IXL Skill Alignment

Geometry alignment for CPM Core Connections

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Chapter 1

Shapes and Transformations

Section 1.1

Textbook section	IXL skills
1.1.1: Creating Quilt Using Symmetry	1. Line symmetry WBX 2. Draw lines of symmetry JU7 3. Count lines of symmetry M7U
1.1.2: Making Predictions and Investigating Results	1. Complete a table for a function graph 7EJ
1.1.3: Perimeters and Areas of Enlarging Tile Patterns	1. Perimeter and area of rectangles and squares SHC 2. Complete linear and quadratic function tables UEZ *Also consider* • Area and perimeter in the coordinate plane I QWZ
1.1.4: Logical Arguments	1. Solve linear equations PHF 2. Solve linear equations: complete the solution 9W4
1.1.5: Building a Kaleidoscope	1. Angle measures BCQ 2. Classify angles VLH

Section 1.2

Textbook section	IXL skills
1.2.1: Spatial Visualization and Reflection	1. Identify reflections AU5 *Also consider* • Additive property of length 7RA
1.2.2: Rigid Transformations: Rotation and Translations	1. Translations: graph the image 7AC 2. Reflections: graph the image SM9 3. Rotations: graph the image 6SD

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	Also consider • Classify congruence transformations CXT • Sequences of congruence transformations: graph the image WHW
1.2.3: Slope of Parallel and Perpendicular Lines	1. Slopes of parallel and perpendicular lines 6K2 2. Equations of parallel and perpendicular lines VEB
1.2.4: Defining Transformations	1. Translations: find the coordinates F8U 2. Reflections: find the coordinates SVY 3. Rotations: find the coordinates ZX5 *Also consider* • Rotate polygons about a point XM7
1.2.5: Using Transformations to Create Shapes	1. Number of sides in polygons 5QQ 2. Congruence transformations: mixed review XQ7
1.2.6: Symmetry	1. Rotational symmetry ERP 2. Transformations that carry a polygon onto itself RJW

Section 1.3

Textbook section	IXL skills
1.3.1: Attributes and Characteristics of Shapes	1. Sort polygons into Venn diagrams TFE
1.3.2: More Characteristics of Shapes	1. Classify triangles TNN 2. Identify trapezoids TRZ 3. Classify quadrilaterals I 86L
Checkpoint opportunity	1. Checkpoint: Transformations of geometric figures D5L 2. Checkpoint: Parallel and perpendicular lines JR9

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Chapter 2

Angles and Measurement

Section 2.1

Textbook section	IXL skills
2.1.1: Complementary, Supplementary, and Vertical Angles	1. Identify complementary, supplementary, vertical, adjacent, and congruent angles 7P7 2. Find measures of complementary, supplementary, vertical, and adjacent angles VZU • *Coming soon:* Complementary, supplementary, and vertical angles: solve for x
2.1.2: Angles Formed by Transversals	1. Transversals: name corresponding angles BNS
2.1.3: More Angles Formed by Transversals	1. Transversals: name angle pairs V85 2. Transversals of parallel lines: find angle measures WB9 *Also consider* • Solve systems of linear equations 76G
2.1.4: Angles in a Triangle	1. Triangle Angle-Sum Theorem UBU
2.1.5: Applying Angle Relationships	• *Coming soon:* Transversals of parallel lines: solve for x

Section 2.2

Textbook section	IXL skills
2.2.1: Units of Measure	1. Area of rectangles and squares SUA
2.2.2: Areas of Triangles and Composite Shapes	1. Area of triangles KCK 2. Area of compound figures with rectangles and triangles LK7
2.2.3: Areas of Parallelograms and Trapezoids	1. Area of parallelograms TRT 2. Area of trapezoids MP6

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	Also consider • Conditionals VU9
2.2.4: Heights and Areas	1. Area: mixed review 4Q8

Section 2.3

Textbook section	IXL skills
2.3.1: Triangle Inequality	1. Triangle Inequality Theorem BW7
2.3.2: The Pythagorean Theorem	1. Pythagorean theorem F55 *Also consider* • Converse of the Pythagorean theorem NCK
Checkpoint opportunity	• *Coming soon:* Checkpoint: Line and angle theorems

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Chapter 3

Justification and Similarity

Section 3.1

Textbook section	IXL skills
3.1.1: Dilations	1. Dilations: graph the image ZRD 2. Dilations: find the coordinates 5KZ 3. Dilations: find length, perimeter, and area WLC *Also consider* • Dilations: find the scale factor and center of the dilation VKY
3.1.2: Similarity	1. Identify similar figures 85X 2. Dilations: scale factor and classification ZDM
3.1.3: Using Ratios of Similarity	1. Similarity ratios BT7 2. Perimeters of similar figures 9T8 *Also consider* • Ratios and proportions 8EU
3.1.4: Applications and Notation	1. Similarity statements UG8 2. Side lengths in similar figures 63L

Section 3.2

Textbook section	IXL skills
3.2.1: Conditions for Triangle Similarity	1. Identify similar triangles using the AA and SAS Similarity Theorems MEE
3.2.2: Creating a Flowchart	1. Identify similar and congruent triangles TK6
3.2.3: Triangle Similarity and Congruence	1. Triangle Proportionality Theorem 6WA
3.2.4: More Conditions for Triangle Similarity	1. Identify similar triangles using the SSS Similarity Theorem EKD

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3.2.5: Determining Similarity	1. Similarity rules for triangles P9W
3.2.6: Applying Similarity	1. Similar triangles and indirect measurement JWK 2. Similarity and altitudes in right triangles CE7
Checkpoint opportunity	1. Checkpoint: Transformations in the plane MPY 2. Checkpoint: Dilations 8C6 3. Checkpoint: Prove circles are similar GXP • *Coming soon:* Checkpoint: Similarity transformations

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Chapter 4

Trigonometry and Probability

Section 4.1

Textbook section	IXL skills
4.1.1: Constant Ratios in Right Triangles	1. Slopes of lines V2T
4.1.2: Connecting Slope Ratios to Specific Angles	1. Side lengths and angle measures in similar figures E2K
4.1.3: Expanding the Trig Table	1. Write variable expressions for arithmetic sequences KNC 2. Write variable expressions for geometric sequences PKH
4.1.4: The Tangent Ratio	1. Find the tangent ratio 47C
4.1.5: Applying the Tangent Ratio	1. Find a side length using the tangent ratio C68

Section 4.2

Textbook section	IXL skills
4.2.1: Using an Area Model	1. Theoretical and experimental probability 2L5 *Also consider* • Solve a quadratic equation by factoring ENU • Solve a quadratic equation using the quadratic formula WGU
4.2.2: Using a Tree Diagram	1. Identify independent and dependent events GW9 2. Probability of independent and dependent events PJZ
4.2.3: Probability Models	1. Outcomes of compound events 82S
4.2.4: Unions, Intersections, and Complements	1. Find probabilities using two-way frequency tables TU9 2. Find probabilities using the addition rule UKV

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4.2.5: Expected Value

1. Expected value TWJ

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Chapter 5

Completing the Triangle Toolkit

Section 5.1

Textbook section	IXL skills
5.1.1: Sine and Cosine Ratios	1. Trigonometric ratios: sin, cos, and tan VLY *Also consider* • Counterexamples 2GJ
5.1.2: Selecting a Trig Tool	1. Trigonometric ratios: find a side length WA7
5.1.3: Inverse Trigonometry	1. Trigonometric ratios: find an angle measure AVD
5.1.4: Applications	• *Coming soon:* Trigonometric ratios: word problems

Section 5.2

Textbook section	IXL skills
5.2.1: Special Right Triangles	1. Special right triangles LDM
5.2.2: Pythagorean Triples	1. Converse of the Pythagorean theorem NCK

Section 5.3

Textbook section	IXL skills
5.3.1: Finding Missing Parts of Triangles	1. Solve a right triangle GPR
5.3.2: Law of Sines	1. Law of Sines ZEL 2. Area of a triangle: Law of Sines 8T8
5.3.3: Law of Cosines	1. Law of Cosines 24X
5.3.4: Ambiguous Triangles	1. Law of Sines and Law of Cosines: mixed review DQH
5.3.5: Choosing a Tool	1. Solve a triangle REQ

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Checkpoint opportunity

1. Checkpoint: Right triangle trigonometry 45J
   - *Coming soon:* Checkpoint: Laws of Sines and Cosines

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Chapter 6
Congruent Triangles

Section 6.1

Textbook section	IXL skills
6.1.1: Congruent Triangles	1. Congruence statements and corresponding parts of triangles U7L 2. Solve problems involving corresponding parts of congruent triangles SNK
6.1.2: Conditions for Triangle Congruence	1. SSS and SAS Theorems 48Q 2. ASA and AAS Theorems N94 3. SSS, SAS, ASA, and AAS Theorems LER *Also consider* • Hypotenuse-Leg Theorem VQJ
6.1.3: Congruence of Triangles Through Rigid Transformations	1. Compositions of congruence transformations on triangles 42C 2. SSS Theorem in the coordinate plane C5G
6.1.4: Flowcharts for Congruence	1. Proving triangles congruent by SSS and SAS VVZ 2. Proving triangles congruent by ASA and AAS 23Z
6.1.5: Converses	1. Converses, inverses, and contrapositives N5P

Section 6.2

Textbook section	IXL skills
6.2.1: Angles on a Pool Table	1. Missing angles in diagrams: mixed review 6P4
6.2.2: Investigating a Triangle	1. Solve a triangle: mixed review 5GJ
6.2.3: Creating a Mathematical Model	1. Similar and congruent triangles: mixed review XCV
6.2.4: Analyzing a Game	1. Probability: mixed review BLS

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6.2.5: Using Transformations and Symmetry to Design Snowflakes	1. Transformations on the coordinate plane: mixed review YKW
Checkpoint opportunity	1. Checkpoint: Rigid motion and congruence H9L 2. Checkpoint: Triangle similarity and congruence 5MD

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Chapter 7
Proof and Quadrilaterals

Section 7.1

Textbook section	IXL skills
7.1.1: Properties of a Circle	1. Center, radius, and diameter of a circle VZ6
7.1.2: Building a Tetrahedron	1. Three-dimensional figure vocabulary NKH *Also consider* • Parts of three-dimensional figures VW9
7.1.3: Shortest Distance Problems	
7.1.4: Using Symmetry to Study Polygons	1. Regular and irregular polygons ZBG

Section 7.2

Textbook section	IXL skills
7.2.1: Special Quadrilaterals and Proof	1. Properties of parallelograms LLK 2. Proving a quadrilateral is a parallelogram H89 • *Coming soon:* Prove theorems about parallelograms
7.2.2: Properties of Rhombi	1. Properties of rhombuses QVX *Also consider* • Match exponential functions and graphs WYG
7.2.3: More Proofs with Congruent Triangles	1. Proofs involving corresponding parts of congruent triangles AKL 2. Proofs involving isosceles triangles V45 *Also consider* • Exterior Angle Theorem TGK

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7.2.4: More Properties of Quadrilaterals	1. Properties of squares and rectangles R9M *Also consider* • Properties of trapezoids UC9 • Properties of kites LZ9
7.2.5: Two-Column Proofs	1. Proofs involving triangles and quadrilaterals V7W
7.2.6: Explore-Conjecture-Prove	1. Proofs involving quadrilaterals P77 2. Midsegments of triangles 8GT *Also consider* • Proofs involving parallel lines I CUV

Section 7.3

Textbook section	IXL skills
7.3.1: Studying Quadrilaterals on a Coordinate Grid	1. Graph quadrilaterals M5F *Also consider* • Slopes of parallel and perpendicular lines 6K2 • Proofs involving parallel lines II 5U8
7.3.2: Coordinate Geometry and Midpoints	1. Midpoint formula: find the midpoint 2YG 2. Partition a line segment in a given ratio J42 *Also consider* • Classify quadrilaterals II MVK
7.3.3: Identifying Quadrilaterals on a Coordinate Grid	• *Coming soon:* Classify shapes on graphs
Checkpoint opportunity	1. Checkpoint: Partition a line segment U7H 2. Checkpoint: Area and perimeter in the coordinate plane 9VT 3. Checkpoint: Parallelogram theorems F5J • *Coming soon:* Checkpoint: Coordinate proofs

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Chapter 8

Polygons and Circles

Section 8.1

Textbook section	IXL skills
8.1.1: Pinwheels and Polygons	1. Polygon vocabulary KHQ
8.1.2: Interior Angles of Polygons	1. Interior angles of polygons 68F *Also consider* • Exterior angles of polygons DZG
8.1.3: Angles of Regular Polygons	1. Interior and exterior angles of regular polygons BNM
8.1.4: Regular Polygon Angle Connections	1. Review: interior and exterior angles of polygons 6VG
8.1.5: Finding Areas of Regular Polygons	• *Coming soon:* Area of regular polygons

Section 8.2

Textbook section	IXL skills
8.2.1: Area Ratios of Similar Figures	1. Areas of similar figures 2BA
8.2.2: Ratios of Similarity	1. Perimeter and area: changes in scale ETV

Section 8.3

Textbook section	IXL skills
8.3.1: Special Ratio	
8.3.2: Area and Circumference of a Circle	1. Area and circumference of circles ZDX
8.3.3: Circles in Context	1. Area of sectors XZQ

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Chapter 9

Solids and Constructions

Section 9.1

Textbook section	IXL skills
9.1.1: Three-Dimensional Solids	1. Front, side, and top views of irregular figures 7VV 2. Base plans of irregular figures W7X
9.1.2: Volumes and Surface Area of Prisms	1. Nets of three-dimensional figures 6BF 2. Volume of figures made of unit cubes ZQ8 3. Surface area and volume of rectangular prisms 7JB *Also consider* • Volume of compound figures 2SB
9.1.3: Prisms and Cylinders	1. Surface area of prisms and cylinders SWV 2. Volume of prisms and cylinders N5F
9.1.4: Volumes of Similar Solids	1. Similar prisms and cylinders: find the missing length U7X 2. Surface area and volume of similar prisms and cylinders 8YD
9.1.5: Ratios of Similarity	1. Surface area and volume of prisms and cylinders: changes in scale NKD

Section 9.2

Textbook section	IXL skills
9.2.1: Introduction to Constructions	1. Construct an angle bisector FHL 2. Construct a congruent angle F7V 3. Construct the inscribed circle and the incenter of a triangle 6ZV 4. Construct an equilateral triangle inscribed in a circle RBF

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	5. Construct a regular hexagon inscribed in a circle MCM
9.2.2: Constructing Bisectors	1. Construct the midpoint or perpendicular bisector of a segment HDT *Also consider* • Construct a square inscribed in a circle WEH
9.2.3: More Explorations with Constructions	1. Construct parallel lines 6EB 2. Construct a perpendicular line BZR 3. Construct a square QQZ
9.2.4: Other Constructions	1. Construct the centroid of a triangle XQC 2. Construct the circumscribed circle and the circumcenter of a triangle UVV *Also consider* • Construct an equilateral triangle or regular hexagon USF
Checkpoint opportunity	**Chapter 9** • *Coming soon:* Checkpoint: Density **Chapters 1-9** • *Coming soon:* Checkpoint: Triangle theorems

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Chapter 10

Circles and Conditional Probability

Section 10.1

Textbook section	IXL skills
10.1.1: Introduction to Chords	1. Parts of a circle 4X2
10.1.2: Angles and Arcs	1. Central angles and arc measures VZX 2. Inscribed angles 98U 3. Arc length 7L9
10.1.3: Chords and Angles	1. Arcs and chords P63 2. Angles in inscribed right triangles 6DL 3. Angles in inscribed quadrilaterals I 24Y
10.1.4: Tangents and Secants	1. Tangent lines CFV
10.1.5: Problem Solving with Circles	1. Circle measurements: mixed review TFF 2. Angles in inscribed quadrilaterals II 2Y5

Section 10.2

Textbook section	IXL skills
10.2.1: Conditional Probability and Independence	1. Independence and conditional probability JR7
10.2.2: Two-Way Tables	1. Find conditional probabilities using two-way frequency tables A6N
10.2.3: Applications of Probability	1. Find conditional probabilities NPS

Section 10.3

Textbook section	IXL skills
10.3.1: The Fundamental Principle of Counting	1. Counting principle NMP *Also consider* • Factorials VBE

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10.3.2: Permutations	1. Permutations 2A8 2. Permutation notation JP7
10.3.3: Combinations	1. Combination notation NQK
10.3.4: Categorizing Counting Problems	1. Permutation and combination notation YXM
10.3.5: Some Challenging Probability Problems	1. Find probabilities using combinations and permutations C56
Checkpoint opportunity	1. Checkpoint: Arc length and area of sectors 57A 2. Checkpoint: Definitions of geometric objects 2JF 3. Checkpoint: Inscribed and circumscribed circles DCT • *Coming soon:* Checkpoint: Understand independence and conditional probability • *Coming soon:* Checkpoint: Probabilities of compound events

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Chapter 11
Solids and Circles

Section 11.1

Textbook section	IXL skills
11.1.1: Platonic Solids	1. Three-dimensional figure vocabulary NKH 2. Solids of revolution LKT *Also consider* • Cross sections of three-dimensional figures 7Z4
11.1.2: Pyramids	1. Surface area of pyramids QQH
11.1.3: Volume of a Pyramid	1. Volume of pyramids E99
11.1.4: Surface Area and Volume of a Cone	1. Surface area of cones NMJ 2. Volume of cones EEE
11.1.5: Surface Area and Volume of a Sphere	1. Surface area of spheres TGF 2. Volume of spheres 62N

Section 11.2

Textbook section	IXL skills
11.2.1: Coordinates on a Sphere	1. Surface area and volume of spheres: changes in scale 9UN
11.2.2: Tangents and Arcs	1. Construct a tangent line to a circle JSH *Also consider* • Perimeter of polygons with an inscribed circle UJT
11.2.3: Secant and Tangent Relationships	• *Coming soon:* Intersecting chords, tangents, or secants

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Checkpoint opportunity

Chapter 11

1. Checkpoint: Angles and lines in circles T95
2. Checkpoint: Cross sections and solids of revolution PYM
3. Checkpoint: Volume WY6

- *Coming soon:* Checkpoint: Use shapes to model objects

Chapters 1-11

4. Checkpoint: Geometric constructions PQG

- *Coming soon:* Checkpoint: Geometric design

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Chapter 12

Conics and Closure

Section 12.1

Textbook section	IXL skills
12.1.1: The 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. Graph circles from equations in standard form GVH
12.1.2: Completing the Square for Equations of Circles	1. Convert equations of circles from general to standard form YM5 2. Find properties of circles from equations in general form EAJ 3. Graph circles from equations in general form 2AU
12.1.3: Introduction to Conic Sections	1. Find the focus or directrix of a parabola TD6 2. Write equations of parabolas in vertex form using the focus and directrix 5LT
12.1.4: Graphing a Parabola Using the Focus and Directrix	1. Graph parabolas R2Q

Section 12.2

Textbook section	IXL skills
12.2.1: Using Coordinate Geometry and Constructions to Explore Shapes	1. Review: properties of quadrilaterals Q2R
12.2.2: Euler's Formula for Polyhedra	
12.2.3: The Golden Ratio	
12.2.4: Using Geometry to Find Probabilities	1. Geometric probability KBK

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Checkpoint opportunity

1. Checkpoint: Equations of circles M2P
   - *Coming soon:* Checkpoint: Equations of parabolas

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