IXL Skill Alignment

Geometry alignment for Glencoe High School Math

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Chapter 0

Preparing for Geometry

Textbook section	IXL skills
0.1: Changing Units of Measure Within Systems	1. Estimate metric measurements H9J 2. Convert rates and measurements: customary units LSC 3. Convert rates and measurements: metric units XZD
0.2: Changing Units of Measure Between Systems	1. Convert between customary and metric systems 2J8
0.3: Simple Probability	1. Theoretical and experimental probability 2L5
0.4: Algebraic Expressions	1. Evaluate variable expressions involving integers CJM
0.5: Linear Equations	1. Solve linear equations PHF
0.6: Linear Inequalities	1. Solve linear inequalities K45
0.7: Ordered Pairs	1. Coordinate plane review ZMF 2. Graph triangles and quadrilaterals 26C
0.8: Systems of Linear Equations	1. Solve systems of linear equations 76G
0.9: Square Roots and Simplifying Radicals	1. Simplify radical expressions QW6

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Chapter 1
Tools of Geometry

Textbook section	IXL skills
1.1: Points, Lines, and Planes	1. Properties of planes, lines, and points SVU *Also consider* • Describe intersections in a plane BD6
1.2: Line Segments and Distance	1. Lengths of segments on number lines JSD 2. Additive property of length 7RA 3. Distance formula 59F *Also consider* • Congruent line segments 6W6 • Construct a congruent segment LRJ
1.3: Locating Points and Midpoints	1. Midpoints 7RH 2. Midpoint formula: find the midpoint 2YG 3. Partition a line segment in a given ratio J42 *Also consider* • Midpoint formula: find the endpoint EUW • Construct the midpoint or perpendicular bisector of a segment HDT
1.4: Angle Measure	1. Angle vocabulary 9U2 2. Angle measures BCQ 3. Classify angles VLH *Also consider* • Find lengths and measures of bisected line segments and angles YQW • Construct a congruent angle F7V • Construct an angle bisector FHL

1.5: Angle Relationships

1. Identify complementary, supplementary, vertical, adjacent, and congruent angles 7P7
2. Find measures of complementary, supplementary, vertical, and adjacent angles VZU
3. Angle diagrams: solve for the variable AKB

Also consider

- Construct a perpendicular line BZR

1.6: Two-Dimensional Figures

1. Polygon vocabulary KHQ
2. Perimeter and area of rectangles and squares SHC
3. Area and circumference of circles ZDX

Also consider

- Area and perimeter in the coordinate plane I QWZ
- Area and perimeter in the coordinate plane II MHQ

1.7: Transformations in the Plane

1. Reflection, rotation, and translation F2E
2. Translations: find the coordinates F8U
3. Reflections: find the coordinates SVY
4. Rotations: find the coordinates ZX5

1.8: Three-Dimensional Figures

1. Parts of three-dimensional figures VW9
2. Three-dimensional figure vocabulary NKH

1.9: Two-Dimensional Representations of Three-Dimensional Figures

1. Front, side, and top views of irregular figures 7VV
2. Nets of three-dimensional figures 6BF

1.10: Precision and Accuracy

1. Precision M5E
2. Greatest possible error FLJ
3. Percent error FBC

Also consider

- Percent error: area and volume R9U

Checkpoint opportunity

1. Checkpoint: Definitions of geometric objects 2JF
2. Checkpoint: Partition a line segment U7H
3. Checkpoint: Area and perimeter in the coordinate plane 9VT

Chapter 2

Logical Arguments and Line Relationships

Textbook section	IXL skills
2.1: Conjectures and Counterexamples	1. Number sequences PL9 2. Shape patterns JJA 3. Counterexamples 2GJ *Also consider* • Make predictions with scatter plots 55Y
2.2: Statements, Conditionals, and Biconditionals	1. Conditionals VU9 2. Converses, inverses, and contrapositives N5P 3. Biconditionals Q6E 4. Truth values JUU *Also consider* • Negations VBY • Identify hypotheses and conclusions 7FW • Truth tables 6FJ
2.3: Deductive Reasoning	
2.4: Writing Proofs	1. Properties of equality 6KC 2. Solve linear equations: complete the solution 9W4
2.5: Proving Segment Relationships	
2.6: Proving Angle Relationships	1. Proofs involving angles HV9
2.7: Parallel Lines and Transversals	1. Transversals: name angle pairs V85 2. Transversals of parallel lines: find angle measures WB9 3. Transversals of parallel lines: solve for x RSV *Also consider* • Identify parallel, intersecting, and skew lines and planes QZD

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	• Transversals of parallel lines: prove angle relationships 6QF
2.8: Slope and Equations of Lines	1. Slopes of lines V2T 2. Equations of lines Q98 3. Slopes of parallel and perpendicular lines 6K2 4. Equations of parallel and perpendicular lines VEB *Also consider* • Graph a linear equation VUT
2.9: Proving Lines Parallel	1. Transversals: prove lines are parallel WFL *Also consider* • Construct parallel lines 6EB
2.10: Perpendiculars and Distance	1. Find the distance between a point and a line GWC 2. Find the distance between two parallel lines A7B

Chapter 3

Rigid Transformations and Symmetry

Textbook section	IXL skills
3.1: Reflections	1. Reflections: graph the image SM9
3.2: Translations	1. Translations: graph the image 7AC 2. Translations: write the rule 9PR
3.3: Rotations	1. Rotate polygons about a point XM7 2. Rotations: graph the image 6SD 3. Reflections and rotations: write the rule DMC
3.4: Compositions of Transformations	1. Glide reflections: graph the image KSS 2. Sequences of congruence transformations: graph the image WHW 3. Sequences of congruence transformations: find the rules GFH *Also consider* • Congruence transformations: mixed review XQ7
3.5: Symmetry	1. Count lines of symmetry M7U 2. Rotational symmetry ERP 3. Transformations that carry a polygon onto itself RJW *Also consider* • Line symmetry WBX • Draw lines of symmetry JU7
Checkpoint opportunity	1. Checkpoint: Transformations of geometric figures D5L

Chapter 4

Triangles and Congruence

Textbook section	IXL skills
4.1: Angles of Triangles	1. Triangle Angle-Sum Theorem UBU 2. Exterior Angle Theorem TGK 3. Proofs involving triangles I G78
4.2: Congruent Triangles	1. Congruence statements and corresponding parts CYL 2. Solve problems involving corresponding parts WYB
4.3: Proving Triangles Congruent - SSS, SAS	1. SSS and SAS Theorems 48Q 2. Proving triangles congruent by SSS and SAS VVZ 3. SSS Theorem in the coordinate plane C5G
4.4: Proving Triangles Congruent - ASA, AAS	1. ASA and AAS Theorems N94 2. Proving triangles congruent by ASA and AAS 23Z *Also consider* • SSS, SAS, ASA, and AAS Theorems LER • Proving triangles congruent by SSS, SAS, ASA, and AAS SZL • Proofs involving corresponding parts of congruent triangles AKL
4.5: Proving Right Triangles Congruent	1. Hypotenuse-Leg Theorem VQJ
4.6: Isosceles and Equilateral Triangles	1. Congruency in isosceles and equilateral triangles HPR 2. Proofs involving isosceles triangles V45
4.7: Triangles and Coordinate Proof	1. Classify triangles on the coordinate plane: justify your answer 5TN
Checkpoint opportunity	**Chapters 1-4** 1. Checkpoint: Rigid motion and congruence H9L

Chapter 5

Relationships in Triangles

Textbook section	IXL skills
5.1: Bisectors of Triangles	1. Perpendicular Bisector Theorem BKS 2. Angle bisectors 68E *Also consider* • Construct the circumcenter or incenter of a triangle EC6
5.2: Medians and Altitudes of Triangles	1. Identify medians, altitudes, angle bisectors, and perpendicular bisectors JWN 2. Find the centroid of a triangle P9S *Also consider* • Construct the centroid or orthocenter of a triangle X8X
5.3: Inequalities in One Triangle	1. Exterior Angle Inequality YQA 2. Angle-side relationships in triangles ZN8
5.4: Indirect Proof	
5.5: The Triangle Inequality	1. Triangle Inequality Theorem BW7
5.6: Inequalities in Two Triangles	
Checkpoint opportunity	**Chapters 1-5** 1. Checkpoint: Line and angle theorems SXW

Chapter 6
Quadrilaterals

Textbook section	IXL skills
6.1: Angles of Polygons	1. Interior angles of polygons SZF 2. Exterior angles of polygons MQ7 3. Review: interior and exterior angles of polygons 6VG
6.2: Parallelograms	1. Properties of parallelograms LLK *Also consider* • Find missing angles in quadrilaterals 6V4
6.3: Tests for Parallelograms	1. Proving a quadrilateral is a parallelogram H89
6.4: Special Parallelograms: Rectangles	1. Properties of rectangles Y6J
6.5: Special Parallelograms: Rhombi, Squares	1. Properties of rhombuses and squares ZTA *Also consider* • Graph quadrilaterals M5F
6.6: Trapezoids and Kites	1. Properties of trapezoids UC9 2. Properties of kites LZ9 3. Classify quadrilaterals on the coordinate plane: justify your answer 89F *Also consider* • Review: properties of quadrilaterals Q2R • Proofs involving triangles and quadrilaterals V7W • Proofs involving quadrilaterals P77 • Classify quadrilaterals I 86L • Classify quadrilaterals II MVK
Checkpoint opportunity	1. Checkpoint: Parallelogram theorems F5J

Chapter 7
Similarity

Textbook section	IXL skills
7.1: Dilations	1. Dilations: find the scale factor ZDM 2. Dilations: graph the image ZRD 3. Dilations: find the coordinates 5KZ *Also consider* • Dilations: find the scale factor and center of the dilation VKY • Dilations: find length, perimeter, and area WLC • Dilations and parallel lines G76
7.2: Similar Polygons	1. Similarity statements UG8 2. Side lengths and angle measures in similar figures E2K 3. Perimeters of similar figures 9T8 *Also consider* • Identify similar figures 85X • Similarity ratios BT7
7.3: Similar Triangles: AA Similarity	1. Angle-angle criterion for similar triangles UN6 2. Similar triangles and indirect measurement JWK
7.4: Similar Triangles: SSS and SAS Similarity	1. Similarity rules for triangles XJQ 2. Prove similarity statements ETX *Also consider* • Similar triangles and similarity transformations G2Z • Prove proportions or angle congruences using similarity DDY
7.5: Parallel Lines and Proportional Parts	1. Triangle Proportionality Theorem 6WA 2. Midsegments of triangles 8GT 3. Proofs involving triangles II DUQ

7.6: Parts of Similar Triangles

Checkpoint opportunity

Chapter 7

1. Checkpoint: Dilations 8C6
2. Checkpoint: Similarity transformations 54T

Chapters 1-7

3. Checkpoint: Transformations in the plane MPY
4. Checkpoint: Triangle theorems PN5
5. Checkpoint: Parallel and perpendicular lines JR9

Chapter 8

Right Triangles and Trigonometry

Textbook section	IXL skills
8.1: Geometric Mean	1. Similarity and altitudes in right triangles CE7 *Also consider* • Proofs involving similarity in right triangles XCT
8.2: The Pythagorean Theorem and Its Converse	1. Pythagorean theorem F55 2. Converse of the Pythagorean theorem NCK 3. Pythagorean Inequality Theorems PZ7 *Also consider* • Prove the Pythagorean theorem JGT • Distance to the origin in three dimensions E92
8.3: Special Right Triangles	1. Special right triangles LDM
8.4: Trigonometry	1. Trigonometric ratios: sin, cos, and tan D5Z 2. Trigonometric ratios: find a side length UZC 3. Trigonometric ratios: find an angle measure 49E *Also consider* • Find trigonometric functions of special angles BP9 • Find trigonometric functions using a calculator UK6 • Inverses of trigonometric functions TBB • Trigonometric ratios in similar right triangles 7X7 • Sine and cosine of complementary angles KMH • Trigonometric ratios: csc, sec, and cot L8J
8.5: Angles of Elevation and Depression	1. Solve a right triangle GPR

8.6: The Law of Sines

1. Area of a triangle: sine formula AR9
2. Law of Sines ZEL

Also consider

- Area of a triangle: Law of Sines 8T8

8.7: The Law of Cosines

1. Law of Cosines 24X
2. Solve a triangle REQ

Checkpoint opportunity

Chapter 8

1. Checkpoint: Right triangle trigonometry 45J
2. Checkpoint: Laws of Sines and Cosines 6L6

Chapters 1-8

3. Checkpoint: Triangle similarity and congruence 5MD

Chapter 9
Circles

Textbook section	IXL skills
9.1: Circles and Circumference	1. Parts of a circle: radii, diameters, and chords UEX 2. Circumference of circles RZN *Also consider* • Similarity of circles NEP
9.2: Measuring Angles and Arcs	1. Central angles and arc measures VZX 2. Arc length 7L9 3. Radians and arc length N8Y *Also consider* • Parts of a circle ZEZ • Convert between radians and degrees NJ9
9.3: Arcs and Chords	1. Arcs and chords P63
9.4: Inscribed Angles	1. Inscribed angles 98U 2. Angles in inscribed right triangles 6DL 3. Angles in inscribed quadrilaterals I 24Y *Also consider* • Angles in inscribed quadrilaterals II 2Y5
9.5: Tangents	1. Tangent lines CFV 2. Construct a tangent line to a circle JSH 3. Perimeter of polygons with an inscribed circle UJT *Also consider* • Construct the inscribed or circumscribed circle of a triangle 8VS • Construct an equilateral triangle inscribed in a circle RBF • Construct a square inscribed in a circle WEH

- Construct a regular hexagon inscribed in a circle MCM

9.6: Secants, Tangents, and Angle Measures

1. Angles formed by chords, secants, and tangents ZN9

Also consider

- Segments formed by chords, secants, and tangents HPE

9.7: Equations of Circles

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 general form 2AU

Also consider

- Determine if a point lies on a circle 4D2
- Convert equations of circles from general to standard form YM5
- Solve a system of linear and quadratic equations: circles WNN

9.8: Equations of Parabolas

1. Write equations of parabolas in vertex form using properties B7J
2. Graph parabolas LKP

Also consider

- Find the focus or directrix of a parabola TD6
- Write equations of parabolas in vertex form from graphs NHB
- Find properties of a parabola from equations in general form A88

Checkpoint opportunity

Chapter 9

1. Checkpoint: Prove circles are similar GXP
2. Checkpoint: Angles and lines in circles T95
3. Checkpoint: Inscribed and circumscribed circles DCT
4. Checkpoint: Equations of circles M2P
5. Checkpoint: Equations of parabolas V6B

Chapters 1-9

6. Checkpoint: Geometric constructions PQG
7. Checkpoint: Coordinate proofs 26X

Chapter 10
Extending Area

Textbook section	IXL skills
10.1: Areas of Parallelograms and Triangles	1. Area of parallelograms and triangles JTR *Also consider* • Understanding area of a parallelogram 5H8 • Understanding area of a triangle URS • Heron's formula KU2
10.2: Areas of Trapezoids, Rhombi, and Kites	1. Area of trapezoids MP6 2. Area of rhombuses 8WQ *Also consider* • Understanding area of a trapezoid S7H
10.3: Areas of Circles and Sectors	1. Area of circles NKL 2. Area of sectors XZQ *Also consider* • Understand arc length and sector area of a circle UGV
10.4: Areas of Regular Polygons and Composite Figures	1. Area of regular polygons R73 2. Area of compound figures KHG *Also consider* • Area between two shapes SB6
10.5: Area and Nonrigid Transformations	1. Areas of similar figures 2BA 2. Perimeter and area: changes in scale ETV *Also consider* • Area and perimeter of similar figures 6J7
10.6: Surface Area	1. Surface area of prisms and cylinders SWV 2. Surface area of pyramids and cones 8WX

Checkpoint opportunity

Chapters 1-10

1. Checkpoint: Arc length and area of sectors 57A

Chapter 11
Extending Volume

Textbook section	IXL skills
11.1: Cross Sections and Solids of Revolution	1. Cross sections of three-dimensional figures 7Z4 2. Solids of revolution LKT
11.2: Volumes of Prisms and Cylinders	1. Volume of prisms and cylinders N5F 2. Volume of compound figures 2SB
11.3: Volumes of Pyramids and Cones	1. Volume of pyramids and cones 7J3
11.4: Spheres	1. Surface area of spheres TGF 2. Volume of spheres 62N
11.5: Spherical Geometry	
11.6: Volume and Nonrigid Transformations	1. Similar solids: find the missing length UT7 2. Surface area and volume of similar solids N9X
11.7: Applying Measurements	1. Calculate density, mass, and volume YKJ
Checkpoint opportunity	**Chapter 11** 1. Checkpoint: Cross sections and solids of revolution PYM 2. Checkpoint: Volume WY6 3. Checkpoint: Density BDY **Chapters 1-11** 4. Checkpoint: Geometric modeling and design T92

Chapter 12
Probability

Textbook section	IXL skills
12.1: Representing Sample Spaces	1. Outcomes of compound events 82S 2. Counting principle NMP
12.2: Probability and Counting	1. Probability of simple events and opposite events HEC
12.3: Probability with Permutations and Combinations	1. Permutations 2A8 2. Permutation and combination notation YXM 3. Find probabilities using combinations and permutations C56
12.4: Geometric Probability	1. Geometric probability KBK
12.5: Probability and the Multiplication Rule	1. Identify independent and dependent events GW9 2. Probability of independent and dependent events PJZ 3. Identify independent events 5P6
12.6: Probability and the Addition Rule	1. Probability of mutually exclusive events and overlapping events VS6 2. Find probabilities using the addition rule UKV
12.7: Conditional Probability	1. Find conditional probabilities NPS 2. Independence and conditional probability JR7 *Also consider* • Probability: mixed review BLS
12.8: Two-Way Frequency Tables	1. Find probabilities using two-way frequency tables TU9 2. Find conditional probabilities using two-way frequency tables A6N *Also consider* • Create relative frequency tables 2WH

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Checkpoint opportunity

1. Checkpoint: Understand independence and conditional probability DMD
2. Checkpoint: Probabilities of compound events Z8J