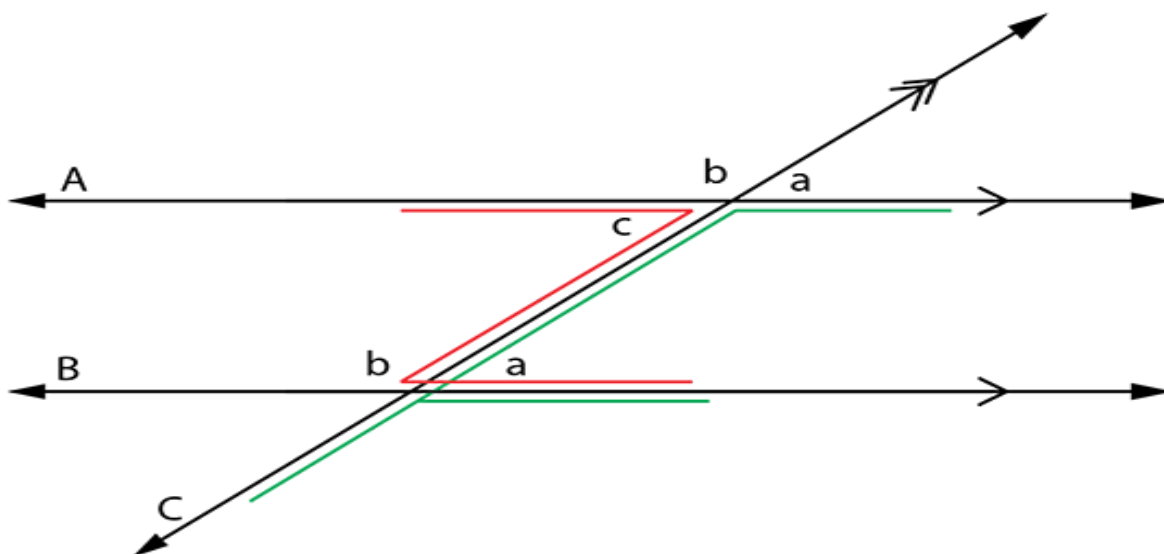


Reasoning and Proof



Unit Introduction

In Unit 2, we will learn theorem postulates and apply them to prove in order to solve problems. We will use inductive and deductive reasoning when dealing with proofs in geometry. We will then be able to make assumptions about how the world works.

Unit Priority Standards

- HSG.CO.C.9: learn how to prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.
- SMP4: Model with Mathematics

Unit Transfer Goals

- Construct viable arguments involving mathematics and statistics
- Apply mathematical knowledge to analyze and model mathematical relationships in the context of a situation in order to make decisions, draw conclusions, and solve problems.

Unit Essential questions	
<ol style="list-style-type: none">1. What is the relationship between the method for finding the midpoint of a segment and the method for finding other partitions of the segment?2. How can you tell the difference between situations that use inductive reasoning and those that use deductive reasoning?	
Acquisition of Knowledge Skill	
<i>Students will know...</i> <ol style="list-style-type: none">1. Logic, in combination with facts, theorems and formulas can be used to draw conclusions about geometric figures2. Geometric figures are ruled by known relationships of measures, often expressed as theorems and/or algebraic functions	<i>Students will be skilled at...I can...</i> <ol style="list-style-type: none">1. Using inductive reasoning to make conjectures about mathematical relationships2. Writing conditionals and finding their truth values3. Writing biconditionals and finding their truth values4. Using deductive reasoning to draw conclusions5. Using deductive reasoning to prove congruency6. Using deductive reasoning to prove theorems

Unit Plan

The schedule is tentative and subject to changes. The schedule is tentative and subject to changes. Students will be notified of anticipated changes ahead of time.

Week 4: Sep 13 - Sep 16	Focus: Inductive Reasoning How can you tell the difference between situations that use inductive reasoning and those that use deductive reasoning?
Learning Target(s):	<ul style="list-style-type: none"> - 2.1: Inductive Reasoning - 2.2: Conditional Statements
Acquired Knowledge and Skills:	<ul style="list-style-type: none"> - Using inductive reasoning to make conjectures about mathematical relationships - Writing conditionals and finding their truth values
Activities:	Notes/ Khan Academy/ Workbook/ Kahoot
Due Dates:	2.1 Worksheet due: Sep 14/15 2.2 Worksheet due: Sep 16

Week 5: Sep 23 - Sep 24	Focus: Biconditional Reasoning / Project Intro How can you tell the difference between situations that use inductive reasoning and those that use deductive reasoning?
Learning Target(s):	<ul style="list-style-type: none"> - 2.3: Biconditional Reasoning
Acquired Knowledge and Skills:	<ul style="list-style-type: none"> - Writing biconditionals and finding their truth values
Activities:	Notes/ Khan Academy/ Workbook/ Kahoot
Due Dates:	Conditional statements due: Sep 24 2.3 Worksheet due: Sep 24 Quarter 1 Project is due: Oct 26 / 27

Week 6: Sep 27 - Oct 1	Focus: Deductive Reasoning / Angle Congruence Unit 2 Quiz (2.1~2.3) How can you tell the difference between situations that use inductive reasoning and those that use deductive reasoning?
Learning Target(s):	<ul style="list-style-type: none"> - 2.4: Deductive Reasoning - 2.5: Proving Angles Congruent
Acquired Knowledge and Skills:	<ul style="list-style-type: none"> - Using deductive reasoning to draw conclusions - Using deductive reasoning to prove congruency
Activities:	Notes/ Khan Academy/ Workbook/ Kahoot Unit 2 Quiz
Due Dates:	2.4 Worksheet due: Sep 28/29 Unit 2 Quiz: Oct 1

Week 7: Oct 4 - Oct 8	Focus: Deductive Reasoning / Unit 2 Review / Unit 2 Test How can you tell the difference between situations that use inductive reasoning and those that use deductive reasoning?
Learning Target(s):	<ul style="list-style-type: none"> - 2.6 & 2.7: Proofs
Acquired Knowledge and Skills:	<ul style="list-style-type: none"> - Using deductive reasoning to prove theorems
Activities:	Notes/ Khan Academy/ Workbook/ Kahoot Unit 2 Test
Due Dates:	2.6 & 2.7 Worksheet due: Oct 5 / 6 Unit 2 Test: Oct 8

Assessment Details

Evidence	
I will check students' understanding throughout the unit by...	
Summative Test <ul style="list-style-type: none"> Unit Test will be given at the end of the unit to test students' understanding of the entire unit. Quiz <ul style="list-style-type: none"> Quiz will be provided to assess students' understanding of the content throughout the unit. Project <ul style="list-style-type: none"> Project will be given throughout the term to help students understand the content better. See the Rubric. 	Formative Warm-up <ul style="list-style-type: none"> A review of previous learning (warm-up activities) at the start of each lesson will be provided to strengthen students' retention of knowledge. Check-In <ul style="list-style-type: none"> Gives students focused feedback on their progress in acquiring skills and knowledge. Discussion <ul style="list-style-type: none"> Challenging math problems will be provided throughout the unit to help students build critical / creative thinking. Kahoot <ul style="list-style-type: none"> Kahoot activity will be provided throughout the class to check for understanding. Exit Ticket <ul style="list-style-type: none"> Exit tickets will be provided at the end of the unit to check for understanding.

Extended Learning

Website Description	Website
Visual simulations and worksheets	https://www.geogebra.org/m/kewpjvue
Assists with steps to solving problems	https://www.webmath.com/index5.html
Helps to try many geometry problems	https://www.mathwarehouse.com/geometry/

