



Northside High School

Geometry Curriculum

Unit 1: Points, Lines, Planes, and Angles

Unit Length: 16 days

Domain: Congruence

- Cluster 1: Investigate transformations in the plane
- Cluster 4: Make Geometric Constructions

Standards:

- *HSG.CO.A.1:
 - Based on the undefined notions of point, line, plane, distance along a line, and distance around a circular arc, define: • Angle • Line segment • Circle • Perpendicular lines • Parallel lines.
- HSG.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) Note: Constructions may include but are not limited to: copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines.
- *HSG.CO.C.9:
 - Apply and prove theorems about lines and angles Note: Theorems include but are not limited to: 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.
- HSG.CO.E.14:
 - Apply inductive reasoning and deductive reasoning for making predictions based on real world situations using:
 - Conditional Statements (inverse, converse, and contrapositive)
 - Venn Diagrams Note: This is not intended to be an isolated topic but instead to support concepts throughout the course

**Guaranteed Viable Curriculum*



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Vocabulary to Emphasize:

- Point
- Line
- Plane
- Angle
- Line segment
- Ray
- Collinear
- Coplanar
- non-collinear
- Non-coplanar
- Parallel
- Perpendicular
- Intersection
- Congruent
- Skew
- Vertex
- linear pair
- Supplementary
- Complementary
- vertical angles
- Adjacent
- Acute
- Obtuse
- right angle
- Transversal
- same-side interior angles (consecutive interior angles)
- alternate interior angles
- alternate exterior angles
- corresponding angles

Unit 1: Part 1

Points, Lines, and Planes

5 days

Essential question: How are definitions in Geometry developed?

| Learning Goal | Notes | Bellwork/Exit | Practice |
|---|--|--|--|
| Students will explore basic geometric terms and apply them to the real world. | PLP Vocabulary Notes | BW: •Pre-Assessment | Pre-AP: Points, Lines Planes markerboard practice |
| Students will explore intersections of points, lines, and planes. | PLP Intersections Foldable Notes *Resource from: http://everybodyisageniusblog.blogspot.com/2012/08/points-lines-and-planes.html | BW: •PLP BW #1 Exit: Write one thing from today's lesson that you understand and one thing you are still confused about. | PLP Intersection Practice Pre-AP/ Enrichment Activity: PLP Intersection Practice #2 |



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| Learning Goal | Notes | Bellwork/Exit | Practice |
|---|-------|--|---|
| Students will analyze whether geometric statements are always, sometimes, or never true. | | BW: •PLP BW #2 Exit: •CFA question (see below) | Always, Sometimes, Never PLP Activity |
| Students will recreate geometric drawings based on point, line, and plane vocabulary. | | BW: •PLP BW #3 Exit: •CFA question (see below) | “Draw What I Say” Activity *Resource from: https://tothemathlimit.wordpress.com/2014/08/31/mtbos-challenge-sunday-summary/ |
| Students will complete differentiated questions about points, lines, planes, and intersections. | | BW: •PLP BW #4 | Points, Lines, and Planes Jeopardy *ActivInspire document |

Unit 1, CFA #1, Version 1: Points, Lines, & Planes

Unit 1, CFA #1, Version 2: Points, Lines, & Planes



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Unit 1: Part 2

Angle Pairs

4 days

Essential questions: How are constructions used in geometry? How do types of angles relate to each other?

| Learning Goal | Notes | Bellwork/Exit | Practice |
|---|---|----------------------------------|---|
| Students will name angles in three different ways and determine the type of angle. Students will construct segments, segment bisectors, angles, and angle bisectors. | <p>Intro to Angles Graphic Organizer</p> <p>*Resource found at: http://newellssecondarymath.blogspot.com/2016/07/angle-basics-with-angle-addition.html</p> <p>Constructions examples and reference*</p> <p>*Resource found at: http://www.mathopenref.com/tocs/constructionstoc.html</p> | BW: •Angle Pairs BW #1 | <p>Basic Constructions</p> <p>Remediation sheet for angle names (if necessary) *</p> <p>*Resource found at: https://cdn.kutasoftware.com/Worksheets/Geo/2-Naming%20Angles.pdf</p> |
| Students will name and describe angle pairs and theorems about congruent and supplementary angle pairs. | <p>Angle Pair Flipbook*</p> <p>*Resource found at: http://newellssecondarymath.blogspot.com/2016/07/angle-relationships-flipbook.html</p> | BW: •Pre-Assessment | <p>Angle Pair Practice* (Note: Use #1-18 for regular, and #19-22 for Pre-AP/Enrichment)</p> <p>*Resource found at: https://cdn.kutasoftware.com/Worksheets/Geo/2-Angle%20Pair%20Relationships.pdf</p> |



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| Learning Goal | Notes | Bellwork/Exit | Practice |
|--|---|--|--|
| Students will use theorems about lines and angles to apply algebraic equations to angle pairs. | Optional: Angle Pair Algebra Flashcards | BW: •Angle Pairs BW #3 Exit: •CFA question (see below) | Angle Pair Algebra Practice Pre-AP/ Enrichment Activity: Angle Relationships Error Analysis *Resource found at: https://www.teacherspayteachers.com/Login?f=%2FFreeDownload%2FAngle-Relationships-Error-Analysis-CCSS-7GB5-Aligned-2523604 |
| Students will use theorems about lines and angles to apply algebraic equations to angle pairs. | | BW: •Angle Pairs BW #4 Exit: •CFA question (see below) | Angle Algebra Scavenger Hunt |

Unit 1, CFA #2, Version 1: Angle Pairs

Unit 1, CFA #2, Version 2: Angle Pairs



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Unit 1: Part 3

Parallel Lines and Transversals

5 days

Essential question: How do angles relate to parallel lines?

| Learning Goal | Notes | Bellwork/Exit | Practice |
|--|--|---|---|
| Students will name and describe angle pairs when a transversal crosses parallel lines. | Parallel Lines Cut By A Transversal Notes “What Angle Pair Am I?” Notes | BW: •Pre-Assessment | Intro Identifying Angles Flash Card Activity |
| Students will use theorems about lines and angles to prove that angles are congruent or supplementary when a transversal crosses parallel lines. | | BW: •Angle Pairs Transversal BW #1 | “Justify Every Step” Practice “True or False and Explain” Practice Pre-AP/ Enrichment Activity: “Which Lines are Parallel” * <small>*Resource from: http://www.mrseteachesmath.com/2014/10/parallel-lines-converse-theorems.html</small> |
| Students will use theorems about lines and angles to apply algebraic equations to angles with a transversal crosses parallel lines. | Parallel Lines Cut By A Transversal Angle Algebra Flashcards | BW: •Angle Pairs Transversal BW #2 Exit: •CFA question (see below) | Parallel Lines Algebra Practice Pre-AP/ Enrichment Activity: “Dinky King” Practice |



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| Learning Goal | Notes | Bellwork/Exit | Practice |
|--|---|---|--|
| Students will use theorems about lines and angles to apply algebraic equations to angles with a transversal crosses parallel lines. | | BW: •Angle Pairs Transversal BW #3 | Angle Pair Card Sort Pre-AP/ Enrichment Activity: Angles formed by Transversals #1 |
| Students will use theorems about lines and angles to prove that angles are congruent or supplementary when a transversal crosses three or more parallel lines. | Creating Angles Formed by Three Parallel Lines Cut by a Transversal | BW: •Angle Pairs Transversal BW #4 Exit: •CFA question (see below) | Three Parallel Lines Flashcard Practice Pre-AP/ Enrichment Activity: Angles formed by Transversals #2* <small>*Free download from Teachers Pay Teachers https://www.teacherspayteachers.com/Product/Cant-Live-Without-It-All-Things-Algebras-Free-Resource-1701815</small> |

Unit 1, CFA #3, Version 1: Parallel Lines Cut by a Transversal

Unit 2, CFA #3, Version 2: Parallel Lines Cut by a Transversal

Final Day: Summative Assessment Review and Student Answer Sheet - to be used as a review day before the Summative Assessment, or as bellwork/exit slips the week before the summative assessment

Always, sometimes, never review flipchart

Unit 1 Common Summative Assessment

Unit 1 Common Summative Assessment Pre-AP

| Unit 1 previous learning: Where do I start/What should they know? | |
|---|---|
| 4.MDC.5 | Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement. |