



IXL Skill Alignment

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Chapter 1

Exploring Algebraic and Geometric Relationships

Section 1.1

Textbook section	IXL skills
1.1.1: How can I classify this polygon? Attributes of Polygons	Triangles and quadrilaterals <ol style="list-style-type: none"> Classify triangles TNN Classify quadrilaterals I 86L Classify quadrilaterals II MVK Symmetry <ol style="list-style-type: none"> Line symmetry WBX Rotational symmetry ERP Draw lines of symmetry JU7 Count lines of symmetry M7U
1.1.2: How can I describe it? More Attributes of Polygons	<ol style="list-style-type: none"> Lines, line segments, and rays XFC Angle vocabulary 9U2

Section 1.2

Textbook section	IXL skills
1.2.1: Can you predict the results? Making Predictions and Investigating Results	
1.2.2: How can I predict the area? Perimeters and Areas of Enlarging Patterns	Area <ol style="list-style-type: none"> Area of rectangles and squares SUA Linear functions <ol style="list-style-type: none"> Slope-intercept form: graph an equation UWB Slope-intercept form: write an equation from a word problem HWM
1.2.3: How can I express area? Area as a Product and a Sum	Area and perimeter <ol style="list-style-type: none"> Add polynomials to find perimeter 8AS Multiply two polynomials using algebra tiles WR5

Linear and exponential functions

- Identify linear and exponential functions from graphs UEC

1.2.4: How can I describe a graph? Describing a Graph

Describe a graph

- Identify linear functions from graphs and equations VMQ

Congruence transformations

- Classify congruence transformations CXT
- Congruence transformations: mixed review XQ7

Section 1.3

Textbook section

IXL skills

1.3.1: What is the relationship? Angle Pair Relationships

- Identify complementary, supplementary, vertical, adjacent, and congruent angles 7P7
- Find measures of complementary, supplementary, vertical, and adjacent angles VZU

1.3.2: What is the relationship? Angles Formed by Transversals

1.3.3: What is the relationship? More Angles Formed by Transversals

Transversals of parallel lines

- Transversals: name angle pairs V85
- Transversals of parallel lines: find angle measures WB9

Polygon vocabulary

- Polygon vocabulary KHQ

1.3.4: What other relationships can I find? Angles and Sides of a Triangle

- Triangle Angle-Sum Theorem UBU
- Angle-side relationships in triangles ZN8
- Triangle Inequality Theorem BW7

Chapter 2

Justification and Similarity

Section 2.1

Textbook section	IXL skills
2.1.1: What information do I need? Triangle Congruence Theorems	Congruence and corresponding parts <ol style="list-style-type: none"> 1. Congruence statements and corresponding parts CYL 2. Solve problems involving corresponding parts WYB Triangle congruence <ol style="list-style-type: none"> 3. SSS and SAS Theorems 48Q 4. ASA and AAS Theorems N94 5. SSS, SAS, ASA, and AAS Theorems LER
2.1.2: How can I organize by thinking? Flowcharts for Congruence	
2.1.3: Can I reverse it? Converses	Logical statements <ol style="list-style-type: none"> 1. Identify hypotheses and conclusions 7FW 2. Counterexamples 2GJ 3. Conditionals VU9 Systems of equations <ol style="list-style-type: none"> 4. Solve systems of linear equations 76G
2.1.4: What if I assume the opposite is true? Proof by Contradiction	

Section 2.2

Textbook section	IXL skills
2.2.1: What do these shapes have in common? Dilations	<ol style="list-style-type: none"> 1. Dilations: graph the image ZRD 2. Dilations: find the coordinates 5KZ 3. Dilations: scale factor and classification ZDM 4. Dilations and parallel lines G76

2.2.2: How can I maintain the shape? Similarity

Similarity ratios and statements

1. Similarity ratios BT7
2. Similarity statements UG8

Similar figures

3. Identify similar figures 85X
4. Side lengths and angle measures in similar figures E2K

Section 2.3

Textbook section	IXL skills
<p>2.3.1: What information do I need? Conditions for Triangle Similarity</p>	
<p>2.3.2: Are the triangles similar? Determining Similar Triangles</p>	<ol style="list-style-type: none"> 1. Similarity rules for triangles XJQ
<p>2.3.3: What can I do with similar triangles? Applying Similarity</p>	<p>Similar triangles</p> <ol style="list-style-type: none"> 1. Similar triangles and indirect measurement JWK <p>Area of compound figures</p> <ol style="list-style-type: none"> 2. Area of compound figures KHG
<p>2.3.4: How can I justify it? Similar Triangle Proofs</p>	<ol style="list-style-type: none"> 1. Triangle Proportionality Theorem 6WA

Chapter 3

Probability and Trigonometry

Section 3.1

Textbook section	IXL skills
3.1.1: How can I represent it? Using an Area Model	
3.1.2: How can I represent it? Using a Tree Diagram	1. Outcomes of compound events <small>GKA</small>
3.1.3: What model should I use? Probability Models	
3.1.4: What are the chances of both events? Unions, Intersections, and Complements	1. Theoretical probability <small>2MS</small> 2. Calculate probabilities of events <small>QRS</small> 3. Find probabilities using the addition rule <small>B9L</small>
3.1.5: How much can I expect to win? Expected Value	1. Expected values for a game of chance <small>F2J</small>

Section 3.2

Textbook section	IXL skills
3.2.1: What patterns can I use? Constant Ratios in Right Triangles	
3.2.2: How important is the angle? Connecting Slope Ratios to Specific Angles	1. Find the slope of a graph <small>E7D</small>
3.2.3: What if the angle changes? Expanding the Trig Table	
3.2.4: What about other right triangles? The Tangent Ratio	
3.2.5: What if I can't measure it? Applying the Tangent Ratio	

Chapter 4

Factoring and More Trigonometry

Section 4.1

Textbook section	IXL skills
4.1.1: How can I determine the product? Introduction to Factoring Expressions	1. Polynomial vocabulary MTT 2. Factor quadratics using algebra tiles Y6U
4.1.2: Is there a faster method? Factoring with Area Models	1. Factor quadratics with leading coefficient 1 S9P
4.1.3: How can I factor this? Factoring More Quadratics	
4.1.4: Can it be factored further? Factoring Completely	1. Factor out a monomial JZL 2. Factor quadratics with other leading coefficients 7ED
4.1.5: How can I use the structure? Factoring Special Cases	1. Factor quadratics: special cases 56E

Section 4.2

Textbook section	IXL skills
4.2.1: What if I know the hypotenuse? Sine and Cosine ratios	1. Trigonometric ratios: sin, cos, and tan D5Z
4.2.2: Which tool should I use? Selecting a Trig Tool	1. Trigonometric ratios: find a side length UZC
4.2.3: How can I determine the angle measure? Inverse Trigonometry	1. Trigonometric ratios: find an angle measure 49E
4.2.4: How can I use trig ratios? Trigonometric Applications	

Chapter 5

Quadratic Functions

Section 5.1

Textbook section	IXL skills
5.1.1: How can I describe a parabola? Investigating the Graphs of Quadratic Functions	<ol style="list-style-type: none"> 1. Characteristics of quadratic functions: graphs HW8 2. Characteristics of quadratic functions: equations YJZ
5.1.2: What are the connections? Multiple Representations of Quadratic Functions	<ol style="list-style-type: none"> 1. Complete a function table: quadratic functions LFV
5.1.3: How can I sketch it without a table? Zero Product Property	<ol style="list-style-type: none"> 1. Solve a quadratic equation using square roots ERF 2. Solve a quadratic equation using the zero product property TNM 3. Solve a quadratic equation by factoring CSS
5.1.4: What new connection can I make? Writing Equations for Quadratic Functions	
5.1.5: What is the connection? Completing the Quadratic Web	<ol style="list-style-type: none"> 1. Match quadratic functions and graphs AU8

Section 5.2

Textbook section	IXL skills
5.2.1: What do I know about the solutions? Perfect Square Equations	<ol style="list-style-type: none"> 1. Simplify radical expressions ZFF
5.2.2: How can I make it a perfect square? Completing the Square	<ol style="list-style-type: none"> 1. Complete the square RD2
5.2.3: How can I generalize? More Completing the Square	<ol style="list-style-type: none"> 1. Solve a quadratic equation by completing the square XCL

5.2.4: How else can I solve it? Introduction to the Quadratic Formula

1. Solve a quadratic equation using the quadratic formula XCF

5.2.5: What can I use it? Solving and Applying Quadratic Equations

5.2.6: What are imaginary numbers? Introducing Complex Numbers

Complex numbers

1. Introduction to complex numbers 5VV
2. Add and subtract complex numbers JVF
3. Multiply complex numbers VZ8
4. Powers of i EUT

Complex solutions

5. Solve a quadratic equation using square roots FG7

Chapter 6

More Right Triangles

Section 6.1

Textbook section	IXL skills
6.1.1: Is there a pattern? Special Right Triangles	1. Simplify radical expressions involving fractions VRZ
6.1.2: How can I use similar triangles? Pythagorean Triples	
6.1.3: What connections can I make? Special Right Triangles and Trigonometry	1. Special right triangles LDM
6.1.4: How can I rewrite it? Radicals and Fractional Exponents	1. Evaluate integers raised to rational exponents PQH

Section 6.2

Textbook section	IXL skills
6.2.1: How can I model it? At Your Service	
6.2.2: What relationships can I use? Angles on a Pool Table	
6.2.3: What is the shortest distance? Shortest Distance Problems	
6.2.4: Where does it come from? The Number System and Deriving the Quadratic Formula	1. Sort rational and irrational numbers ALH 2. Classify rational and irrational numbers 3S8 3. Properties of operations on rational and irrational numbers C7S
6.2.5: How can I represent it? Using Algebra to Find a Maximum	
6.2.6: How can I analyze it to make a decision? Analyzing a Game	

Chapter 7

Proof and Conditional Probability

Section 7.1

Textbook section	IXL skills
7.1.1: What can I learn about quadrilaterals? Explore—Conjecture—Prove	Angles in quadrilaterals 1. Find missing angles in quadrilaterals 6V4 Properties of quadrilaterals 2. Properties of parallelograms LLK 3. Properties of squares and rectangles R9M 4. Properties of trapezoids UC9 5. Properties of kites LZ9
7.1.2: What is special about a rhombus? Properties of Rhombi	1. Properties of rhombuses QVX 2. Review: properties of quadrilaterals Q2R
7.1.3: How else can I write it? Two-Column Proofs	Proofs involving quadrilaterals 1. Proving a quadrilateral is a parallelogram H89 2. Proofs involving triangles and quadrilaterals V7W 3. Proofs involving quadrilaterals P77 Proofs involving parallel lines 4. Proofs involving parallel lines I CUV 5. Proofs involving parallel lines II 5U8
7.1.4: What else can I prove? More Geometric Proofs	1. Proofs involving isosceles triangles V45
7.1.5: How can I use other properties to prove? Using Similar Triangles to Prove Theorems	1. Proofs involving similarity in right triangles XCT

Section 7.2

Textbook section	IXL skills
7.2.1: What does independence tell me? Conditional Probability and Independence	<ol style="list-style-type: none">1. Find probabilities using two-way frequency tables HGA2. Find conditional probabilities using two-way frequency tables HGC
7.2.2: Is there another way to organize data? More Conditional Probability	
7.2.3: How can I pull it all together? Applications of Probability	<ol style="list-style-type: none">1. Identify independent events RTZ2. Find conditional probabilities 2M43. Independence and conditional probability AJC

Chapter 8

Polygons and Circles

Section 8.1

Textbook section	IXL skills
8.1.1: What can I construct? Constructing Triangle Centers	<ol style="list-style-type: none"> 1. Construct the circumcenter or incenter of a triangle EC6 2. Construct the centroid or orthocenter of a triangle X8X

Section 8.2

Textbook section	IXL skills
8.2.1: What is its measure? Angles of Polygons	<ol style="list-style-type: none"> 1. Interior angles of polygons SZF 2. Exterior angles of polygons MQ7 3. Review: interior and exterior angles of polygons 6VG
8.2.2: What is the area? Areas of Regular Polygons	

Section 8.3

Textbook section	IXL skills
8.3.1: How does the area change? Area Ratios of Similar Figures	<ol style="list-style-type: none"> 1. Perimeters of similar figures 9T8 2. Areas of similar figures 2BA 3. Area and perimeter of similar figures 6J7
8.3.2: How does the area change? Ratios of Similarity	<ol style="list-style-type: none"> 1. Perimeter and area: changes in scale ETV

Section 8.4

Textbook section	IXL skills
8.4.1: What if it has infinitely many sides? A Special Ratio	
8.4.2: What is the relationship? Arcs and Sectors	<ol style="list-style-type: none">1. Arc length 7L92. Radians and arc length N8Y3. Area of sectors XZQ
8.4.3: How can I use it? Circles in Context	<ol style="list-style-type: none">1. Convert between radians and degrees NJ9

Chapter 9

Modeling with Functions

Section 9.1

Textbook section	IXL skills
9.1.1: How can an equation help me predict? Modeling Nonlinear Data	
9.1.2: How can I shift and stretch a parabola? Parabola Investigation	1. Transformations of quadratic functions KQL
9.1.3: What does the equation reveal? Graphing Form of a Quadratic Function	1. Graph a quadratic function S9G 2. Convert equations of parabolas from general to vertex form WHK
9.1.4: Can I transform other functions? Transforming the Absolute Value Function	1. Graph an absolute value function 23W 2. Transformations of absolute value functions FYJ

Section 9.2

Textbook section	IXL skills
9.2.1: How can I solve quadratic inequalities? Quadratic Applications with Inequalities	1. Graph solutions to quadratic inequalities DP9 2. Solve quadratic inequalities 56V
9.2.2: How can I determine the intersections? Solving Systems of Equations	1. Solve a system of linear and quadratic equations: parabolas HVZ

Section 9.3

Textbook section	IXL skills
9.3.1: How fast is it going? Average Rate of Change and Projectile Motion	
9.3.2: Which function always wins? Comparing the Growth of Functions	

9.3.3: Can I build a function piece by piece?
Piecewise-Defined Functions

9.3.4: How else can I build a new function?
Combining Functions

1. Add and subtract functions QQD
 2. Multiply functions 49K
-

Section 9.4

Textbook section	IXL skills
9.4.1: How can I "undo" a function? Inverse Functions	1. Find the inverse of a function <small>VME</small>

Chapter 10

Circles and More

Section 10.1

Textbook section

10.1.1: What is the equation? The Equation of a Circle

IXL skills

Properties of a circle

1. Find the center of a circle CJA
2. Find the radius or diameter of a circle VGW

Standard form

3. Write equations of circles in standard form from graphs 8HJ
4. Write equations of circles in standard form using properties EXA
5. Graph circles from equations in standard form GVH

10.1.2: How can I find the center and radius? Completing the Square for Equations of Circles

General form

1. Find properties of circles from equations in general form EAJ
2. Graph circles from equations in general form 2AU

Convert between forms of equations

3. Convert equations of circles from general to standard form YM5

10.1.3: How can I graph it? The Geometric Definition of a Parabola

Section 10.2

Textbook section

10.2.1: How far across is it? Introduction to Chords

IXL skills

10.2.2: What is the relationship? Angles and Arcs

1. Central angles and arc measures VZX
2. Circle measurements: mixed review TFF
3. Arcs and chords P63

4. Inscribed angles 98U

10.2.3: What more can I learn about circles?
Chords and Angles

1. Angles in inscribed quadrilaterals I 24Y
 2. Angles in inscribed quadrilaterals II 2Y5
-

10.2.4: What is the relationship? Tangent Lines

1. Tangent lines CFV
 2. Construct a tangent line to a circle JSH
-

10.2.5: What is the relationship? Tangents and
Arcs

Chapter 11

Solids

Section 11.1

Textbook section	IXL skills
11.1.1: How can I measure it? Prisms and Cylinders	1. Surface area of prisms and cylinders SWV 2. Volume of prisms and cylinders N5F
11.1.2: How does the volume change? Volumes of Similar Solids	
11.1.3: How does the volume change? Ratios of Similarity	

Section 11.2

Textbook section	IXL skills
11.2.1: How can I measure it? Volume of a Pyramid	
11.2.2: What if it is a cone? Surface Area and Volume of a Cone	Pyramids and cones 1. Surface area of pyramids and cones 8WX 2. Volume of pyramids and cones 7J3 Similar solids 3. Similar solids: find the missing length UT7 4. Surface area and volume of similar solids N9X 5. Surface area and volume: changes in scale T9H
11.2.3: What is the relationship? Surface Area and Volume of a Sphere	1. Surface area of spheres TGF 2. Volume of spheres 62N

Chapter 12

Counting and Closure

Section 12.1

Textbook section	IXL skills
12.1.1: What if the sample space is very large? The Fundamental Counting Principle	1. Counting principle NMP
12.1.2: How can I count arrangements? Permutations	1. Permutations 2A8
12.1.3: How many groups are possible? Combinations	1. Permutation and combination notation YXM
12.1.4: What kind of counting problem is this? Categorizing Counting Problems	

Section 12.2

Textbook section	IXL skills
12.2.1: What is the probability? Using Geometry to Calculate Probabilities	1. Geometric probability KBK
12.2.2: How can I model it? Choosing a Model	1. Find the equation of a regression line D9Y 2. Interpret regression lines UWX 3. Analyze a regression line of a data set 6CM
12.2.3: What is special about this ratio? The Golden Ratio	
12.2.4: What are my chances of winning? Some Challenging Probability Problems	1. Find probabilities using combinations and permutations C56