

Unit 8 Quadrilaterals

Content Area: **Math**
Course(s): **CP Geometry**
Time Period: **Marking Period 3**
Length: **3**
Status: **Published**

Unit Overview

In this ~~chapter~~ **unit** students will find angles measures in polygons. They will investigate properties of parallelograms and learn what information they can use to conclude that a quadrilateral is a parallelogram. Students will also study special quadrilaterals such as rhombuses, rectangles, squares, trapezoids, and kites.

Enduring Understandings

The interior angle sum of any polygon can be found by breaking the polygon into triangles and using calculations based on 180° .

Students will understand how to use angle relationships in polygons.

Students will understand how to use properties of parallelograms.

Students will understand how to classify quadrilaterals by their properties.

Essential Questions

What special properties can be found in polygons?

How do we find the interior angle sum of any given polygon?

How can we understand the exterior angle sum of any given polygon?

How can we apply the interior and exterior angle sums to find one interior or exterior angle in a regular polygon?

How do we classify quadrilaterals?

What are the properties of parallelograms and special types of parallelograms?

What can you use to prove quadrilaterals?

MA.G-CO.A.3	Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.
MA.S-ID.B.6a	Fit a function to the data (including with the use of technology); use functions fitted to data to solve problems in the context of the data.
MA.G-CO.C	Prove geometric theorems
MA.F-IF.B.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.
MA.G-CO.C.9	Prove theorems about lines and angles.
MA.G-CO.C.11	Prove theorems about parallelograms.
MA.G-CO.D.12	Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.).
MA.F-BF.A.1	Write a function that describes a relationship between two quantities.
MA.G-GPE.B.4	Use coordinates to prove simple geometric theorems algebraically.
MA.G-GPE.B.7	Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.
MA.G-MG	Modeling with Geometry
MA.G-MG.A	Apply geometric concepts in modeling situations
MA.G-MG.A.1	Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).
MA.G-MG.A.3	Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).

Interdisciplinary Connections

LA.W.9-10.6	Use technology, including the Internet, to produce, share, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.
SCI.HS-ETS1-2	Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.
TECH.8.1.12.C.CS4	Contribute to project teams to produce original works or solve problems.

Technology Standards

TECH.8.1.12.C.CS4	Contribute to project teams to produce original works or solve problems.
TECH.8.1.12.D.CS3	Exhibit leadership for digital citizenship.
TECH.8.1.12.E.CS4	Process data and report results.
TECH.8.1.12.F.CS3	Collect and analyze data to identify solutions and/or make informed decisions.
TECH.8.1.12.F.CS4	Use multiple processes and diverse perspectives to explore alternative solutions.
TECH.8.2.12.C.CS2	The application of engineering design.

21st Century Themes/Careers

Financial Literacy Integration

PFL.9.1.12.C.1	Compare and contrast the financial benefits of different products and services offered by a variety of financial institutions.
PFL.9.1.12.C.2	Compare and compute interest and compound interest and develop an amortization table using business tools.
PFL.9.1.12.C.3	Compute and assess the accumulating effect of interest paid over time when using a variety of sources of credit.

Instructional Strategies & Learning Activities

- Lesson Discovery Activities
- Partner/ Group Work
- Break polygons into triangles to find the interior angle sum
- Hierarchy of quadrilaterals
- investigate parallelograms
- Midsegment of a trapezoid

Formative Assessments

- Daily homework checks
- Quiz
- Chapter Unit Test
- Exit Tickets
- Warm-ups

Summative Assessment

- Unit Test
- Unit Project (Optional)

Benchmark Assessments

Students will take NJSLA Geometry Benchmark A

Alternate Assessments

- Modified homework
- Modified quizzes
- Modified tests
- Modified projects