

CURRICULUM MAP: GEOMETRY REGENTS

RCSD- Department of Mathematics 2012-2013

CCSSM Emnhasis and Fluency Recommendations Boldfaced

Pacing	Unit/Essential Questions	Essential Knowledge-Content/Performance Indicators (What students must learn)	Essential Skills (What students will be able to do)	Vocabulary	Resources
9/5-9/14 8 days	Unit of Review <p>1. How do you solve equations with fractions using inverse operations or using the LCD to clear denominators in the equation?</p> <p>2. How do you factor algebraic expressions?</p> <p>3. How do you solve quadratic equations graphically and algebraically?</p>	Student will review: A.A.19 Identify and factor the difference of two squares A.A.20 Factor algebraic expressions completely, including trinomials with a lead coefficient of one (after factoring a GCF) A.A.22 Solve all types of linear equations in one variable. A.A.25 Solve equations involving fractional expressions. Note: Expressions which result in linear equations in one variable A.A.27 Understand and apply the multiplication property of zero to solve quadratic equations with integral coefficients and integral roots A.A.28 Understand the difference and connection between roots of a quadratic equation and factors of a quadratic expression. A.G.4 Identify and graph quadratic functions A.G.8 Find the roots of a parabolic function graphically.	Students will review: 1. Solve multi-step equations (including Fractions) 2. Factoring all types. 3. Graph quadratic functions and solve quadratic equations algebraically and graphically. 4. Solve systems of linear & quadratic equations graphically & algebraically.	<ul style="list-style-type: none"> ✓ quadratic function ✓ quadratic equation ✓ linear function ✓ linear equation ✓ system of equations ✓ parabola ✓ algebraic expression ✓ monomial ✓ binomial ✓ trinomial ✓ polynomial ✓ coefficient ✓ GCF ✓ multiplication property of zero ✓ factor 	JMAP A.A.19 , A.A.20 , A.A.22 , A.A.25 , A.A.27 A.A.28 , A.G.4 A.G.8 RegentsPrep.org Solving Fractional Equations Linear Equations Factoring Quadratic Equations Graphing Parabolas

<p>9/17- 9/26</p> <p>8 days</p> <p>CCSSM</p>	<p>Chapter 1 Foundations of Geometry</p> <p>What are the building blocks of geometry and what symbols do we use to describe them?</p> <p>CCSSM Fluency needed for congruence and similarity</p>	<p>Students will learn:</p> <p>G.G.17 Construct a bisector of a given angle, using a straightedge and compass, and justify the construction</p> <p>G.G.66 Find the midpoint of a line segment, given its endpoints</p> <p>G.G.67 Find the length of a line segment, given its endpoints</p>	<p>Students will be able to:</p> <ol style="list-style-type: none"> 1. identify, name and draw points, lines, segments, rays and planes 2. use midpoints of segments to find lengths 3. construct midpoints and congruent segments 4. use definition of vertical, complementary and supplementary angles to find missing angles 5. apply formulas for perimeter, area and circumference 6. use midpoint and distance formulas to solve problems 	<ul style="list-style-type: none"> ✓ undefined term ✓ point ✓ line ✓ plane ✓ collinear ✓ coplanar ✓ segment ✓ endpoint ✓ ray ✓ opposite rays ✓ postulate ✓ coordinate ✓ distance ✓ length ✓ congruent segments ✓ construction ✓ between ✓ midpoint ✓ bisect ✓ segment bisector ✓ adjacent angles ✓ linear pair ✓ complementary angles ✓ supplementary angles ✓ vertical angles ✓ coordinate plane ✓ leg ✓ hypotenuse 	<p>Holt Text</p> <p>1-1: pg 6-8 (Examples 1-4) 1-2: pg 13-16 (Examples 1-5, include constructions) 1-3: pg 20-24 (Examples 1-4, include constructions) 1-4: pg 28-30 (Examples 1-5) 1-5: pg 36-37 (Examples 1-3) 1-6: pg 43-46 (Examples 1-4)</p> <p>Geometry Labs from Holt Text</p> <p>1-1 Exploration 1-3 Exploration 1-3 Additional Geometry Lab 1-4 Exploration 1-5 Exploration 1-5 Geometry Lab 1 1-5 Geometry Lab 2 1-6 Exploration</p> <p>GSP Labs from Holt</p> <p>1-2 Exploration 1-2 Tech Lab p. 12</p> <p>pg. 27: Using Technology</p> <p>Vocab Graphic Organizers</p> <p>1-1 know it notes 1-4 know it notes 1-2 know it notes 1-5 know it notes 1-3 know it notes 1-6 know it notes</p> <p>JMAP</p> <p>G.G.17, G.G.66, G.G.67</p> <p>RegentsPrep.org</p> <p>Lines and Planes Constructions Mathbits.com Finding Distances Reasoning with Rules</p>
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9/27- 10/05 7 days	Chapter 2: Geometric Reasoning <p>1. How is logical reasoning used in geometry?</p> <p>2. How is reasoning used to construct a formal algebraic proof?</p> <p>3. How can angle relationships be identified, solved and proved?</p>	G.G.24 Determine the negation of a statement and establish its truth value G.G.25 Know and apply the conditions under which a compound statement (conjunction, disjunction, conditional, biconditional) is true. G.G.26 Identify and write the inverse, converse, and contrapositive of a given conditional statement and note the logical equivalences. G.G. 27 Write a proof arguing from a given hypothesis to a given conclusion	1. Student will identify, write, and analyze the truth value of conditional statements. 2. Students will write the inverse, converse, and contrapositive of a conditional statement. 3. Students will write and analyze biconditional statements. 4. Students will analyze the truth value of conjunctions and disjunctions. 5. Students will identify properties of equality and congruency. 6. Students will write two column proofs.	<ul style="list-style-type: none"> ✓ Inductive reasoning ✓ Conjecture ✓ Counterexample ✓ Conditional statement ✓ Hypothesis ✓ Conclusion ✓ Truth table ✓ Negation ✓ Converse ✓ Inverse ✓ Contrapositive ✓ Biconditional statement ✓ Compound statement ✓ Conjunction ✓ Disjunction ✓ proof 	<u>Holt Text</u> 2-1: pg 74-79 2-2: pg 81-87 2-4: pg 96-101 Pg 128-129 2-5: 104-109 2-6: pg 110-116 2-7: pg 118-125 <u>Vocabulary development – Graphing Organizers</u> 2-2: graphing organizer 2-4: graphing organizer 2-5: know it notes 2-6: know it notes <u>JMAP</u> G.G.24, G.G.25, G.G.26 <u>RegentsPrep.org</u> Logic Related Conditionals Writing proofs
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10/9- 10/19 9 days CCSSM	Chapter 3 Parallel and Perpendicular Lines CCSSM Fluency needed for congruence and similarity What special relationships exist in parallel and perpendicular lines?	G.G.18 Construct the perpendicular bisector of a given segment, using a straightedge and compass, and justify the construction G.G.19 Construct lines parallel (or perpendicular) to a given line through a given point, using a straightedge and compass, and justify the construction G.G.35 Determine if two lines cut by a transversal are parallel, based on the measure of given pairs of angles formed by the transversal and the lines G.G.62 Find the slope of a perpendicular line, given the equation of a line G.G.63 Determine whether two lines are parallel, perpendicular or neither, given their equations G.G.64 Find the equation of a line, given a point on the line and the equation of a line perpendicular to the given line G.G.65 Find the equation of a line, given a point on the line and the equation of a line parallel to the desired line G.G.68 Find the equation of a line that is the perpendicular bisector of a line segment, given the endpoints of the line segment. G.G.70 Solve systems of equations involving one linear equation and one quadratic equation graphically. 1. construct the perpendicular bisector of a segment 2. construct parallel or perpendicular lines to a given line and point 3. identify and explore special angle relationships formed when two parallel lines are cut by a transversal 4. determine when two lines that are cut by a transversal are parallel based on given angle measures explore relationships of slopes to determine when two lines are parallel, perpendicular or neither 6. write the equations of lines that are parallel or perpendicular to a given line that pass through a specific point 7. solve quadratic-linear systems graphically	✓ parallel/perpendicular skew lines ✓ parallel planes ✓ transversal ✓ corresponding angles ✓ alternate interior / exterior angles ✓ same side interior angles ✓ bisector ✓ perpendicular bisector ✓ distance from a point to a line ✓ slope ✓ pos/ neg / 0 slope ✓ undefined slope ✓ x-intercept ✓ y-intercept ✓ linear functions ✓ point slope form ✓ slope-intercept form ✓ vertical line ✓ horizontal line	Holt Text Be sure to include proofs and constructions throughout unit. 3-1: pg. 146-147 (Examples 1-3) 3-2 : pg. 155-157 (Examples 1-3) Geometry Lab: pg. 170 Activity 1 Constructing Parallel Lines 3-4: pg. 172-74 (Theorems p.173) Be sure to include construction of perpendicular bisector Geometry Lab: pg. 179 Constructing perpendicular lines through a given point 3-5: pg 182-184 (Examples 1-3) 3-6 : pg 190-193 (Examples 1-3) Be sure to include exercises on pg. 195 #41- 44 and #47-51 (Note: Students can write equation of line in any form. They will not be told to write it in point slope form or slope intercept form.) p. 199 Solving quad-linear systems graphically
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Geometry Labs from Holt Text: [3-1 Exploration](#) [3-2 Exploration](#) [3-2 Additional Geometry Lab](#) [3-3 Geometry Lab p. 170](#) [3-4 Exploration](#) [3-4 Geometry Lab p. 179](#)

[3-4 Geoboard Geometry Lab](#) [3-5 Exploration](#) [3-5 Geoboard Geometry Lab](#) [3-6 Exploration](#) [3-6 Tech Lab p. 188](#) [3-6 B Additional Lab](#)

GSP Labs from Holt: [3-2 Tech Lab p. 154](#) [3-3 Exploration](#)

Vocab Graphic Organizers: [3-1: know it notes](#) [3-4: know it notes](#) [3-2: know it notes](#) [3-5: know it notes](#) [3-3: know it notes](#) [3-6: know it notes](#)

JMAP: [G.G.18,G.G.19,G.G.35,G.G.62G.G.63,G.G.64,G.G.65,G.G.70](#)

RegentsPrep.org: [Constructions](#), [Parallel Lines](#), [Slopes and Equations of Lines](#), [Linear and Quadratic Systems](#), [Equations of Lines Review](#)

Mathbits.com: [Slopes of Lines Activity](#) [GSP: Angles & Parallel Lines Slope Demo with SkiBird Math in the Movies- October Sky](#)

10/22-11/16 18 days CCSSM	<p>Chapter 4 Triangle Congruency</p> <p>1. What types of triangles are there and what are some properties that are unique to them?</p> <p>2. What postulates are used to prove triangle congruency?</p> <p>Congruency is a CCSSM Emphasis</p>	<p>G.G.27 Write a proof arguing from a given hypothesis to a given conclusion</p> <p>G.G.28 Determine the congruence of two triangles by using one of the five congruence techniques (SSS,SAS,ASA,AAS, HL), given sufficient information about the sides and/or angles of two congruent triangles</p> <p>G.G.29 Identify corresponding parts of congruent triangles</p> <p>G.G.30 Investigate, justify and apply theorems about the sum of the measures of the angles of a triangle</p> <p>G.G.31 Investigate, justify and apply the isosceles triangle theorem and its converse.</p> <p>G.G.36 Investigate, justify and apply theorems about the sum of the measures of the interior and exterior angles of polygons</p> <p>G.G.37 Investigate, justify and apply theorems about each interior and exterior angle measure of regular polygons</p> <p>G.G.69 Investigate, justify and apply the properties of triangles and quadrilaterals in the coordinate plane, using the distance, midpoint and slope formulas</p>	<ol style="list-style-type: none"> 1. classify triangles by angle measures and side lengths. 2. find the measures of interior and exterior angles of triangles 3. use congruent triangles to identify corresponding parts 4. determine when two triangles are congruent by SSS ,SAS, ASA, AAS and HL 5. use coordinate geometry to justify and investigate properties of triangles 	<ul style="list-style-type: none"> ✓ acute triangle ✓ equiangular triangle ✓ right triangle ✓ obtuse triangle ✓ equilateral triangle ✓ isosceles triangle ✓ scalene triangle ✓ interior angle of a triangle ✓ exterior angle of a triangle ✓ remote interior angle ✓ congruent polygons ✓ congruent triangles ✓ corresponding angles ✓ corresponding sides ✓ included angle ✓ included side ✓ legs of an isosceles triangle ✓ base angles of an isosceles triangle ✓ vertex angle of an isosceles triangle 	<p>Holt Text Be sure to include proofs and constructions throughout unit.</p> <p>4-1: pg 216-221 (Examples 1-4) 4-2: pg 223-230 (Examples 1-4) 4-3: pg 231 – 237 (Examples 1-4) 4-4: pg 242-246 (Examples 1-4) 4-5: pg 252 -259 (Examples 1-4) 4-6: pg 260-262 (Examples 1-4) 4-7: pg 267 – 272 (Examples 1-4) 4-8: pg 273 -278 (Examples 1-4) Extension pg 282-283</p> <p>Geometry Labs from Holt Text</p> <p>4-1 Exploration 4-2 Geometry Lab p. 222 4-2 Additional Tech Lab 4-3 Exploration 4-4 Exploration 4-4 Geometry Lab p.240 4-4 Additional Geometry Lab 4-5 Exploration 4-6 Exploration 4-7 Exploration 4-8 Exploration</p>
<p>GSP Labs from Holt 4-2 Exploration 4-4 bottom of p.249 4-5 Tech Lab p. 250</p> <p>Vocab Graphic Organizers 4-1: know it notes 4-5: know it notes 4-2: know it notes 4-6: know it notes 4-3: know it notes 4-7: know it notes 4-4: know it notes 4-8: know it notes</p> <p>JMAP G.G.27,G.G.28,G.G.29,G.G.30G.G.31, G.G.36,G.G.37,G.G.69</p> <p>RegentsPrep.org Proper Notation: Congruence vs Equality Basic Vocab for Formal Proofs Vocabulary Matching Triangle Congruency, Angles and Triangles, Isosceles Triangle Theorems, Coordinate Geometry Proofs for Triangle only Triangle Regents Questions</p>					

11/19- 11/21 3 days CCSSM	<p>Review Constructions</p> <p>What geometric conclusions can be drawn from using constructions as your hypothesis?</p> <p>CCSSM Fluency: Use of Construction Tools</p>	<p>G.G.17 Construct a bisector of a given angle, using a straightedge and compass, and justify the construction</p> <p>G.G.18 Construct the perpendicular bisector of a given segment, using a straightedge and compass, and justify the construction</p> <p>G.G.19 Construct lines parallel (or perpendicular) to a given line through a given point, using a straightedge and compass, and justify the construction</p> <p>G.G.20 Construct an equilateral triangle, using a straightedge and compass, and justify the construction</p>	<ol style="list-style-type: none"> 1. Students will construct a bisector of a given angle. 2. Students will construct the perpendicular bisector of a given segment 3. Students will construct lines parallel to a given line through a given point 4. Students will construct lines perpendicular to a given line through a given point 5. Students will construct an equilateral triangle 6. Students will justify the constructions 	<input checked="" type="checkbox"/> Construct <input checked="" type="checkbox"/> Bisector <input checked="" type="checkbox"/> Parallel <input checked="" type="checkbox"/> Perpendicular <input checked="" type="checkbox"/> Equilateral	<p>JMAP <u>G.G.17</u>, <u>G.G.18</u>, <u>G.G.19</u>, <u>G.G.20</u></p> <p>RegentsPrep.org <u>Bisect a line segment and an angle</u> <u>Parallel through a point</u> <u>Perpendiculars</u> <u>Equilateral triangle</u></p> <p>Other Resources SEE ATTACHED PACKET</p>
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11/26- 12/12 13 days CCSSM	Chapter 5 Relationships in Triangles 1. What properties are unique to the various centers of a triangle? 2. What are the inequality relationships in triangles? 3. How do we use the Pythagorean theorem and its converse to solve problems? CCSSM Fluency needed for congruence and similarity	G.G.21 Investigate and apply the concurrence of medians, altitudes, angle bisectors and perpendicular bisectors of triangles. G.G.32 Investigate, justify and apply theorems about geometric inequalities, using the exterior angle theorem G.G.33 Investigate, justify and apply the triangle inequality theorem G.G.34 Determine either the longest side of a triangle given the three angle measures or the largest angle given the lengths of three sides of a triangle G.G.42 Investigate, justify and apply theorems about geometric relationships, based on the properties of the line segment joining the midpoints of two sides of the triangle G.G.43 Investigate, justify and apply theorems about the centroid of a triangle, dividing each median into segments whose lengths are in the ratio 2:1 G.G.48 Investigate, justify and apply the Pythagorean theorem and its converse Students will review: A.N.2 Simplify radicals (no variables in radicand)	1. list angles of a triangle in order from smallest to largest when given 2. the lengths of sides of a triangle 3. list sides of a triangle in order from smallest to largest when given two angles of a triangle 4. determine whether three given side lengths can form a triangle 5. find the missing side length of a right triangle when given the length of the other two sides 6. use the Pythagorean theorem to determine when a triangle is a right triangle	<ul style="list-style-type: none"> ✓ equidistant ✓ locus ✓ concurrent ✓ point of concurrency ✓ circumcenter of triangle ✓ circumscribed ✓ incenter ✓ inscribed ✓ median of a triangle ✓ centroid of a triangle ✓ altitude of a triangle ✓ orthocenter of a triangle ✓ Euler line ✓ midsegment of a triangle ✓ indirect proof ✓ Pythagorean triple ✓ radical ✓ radicand ✓ root 	Holt Text 5-1 pg. 300-303 (Examples 1-4) 5-2 pg. 307-310 (Examples 1-4) 5-3 pg. 314-316 (Examples 1-3) 5-4 pg. 322-323 (Examples 1-3) 5-5 pg. 332-334 (Examples 1-5) Review Simplest Radical Form pg 346 5-7 pg. 348-352 (Examples 1-4)
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Geometry Labs from Holt Text

- [5-1 Exploration](#)
[5-1 Graphing Calculator Lab](#)
[5-2 Graphing Calculator Lab](#)
[5-3 Exploration](#)
[5-3 Additional Geometry Lab](#)
[5-5 Geometry Lab p. 331](#)
[5-7 Geometry Lab p. 347](#)
[5-7 Additional Tech Lab](#)

[GSP Labs from Holt 5-2 Exploration](#) [5-3 Tech Lab p. 321](#) [5-4 Exploration](#) [5-5 Exploration](#) [5-7 Exploration](#)
[Vocab Graphic Organizers](#) [5-1 know it notes](#) [5-4 know it notes](#) [5-2 know it notes](#) [5-5: know it notes](#) [5-3 know it notes](#) [5-7: know it notes](#)

[JMAP G.G.21, G.G.32, G.G.33,G.G.34, G.G.43 G.G.48](#)

[RegentsPrep.org](#) [Triangle Inequality Theorems](#) [Midsegment of a Triangle](#) [Concurrency of Triangles](#) [Multiple Choice](#) [Triangle Centers Practice](#)

[Pythagorean Theorem and Converse](#)

[Mathbits.com](#) [Math in the Movies Wizard of Oz](#)

12/13- 1/11 15 days CCSSM	<p>Chapter 6: Quadrilaterals</p> <p>What types of quadrilaterals exist and what properties are unique to them?</p> <p>CCSSM Fluency needed for congruence and similarity</p>	<p>G.G.27 Write a proof arguing from a given hypothesis to a given conclusion</p> <p>G.G.36 Investigate, justify, and apply theorems about the sum of the measures of the interior and exterior angles of polygons</p> <p>G.G.37 Investigate, justify, and apply theorems about each interior and exterior angle measure of regular polygons</p> <p>G.G.38 Investigate, justify, and apply theorems about parallelograms involving their angles, sides, and diagonals</p> <p>G.G.39 Investigate, justify, and apply theorems about special parallelograms (rectangles, rhombuses, squares) involving their angles, sides, and diagonals</p> <p>G.G.40 Investigate, justify, and apply theorems about trapezoids (including isosceles trapezoids) involving their angles, sides, medians, and diagonals</p> <p>G.G.41 Justify that some quadrilaterals are parallelograms, rhombuses, rectangles, squares, or trapezoids</p> <p>G.G.69 Investigate, justify, and apply the properties of triangles and quadrilaterals in the coordinate plane, using the distance, midpoint, and slope formulas</p>	<ol style="list-style-type: none"> 1. Students will classify polygons by number of sides and shape. 2. Students will discover and apply relationships between interior and exterior angles of polygons 3. Students will classify quadrilaterals according to properties. 4. Students will apply properties of parallelograms, rectangles, rhombi, squares and trapezoids to real-world problems 5. Students will write proofs of quadrilaterals 6. Students will investigate, justify and apply properties of quadrilaterals in the coordinate plane 	<ul style="list-style-type: none"> ✓ Polygon ✓ Vertex of a polygon ✓ Diagonal ✓ Regular polygon ✓ Exterior angle ✓ Concave ✓ Convex ✓ Parallelogram ✓ Rectangle ✓ Rhombus ✓ Square ✓ Trapezoid ✓ Base of a trapezoid ✓ Base angle of a trapezoid ✓ Isosceles trapezoid ✓ Midsegment of a trapezoid ✓ Midpoint ✓ Slope ✓ Distance 	<p>Holt Text</p> <p>6-1: pg 382-388 6-2: pg 390-397 6-3: pg 398-405 6-4: pg 408-415 6-5: pg 418-425 6-6: pg 429-435 (no kites)</p> <p>GSP from Holt Text</p> <p>6-2: Exploration 6-2: technology lab 6-5: pg 416-417 6-6: pg 426</p> <p>Geometry Labs from Holt Text</p> <p>6-1: Exploration 6-2: pg 390 6-3: Exploration 6-3: Lab with geoboard 6-4: Exploration 6-4: Lab with tangrams 6-6: Lab with geoboard – no kites</p> <p>Vocab Graphing Organizers</p> <p>6-1: know it notes 6-2: know it notes 6-3: know it notes 6-4: know it notes 6-5: know it notes 6-6: know it notes – no kites</p> <p>JMAP</p>
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1/14- 1/18 5 days	MIDTERM REVIEW				

1/28- 2/15 15 days CCSSM	Chapter 7: Similarity and Chapter 8: (section 8-1 only) 1. How do you know when your proportion is set up correctly? 2. What are some ways to determine of any two polygons are similar? Think physically and numerically. 3. How can you prove if triangles are similar? 4. When you dilate a figure, is it the same as creating a figure similar to the original one? Similarity is a CCSSM Emphasis	Students will learn: G.G.44 Establish similarity of triangles, using the following theorems: AA, SAS, and SSS G.G.45 Investigate, justify, and apply theorems about similar triangles G.G.46 Investigate, justify, and apply theorems about proportional relationships among the segments of the sides of the triangle, given one or more lines parallel to one side of a triangle and intersecting the other two sides of the triangle G.G.47 Investigate, justify and apply theorems about mean proportionality: the altitude to the hypotenuse of a right triangle is the mean proportional between the two segments along the hypotenuse; the altitude to the hypotenuse of a right triangle divides the hypotenuse so that either leg of the right triangle is the mean proportional between the hypotenuse and segment of the hypotenuse adjacent to that leg G.G.58 Define, investigate, justify, and apply similarities (dilations ...)	1. Students will write and simplify ratios. 2. Students will use proportions to solve problems. 3. Students will identify similar polygons and apply properties of similar polygons to solve problems. 4. Students will prove certain triangles are similar by using AA, SSS, and SAS and will use triangle similarity to solve problems. 5. Students will use properties of similar triangles to find segment lengths. 6. Students will apply proportionality and triangle angle bisector theorems. 7. Students will use ratios to make indirect measurements and use scale drawings to solve problems. 8. Students will apply similarity properties in the coordinate plane and use coordinate proof to prove figures similar.	✓ Dilation ✓ Proportion ✓ Ratio ✓ Scale ✓ Scale drawing ✓ Scale factor ✓ Similar ✓ Similar polygons ✓ Similarity ratio ✓ Side ✓ Angle ✓ Parallel ✓ mean proportional theorem ✓ geometric mean	Holt Text 7-1: pg 454-459 (Examples 1-5) 7-2: pg 462-467 (Examples 1-3) 7-3: pg 470-477 (Examples 1-5) 7-4: pg 481-487 (Examples 1-4) 7-5: pg 488-494 (Examples 1-3, discover 4) 7-6: pg 495-500 (Examples 1-4) 8-1: pg. 518-520 (Examples 1-4) Vocab Graphic Organizers 7-1: Know it Notes 7-2: Know it Notes 7-3: Know it Notes 7-4: Know it Notes 7-5: Know it Notes 7-6: Know it Notes 8-1: Know it Notes GSP from Holt Text 7-2 Tech Lab p.460 7-3 Tech Lab p.468 7-4 Exploration 7-4 Tech Lab p. 480 Geometry Labs from Holt Text 7-1 Exploration 7-2 Exploration 7-2 Geoboard Lab 7-3 Exploration 7-5 Exploration 7-6 Exploration 7-6 Geoboard lab 8-1 Exploration 8-1 Tech Lab with Graphing Calculator

JMAP

[G.G.44, G.G.45, G.G.46, G.G.47](#)

RegentsPrep.org

[Lesson: Midsegment Theorem](#)

[Practice: Midsegment Theorem](#)

[Teacher Resource: Discovering
Midsegment Theorem](#)

[Lesson: Similar Triangles](#)

[Lesson: Similar Figure Info](#)

[Lesson: Proofs with Similar Triangles](#)

[Lesson: Strategies for Dealing with
Similar Triangles](#)

[Practice: Similarity Numerical Problems](#)

[Practice: Similarity Proofs](#)

[Lesson: Mean Proportional In a Right
Triangle](#)

[Practice: Mean Proportional in a Right
Triangle](#)

<p>2/25-3/5</p> <p>7 days</p> <p>Three-Dimensional Plane Geometry</p> <p>1. What is the difference between a line, a segment and a ray?</p> <p>2. What is the difference between the intersection of 2 lines, 2 planes, and a line with a plane?</p> <p>3. What is formed when a plane intersects 2 other parallel planes?</p>	<p>G.G.1 Know and apply that if a line is perpendicular to each of two intersecting lines at their point of intersection, then the line is perpendicular to the plane determined by them</p> <p>G.G.2 Know and apply that through a given point there passes one and only one plane perpendicular to a given line</p> <p>G.G.3 Know and apply that through a given point there passes one and only one line perpendicular to a given plane</p> <p>G.G.4 Know and apply that two lines perpendicular to the same plane are coplanar</p> <p>G.G.5 Know and apply that two planes are perpendicular to each other if and only if one plane contains a line perpendicular to the second plane</p> <p>G.G.6 Know and apply that if a line is perpendicular to a plane, then any line perpendicular to the given line at its point of intersection with the given plane is in the given plane</p> <p>G.G.7 Know and apply that if a line is perpendicular to a plane, then every plane containing the line is perpendicular to the given plane</p> <p>G.G.8 Know and apply that if a plane intersects two parallel planes, then the intersection is two parallel lines</p>	<p>1. identify perpendicular lines</p> <p>2. identify perpendicular planes</p> <p>3. define line, segment and ray</p> <p>4. define a plane and what the minimum requirements are for a plane (3 points)</p> <p>5. know the differences in what is formed when lines intersect lines, planes intersect planes, and lines intersect planes.</p> <p>6. Understand the meaning of coplanar</p> <p>7. Understand the meaning of collinear</p> <p>8. Visualize and represent each of the aforementioned P.I.s that they will learn.</p>	<p>✓ Point</p> <p>✓ Perpendicular</p> <p>✓ Coplanar</p> <p>✓ Parallel</p> <p>✓ Parallel lines</p> <p>✓ Parallel planes</p> <p>✓ Skewed lines</p> <p>✓ Point of intersection</p> <p>✓ Line</p> <p>✓ Ray</p> <p>✓ Line segment</p>	<p>Holt Text</p> <ul style="list-style-type: none"> • G.G.1-4, 6: 3-4 Extension: Lines Perpendicular to Planes pg. NY 180A-D • G.G.7-10: 10-3 Extension: Perpendicular Planes and Parallel Planes pg. NY 678A-D • G.G.10: Chapter 10-1 Solid Geometry pg. 654 <p>JMAP G.G.1, G.G.2, G.G.3, G.G.4, G.G.5, G.G.6, G.G.7, G.G.8, G.G.9</p> <p>Amsco Resources Ch. 11-1: G.G.1, G.G.2, G.G.3 Ch. 11-2: G.G.4, G.G.7, G.G.8 Ch. 11-3: G.G.9</p> <p>Pearson Resources Online Mini-Quiz Vocabulary Crossword Video: Determining Colinear Points Video: Defining a Plane Discovery Education Points, Lines, and Planes</p> <p>RegentsPrep.org</p>
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		<p>G.G.9 Know and apply that if two planes are perpendicular to the same line, they are parallel</p>			<p><u>Teacher Resource</u> <u>Lesson: Defining Key Terms</u> <u>Lesson: Theorems Relating Lines and Planes</u> <u>Multiple Choice: Practice with Lines and Planes</u></p>
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3/6- 3/15 8 days	Chapter 10: 3D Shapes (Volume and Surface Area) 1. How can one generalize how to find the volume of any prism? 2. How is the volume of a prism similar to the volume formula of a cylinder? 3. If you needed to explain the process of finding surface area of any figure, how would you?	G.G.10 Know and apply that the lateral edges of a prism are congruent and parallel. G.G.12 Know and apply that the volume of a prism is the product of the area of the base and the altitude G.G.13 Apply the properties of a regular pyramid, including: <ul style="list-style-type: none"> • Lateral edges are congruent • Lateral faces are congruent isosceles triangles • Volume of a pyramid equals one-third the product of the area of the base and the altitude G.G.14 Apply the properties of a cylinder, including: <ul style="list-style-type: none"> • Bases are congruent • Volume equals the product of the area of the base and altitude • Lateral area of a right circular cylinder equals the product of an altitude and the circumference of the base G.G.15 Apply the properties of a right circular cone, including: <ul style="list-style-type: none"> • Lateral area equals one-half the product of the slant height and the circumference of its base • Volume is one-third the product of the area of its base and its altitude G.G. 16 Apply the properties of a sphere, including: <ul style="list-style-type: none"> • The intersection of a plane and a sphere is a circle • A great circle is the largest circle that can be drawn on a sphere • Two planes equidistant from the center of the sphere and intersecting the sphere do so in 	1. Students will classify 3-D figures according to their properties. 2. Students will learn and apply the formula for the surface area of a prism and cylinder. 3. Students will learn and apply the formula for the surface area of a pyramid and a cone. 4. Students will learn and apply the formula for the volume of a prism and cylinder. 5. Students will learn and apply the formula for the volume of a pyramid and a cone. 6. Students will learn and apply the formula for the volume and surface area of a sphere.	<input checked="" type="checkbox"/> Cone <input checked="" type="checkbox"/> Cylinder <input checked="" type="checkbox"/> Net <input checked="" type="checkbox"/> Prism <input checked="" type="checkbox"/> Right prism (in all of its forms) <input checked="" type="checkbox"/> Pyramid <input checked="" type="checkbox"/> Sphere <input checked="" type="checkbox"/> Surface area <input checked="" type="checkbox"/> Volume <input checked="" type="checkbox"/> Lateral edge <input checked="" type="checkbox"/> Lateral face <input checked="" type="checkbox"/> Lateral surface <input checked="" type="checkbox"/> Altitude <input checked="" type="checkbox"/> Regular <input checked="" type="checkbox"/> Vertex <input checked="" type="checkbox"/> Slant height <input checked="" type="checkbox"/> Radius <input checked="" type="checkbox"/> Great circle	Holt Text 10-1: pg 654-660 (Examples 1-4) 10-2: pg 661-668 (OPTIONAL) 10-3: pg 670-677 (OPTIONAL) 10-4: pg 680-687 (Examples 1a, 2-5) 10-5: pg 689-696 (Examples 1a, 2-5) 10-6: pg 697-704 (Examples 1a,b, 3b,4,5) 10-7: pg 705-712 (Examples 1-5) 10-8: pg 714-721 (Examples 1-4) Vocab Graphing Organizers 10-1: Know it Notes 10-4: Know it Notes 10-5: Know it Notes 10-6: Know it Notes 10-7: Know it Notes 10-8: Know it Notes Geometry Labs from Holt 10-1 Exploration 10-4 Exploration 10-4 Spreadsheet Lab 10-4 Cylinder Lab Recording Sheet 10-5 Exploration 10-5 Geometry Lab 10-6 Exploration 10-7 Exploration 10-8 Exploration 10-8 Spreadsheet Lab Recording Sheet JMAP G.G.12, G.G.13, G.G.14, G.G.15, G.G.16
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	<p>congruent circles</p> <ul style="list-style-type: none">• Surface area is $4\pi r^2$• Volume is $\frac{4}{3}\pi r^3$			<p><u>RegentsPrep.org</u></p> <p>Lesson: Prisms</p> <p>Lesson: Cylinders</p> <p>Lesson: Pyramids</p> <p>Lesson: Cones</p> <p>Lesson: Spheres</p> <p>Practice: Working With Solids</p> <p>Practice: Applied Questions Regarding Solids</p>
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<p>3/18-4/19</p> <p>19 days</p>	<p>Chapter 11 Circles</p> <p>What are the properties of lines and angles that intersect circles and how do we use them to solve problems?</p>	<p>G.G.49 Investigate, justify and apply theorems regarding chords of a circle: perpendicular bisectors or chords; the relative lengths of chords as compared to their distance from the center of the circle</p> <p>G.G.50 Investigate, justify and apply theorems about tangent lines to a circle: a perpendicular to the tangent at the point of tangency; two tangents to a circle from the same external point; common tangents of two no-intersecting or tangent circles</p> <p>G.G. 51 Investigate, justify and apply theorems about the arcs determined by the rays of angles formed by two lines intersecting a circle when the vertex is: inside the circle (two chords); on the circle (tangent and chord); outside the circle (two tangents, two secants, or tangent and secant)</p> <p>G.G.52 Investigate, justify and apply theorems about arcs of a circle cut by two parallel lines</p> <p>G.G. 53 Investigate, justify and apply theorems regarding segments intersected by a circle: along two tangents from the same external point; along two secants from the same external point; along a tangent and a secant from the same external point; along two intersecting chords of a given circle</p> <p>G.G.71 Write the equation of a circle, given its center and radius or given the endpoints of a diameter</p>	<ol style="list-style-type: none"> 1. identify tangents, secants and chords that intersect circles and use properties to solve problems 2. use properties of arcs and chords of circles to solve problems 3. investigate and understand theorems regarding inscribed angles and central angles in a circle 4. find the measures of angles or arcs formed by secants, chords and tangents that intersect a circle 5. find the lengths of segments formed by lines that intersect circles 6. write equations and graph circles in the coordinate plane 	<ul style="list-style-type: none"> ✓ interior of a circle ✓ exterior of a circle ✓ chord ✓ secant ✓ tangent of a circle ✓ point of tangency ✓ congruent circles ✓ concentric circles ✓ tangent circles ✓ common tangent ✓ central angle ✓ arc ✓ minor arc ✓ major arc ✓ semicircle ✓ adjacent arcs ✓ congruent arcs ✓ inscribed angle ✓ intercepted arc ✓ subtend ✓ secant segment ✓ external secant segment ✓ tangent segment ✓ radius ✓ diameter ✓ center-radius form of a circle 	<p>Holt Text</p> <p>11-1: pg 746-750 (Examples 1-4) (GSP models or construction on pg 748 would allow students to discover theorems 11-1-1, 11-1-2 and 11-1-3)</p> <p>11-2: pg 756-759 (Examples 1-4)</p> <p>11-4 pg. 772-775 (Examples 1-4)</p> <p>11-4 pg NY780A Extension (Example 1 only , Note: This is a theorem they should be able to apply to solve problems – pg 780C #2)</p> <p>11-5 pg 782-785 (Examples 1-5)</p> <p>11-6 pg 792-794 (Examples 1-4)</p> <p>11-7 pg 799-801 (Examples 1-3)</p> <p>GSP Labs from Holt</p> <p>11-4 Exploration</p> <p>11-5 Exploration</p> <p>11-5 Tech Lab p. 780</p> <p>11-6 Exploration</p> <p>11-6 Tech Lab p. 790</p> <p>Geometry Labs from Holt</p> <p>11-1 Exploration</p> <p>11-2 Tech Lab</p> <p>11-2 Exploration</p> <p>11-5 Additional Geometry Lab</p> <p>11-6 Additional Geometry Lab</p> <p>11-7 Exploration</p> <p>Vocab Graphic Organizers</p> <p>11-1 know it notes 11-5 know it notes</p> <p>11-2 know it notes 11-6 know it notes</p>
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	<p>G.G.72 Write the equation of a circle, given its center and radius or given the endpoints of a diameter. Note: The center is an ordered pair of integers and the radius is an integer.</p> <p>G.G.73 Find the center and radius of a circle, given the equation of the circle in center-radius form</p> <p>G.G.74 Graph circles of the form $(x-h)^2 + (y-k)^2 = r^2$</p>			11-4 know it notes 11-7 know it notes JMAP G.G.49 , G.G.50 , G.G.51 , G.G.52 , G.G.53 G.G.71 , G.G.72 , G.G.73 , G.G.74 RegentsPrep.org Chords, Circles and Tangents Circles and Angles Circles Practice Regents Questions Mathbits.com GSP: Angles and Circles GSP: Segments and Circles GSP: Tangents and Circles from scratch
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<p>4/22- 5/3</p> <p>10 days</p> <p>CCSSM</p>	<p>Chapter 12: Transformations</p> <p>1. How does a transformation affect the ordered pairs of the original shape?</p> <p>2. How does a change in ordered pairs affect the position of a geometric figure?</p> <p>3. How does a scale factor affect a shape, its area and its position in the coordinate plane?</p> <p>Transformations is a CCSSM Emphasis used to prove similarity & congruence</p>	<p>G.G.54 Define, investigate, justify, and apply isometries in the plane (rotations, reflections, translations, glide reflections)</p> <p>G.G.55 Investigate, justify, and apply the properties that remain invariant under translations, rotations, reflections, and glide reflections</p> <p>G.G.56 Identify specific isometries by observing orientation, numbers of invariant points, and/or parallelism</p> <p>G.G.57 Justify geometric relationships (perpendicularity, parallelism, congruence) using transformational techniques (translations, rotations, reflections)</p> <p>G.G.58 Define, investigate, justify, and apply similarities (dilations and the composition of dilations and isometries)</p> <p>G.G.59 Investigate, justify, and apply the properties that remain invariant under similarities</p> <p>G.G.60 Identify specific similarities by observing orientation, numbers of invariant points, and/or parallelism</p> <p>G.G.61 Investigate, justify, and apply the analytical representations for translations, rotations about the origin of 90° and 180°, reflections over the lines $x = 0$, $y = 0$, and $y = x$, and dilations centered at the origin</p>	<p>1. Students will identify and draw reflections, transformations, rotations, dilations and composition of transformations.</p> <p>2. Students will apply theorems about isometries.</p> <p>3. Students will identify and describe symmetry in geometric figures.</p> <p>4. Students will investigate properties that are invariant under isometries and dilations.</p> <p>5. Students will use analytical representations to justify claims about transformations.</p>	<ul style="list-style-type: none"> ✓ Transformation ✓ Image ✓ Preimage ✓ Reflection in line ✓ Point reflection ✓ Translation ✓ Rotation ✓ Isometry ✓ Opposite isometry ✓ Direct isometry ✓ Composition of transformations ✓ Glide reflection ✓ Symmetry ✓ Line symmetry ✓ Rotational symmetry ✓ Enlargement ✓ Reduction ✓ Invariant 	<p>Holt Text</p> <p>12-1: pg 824-830 (Examples 1,2,4) 12-2: pg 831-837 (Examples 1,3) 12-3: pg 839-845 (Examples 1,3) 12-4: pg 848-853 (Example 1) 12-5: pg 856-862 (Example 1,2,3) 12-7: pg 872-879 (Examples 1 , 4) pg 906-907 pg 910-913</p> <p>GSP from Holt Text</p> <p>12-1: Exploration 12-2: Exploration 12-4: Exploration</p> <p>Vocabulary development – Graphing Organizers</p> <p>12-1:know it notes 12-1:reading strategy 12-2:reading strategy 12-3:know it notes 12-5:know it notes 12-5:reading strategy</p> <p>JMAP</p> <p>G.G.54, G.G.55, G.G.56, G.G. 57, G.G.58, G.G.59, G.G.60, G.G.61</p> <p>RegentsPrep.org Transformational Geometry (Go to geometry section and find links)</p>
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under transformational geometry)

Mathbits.com

[TI 84 - transformations](#)

[TI 84 - rotations](#)

[GSP - transformations](#)

[GSP – transformations from scratch](#)

[Math in movies](#)

5/6- 5/15 8 days	Locus How can each of the 5 fundamental loci be applied to a real world context?	G.G.22 Solve problems using compound loci G.G.23 Graph and solve compound loci in the coordinate plane	1. Students will state and illustrate the 5 fundamental locus theorems 2. Student will solve problems using compound loci 3. Students will graph and solve compound loci in the coordinate plane	✓ Locus ✓ Compound ✓ Equidistant	JMAP G.G.22, G.G.23 RegentsPrep.org Basic locus theorems Compound locus Other Resources SEE ATTACHED PACKET
5/16- 5/24 7 days CCSSM	Review Coordinate Geometry Proofs How can mathematical formulas be used to validate properties of polygons? Use of coordinates to prove geometric theorems is a CCSSM Emphasis	G.G.69 Investigate, justify, and apply the properties of triangles and quadrilaterals in the coordinate plane, using the distance, midpoint, and slope formulas	1. Students will use coordinate geometry to justify and investigate properties of triangles 2. Students will investigate, justify and apply properties of quadrilaterals in the coordinate plane	✓ Midpoint ✓ Distance ✓ Slope ✓ Parallel ✓ Perpendicular ✓ Isosceles ✓ Equilateral ✓ Scalene ✓ Right ✓ Parallelogram ✓ Rectangle ✓ Rhombus ✓ Square ✓ Trapezoid	JMAP G.G.69 RegentsPrep.org Coordinate Geometry Proofs Other Resources SEE ATTACHED PACKET Coordinate Geometry Packet
5/28- 6/10 10 days	FINAL EXAM REVIEW				Mathbits.com Geometry Review and Formula Sheet Theorems and Properties in Geometry GeoCaching Activity Geometry Jeopardy

