

NAME _____ SECTION _____

GEOMETRY LAB

UNIT 1B: GEOMETRIC REASONING

SHOW ALL WORK

BRING COLORED PENCILS TO CLASS AND USE ON YOUR HOMEWORK

LESSON	TOPIC	BOOK/ VIDEO	COMMON CORE LS	ASSIGNMENT
DAY 12	CONDITIONAL STATEMENTS, DEFINITIONS, COUNTEREXAMPLES, and AXIOMS	2-1, 2-2, 2-3, P128	ESSENTIAL SKILL	P. 77: #19 P. 85-86: #32,34,61 P.100-101: #11,15,18,23,24,25,29,33,36,40,53
DAY 13	<u>ALGEBRAIC & GEOMETRIC PROOFS</u> <ul style="list-style-type: none"> Properties of Equality Advanced Segment and Angle Addition/ Subtraction Transitive & Substitution 	2-5	G-CO.9	WORKSHEET DAY 1-13
DAY 14	NEW AXIOMS	2-5,6,7	G-CO.9	WORKSHEET DAY 1-14 L
DAY 15	<u>ALGEBRAIC & GEOMETRIC PROOFS</u> <ul style="list-style-type: none"> Midpoint, Segment & \sphericalangle Bisectors Halves of Congruent Segments/\sphericalangles 	2-5	C-GO.9	GEOMETRIC PROOFS PACKET – DAY 1-15 L
DAY 16	<u>GEOMETRIC PROOFS</u> <ul style="list-style-type: none"> Linear Pair \rightarrow Supplementary \cong Supplements Theorem \cong Complements Theorem Rt. \sphericalangle Congruence Congruent & Supplementary Angles Theorem (\rightarrow Rt. \sphericalangle's) 	2-6	G-CO.9	GEOMETRIC PROOFS PACKET – DAY 1-16 L
DAY 17	<u>FLOWCHART & PARAGRAPH PROOFS</u> <ul style="list-style-type: none"> Common/Overlapping Segment/Angle Theorems Vertical Angles Theorem 	2-7	G-CO.9	GEOMETRIC PROOFS PACKET – DAY 1-17 R
DAY 18	REVIEW FOR TEST			FINISH REVIEW FOR TEST PACKET
T	TEST – Units 1A & 1B			<ul style="list-style-type: none"> CUMULATIVE REVIEW #1 BRIDGE TO UNIT 2

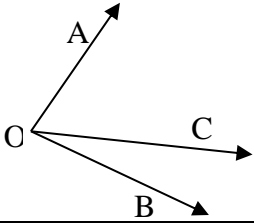
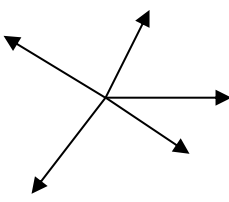
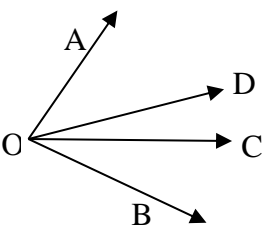
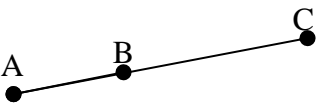
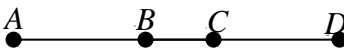
GEOMETRY CLASS LESSON SUMMARIES FOR UNIT 1B LAB

DAY	MAIN POINTS / FORMULAS TO REMEMBER	QUESTIONS AFTER HMWK
1-12	<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 _____. 	

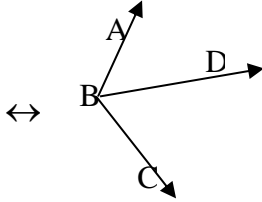
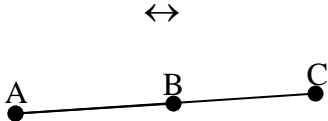

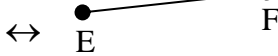
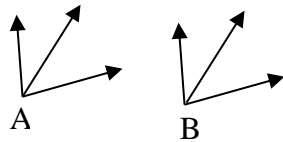
<p>1-13 + See Axioms Pages</p>	<p>Property Name Addition Prop of Equality: If $x=y$, then $x+4 =$ _____ (Subtraction Property of Equality) If $x=y$ and $a=b$, then $x+a =$ _____ Multiplication Prop of Equality: If $x=y$, then $4x =$ _____ (Division Prop of Equality) If $x=y$ and $a=b$, then $ax =$ _____ 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 _____</p> <p>• 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. • Advanced segment/angle addition example: Given $\overline{EF} \cong \overline{CB}$; $\overline{EG} \cong \overline{AC}$; Prove $\overline{FG} \cong \overline{AB}$</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Statement</th> <th style="text-align: left;">Reason</th> </tr> </thead> <tbody> <tr> <td>1) $EF+FG=EG$; $AB+BC=AC$</td> <td>1) _____</td> </tr> <tr> <td>2) $\overline{EF} \cong \overline{CB}$; $\overline{EG} \cong \overline{AC}$</td> <td>2) _____</td> </tr> <tr> <td>3) $EF+FG=AB+BC$</td> <td>3) _____</td> </tr> <tr> <td>4) $EF+FG=AB+EF$</td> <td>4) _____</td> </tr> <tr> <td>5) $FG=AB$</td> <td>5) _____</td> </tr> <tr> <td>6) $\overline{FG} \cong \overline{AB}$</td> <td>6) _____</td> </tr> </tbody> </table> <div style="border: 1px dashed black; padding: 5px; margin-top: 10px;"> <p>A. Given B. Substitution C. Subtraction Property of Equality D. Segment Addition Postulate E. Congruent segments have equal measure</p> </div>	Statement	Reason	1) $EF+FG=EG$; $AB+BC=AC$	1) _____	2) $\overline{EF} \cong \overline{CB}$; $\overline{EG} \cong \overline{AC}$	2) _____	3) $EF+FG=AB+BC$	3) _____	4) $EF+FG=AB+EF$	4) _____	5) $FG=AB$	5) _____	6) $\overline{FG} \cong \overline{AB}$	6) _____
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6) $\overline{FG} \cong \overline{AB}$	6) _____														
<p>1-14</p>	<p>See Axioms</p>														
<p>1-15</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>1-16</p>	<p>See Axioms</p>														
<p>1-17 + See Axioms Pages</p>	<p>• Common/Overlapping Segment Theorem (Similar for Common Angle Theorem)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Given Littles \cong</p> </div> <div style="text-align: center;"> <p>Given Overlapping Pieces \cong</p> </div> </div> <table border="0" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 50%;">1)</td> <td style="width: 50%;">1)</td> </tr> <tr> <td>2)</td> <td>2)</td> </tr> <tr> <td>3)</td> <td>3)</td> </tr> </table> <p>• 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>	1)	1)	2)	2)	3)	3)								
1)	1)														
2)	2)														
3)	3)														
<p>Review</p>															

AXIOMS (Theorems, Corollaries, Postulates, Definitions)

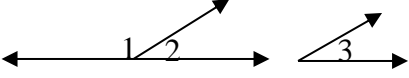
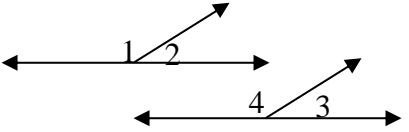
Sum of Parts

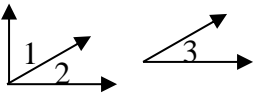
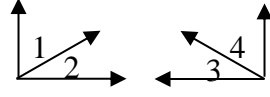
Conditional Statement	Diagram / Example	Stated as a Reason in a Proof
If point C is in the interior of $\angle AOB$, then _____		
Given a sequence of n consecutive adjacent angles whose interiors are all disjoint such that the angle formed by the first $n - 1$ angles and the last angle are a linear pair, 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

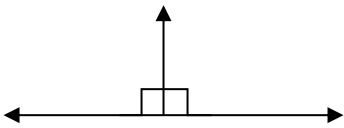
Conditional Statement	Diagram / Example	Stated as a Reason in a Proof
If \overline{BD} bisects $\angle ABC$, then <hr/>		Definition of Angle Bisector Or
If $\angle ABD \cong \angle CBD$ and they are adjacent, then <hr/> Note conjunction!		Angle Bisector \leftrightarrow two congruent adjacent angles
If B is the midpoint of \overline{AC} , then <hr/>		Definition of a Midpoint or
If $\overline{AB} \cong \overline{BC}$ and A, B, and C are collinear, then <hr/> Note conjunction!		Midpoint \leftrightarrow two congruent collinear segments
\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

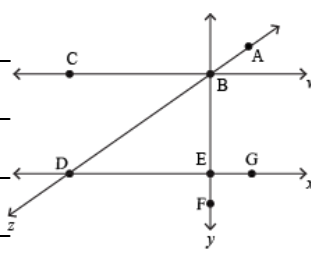
Conditional Statement	Diagram / Example	Stated as a Reason
The sum of two angles = 90° if and only if the angles are _____ _____		
The sum of two angles = 180° if and only if the angles are _____ _____		
If two angles are adjacent and their noncommon sides form opposite rays, then the angles are a _____ _____		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>
<p>If 2 angles are complementary to congruent angles, then they are _____</p>		<p>Congruent Supplements Theorem <i>Or</i> Supplements of congruent angles are congruent</p>

Right Angles

<p>The measure of an angle is 90° if and only if the angle is a _____ angle</p>		
<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>

Warm Up Quizzes LAB

<p>G 1) _____</p> <p>2) _____</p>	<p>I</p> <p>1) _____</p> <p>2) _____</p> <p>3) _____</p> <p>4) _____</p> 
<p>H Reasons:</p> <p>1) _____</p> <p>2) _____</p> <p>3) _____</p> <p>4) _____</p>	<p>J</p> <p>1) _____</p> <p>2) _____</p> <p>3) _____</p> 