

GEOMETRY LAB

UNIT 2: GEOMETRIC REASONING

SHOW ALL WORK

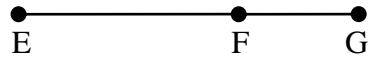
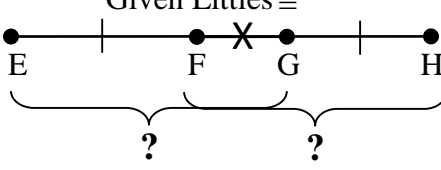
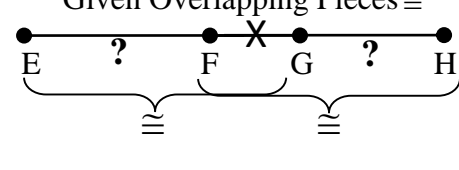
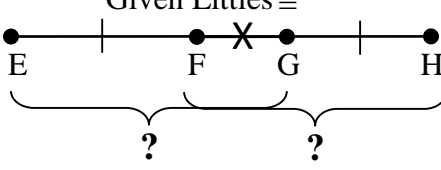
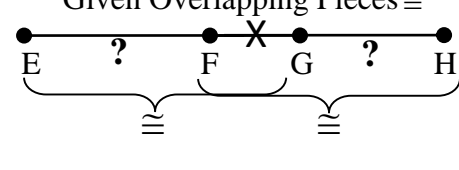
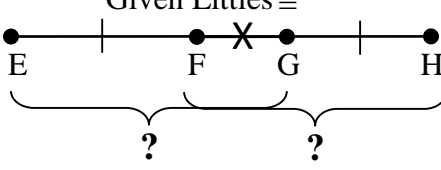
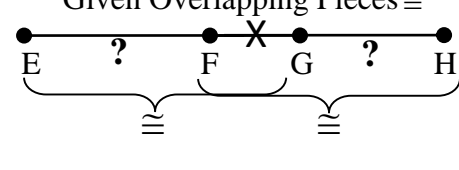
BRING COLORED PENCILS TO CLASS AND USE ON YOUR HOMEWORK

LESSON	TOPIC	BOOK/VIDEO	COMMON CORE LS	ASSIGNMENT
DAY 1	CONDITIONAL STATEMENTS, DEFINITIONS, and AXIOMS	2-1, 2-2, 2-3, P128	ESSENTIAL SKILL	P. 77: #19 P. 85-86: #32,34 P.100-101: #11,15,18,23,24,25,29,33,36,40,53,61
DAY 2	NEW AXIOMS	2-5,6,7	G-CO.9	WORKSHEET 2-2
DAY 3	<u>ALGEBRAIC PROOFS</u> <ul style="list-style-type: none"> • Properties of Equality • Segment Addition/ Subtraction • \sphericalangle Addition/ Subtraction 	2-5	ESSENTIAL SKILL	WORKSHEET 2-3
DAY 4	<p style="text-align: center;"><i>Mini Quiz 1</i></p> <u>ALGEBRAIC & GEOMETRIC PROOFS</u> <ul style="list-style-type: none"> • Transitive & Substitution • Midpoint, Segment & \sphericalangle Bisectors • Halves of Congruent Segments/\sphericalangles 	2-5	G-CO.9	GEOMETRIC PROOFS PACKET – ASSIGNED PROBLEMS
DAY 5	<p style="text-align: center;"><i>Mini Quiz 2</i></p> <u>GEOMETRIC PROOFS</u> <ul style="list-style-type: none"> • Linear Pair • \cong Supplements Theorem • \cong Complements Theorem • Rt. \sphericalangle Congruence 	2-6	G-CO.9	GEOMETRIC PROOFS PACKET – ASSIGNED PROBLEMS
DAY 6	<p style="text-align: center;"><i>Mini Quiz 3</i></p> <p style="text-align: center;">FLOWCHART & PARAGRAPH PROOFS</p> <ul style="list-style-type: none"> • Common Segment Theorem • Common Angle Theorem 	2-7	G-CO.9	GEOMETRIC PROOFS PACKET – ASSIGNED PROBLEMS
DAY 7	<p style="text-align: center;"><i>Mini Quiz 4</i></p> <p style="text-align: center;">FLOWCHART & PARAGRAPH PROOFS</p> <ul style="list-style-type: none"> • Vertical Angles Theorem • Congruent+Supplementary \sphericalangle's 	2-7	G-CO.9	GEOMETRIC PROOFS PACKET – ASSIGNED PROBLEMS
DAY 8	REVIEW FOR TEST			FINISH REVIEW FOR TEST PACKET
T	TEST			<ul style="list-style-type: none"> • CUMULATIVE REVIEW #2 • BRIDGE TO UNIT 3

GEOMETRY CLASS LESSON SUMMARIES FOR UNIT 2

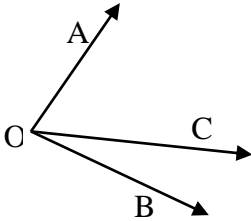
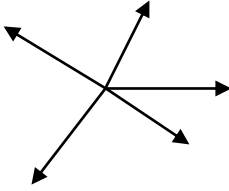
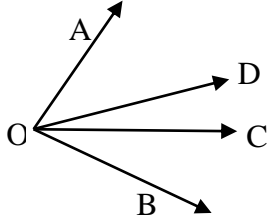
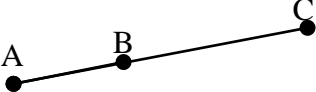
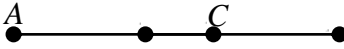
NAME: _____

DAY	MAIN POINTS / FORMULAS TO REMEMBER	QUESTIONS AFTER HMWK
2-1	<ul style="list-style-type: none"> • Conditional Statement : If hypothesis \rightarrow _____ • Converse : _____ • Counterexample: An example that _____ a statement. • Biconditional : Hypothesis “_____” conclusion. \leftrightarrow For a biconditional to be true, both the _____ & _____ statements must be true. • _____ in geometry are biconditional statements. • Conjunction: a statement using the word “_____”. To be true, both parts must be _____. 	

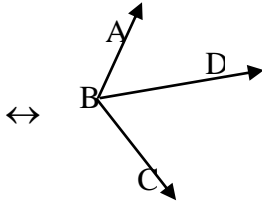
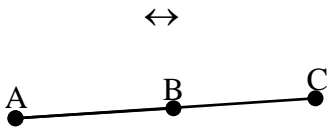


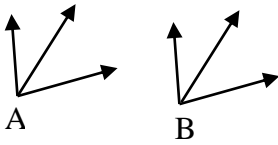
<p>2-2</p>	<p>See Axioms</p>																	
<p>2-3 + See Axioms Pages</p>	<table border="0"> <thead> <tr> <th style="text-decoration: underline;">Property Name</th> <th style="text-decoration: underline;">Example</th> </tr> </thead> <tbody> <tr> <td>Addition Prop of Equality: (Subtraction Property of Equality)</td> <td>If $x=y$, then $x+4 =$ _____ If $x=y$ and $a=b$, then $x+a =$ _____</td> </tr> <tr> <td>Multiplication Prop of Equality: (Division Prop of Equality)</td> <td>If $x=y$, then $4x =$ _____ If $x=y$ and $a=b$, then $ax =$ _____</td> </tr> <tr> <td>Reflexive Prop of Equality:</td> <td>$AB =$ _____</td> </tr> <tr> <td>Reflexive Prop of Congruence:</td> <td>$\overline{AB} \cong$ _____</td> </tr> <tr> <td>Transitive Prop of Equality:</td> <td>If $AB=BC$ and $BC=CD$, then _____</td> </tr> <tr> <td>Transitive Prop of Congruence:</td> <td>If $\sphericalangle A \cong \sphericalangle B$ and $\sphericalangle B \cong \sphericalangle C$, then _____</td> </tr> <tr> <td>Substitution Prop of Equality:</td> <td>If $AB=BC$ and $CD=BC$, then _____</td> </tr> </tbody> </table> <hr/> <ul style="list-style-type: none"> • A two-column proofs has statements on the _____ side and reasons/justifications on the _____ side. • To write an algebraic proof, start with a _____ using _____. Then use algebraic properties to justify each statement towards the solution. <p>Ex: </p> <ol style="list-style-type: none"> 1) Statement #1 is _____ Reason: _____ 2) Statement #2 uses _____ 3) Statement #3 uses _____ 	Property Name	Example	Addition Prop of Equality: (Subtraction Property of Equality)	If $x=y$, then $x+4 =$ _____ If $x=y$ and $a=b$, then $x+a =$ _____	Multiplication Prop of Equality: (Division Prop of Equality)	If $x=y$, then $4x =$ _____ If $x=y$ and $a=b$, then $ax =$ _____	Reflexive Prop of Equality:	$AB =$ _____	Reflexive Prop of Congruence:	$\overline{AB} \cong$ _____	Transitive Prop of Equality:	If $AB=BC$ and $BC=CD$, then _____	Transitive Prop of Congruence:	If $\sphericalangle A \cong \sphericalangle B$ and $\sphericalangle B \cong \sphericalangle C$, then _____	Substitution Prop of Equality:	If $AB=BC$ and $CD=BC$, then _____	
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<p>2-4 + Axioms Pages</p>	<p>To prove a midpoint, segment bisector, or angle bisector, prove that the little segments/angles are _____ then use the _____ to state your point is a midpoint, your segment is bisected, or your angle is bisected.</p>																	
<p>2-5</p>	<p>See Axioms</p>																	
<p>2-6 + See Axioms Pages</p>	<ul style="list-style-type: none"> • Common Segment Theorem (Similar for Common Angle Theorem) <table border="0" style="width: 100%;"> <tr> <td style="text-align: center;"> <p>Given Littles \cong</p>  </td> <td style="text-align: center;"> <p>Given Overlapping Pieces \cong</p>  </td> </tr> <tr> <td>1)</td> <td>1)</td> </tr> <tr> <td>2)</td> <td>2)</td> </tr> <tr> <td>3)</td> <td>3)</td> </tr> </table> <ul style="list-style-type: none"> • Paragraph proofs consist of matches statements and their reasons in _____ often using “since _____, then _____”. • Flowchart proofs place statements in _____ with reasons underneath. Boxes are connected by _____ going left to right or top to bottom. 	<p>Given Littles \cong</p> 	<p>Given Overlapping Pieces \cong</p> 	1)	1)	2)	2)	3)	3)									
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2)	2)																	
3)	3)																	
<p>2-7</p>	<p>See Axioms</p>																	
<p>Review</p>																		

AXIOMS (Theorems, Corollaries, Postulates, Definitions)

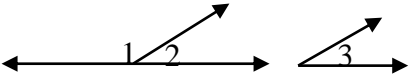
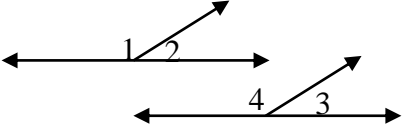
Sum of Parts

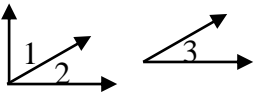
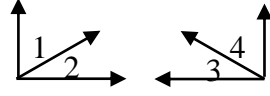
Conditional Statement	Diagram / Example	Stated as a Reason in a Proof
If point C is in the interior of $\angle AOB$, then _____		
Given a sequence of n consecutive adjacent angles whose interiors are all disjoint such that the angle formed by the first $n - 1$ angles and the last angle are a linear pair, then the angle measures _____	(\angle 's on a line)	Consecutive adjacent angles on a line sum to 180°
If the sum of the measures of all angles formed by three or more rays with the same vertex and whose interiors do not overlap, then the angle measures _____		Angles at a point sum to 360°
If points C and D are in the interior of $\angle AOB$ AND $\angle AOD \cong \angle BOC$, then _____ <i>See lesson summaries for 3 step process (can also go \cong bigs \rightarrow \cong littles)</i>		Common Angle Theorem Or Overlapping Angles Theorem
If A, B, and C are collinear, then _____		
If points A, B, C, AND D are collinear and $\overline{AB} \cong \overline{CD}$, then _____ <i>See lesson summaries for 3 step process (can also go \cong bigs \rightarrow \cong littles)</i>		Common Segment Thm Or Overlapping Segments Thm

Bisectors

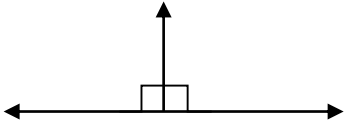
Conditional Statement	Diagram / Example	Stated as a Reason in a Proof
If \overline{BD} bisects $\angle ABC$, then <hr/>		Definition of Angle Bisector Or Angle Bisector \leftrightarrow two congruent adjacent angles
If $\angle ABD \cong \angle CBD$ and they are adjacent, then <hr/> Note conjunction!		
If B is the midpoint of \overline{AC} , then <hr/>		Definition of a Midpoint or Midpoint \leftrightarrow two congruent collinear segments
If $\overline{AB} \cong \overline{BC}$ and A, B, and C are collinear, then <hr/> Note conjunction!		
\overline{CD} bisects \overline{EF} at G and $\overline{EFG} \leftrightarrow$ G is the midpoint.		
\overline{CD} bisects \overline{EF} at G and $\overline{EFG} \leftrightarrow \overline{EG} \cong \overline{GF}$.		Segment bisector \leftrightarrow 2 \cong collinear segments. Or Definition of a Segment Bisector
If 2 \cong angles are bisected, then their <hr/>		Halves of Congruent Angles are Congruent.
If 2 \cong segments are bisected, then their <hr/>		

Angle Pairs

Conditional Statement	Diagram / Example	Stated as a Reason in a Proof
The sum of two angles = 90° if and only if the angles are _____ _____		
The sum of two angles = 180° if and only if the angles are _____ _____		
If two angles are adjacent and their noncommon sides form opposite rays, then the angles are a _____ _____		Defn. of a Linear Pair
If two \sphericalangle 's form a linear pair, then they are _____ _____		Linear pairs of \sphericalangle 's are supplementary. Linear Pair \rightarrow Supp \sphericalangle 's
If 2 non-adjacent \sphericalangle 's are formed by intersecting lines then they are _____ _____		Defn of Vertical Angles
If angles are vertical \sphericalangle 's , then the angles are _____ _____		Vertical \sphericalangle pairs are equal in measure Vertical \sphericalangle pairs are \cong
If 2 angles are supplementary to the same angle, then they are _____ _____		Congruent Supplements Theorem Or Supplements of the same angle are congruent
If 2 angles are supplementary to congruent angles, then they are _____ _____		Congruent Supplements Theorem Or Supplements of congruent angles are congruent

<p>If 2 angles are complementary to the same angle, then they are _____</p>		<p>Congruent Supplements Theorem <i>Or</i> Supplements of the same angle are congruent</p>
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Right Angles

<p>If 2 \sphericalangle's are right \sphericalangle's, then _____</p>		<p>Right \sphericalangle's are \cong.</p>
<p>If 2 \cong \sphericalangle's are supplementary, then _____</p> <p><i>Note conjunction!</i></p>		<p>Congruent & supplementary angles are right \sphericalangle's</p>