



**Geometry A**

**Course Name:** Geometry A

**Unit Name:** Unit 0: Preparing for Geometry

**Time Frame:** Weeks 1-2

**Unit Standards**

A.1.a: Apply algebraic properties (e.g., commutative, associative, distributive, identity, inverse, substitution) to simplify algebraic expressions.

A.1.b: Solve single-step and multistep equations and inequalities in one variable.

A.1.e: Graph a linear equation using a table of values, x- and y-intercepts, or slope-intercept form.

A.1.f: Find the probability of a simple event.

**Unit Essential Questions**

1. What is chapter 0 about? Chapter 0 is a review of key Algebra concepts.
2. Why do you think you would need Algebra concepts for Geometry? You will use algebraic concepts throughout the course of Geometry to solve basic problems and real world problems.

**Unit Essential Vocabulary**

1. experiment	9. X-coordinate
2. trial	10. Y-coordinate
3. outcome	11. quadrant
4. event	12. origin
5. probability	13. system of equations
6. theoretical probability	14. substitution
7. experimental probability	15. elimination
8. order pair	16. Product and quotient properties

**Resources**

Textbook  
Kuta Worksheet Builder  
Examview

**Assessment(s)** Quiz Chapter 0

**Assessment Data:**

Chapter Test

A –

B –

C –

D –

F –



Geometry A

<b>Course Name:</b> Geometry A																									
<b>Unit Name:</b> Unit 1: Tools of Geometry																									
<b>Time Frame:</b>	Weeks 3-4																								
<b>Unit Standards</b>	<p>D.1.a: Identify and model plane figures, including collinear and noncollinear points, lines, segments, rays, and angles using appropriate mathematical symbols.</p> <p>D.1.b: Identify vertical, adjacent, complementary, and supplementary angle pairs and use them to solve problems (e.g., solve equations, use in proofs).</p> <p>G.1.b: Apply the midpoint and distance formulas to points and segments to find midpoints, distances, and missing information.</p>																								
<b>Unit Essential Questions</b>	<ol style="list-style-type: none"> <li>Why do we measure? Measurements provide a quantifiable way to describe real-world quantities.</li> <li>Why do you think the title "Tools for Geometry" represents? Tools of Geometry represents the vocabulary knowledge that is necessary to process and to have conversation throughout the remainder of the course</li> </ol>																								
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Geometry A

<b>Course Name:</b> Geometry A																	
<b>Unit Name:</b> Unit 2: Reasoning and Proof																	
<b>Time Frame:</b>	Week 5																
<b>Unit Standards</b>	<p>C.1.a: Use definitions, basic postulates, and theorems about points, segments, lines, angles, and planes to write proofs and to solve problems.</p> <p>C.1.b: Use inductive reasoning to make conjectures and deductive reasoning to arrive at valid conclusions.</p> <p>C.1.c: Identify and write conditional and biconditional statements along with the converse, inverse, and contrapositive of a conditional statement; use these statements to form conclusions.</p> <p>C.1.e: Read and write different types and formats of proofs including two-column, flowchart, paragraph, and indirect proofs.</p>																
<b>Unit Essential Questions</b>	<p>1. Why is it important to be able to think logically? On a daily basis, we are presented with information and arguments from various sources such as television commercials and politicians. Many of these arguments are not valid. To analyze these arguments or to present valid arguments, we must be able to think logically and form valid conclusions.</p>																
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Geometry A

<b>Course Name:</b> Geometry A																	
<b>Unit Name:</b> Unit 3: Parallel and Perpendicular Lines																	
<b>Time Frame:</b>	Weeks 6-8																
<b>Unit Standards</b>	<p>C.1.d: Use various methods to prove that two lines are parallel or perpendicular (e.g., using coordinates, angle measures).</p> <p>D.1.f: Apply properties and theorems of parallel and perpendicular lines to solve problems.</p> <p>G.1.a: Use slope to distinguish between and write equations for parallel and perpendicular lines.</p>																
<b>Unit Essential Questions</b>	<ol style="list-style-type: none"> <li>Why do we have undefined terms such as point and line? We have to start somewhere, so we start with a set of terms with meanings that are accepted as true.</li> <li>How can we use undefined terms? We can use them to define more terms. Then we can use these definitions to write postulates and theorems and to develop properties.</li> </ol>																
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<b>Assessment(s)</b>	Chapter 3 Test																
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Geometry A

Course Name: Geometry A

Unit Name: Unit 4: Congruent Triangles

Time Frame: Weeks 11-12

**Unit Standards**

C.1.f: Prove that two triangles are congruent by applying the SSS, SAS, ASA, AAS, and HL congruence statements.

C.1.g: Use the principle that corresponding parts of congruent triangles are congruent to solve problems

D.2.a: Identify and classify triangles by their sides and angles

D.2.b: Identify vertical, adjacent, complementary, and supplementary angle pairs and use them to solve problems (e.g., solve equations, use in proofs)

D.2.c: Identify corresponding, same-side interior, same-side exterior, alternate interior, and alternate exterior angle pairs formed by a pair of parallel lines and a transversal and use these special angle pairs to solve problems (e.g., solve equations, use in proofs)

D.2.i: Apply the Angle Sum Theorem for triangles and polygons to find interior and exterior angle measures given the number of sides, to find the number of sides given angle measures, and to solve real-world problems

D.2.j: Apply the Isosceles Triangle Theorem and its converse to triangles to solve mathematical and real-world problems

E.1.b: Identify congruent figures and their corresponding parts.

G.1.c: Use coordinate geometry to solve problems about geometric figures (e.g., segments, triangles, quadrilaterals)

**Unit Essential Questions**

1. How can you compare two objects? You can compare their characteristics, such as size, color, and shape.
2. How can you tell if two objects are congruent? You can measure all of the parts of each object and then compare them.
3. How can you tell if two triangles are congruent? You can measure all of the sides and angles of each triangle, and then compare them to see if the corresponding parts are congruent.

**Unit Essential Vocabulary**

1. acute triangle	9. Remote interior angle
2. equilateral triangle	10. corollary
3. obtuse triangle	11. Vertex angle
4. right triangle	12. Congruent polygon
5. equilateral triangle	13. Corresponding parts
6. isosceles triangle	14. Included angle
7. scalene triangle	15. Included side
8. exterior angle	16. Base angles

**Resources**

Textbook  
Kuta Worksheet Builder  
Examview

**Assessment(s)**

Chapter 4 Test

**Chapter Test**

A –  
B –  
C –  
D –  
F –



Geometry A

Course Name: Geometry A

Unit Name: Unit 5: Relationships in Triangles

Time Frame: Weeks 13-14

**Unit Standards**  
D.2.b: Identify medians, altitudes, perpendicular bisectors, and angle bisectors of triangles and use their properties to solve problems (e.g., find points of concurrency, segment lengths, or angle measures).  
D.2.c: Apply the Triangle Inequality Theorem to determine if a triangle exists and the order of sides and angles.

**Unit Essential Questions**  
1. What makes a triangle a triangle? Three sides, three angles, angle measures that sum to 180.  
2. How are the sides and angles of a triangle related? The longest side is opposite the greatest angle and the smallest side is opposite the smallest angle.

**Unit Essential Vocabulary**  
1. perpendicular bisector  
2. point of concurrency  
3. circumcenter  
4. incenter  
5. median  
6. centroid  
7. altitude  
8. orthocenter  
9. Indirect reasoning  
10. Indirect proof  
11. Proof by contradiction

**Resources**  
Textbook  
Kuta Worksheet Builder  
Examview

**Assessment(s)** Chapter 5 Test

**Assessment Data:**  
Chapter Test  
A –  
B –  
C –  
D –  
F –



Geometry A

Course Name: Geometry A

Unit Name: Unit 6: Quadrilaterals

Time Frame: Weeks 16-17

Unit Standards

- C.1.i: Use properties of special quadrilaterals in a proof.
- D.2.g: identify and classify quadrilaterals, including parallelograms, rectangles, rhombi, squares, kites, trapezoids, and isosceles trapezoids, using their properties.
- D.2.h: identify and classify regular and nonregular polygons (e.g., pentagons, hexagons, heptagons, octagons, nonagons, decagons, dodecagons) based on the number of sides, the angle measures, and the side lengths.
- D.2.i: Apply the Isosceles Triangle Theorem and its converse to triangles to solve mathematical and real-world problems.
- G.1.c: Use coordinate geometry to solve problems about geometric figures (e.g., segments, triangles, quadrilaterals).

Unit Essential Questions

1. Why do we name figures? By naming a figure, we know what properties to associate with that figure. The figure could then be used to model a situation and the properties of the figure could be used to solve a problem.
2. How can the properties of quadrilaterals be used in the real world? Properties of quadrilaterals can help you calculate indirect distances, and build objects such as buildings and bridges.

Unit Essential Vocabulary

- |                  |                             |
|------------------|-----------------------------|
| 1. diagonal      | 9. Isosceles trapezoid      |
| 2. parallelogram | 10. Midsegment of trapezoid |
| 3. rectangle     | 11. kite                    |
| 4. rhombus       | 12. Legs of trapezoid       |
| 5. square        | 13. Base angles             |
| 6. trapezoid     |                             |
| 7. bases         |                             |
| 8. legs          |                             |

Resources

Textbook  
Kuta Worksheet Builder  
Examview

Assessment(s)

Chapter 6 Test

Assessment Data:

Chapter Test  
A –  
B –  
C –  
D –  
F –



Geometry A

Course Name: Geometry A

Unit Name: Unit 9: Transformations and Symmetry

Time Frame: Weeks 14-15

**Unit Standards**

E.1.a: Determine points or lines of symmetry and apply the properties of symmetry to figures

E.1.e: Identify and draw images of transformations and use their properties to solve problems

G.1.e: Determine the effect of reflections, rotations, translations, and dilations and their compositions on the coordinate plane

**Unit Essential Questions**

1. Why do we use mathematics to model real-world situations? To solve problems, understand phenomena, look for trends.

**Unit Essential Vocabulary**

1. line of reflection	9. Rotational symmetry
2. translation	10. Center of symmetry
3. rotations	11. Order of symmetry
4. center of rotation	12. dilations
5. angle of rotation	
6. reflections	
7. symmetry	
8. line of symmetry	

**Resources**

Textbook  
Kuta Worksheet Builder  
Examview

**Assessment(s)** Chapter 9 Test

**Assessment Data:**

Chapter Test

A –

B –

C –

D –

F –