

Discovering Geometry High School Geometry

*This proposed pacing and sequencing guide is for a heterogeneous, non-differentiated Geometry course. Schools that offer Accelerated or Advanced courses will need to extend this document to provide additional depth and rigor.

Section	Section Title	Standards Alignment	Comments
Chapter 1 - Introducing Geometry & Chapter 2 - Reasoning in Geometry			
<i>Big Idea</i> : Multiple Representations of Functions & Algebra Review			
1.1	Building Blocks of Geometry		
1.2	Poolroom Math	5.2a	
1.4	Polygons	4.1a, 4.3a	
2.1	Inductive Reasoning	2.1a, 2.2a, 2.2b, 2.3a, 2.5c	
2.2	Finding the nth Term	2.1a, 2.2a, 2.2b, 2.3a, 2.5c	
2.3 & 2.5	Mathematical Modeling & Angle Relationships		Section 2.3 exercises 1-6
2.6	Special Angles on Parallel Lines	4.3a, 4.3b	
Chapter 3 - Using Tools of Geometry			
<i>Note</i> : Geometric constructions can be a powerful tool to introduce, explore, and reinforce geometric concepts and properties. Teachers can incorporate geometric constructions where appropriate throughout the text, but it is not suggested to focus on geometric constructions in isolation until the end of the school year, if desired. Mastery of geometric constructions is not expected and they will not be assessed.			
Chapter 4 - Discovering and Proving Triangle Properties			
<i>Big Idea</i> : Exploring and Proving Properties of Polygons and Circles			
4.1	Triangle Sum Conjecture	4.3a, 4.3b	
4.2	Properties of Isosceles Triangles	4.3a, 4.3b	
4.3	Triangle Inequalities	4.3a, 4.3b	Can be skipped if time is short
4.4	Are There Congruence Shortcuts?	4.1a	
4.5	Are There Other Congruence Shortcuts?	4.1a	
4.6	Corresponding Parts of Congruent Triangles	4.1a	
4.7	Flowchart Thinking	4.1a, 4.3b	
Chapter 5 - Discovering and Proving Polygon Properties			
<i>Big Idea</i> : Exploring and Proving Properties of Polygons and Circles			
5.1	Polygon Sum Conjecture	2.1a, 2.2a, 2.2b, 2.3a, 4.3a, 4.3b	
5.2	Exterior Angles of a Polygon	4.3a, 4.3b	
5.3	Kite and Trapezoid Properties	4.3a, 4.3b	Kite properties can be skipped if time is short
1.6 & 5.5	Special Quadrilaterals & Properties of Parallelograms	4.3a, 4.3b	
5.6	Properties of Special Parallelograms	4.3a, 4.3b	
5.7	Proving Quadrilateral Properties	4.3b	
Algebra Skills Review (To be covered by the end of first semester)			
<i>Big Idea</i> : Multiple Representations of Functions & Algebra Review			
<i>These concepts and skills need to be covered sometime during the first semester, either through daily warm-ups, mini-lessons, or full class periods. They can be pulled together as a whole unit on algebra skills or they can be presented as they appear in the textbook. Scatterplots and Lines of Best Fit will need to be supplemented.</i>			
Alg Skls 1	Midpoint	4.1c	Pages 36-37; Discovering Algebra section 11.2 resources
Alg Skls 2	Slope	2.2c, 4.1c	Pages 135-136
Alg Skls 3	Slopes of Parallel and Perpendicular Lines	4.1c, 4.3a	Pages 167-169; Discovering Algebra section 11.1 resources
Alg Skls 4	Solving Equations	1.2a, 2.3a	Pages 212-214; Algebra With Pizzazz as supplement
Alg Skls 5	Writing Linear Equations	2.2a, 2.2b, 4.1c	Pages 287-290
	Scatterplots and Lines of Best Fit	3.3a, 3.3b, 3.3c	Use CSAP released items, Probability Activities , or Data Analysis and Probability Workbook (Algebra 2)
Probability & Counting Techniques (To be covered by the end of first semester)			
<i>Big Idea</i> : Probability & Counting Techniques			
<i>These concepts and skills need to be covered sometime during the first semester, either through daily warm-ups, mini-lessons, or full class periods. They can be pulled together as a whole unit on Probability and Counting Techniques.</i>			
	Review of Basic Probability	3.5a, 3.5b, 3.5e	Use Probability Activities or Data Analysis and Probability Workbook (Algebra 2)
	Review Counting Techniques	3.6a	Use Probability Activities or Data Analysis and Probability Workbook (Algebra 2)

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	Probability With Combinations	3.5a, 3.6a	Use Probability Activities or Data Analysis and Probability Workbook (Algebra 2)
	Probability of Independent Events	3.5c, 3.5d	Use Probability Activities or Data Analysis and Probability Workbook (Algebra 2)
End of 2nd Quarter			
Algebra Skills Review (To be covered before CSAP testing in March)			
<u>Big Idea</u> : Multiple Representations of Functions & Algebra Review			
These concepts and skills need to be covered before CSAP, either through daily warm-ups, mini-lessons, or full class periods. They can be pulled together as a whole unit on algebra skills or they can be presented as they appear in the textbook. Inequalities in One and Two Variables will need to be supplemented, and Solving Systems of Linear Equations will need to be reviewed before CSAP.			
Alg Skls 6	Solving Systems of Linear Equations	2.1, 2.2a, 2.2b, 2.3b	Algebra With Pizzazz as supplement
	Inequalities in One and Two variables	2.1a, 2.3a, 2.5a	Use Discovering Algebra section 6.5 & 6.6 resources or Algebra With Pizzazz
Alg Skls 8	Products, Factors, and Quadratic Equations	1.2a, 2.3a	Pages 438-441
Alg Skls 10	Solving for Any Variable	2.3c	Pages 567-568 (Preview for Chapters 8 & 10)
Alg Skls 12	Transforming Functions	2.2b, 2.4c	Pages 675-678
Chapter 8 - Area			
<u>Big Idea</u> : Area & Volume			
8.1	Areas of Rectangles and Parallelograms	4.2b, 5.2b	Combine 8.1, 8.2, 8.3 as much as possible
8.2	Areas of Triangles, Trapezoids, and Kites	4.2b, 5.2b, 6.2a	Area of kites can be skipped if time is short
8.3	Area Problems	1.3a, 2.3a, 4.2b, 5.2b, 6.2a	Combine 8.1, 8.2, 8.3 as much as possible
8.4	Areas of Regular Polygons	4.2b, 4.3b, 5.2b, 6.2a	
6.5	The Circumference/Diameter Ratio	1.1b, 2.3a, 6.2a	Combine 6.5 & 6.6 as much as possible
6.6	Around the World	1.1b, 2.3a, 5.1b, 5.2b, 6.2a	Combine 6.5 & 6.6 as much as possible
8.5	Areas of Circles	1.1b, 2.3a, 4.2b, 5.2b, 6.2a	
8.6	Any Way You Slice It	1.1b, 2.3a, 4.2b, 5.2b	Can be skipped if time is short
8.7	Surface Area	1.1b, 2.3a, 4.2b, 4.2c, 5.2b, 6.2a	
Chapter 9 - Pythagorean Theorem & Chapter 13 - Trigonometry			
<u>Big Idea</u> : Properties of Right Triangles			
9.1	The Theorem of Pythagoreas	4.2a, 6.2a	
9.2	The Converse of the Pythagorean Theorem	4.2a, 6.2a	
Alg Skls 9	Radical Expressions	1.1b, 1.2a, 6.2b	Pages 489-490
9.3	Two Special Right Triangles	4.3a, 4.3b	Two days for this section
9.4	Story Problems	1.1b, 1.3a, 2.3a, 4.2a, 4.3b, 6.2a	
9.5	Distance in Coordinate Geometry	4.1c, 4.2c, 4.3b, 6.2a	Distance formula only
12.1	Trigonometric Ratios	2.3a, 4.4a	
12.2	Problem Solving with Right Triangles	2.3a, 4.4a, 5.1a	
Chapter 10 - Volume			
<u>Big Idea</u> : Area & Volume			
10.2	Volume of Prisms and Cylinders	1.1b, 2.3a, 2.5b, 4.2c, 5.2b, 6.2a	Combine 10.2 & 10.3 as much as possible
10.3	Volume of Pyramids and Cones	1.1b, 2.3a, 2.5b, 4.2c, 5.2b, 6.2a	Combine 10.2 & 10.3 as much as possible
10.4	Volume Problems	1.1b, 1.3a, 2.3a, 4.2c, 5.2b, 6.2a	
10.6 & 10.7	Volume of a Sphere & Surface Area of a Sphere	1.1b, 2.3a, 4.2c, 5.2b, 6.2a	

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Section	Section Title	Standards Alignment	Comments
Chapter 11 - Similarity			
<i>Big Idea : Proportional Reasoning</i>			
Alg Skls 11	Proportion and Reasoning	2.3a, 6.1a	
11.1	Similar Polygons	4.1a, 4.1b, 6.1a	
CSAP TESTING			
End of 3rd Quarter			
11.2	Similar Triangles	4.1a, 6.1a	
11.3	Indirect Measurement with Similar Triangles	4.1a, 5.1a, 6.1a	
11.5	Proportions with Area	4.1a, 5.1d, 6.1a	
11.6	Proportions with Volume	4.1a, 5.1d, 6.1a	
11.7	Proportional Segments Between Parallel Lines	4.1a, 6.1a	
Chapter 6 - Circles			
<i>Big Idea : Exploring and Proving Properties of Polygons and Circles</i>			
1.7	Circles		
6.1	Tangent Properties	4.3c	
6.2	Chord Properties	4.3c	
6.3	Arcs and Angles	4.3c	
6.4	Proving Circle Conjectures	4.3c	Can be skipped if time is short
6.7	Arc Length	1.1b, 2.3a, 4.3c, 6.2a	
<i>Note : The following chapters or units are optional (time permitting), and individual schools can decide which are appropriate for Geometry. The outlined chapters and concepts above must take instructional priority for Geometry.</i>			
Chapter 3 - Using Tools of Geometry			
3.1	Duplicating Segments and Angles		
3.2	Constructing Perpendicular Bisectors		
3.3	Constructing Perpendiculars to a Line		
3.4	Constructing Angle Bisectors		
3.5	Constructing Parallel Lines		
3.6	Construction Problems		
3.7	Constructing Points of Concurrency		
3.8	The Centroid		
Chapter 7 - Transformations and Tessellations			
0.1 & 7.1	Geometry in Nature and in Art & Transformations and Symmetry	4.1b	
7.2	Properties of Isometries	4.1b, 2.5c	
7.3	Composition of Transformations	4.1b	
7.4	Tessellations with Regular Polygons		Can be substituted with a tessellation project or can be skipped altogether
7.6	Tessellations Using Only Translations		Can be substituted with a tessellation project or can be skipped altogether
7.7	Tessellations That Use Rotations		Can be substituted with a tessellation project or can be skipped altogether
7.8	Tessellations That Use Glide Reflections		Can be substituted with a tessellation project or can be skipped altogether
Algebra 2 Readiness (Use <i>Algebra With Pizzazz</i> or Chapters 1 & 2 practice worksheets from the Algebra 2 textbook)			
	Algebraic Expressions (Section 1-2)		
	Solving Equations (Section 1-3)		
	Solving Inequalities (Section 1-4)		
	Absolute Value Equations (Section 1-5)		
	Linear Equations (Section 2-2)		
	Using Linear Models (Section 2-4)		