style-type: none"><li>1. Tangent lines CFV</li><li>2. Construct a tangent line to a circle JSH</li></ol>
<b>24.4:</b> Segment Relationships in Circles	
<b>24.5:</b> Angle Relationships in Circles	

# Module 25

## Arc Length and Sector Area

Textbook section	IXL skills
<b>25.1:</b> Justifying Circumference and Area of a Circle	1. Area and circumference of circles ZDX
<b>25.2:</b> Arc Length and Radian Measure	1. Radians and arc length HVD
<b>25.3:</b> Sector Area	1. Area of sectors XZQ

# Module 26

## Equations of Circles and Parabolas

### Textbook section

### IXL skills

#### 26.1: Equation of a Circle

1. Write equations of circles in standard form from graphs 8HJ
2. Write equations of circles in standard form using properties EXA
3. Convert equations of circles from general to standard form YM5
4. Graph circles from equations in standard form GVH
5. Graph circles from equations in general form 2AU

#### 26.2: Equation of a Parabola

1. Write equations of parabolas in vertex form using properties EPR
2. Convert equations of parabolas from general to vertex form 39W
3. Find properties of a parabola from equations in general form B7U
4. Graph parabolas YNJ