

Geometry/10th Grade Scope & Sequence

1 st Six Weeks (25 Days) 8/14/19 to 9/19/19	2 nd Six Weeks (27 Days) 9/24/19 to 11/1/19
<ul style="list-style-type: none"> ❖ Unit 0: The First Five Days (5 Days: Aug 14 - Aug 20) <ul style="list-style-type: none"> ➤ Big Ideas: “How can I feel safe, engaged and be comfortable while participating in meaningful learning?” “What are the SpringWay systems and routines?” “Who am I in this learning?” ➤ Important Concepts: <ul style="list-style-type: none"> ▪ Create Social Contracts, Discuss Shared Voice, ▪ Classroom Routines, ▪ Calculator Management ▪ Stations: procedures, roles and expectations. ➤ Process Standards: 1E , 1F, 1G ❖ Unit 1: Geometry Foundations with Algebraic Connections(10 Days: Aug 21- Sep 5) <ul style="list-style-type: none"> ➤ Big Ideas: “How will I use the tools of geometry to solve real-world problems?” ➤ Important Concepts: <ul style="list-style-type: none"> ▪ Determine the coordinates of a point, including finding the midpoint ▪ Derive and use the distance, slope, and midpoint formulas. ▪ Distinguish between undefined terms, definitions, postulates, conjectures, and theorems ▪ Compare Euclidean and Spherical Geometry ➤ Readiness TEKS: 2B ➤ Supporting TEKS: 2A, 4A, 4D ❖ Unit 2: Construction Foundations & Logical Reasoning (10 Days: Sep 6 - Sep 19) <ul style="list-style-type: none"> ➤ Big Ideas: “How do I identify and determine the validity of conditional statements?” ➤ Important Concepts: <ul style="list-style-type: none"> ▪ Distinguish between undefined terms, definitions, postulates, conjectures, and theorems. 	<ul style="list-style-type: none"> ❖ Unit 3: Parallel and Perpendicular (15 Days: Sep 24 - Oct 16) <ul style="list-style-type: none"> ➤ Big Ideas: “How do I use the characteristics of parallel and perpendicular lines to analyze real-world problems?” “How do I construct lines and segments and use them to make conjectures about geometric relationships?” ➤ Important Concepts: <ul style="list-style-type: none"> ▪ Investigate patterns to make conjectures about geometric relationships. ▪ Use a compass and a straightedge to make constructions ▪ Use the constructions to make conjectures about geometric relationships ▪ Verify theorems and apply these relationships to solve problems ➤ Readiness TEKS: 2B, 2C, 5A, 6A ➤ Supporting TEKS: 5B, 5C ❖ Unit 4: Parts of Triangles & Classifying Triangles (12 Days: Oct 17 - Nov 1) <ul style="list-style-type: none"> ➤ Big Ideas: “How do I apply the definition of congruence to identify congruent figures and their corresponding sides and angles?” ➤ Important Concepts: <ul style="list-style-type: none"> ▪ Prove two triangles are congruent by applying the Side- Angle-Side, Angle-Side-Angle, Side-Side-Side, Angle- Angle-Side, and Hypotenuse-Leg congruence conditions. ▪ Apply the definition of congruence in terms of rigid transformations, to identify congruent figures and their corresponding sides and angles. ➤ Readiness TEKS: 6B, 6C ➤ Supporting TEKS: <p style="text-align: right;">Processing Standards: Taught Throughout</p>

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<ul style="list-style-type: none"> ▪ Identify and determine the validity of the converse, inverse, and contrapositive of a conditional statement. ▪ Recognize the connection between a biconditional statement and a true conditional statement with a true converse. ▪ Verify that a conjecture is false using a counterexample. <ul style="list-style-type: none"> ➤ Readiness TEKS: 4C ➤ Supporting TEKS: 4A, 4B 	
Processing Standards: Taught Throughout	
3rd Six Weeks (26 Days) 11/6/19 to 12/19/19	4th Six Weeks (31 Days) 1/7/19 to 2/21/19
<ul style="list-style-type: none"> ◆ Unit 5: Triangles Relationships & Proofs (11 Days: Nov 6 - Nov 20*) <ul style="list-style-type: none"> ➤ Big Ideas: “How do I prove and verify theorems about similar triangles?” ➤ Important Concepts: <ul style="list-style-type: none"> ▪ Verify the Triangle Inequality theorem ▪ Apply the Angle-Angle criterion to verify similar triangles ▪ Apply the proportionality of the corresponding sides to solve problems ▪ Prove theorems about similar triangles ▪ Prove the Pythagorean Theorem, the sum of interior angles, base angles of isosceles triangles, midsegments, and medians, and apply these relationships to solve problems ▪ Prove two triangles are congruent by applying the Side- Angle-Side, Angle-Side-Angle, Side-Side-Side, Angle- Angle-Side, and Hypotenuse-Leg congruence conditions. ➤ Readiness TEKS: 6B, 7B, ➤ Supporting TEKS: 5D, 6D, 8A, 7A, 8B *PSAT Testing <ul style="list-style-type: none"> ◆ Unit 6: Right Triangles (15 Days: Nov 21 - Dec 19) <ul style="list-style-type: none"> ➤ Big Ideas: “How do I analyze triangle attributes by performing right triangle constructions?” ➤ Important Concepts: 	<ul style="list-style-type: none"> ◆ Unit 0: The First Five Days (5 days: Jan 7- Jan 13) <ul style="list-style-type: none"> ➤ Big Ideas: “How can I feel safe, engaged and be comfortable while participating in meaningful learning?” “What are the SpringWay systems and routines?” “Who am I in this learning?” ➤ Important Concepts: <ul style="list-style-type: none"> ▪ Create Social Contracts, Discuss Shared Voice, ▪ Classroom Routines, ▪ Calculator Management ▪ Stations: procedures, roles and expectations. ➤ Process Standards: 1A, 1B , 1C, 1D, 1E , 1F, 1G ◆ Unit 7: Transformations (11 Days: Jan 14 - Jan 28) <ul style="list-style-type: none"> ➤ Big Ideas: “How do I apply transformations to various geometric figures?” ➤ Important Concepts: <ul style="list-style-type: none"> ▪ Describe and perform transformations ▪ Identify the sequence of transformations ▪ Identify and distinguish between reflectional and rotational symmetry ▪ Determine the image or pre-image of a given two- dimensional figure ▪ Apply the definition of congruence to identify congruent figures and their corresponding sides and angles ➤ Readiness TEKS: 3A, 3B, 3C, 3D, 6C

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<ul style="list-style-type: none"> • Use the distance, slope, and midpoint formulas to verify geometric relationships • Use the Pythagorean Theorem • Determine the lengths of sides and measures of angles in a right triangle by applying the trigonometric ratios sine, cosine, and tangent to solve problems • Apply the relationships in special right triangles 30 -60-90 and 45 -45 -90 and the Pythagorean theorem <p>➤ Readiness TEKS: 2B, 9A, 9B ➤ Supporting TEKS: 6D</p> <p style="text-align: right;">Processing Standards: Taught Throughout</p>	<p>➤ Supporting TEKS:</p> <p>❖ Unit 8: Similarity (15 Days: Jan 29 - Feb 21)</p> <p>➤ Big Ideas: “How do I solve geometric problems involving similarity?”</p> <p>➤ Important Concepts:</p> <ul style="list-style-type: none"> • Apply the Angle-Angle criterion to verify similar triangles • Apply the proportionality of the corresponding sides to solve problems • Apply the definition of similarity in terms of a dilation • Identify similar figures and their proportional sides and their congruent corresponding angles • Identify and apply the relationships that exist when an altitude is drawn to the hypotenuse of a right triangle, including the geometric mean, to solve problem <p>➤ Readiness TEKS: 7B, ➤ Supporting TEKS: 7A, 8B</p> <p style="text-align: right;">Processing Standards: Taught Throughout</p>
5th Six Weeks (33 Days) 2/24/19 to 4/17/19	6th Six Weeks (31 Days) 4/20/19 to 6/2/19
<p>❖ Unit 9: Properties of Quadrilaterals (17 Days: Feb 24 - Mar 25)</p> <p>➤ Big Ideas: “What are the key properties of various quadrilaterals and polygons ?”</p> <p>➤ Important Concepts:</p> <ul style="list-style-type: none"> • Investigate patterns to make conjectures about geometric relationships • Prove a quadrilateral is a parallelogram, rectangle, square, or rhombus using opposite sides, opposite angles, or diagonals and apply these relationships to solve problems <p>➤ Readiness TEKS: ➤ Supporting TEKS:</p> <p>❖ Unit 10: Theorems of Circles (16 Days: Mar 26 - Apr 17*)</p> <p>➤ Big Ideas: “How do I analyze and apply properties of tangents to a circle and the angles and polygons formed within?”</p> <p>➤ Important Concepts:</p> <ul style="list-style-type: none"> • Apply theorems about circles 	<p>❖ Unit 11: Volume and Area (18 Days: Apr 20 - May 13)</p> <p>➤ Big Ideas: “How do I determine the area of various polygons?”</p> <p>➤ Important Concepts:</p> <ul style="list-style-type: none"> • Find areas of various polygons • Describe how changes in linear dimensions affect perimeter and area • Determine how to use trigonometry to determine the area of a regular polygon • Build and deconstruct three-dimensional figures to find surface area and volume <p>➤ Readiness TEKS: G.9A, G 9B, G.10B, G.11B, G.11D ➤ Supporting TEKS: G.6D, G.10A, G.11A</p> <p>❖ Unit 12: Probability (13 Days: May 14 - June 1*)</p> <p>➤ Big Ideas: “What are experimental and theoretical probability, permutations, and combinations, and how do I apply probability?”</p>

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- Apply proportional relationships between the measurements within a circle to solve problems
- Describe radian measure of an angle as the ratio of the length of an arc intercepted by a central angle and the radius of the circle
- Show that the equation of a circle with center at the origin and radius r is $x^2 + y^2 = r^2$
- Determine the equation for the graph of a circle with radius r and center (h, k) , $(x - h)^2 + (y - k)^2 = r^2$

➤ Readiness TEKS:

➤ Supporting TEKS: 12A, 12B, 12C, 12D, 12E

**SAT Testing*

Processing Standards: 1(A thru G) Taught Throughout

➤ Important Concepts:

- Develop strategies to use permutations and combinations to solve contextual problems
- Determine probabilities based on area to solve contextual problems
- Identify whether two events are independent and compute the probability of the two events occurring together with or without replacement
- Identify whether two events are independent and compute the probability of the two events occurring together with or without replacement
- Determine how conditional and independence probability correspond
- Apply conditional and independence probability in contextual problems

➤ Readiness TEKS:13C

➤ Supporting TEKS: 13A, 13B, 13D, 13E

**Final Exams*

Processing Standards: 1(A thru G) Taught Throughout