



WEST SHORE SCHOOL DISTRICT
Geometry Essentials Learning Module 2

Title of Module	Reasoning and Proof	Grade Level	9-12
Curriculum Area	Mathematics	Time Frame	10 days

Desired Results

Best Practices	
<ol style="list-style-type: none"> 1. Make sense of problems and persevere in solving them 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics 5. Use appropriate tools strategically 6. Attend to precision 7. Look for and make use of structure (Deductive Reasoning) 8. Look for and express regularity in repeated reasoning. 	
Transfer Goals	
Students will be able to independently use their learning to... <ul style="list-style-type: none"> • Connect old problem solving techniques to new curriculum. • Connect new material to real world applications. • Create viable mathematical arguments and use them to critique the arguments of fellow classmates. 	
Key Learnings/Big Ideas	
Students will learn to: <ol style="list-style-type: none"> 1) Use inductive and deductive reasoning 2) Understand geometric relationships in diagrams 	
Content and Reading and Writing Standards	
<u>Core Standards</u> CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures. CC.2.3.HS.A.11 Apply coordinate geometry to prove simple geometric theorems algebraically CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.	
Essential Questions	Vocabulary (Best Practices)
Unit EQ: How is logical reasoning important to Geometry?	Utilize concepts & competencies to add to vocabulary
LEQ: 1) How do you use inductive reasoning in mathematics?	Conjecture Inductive Reasoning Counterexample Conditional Statement Converse Inverse Contrapositive If-Then Form

<p>2) How do you write the three related conditionals from a conditional statement?</p> <p>3) How do you determine if a series of statements uses the Law of Detachment or the Law of Syllogism?</p> <p>4) How can you identify postulates illustrated by a diagram?</p> <p>5) How do you solve an equation?</p>	<p>Hypothesis</p> <p>Conclusion</p> <p>Negation</p> <p>Equivalent Statements</p> <p>Perpendicular Lines</p> <p>Bi-conditional Statement</p> <p>Deductive Reasoning</p> <p>Theorem</p>
<p>Concepts</p> <p>Students will know...</p>	<p>Skills/Competencies (I Can...) Based on LEQs</p> <p>Students will be able to...</p>
<p>1. How to use both inductive and deductive reasoning and determine the difference between them.</p> <p>2. How to write a statement in if-then form and write the three related conditionals.</p> <p>3. How to read a diagram and use postulates to interpret what they can assume from a diagram.</p>	<p>1. I can determine the next value in a pattern.</p> <p>2. I can determine if a series of statements uses the Law of Syllogism or the Law of Detachment.</p> <p>3. I can identify the hypothesis and conclusion of a conditional statement.</p> <p>4. I can write a conditional statement in if-then form and then write the converse, inverse and contrapositive of that statement.</p>

Assessment Evidence

Formative Assessment

Questioning, Think Pair Share, Graphic Organizers, Visual Representations, Bell Ringers, Exit Slips, Web Based Surveys

Summative Assessment

Common Assessments

Best Instructional Practices

- [Activating Strategies](#)
- [Extended Thinking](#)
- [Summarizing](#)
- [Vocabulary in Context](#)
- [Advance Organizers](#)
- [Non-verbal Representation](#)
- [Integration of Webb's Depth](#)
- [Integration of 21st Century Skills](#)
- [Reading and writing across disciplines](#)
- [Rigor and Relevance](#)

Resources

Student	Teacher