IXL Skill Alignment

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Module 1

Reasoning with Shapes

Topic 1: Composing and Decomposing Shapes

Textbook section	IXL skills
Lesson 1.1: Running Circles Around Geometry	
Lesson 1.2: The Quad Squad	**Classify quadrilaterals** 1. Classify quadrilaterals I 86L 2. Classify quadrilaterals II MVK **Properties of quadrilaterals** 3. Properties of parallelograms LLK 4. Properties of rhombuses QVX 5. Properties of squares and rectangles R9M 6. Properties of trapezoids UC9 7. Properties of kites LZ9 8. Review: properties of quadrilaterals Q2R **Angles in quadrilaterals** 9. Find missing angles in quadrilaterals 6V4 10. Angles in inscribed quadrilaterals I 24Y
Lesson 1.3: Tri- Tri- Tri- and Separate Them	**Logic** 1. Counterexamples 2GJ 2. Conditionals VU9 3. Converses, inverses, and contrapositives N5P **Triangles** 4. Classify triangles TNN
Lesson 1.4: What's the Point?	1. Construct the circumcenter or incenter of a triangle EC6 2. Construct the centroid or orthocenter of a triangle X8X 3. Construct the midpoint or perpendicular bisector of a segment HDT 4. Construct an angle bisector FHL

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5. Construct a perpendicular line BZR
6. Construct the inscribed or circumscribed circle of a triangle 8VS

Topic 2: Justifying Line and Angle Relationships

Textbook section	IXL skills
Lesson 2.1: Proof Positive	**Segment measures** 1. Lengths of segments on number lines JSD 2. Additive property of length 7RA **Angle measures** 3. Find measures of complementary, supplementary, vertical, and adjacent angles VZU **Proofs involving angles** 4. Proofs involving angles HV9
Lesson 2.2: A Parallel Universe	**Transversals of parallel lines** 1. Transversals: name angle pairs V85 2. Transversals of parallel lines: find angle measures WB9 **Proofs involving parallel lines** 3. Proofs involving parallel lines I CUV 4. Proofs involving parallel lines II 5U8
Lesson 2.3: Ins and Outs	**Triangles** 1. Triangle Angle-Sum Theorem UBU 2. Exterior Angle Theorem TGK **Polygons** 3. Interior angles of polygons SZF 4. Exterior angles of polygons MQ7 5. Review: interior and exterior angles of polygons 6VG **Proofs** 6. Proofs involving triangles I G78

Textbook section	IXL skills
Lesson 2.4: Identical Twins	**Perpendicular Bisector Theorem** 1. Perpendicular Bisector Theorem BKS **Triangle congruence proofs** 2. Proving triangles congruent by SSS and SAS VVZ 3. Proving triangles congruent by ASA and AAS 23Z 4. Proving triangles congruent by SSS, SAS, ASA, and AAS SZL **Corresponding parts of congruent triangles** 5. Proofs involving corresponding parts of congruent triangles AKL **Isosceles and equilateral triangles** 6. Congruency in isosceles and equilateral triangles HPR 7. Proofs involving isosceles triangles V45
Lesson 2.5: Corners in a Round Room	**Central angles and inscribed angles** 1. Central angles and arc measures VZX 2. Inscribed angles 98U **Angles in inscribed quadrilaterals** 3. Angles in inscribed quadrilaterals II 2Y5 **Tangent lines** 4. Tangent lines CFV 5. Construct a tangent line to a circle JSH

Topic 3: Using Congruence Theorems

Textbook section	IXL skills
Lesson 3.1: SSS, SAS, AAS, … S.O.S!	1. Hypotenuse-Leg Theorem VQJ
Lesson 3.2: Props to You	1. Proofs involving triangles and quadrilaterals V7W 2. Proofs involving quadrilaterals P77
Lesson 3.3: Three-Chord Song	1. Arcs and chords P63

Module 2

Investigating Proportionally

Topic 1: Similarity

Textbook section	IXL skills
Lesson 1.1: Big, Little, Big, Little	**Dilations and scale factors** 1. Dilations: graph the image ZRD 2. Dilations: find the coordinates 5KZ 3. Dilations: scale factor and classification ZDM **Similar figures** 4. Identify similar figures 85X 5. Side lengths and angle measures in similar figures E2K **Similarity transformations** 6. Similar triangles and similarity transformations G2Z
Lesson 1.2: Similar Triangles or Not?	1. Similarity rules for triangles XJQ
Lesson 1.3: Keep it in Proportion	**Triangle Proportionality Theorem** 1. Triangle Proportionality Theorem 6WA **Proofs involving proportionality** 2. Prove proportions or angle congruences using similarity DDY 3. Proofs involving triangles II DUQ **Dilations and parallel lines** 4. Dilations and parallel lines G76
Lesson 1.4: This Isn't Your Average Mean	**Similarity in right triangles** 1. Similarity and altitudes in right triangles CE7 2. Proofs involving similarity in right triangles XCT **Pythagorean Theorem** 3. Prove the Pythagorean theorem JGT
Lesson 1.5: Run it Up the Flagpole	1. Similar triangles and indirect measurement JWK

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Lesson 1.6: Jack's Spare Key	1. Midpoints 7RH 2. Midpoint formula: find the midpoint 2YG 3. Distance formula 59F

Topic 2: Trigonometry

Textbook section	IXL skills
Lesson 2.1: Three Angle Measure	
Lesson 2.2: The Tangent Ratio	
Lesson 2.3: The Sine Ratio	
Lesson 2.4: The Cosine Ratio	**Find trigonometric ratios** 1. Trigonometric ratios: sin, cos, and tan D5Z 2. Trigonometric ratios: csc, sec, and cot L8J 3. Trigonometric ratios in similar right triangles 7X7 4. Find trigonometric functions of special angles BP9 5. Find trigonometric functions using a calculator UK6 **Find side lengths and angle measures** 6. Trigonometric ratios: find a side length UZC 7. Trigonometric ratios: find an angle measure 49E
Lesson 2.5: We Complement Each Other	**Complementary angles** 1. Trigonometric functions of complementary angles KMH **Pythagorean Theorem** 2. Pythagorean theorem F55 3. Converse of the Pythagorean theorem NCK **Solve a right triangle** 4. Solve a right triangle GPR **Special right triangles** 5. Special right triangles LDM

Topic 3: Circles and Volume

Textbook section	IXL skills
Lesson 3.1: All Circles Great and Small	**Similarity of circles** 1. Similarity of circles NEP **Arc length and radians** 2. Arc length 7L9 3. Convert between radians and degrees NJ9 4. Radians and arc length N8Y
Lesson 3.2: A Slice of Pi	1. Area of sectors XZQ
Lesson 3.3: Cakes and Pancakes	
Lesson 3.4: Get to the Point	**Surface area** 1. Surface area of prisms and cylinders SWV 2. Surface area of pyramids and cones 8WX 3. Surface area of spheres TGF **Volume** 4. Volume of prisms and cylinders N5F 5. Volume of pyramids and cones 7J3 6. Volume of spheres 62N

Module 3

Exploring Functions

Topic 1: Functions Derived From Linear Relationships

Textbook section	IXL skills
Lesson 1.1: Putting the V in Absolute Value	1. Graph an absolute value function TD2 2. Transformations of absolute value functions 9TC
Lesson 1.2: Play Ball!	**Equations** 1. Solve absolute value equations 9LF 2. Graph solutions to absolute value equations KXA **Inequalities** 3. Solve absolute value inequalities HXH 4. Graph solutions to absolute value inequalities NE9
Lesson 1.3: I Graph in Pieces	
Lesson 1.4: Step by Step	
Lesson 1.5: A Riddle Wrapped in a Mystery	1. Find the inverse of a function VME 2. Find values of inverse functions from tables YLX

Topic 2: Exponentials

Textbook section	IXL skills
Lesson 2.1: Got Chills … They're Multiplyin'	**Evaluate rational exponents** 1. Evaluate rational exponents KJX **Simplify square roots** 2. Simplify radical expressions ZFF 3. Simplify radical expressions with variables 82V **Simplify higher index roots** 4. Simplify radical expressions with variables I LQX 5. Simplify radical expressions with variables II QGZ

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6. Nth roots U42

Operations with radicals

7. Multiply radical expressions PUM
8. Divide radical expressions CCU
9. Add and subtract radical expressions L46
10. Simplify radical expressions using the distributive property QAX
11. Simplify radical expressions using conjugates FX7

Rational exponents

12. Multiplication with rational exponents LMC
13. Division with rational exponents AN5
14. Power rule V2J
15. Simplify expressions involving rational exponents I 2VX
16. Simplify expressions involving rational exponents II U96

Lesson 2.2: Turn That Frown Upside Down

Exponential functions and graphs

1. Evaluate an exponential function D6H
2. Exponential functions over unit intervals 2YT

Real-world problems

3. Exponential growth and decay: word problems TYQ
4. Compound interest: word problems YJW
5. Continuously compounded interest: word problems 5GU

Lesson 2.3: Just So … Basic

1. Match exponential functions and graphs PCX

Lesson 2.4: Saving Strategies

Topic 3: Introduction to Quadratic Functions

Textbook section	IXL skills
Lesson 3.1: Up and Down or Down and Up	1. Complete a function table: quadratic functions LFV
Lesson 3.2: Endless Forms Most Beautiful	**Characteristics of quadratic functions** 1. Characteristics of quadratic functions: graphs HW8 2. Characteristics of quadratic functions: equations YJZ **Graph quadratic functions** 3. Graph a quadratic function S9G 4. Match quadratic functions and graphs QCE
Lesson 3.3: More Than Meets the Eye	1. Transformations of quadratic functions 6YS 2. Write a quadratic function from its vertex and another point YGV 3. Write a quadratic function from its zeroes G2Q
Lesson 3.4: You Lose Some, You Lose Some	**Rearrange multi-variable equations** 1. Solve multi-variable equations LZD **Linear, quadratic, and exponential functions** 2. Identify linear, quadratic, and exponential functions from graphs DHB 3. Identify linear, quadratic, and exponential functions from tables SP5 **Functions over unit intervals** 4. Linear functions over unit intervals L5P 5. Exponential functions over unit intervals S7D

Module 4

Seeing Structure

Topic 1: Solving Quadratic Equations

Textbook section	IXL skills
Lesson 1.1: This Time, with Polynomials	**Understand polynomials** 1. Polynomial vocabulary DYB 2. Model polynomials with algebra tiles TYV **Addition and subtraction** 3. Add and subtract polynomials using algebra tiles J7V 4. Add and subtract polynomials 5EK 5. Add polynomials to find perimeter 8AS **Multiplication** 6. Multiply a polynomial by a monomial G2G 7. Multiply two polynomials using algebra tiles WR5 8. Multiply two binomials M7Q 9. Multiply two binomials: special cases 9JN 10. Multiply polynomials 58A
Lesson 1.2: Solutions, More or Less	1. Solve a quadratic equation using square roots ERF 2. Solve a quadratic equation using the zero product property TRU
Lesson 1.3: Transforming Solutions	
Lesson 1.3: The Missing Link	**Factor expressions** 1. GCF of monomials ZZU 2. Factor out a monomial JZL 3. Factor quadratics using algebra tiles Y6U 4. Factor quadratics with leading coefficient 1 S9P 5. Factor quadratics with other leading coefficients 7ED 6. Factor quadratics: special cases 56E

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	Solve by factoring 7. Solve a quadratic equation by factoring CSS **Complete the square** 8. Complete the square RD2 9. Solve a quadratic equation by completing the square XCL
Lesson 1.5: Ladies and Gents, Please Welcome the Quadratic Formula!	**Rational and irrational numbers** 1. Sort rational and irrational numbers ALH 2. Classify rational and irrational numbers 3S8 3. Properties of operations on rational and irrational numbers C7S **Quadratic formula** 4. Solve a quadratic equation using the quadratic formula YQH

Topic 2: Applications of Quadratics

Textbook section	IXL skills
Lesson 2.1: *i* Want to Believe	**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 **Quadratic equations with complex solutions** 5. Solve a quadratic equation using square roots FG7 6. Using the discriminant QHK **Fundamental Theorem of Algebra** 7. Fundamental Theorem of Algebra YS8
Lesson 2.2: Ahead of the Curve	1. Graph solutions to quadratic inequalities DP9 2. Solve quadratic inequalities 56V
Lesson 2.3: All Systems Are Go!	1. Solve a system of linear and quadratic equations: parabolas HVZ

Lesson 2.4: Model Behavior	**Inverse functions and relations** 1. Find inverse functions and relations ZRQ **Radical functions** 2. Domain and range of radical functions: graphs UXG 3. Domain and range of radical functions: equations 73C

Topic 3: Circles on a Coordinate Plane

Textbook section	IXL skills
Lesson 3.1: X^2 Plus Y^2 Equals Radius^2	**Write equations** 1. Write equations of circles in standard form from graphs 8HJ 2. Write equations of circles in standard form using properties EXA **Complete the square** 3. Convert equations of circles from general to standard form YM5 4. Find properties of circles from equations in general form EAJ **Graph circles** 5. Graph circles from equations in standard form GVH
Lesson 3.2: A Blip on the Radar	
Lesson 3.3: $\sin^2\theta$ Plus $\cos^2\theta$ Equals 1^2	**Use the unit circle** 1. Find trigonometric ratios using the unit circle ZF7 **Use the Pythagorean identity** 2. Trigonometric identities I XJJ 3. Trigonometric identities II F8F
Lesson 3.4: Going the Equidistance	**Characteristics of parabolas** 1. Identify the direction a parabola opens HHX 2. Find the vertex of a parabola 2NE 3. Find the focus or directrix of a parabola TNG 4. Find the axis of symmetry of a parabola AAY

Write equations of parabolas

5. Write equations of parabolas in vertex form from graphs C6U
6. Write equations of parabolas in vertex form using properties EPR

Graph parabolas

7. Graph parabolas YNJ

Module 5

Making Informed Decisions

Topic 1: Independence and Conditional Probability

Textbook section	IXL skills
Lesson 1.1: What Are the Chances?	**Calculate probability** 1. Theoretical probability 2MS 2. Calculate probabilities of events QRS **Sample spaces** 3. Outcomes of compound events GKA 4. Counting principle GTX **Independent and dependent events** 5. Identify independent and dependent events 5A7
Lesson 1.2: And?	
Lesson 1.3: Or?	1. Find probabilities using the addition rule B9L
Lesson 1.4: And, Or, and More!	1. Probability of independent and dependent events X5U

Topic 2: Computing Probabilities

Textbook section	IXL skills
Lesson 2.1: Table Talk	1. Find probabilities using two-way frequency tables HGA 2. Find conditional probabilities using two-way frequency tables HGC
Lesson 2.2: It All Depends	1. Identify independent events RTZ 2. Find conditional probabilities 2M4 3. Find conditional probabilities using two-way frequency tables HGC
Lesson 2.3: Give Me 5!	1. Permutations 2A8 2. Permutation and combination notation YXM

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Lesson 2.4: A Different Kind of Court Trial	1. Find probabilities using combinations and permutations SVX
Lesson 2.5: What Do You Expect?	1. Geometric probability KBK 2. Choose the better bet 5YW