



Northside High School

Geometry Curriculum

Unit 6: Polygons & Quadrilaterals

Unit Length: 17 days

Domain: Congruence

- Cluster 3: Apply and prove geometric theorems.

Domain: Circles

- Cluster 10: Understand and apply theorems about circles.

Standards:

- *HSG.CO.C.11:
 - Apply and prove theorems about quadrilaterals Note: Theorems include but are not limited to relationships among the sides, angles, and diagonals of quadrilaterals and the following theorems concerning parallelograms: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.
- HSG.C.A.3:
 - Construct the inscribed and circumscribed circles of a triangle.
 - Prove properties of angles for a quadrilateral inscribed in a circle.
- HSG.CO.E.14:
 - Apply inductive reasoning and deductive reasoning for making predictions based on real world situations using:
 - Conditional Statements (inverse, converse, and contrapositive).
 - Venn Diagrams Note: This is not intended to be an isolated topic but instead to support concepts throughout the course.

**Guaranteed Viable Curriculum*



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Vocabulary to Emphasize:

- Polygon.
- Quadrilateral.
- Parallelogram.
- Rectangle.
- Square.
- Rhombus.
- Trapezoid (isosceles/right).
- Kite.
- Diagonal.
- Consecutive side/angle
- Opposite side/angle.
- Congruent.
- Parallel.
- Perpendicular .
- Supplementary.
- Bisect.
- Inscribed.
- Circumscribed.



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Unit 6: Part 1 Polygons

6 days

Essential question: What are the properties of polygons?

Learning Goal	Notes	Bellwork/Exit	Practice
Students will discover what makes a polygon and determine whether or not polygons are regular, irregular, concave, or convex.	What Makes a Polygon? Intro Notes. Classifying Polygons Notes.	BW: <ul style="list-style-type: none">Go over rules and procedures again and set up INB's. *first day back from break	Use polygon manipulatives and have students sort and classify. Polygon Worksheet #1.* <small>*resource from Holt Geometry textbook and workbook pages</small>
Students will solve for interior and exterior angles in polygons.	Polygon Angle Notes.	BW: <ul style="list-style-type: none">Pre-assessment.Polygons BW #1.	Polygon Worksheet #2* <small>*resource from Holt Geometry textbook and workbook pages</small>
Students will set up algebraic equations and solve for interior and exterior angles in polygons.	Polygon Angle. Algebra Notes.	BW: <ul style="list-style-type: none">Polygons BW #2.	Polygon Worksheet #3* <small>*resource from Holt Geometry textbook and workbook pages</small> Pre-AP/Enrichment: Polygon Homework Sheet
Students will solve problems based on the properties of polygons.		BW: <ul style="list-style-type: none">Polygons BW #3.	Polygon Worksheet #4.
Students will solve for missing angles using the properties of polygons.		BW: <ul style="list-style-type: none">Polygons BW #4.	Polygon Worksheet #5.
Students will solve for missing angles using the properties of polygons.		BW: <ul style="list-style-type: none">Polygons BW #5.	Polygon Algebra. Scavenger Hunt.

CFA #1, Version A: Polygons.

CFA #1, Version B: Polygons.



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Unit 6: Part 2 Quadrilaterals

10 days

Essential questions: What are the properties of quadrilaterals?

Learning Goal	Notes	Bellwork/Exit	Practice
Students will explore and apply the properties of parallelograms.	Quadrilateral Notes Foldable.* (Talk about parallelograms today and vocabulary). *resource from http://newellssecondarymath.blogspot.com/2016/02/quadrilaterals.html	BW: <ul style="list-style-type: none">Quads BW #1.	Proving Quadrilaterals are Parallelograms Practice.* *Resource found at http://www.mrseteachesmath.com/2017/03/quadrilaterals-inb-pages-part-1.html
Students will explore and apply the properties of parallelograms.		BW: <ul style="list-style-type: none">Quads BW #2.	Quadrilateral Worksheet #1.* *resource from Holt Geometry textbook and workbook pages
Students will apply the properties of parallelograms to algebraic equations.	Quadrilateral Notes Foldable.* (The last ten or fifteen minutes of class, go over notes on squares, rhombi, and rectangles). *resource from http://newellssecondarymath.blogspot.com/2016/02/quadrilaterals.html	BW: <ul style="list-style-type: none">Quads BW #3. Exit: (if time allows) <ul style="list-style-type: none">Quadrilateral Properties	Parallelogram Maze Activity.* *resource from http://newellssecondarymath.blogspot.com/2016/02/quadrilaterals.html Pre-AP/Enrichment: <ul style="list-style-type: none">Quadrilateral Homework #1.* *resource from Holt Geometry textbook and workbook pages



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Learning Goal	Notes	Bellwork/Exit	Practice
Students will explore the properties of Squares, Rhombi, and Rectangles as related to parallelograms.	Quadrilateral Notes Foldable.* (Finish going over notes of squares, rhombi, and rectangles). *resource from http://newellssecondarymath.blogspot.com/2016/02/quadrilaterals.html	BW: <ul style="list-style-type: none"> Quads BW #4. 	Squares & Rhombi Partner Activity.* *resource from http://newellssecondarymath.blogspot.com/p/classroom-activities.html Pre-AP/Enrichment: <ul style="list-style-type: none"> Quadrilateral Homework #2.* *resource from Holt Geometry textbook and workbook pages
Students will apply the properties of parallelograms, squares, rectangles, and rhombi to solve algebraic equations.		BW: <ul style="list-style-type: none"> Quads BW #5. 	Quadrilaterals Task Cards #1-20.* *resource from http://newellssecondarymath.blogspot.com/p/classroom-activities.html
Students will apply the properties of parallelograms, squares, rectangles, and rhombi to solve algebraic equations.		BW: <ul style="list-style-type: none"> Quads BW #6. Exit: <ul style="list-style-type: none"> CFA. 	Finish Task Cards.
Students will explore and apply the properties of kites and trapezoids.	Quadrilateral Notes Foldable.* (Talk about trapezoids and kites today.) *resource from http://newellssecondarymath.blogspot.com/2016/02/quadrilaterals.html	BW: <ul style="list-style-type: none"> Quads BW #7. 	Quadrilateral Worksheet #2- Kites and Trapezoids.* *resource from Holt Geometry textbook and workbook pages. Pre-AP/Enrichment: <ul style="list-style-type: none"> Quadrilaterals Homework #3.* *resource from Holt Geometry textbook and workbook pages.
Students will apply the properties of kites and trapezoids to solve algebraic equations.		BW: <ul style="list-style-type: none"> Quads BW #8. Exit: <ul style="list-style-type: none"> CFA. 	Kites & Trapezoids Practice.



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Learning Goal	Notes	Bellwork/Exit	Practice
Students will apply the properties of all quadrilaterals to solve algebraic equations.		BW: <ul style="list-style-type: none">Quads BW #9.	Quadrilaterals Task Cards #21-30.* *resource from http://newellssecondarymath.blogspot.com/p/classroom-activities.html Pre-Ap: <ul style="list-style-type: none">Quadrilaterals Stations.* *resource from http://newellssecondarymath.blogspot.com/p/classroom-activities.html
Students will review all of the properties of polygons.		BW: <ul style="list-style-type: none">Quads BW #10.	Unit 6 Review.

CFA #2, Version A: Parallelograms

CFA #2, Version B: Parallelograms

CFA #3, Version A: Kites & Trapezoids

CFA #3, Version B: Kites & Trapezoids

Unit 6 Common Summative Assessment

Unit 6 previous learning: Where do I start/What should they know?	
3.G.1	Understand that shapes in different categories (e.g. rhombuses, rectangles, and others) may share attributes (e.g. having four sides). And that the shared attributes can define a larger category (e.g. quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
5.G.3	Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
6.G.A.3	Apply the following techniques in the context of solving real-world and mathematical problems: Draw polygons in the coordinate plane given coordinates for the vertices • Use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate.
7.G.A.2	Differentiate between regular and irregular polygons.