Unit 2 Reasoning and Proof

Content Area: **Math**
Course(s): **CP Geometry**
Time Period: **Marking Period 1**
Length: **3**
Status: **Published**

Unit Overview

In this ~~chapter~~ unit students will analyze conditional statements and write the converse, inverse, and contrapositive of a conditional statement. Students will develop simple logical arguments and use properties of equality and the laws of logic to prove basic theorems about congruence, supplementary angles, complementary angles, and vertical angles. Finally, students will understand geometric relationships in diagrams.

Enduring Understandings

Students will understand that proofs can be used to argue geometric relationships.

Students will understand how to use deductive reasoning.

Students will understand geometric relationships in diagrams.

Students will understand how to write proofs for geometric relationships.

Essential Questions

What are the types of special angle relationships?

How can you understand geometric relationships in diagrams?

What are conditional statements?

How can we use conditional statements to evaluate truth value?

What are the algebraic properties and how can they be used?

How do you use a formal proof to prove geometric and algebraic properties?

New Jersey Student Learning Standards (No CCS)

MA.G-CO	Congruence
MA.G-CO.A.1	Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.
MA.G-CO.C	Prove geometric theorems
MA.G-CO.C.9	Prove theorems about lines and angles.
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.G-GPE.B	Use coordinates to prove simple geometric theorems algebraically
MA.G-GPE.B.4	Use coordinates to prove simple geometric theorems algebraically.
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).

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

CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.

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
- Truth table Acitivity
- Partner/ Group Work
- Unions and Intersections Acitivity

Formative Assessments

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

Benchmark Assessments

Students will take NJSLA Geometry Benchmark A

Alternate Assessments

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

Summative Assessment

- Unit Test

- Unit Project (Optional)