

HILLSBOROUGH TOWNSHIP PUBLIC SCHOOLS

HILLSBOROUGH HIGH SCHOOL

MATHEMATICS CURRICULUM

Geometry

July, 2020

COURSE OVERVIEW GEOMETRY

The geometry curriculum is designed to introduce students to a variety of proofs, theorems and postulates as they gain a better understanding of the mathematical world around them. The course develops essential skills in estimation, logical thinking and problem-solving applications/approaches which enable the students to critically analyze various situations.

The course will present concepts including, but not limited to, basic definitions, postulates and reasoning skills, lines, transformations, geometric relationships, congruence and similarity, and characteristics of polygons and circles.

Throughout the course students will use a variety of strategies and tools to gain a solid understanding of the material. State-of-the-Art technology will enhance the educational experience by allowing lessons to become more interactive and inquiry based.


The course will meet the requirements of the New Jersey Student Learning Standards as approved by the state. The curriculum will reflect various teaching strategies and offer opportunities for enrichment and reinforcement based on individual need while preparing all students to meet and/or exceed the standards assessed by the New Jersey Student Learning Assessment for Geometry as well as any other graduation assessment yet to be developed and implemented..

**Hillsborough Township Public Schools
Geometry Mathematics Curriculum**

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| Unit Title: Unit 1 Basics of Geometry | Timeframe/Pacing: 15 days |
| <p>Essential Questions</p> <ul style="list-style-type: none"> ● How can we use geometric language and mathematical models to describe spatial and physical relationships? ● How can we best represent and verify geometric/algebraic relationships? ● How can we use the coordinate plane to determine information about the polygon? | |
| <p>Enduring Understandings</p> <ul style="list-style-type: none"> ● Geometric properties can be used to construct geometric figures. ● Coordinate planes can easily be used to describe the perimeter and area of a polygon. ● Mathematical models can be used to describe and quantify physical relationships. | |
| <p>Standards Taught and Assessed</p> <ul style="list-style-type: none"> ● <input type="checkbox"/> G.CO.A.1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. ● <input type="checkbox"/> G.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, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line. ● <input checked="" type="checkbox"/> G.GPE.B.7: Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.★ ● <input checked="" type="checkbox"/> G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★ | |
| <p>Highlighted Interdisciplinary Connections</p> <ul style="list-style-type: none"> ● English Language Arts: NJLSA.R4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. ● Computer Science and Design Thinking: 8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models. | |
| <p>Highlighted Career Ready Practices and 21st Century Themes and Skills</p> <ul style="list-style-type: none"> ● 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3). ● 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, | |

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| <p>2.2.12.PF.3).</p> <ul style="list-style-type: none"> ● 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a). | | | | |
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| <p>Social Emotional Learning Competencies</p> <ul style="list-style-type: none"> ● 2.1.12.EH.1: Recognize one’s personal traits, strengths, and limitations and identify how to develop skills to support a healthy lifestyle. ● 2.1.12.EH.3: Describe strategies to appropriately respond to stressors in a variety of situations (e.g., academics, relationships, shootings, death, car accidents, illness). ● 2.1.12.EH.4: Analyze and adapt mental and emotional health messages and communication techniques to peers and other specific target audiences (e.g., dimensions of health). | | | | |
| <p>Pre-Assessment</p> <ul style="list-style-type: none"> ● G.CO.A.1 ● G.GPE.B.7 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● ELL - Spanish student edition, reviews, assessments and videos are available via Big Ideas Math teacher resources. ● Specific other accommodations/modifications per a student’s IEP or 504 plan | | |
| Student Learning Objectives: We are learning to/that... | Student Strategies (Mathematical Practices) | Formative Assessment | Activities and Resources | Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504) |
| <p><input type="checkbox"/> G.CO.A.1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP4 - Model with mathematics</p> <p>SMP5 - Use appropriate tools strategically</p> | <p>Name the geometric term modeled by the object.</p>  <ul style="list-style-type: none"> ● line ● point ● plane ● segment ● ray | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student’s IEP or 504 plan</p> |

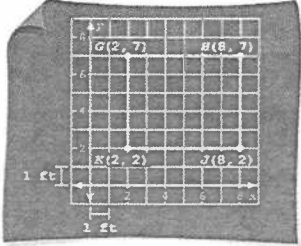
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| <p>□ G.CO.D.12: Make formal geometric constructions with a variety of tools and methods. Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</p> | <p>SMP1 - Make sense of problems and persevere in solving them</p> <p>SMP6 - Attend to precision</p> | <p>Use a straightedge to draw a line segment AB that is 5 inches long. Then draw a perpendicular line CD that is 7 inches long.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan.</p> |
| <p>■ G.GPE.B.7: Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula. ★</p> | <p>SMP1 - Make sense of problems and persevere in solving them</p> <p>SMP2 - Reason abstractly and quantitatively</p> <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>Find the perimeter of $\triangle ABC$ with vertices A(-2, 3), B(3, -3), and C(-2, -3).</p> <p>Find the area of $\triangle DEF$ with vertices D(1, 3), E(4, -3), and F(-4, -3).</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan.</p> |
| <p>■ G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects ★</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP6 - Attend to</p> | <p>You are building a shed in your backyard. The diagram shows the four vertices of the shed. Each unit in the coordinate plane represents 1 foot. Find the</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> |

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| | <p>precision</p> <p>SMP7-Look for and make use of structure</p> | <p>area of the floor of the shed.</p>  | | <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Benchmark 1 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | | |
| <p>Summative Assessment(s)</p> <ul style="list-style-type: none"> ● Unit 1 Common Assessment 1 <ul style="list-style-type: none"> ○ G.CO.A.1 ○ G.GPE.B.7 ● Unit 1 Common Assessment 2 <ul style="list-style-type: none"> ○ G.CO.A.1 ○ G.GPE.B.7 ○ G.MG.A.1 ● Unit 1 Performance Task | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | | |

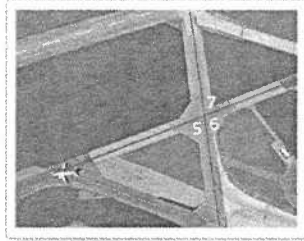
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| Unit Title: Unit 2 Reasoning & Proofs | Timeframe/Pacing: 13 days |
| Essential Questions <ul style="list-style-type: none"> • How can we best represent and verify geometric/algebraic relationships? | |
| Enduring Understandings <ul style="list-style-type: none"> • Reasoning and/or proof can be used to verify or refute conjectures or theorems in geometry. | |
| Standards Taught and Assessed <ul style="list-style-type: none"> • ■ G.CO.C.9: Prove theorems about lines and angles. Theorems include: 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. • ■ G.CO.C.10: Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point. | |
| Highlighted Interdisciplinary Connections <ul style="list-style-type: none"> • English Language Arts: NJLSA.R.4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. • Computer Science and Design Thinking: 8.1.5.DA.5: Propose cause and effect relationships, predict outcomes, or communicate ideas using data. • Computer Science and Design Thinking: 8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models. | |
| Highlighted Career Ready Practices and 21st Century Themes and Skills <ul style="list-style-type: none"> • 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3). • 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3). • 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a). | |
| Social Emotional Learning Competencies <ul style="list-style-type: none"> • 2.1.12.EH.1: Recognize one's personal traits, strengths, and limitations and identify how to develop skills to support a healthy lifestyle. • 2.1.12.EH.3: Describe strategies to appropriately respond to stressors in a variety of situations (e.g., academics, relationships, shootings, | |

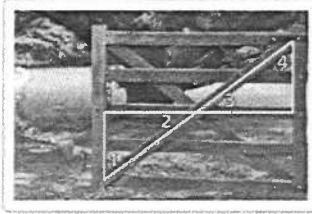
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| <p>death, car accidents, illness).</p> <ul style="list-style-type: none"> ● 2.1.12.EH.4: Analyze and adapt mental and emotional health messages and communication techniques to peers and other specific target audiences (e.g., dimensions of health). | | | | |
| <p>Pre-Assessment</p> <ul style="list-style-type: none"> ● G.CO.C.9 ● G.CO.C.10 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● ELL - Spanish student edition, reviews, assessments and videos are available via Big Ideas Math teacher resources. ● Specific other accommodations/modifications per a student's IEP or 504 plan | | |
| <p>Student Learning Objectives: We are learning to/that...</p> | <p>Student Strategies (Mathematical Practices)</p> | <p>Formative Assessment</p> | <p>Activities and Resources</p> | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> |
| <p>■ G.CO.C.9: Prove theorems about lines and angles. Theorems include: 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 endpoint.</p> | <p>SMP2 - Reason abstractly and quantitatively</p> <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>Write a two column proof: Given $\angle 5$ and $\angle 7$ are vertical angles. Prove $\angle 5 \cong \angle 7$</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.CO.C.10: Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>Given $\angle 1$ and $\angle 3$ are complementary. $\angle 2$ and $\angle 4$ are complementary. Prove $\angle 1 \cong \angle 4$.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> |

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| <p>are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point</p> | <p>MP4 - Model with mathematics</p> <p>SMP8 - Look for and express regularity in repeated reasoning</p> |  | | <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Not applicable | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan ● Challenge questions | | |
| <p>Summative Assessment(s)</p> <ul style="list-style-type: none"> ● Unit 2 Common Assessment 1 <ul style="list-style-type: none"> ○ G.CO.C.9 ○ G.CO.C.10 ● Unit 2 Common Assessment 2 <ul style="list-style-type: none"> ○ G.CO.C.9 ○ G.CO.C.10 ● Unit 2 Performance Task | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan ● Challenge questions | | |

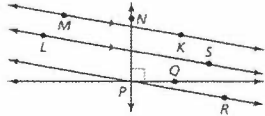
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| Unit Title: Unit 3 Parallel & Perpendicular Lines | Timeframe/Pacing: 13 days |
| <p>Essential Questions</p> <ul style="list-style-type: none"> ● How can we use geometric language to describe spatial relationships? ● How can we best represent and verify geometric/algebraic relationships? ● How can measurements be used to solve problems? | |
| <p>Enduring Understandings</p> <ul style="list-style-type: none"> ● Geometric properties can be used to construct geometric figures. ● Reasoning and/or proof can be used to verify or refute conjectures or theorems in geometry. ● Measurements can be used to describe, compare, and make sense of phenomena. | |
| <p>Standards Taught and Assessed</p> <ul style="list-style-type: none"> ● <input type="checkbox"/> G.CO.A.1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. ● <input checked="" type="checkbox"/> G.CO.C.9: Prove theorems about lines and angles. Theorems include: 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. ● <input type="checkbox"/> G.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, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line. ● <input checked="" type="checkbox"/> G.GPE.B.5: Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point). ● <input checked="" type="checkbox"/> G.GPE.B.6: Find the point on a directed line segment between two given points that partitions the segment in a given ratio. | |
| <p>Highlighted Interdisciplinary Connections</p> <ul style="list-style-type: none"> ● English Language Arts: NJLSA.R4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. ● Computer Science and Design Thinking: 8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models. | |

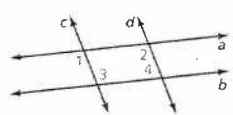

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| <p>Highlighted Career Ready Practices and 21st Century Themes and Skills</p> <ul style="list-style-type: none"> ● 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3). ● 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3). ● 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a). | | | | |
| <p>Social Emotional Learning Competencies</p> <ul style="list-style-type: none"> ● 2.1.12.EH.1: Recognize one’s personal traits, strengths, and limitations and identify how to develop skills to support a healthy lifestyle. ● 2.1.12.EH.3: Describe strategies to appropriately respond to stressors in a variety of situations (e.g., academics, relationships, shootings, death, car accidents, illness). ● 2.1.12.EH.4: Analyze and adapt mental and emotional health messages and communication techniques to peers and other specific target audiences (e.g., dimensions of health). | | | | |
| <p>Pre-Assessment</p> <ul style="list-style-type: none"> ● G.CO.A.1 ● G.GPE.B.5 ● G.GPE.B.6 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● ELL - Spanish student edition, reviews, assessments and videos are available via Big Ideas Math teacher resources. ● Specific other accommodations/modifications per a student’s IEP or 504 plan | | |
| <p>Student Learning Objectives: We are learning to/that...</p> | <p>Student Strategies (Mathematical Practices)</p> | <p>Formative Assessment</p> | <p>Activities and Resources</p> | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> |
| <p>☐ G.CO.A.1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>Name a pair of parallel lines and perpendicular lines.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student’s IEP or 504 plan</p> |

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| <p>■ G.CO.C.9: Prove theorems about lines and angles. Theorems include: 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</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP6 - Attend to precision</p> | <p>Given $a \parallel b, \angle 2 \cong \angle 3$ Prove $c \parallel d$</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>□ G.CO.D.12: Make formal geometric constructions with a variety of tools and methods. Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>Use a compass and a straightedge to construct the perpendicular bisector of segment AB.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.GPE.B.5: Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems</p> | <p>SMP1 - Make sense of problems and persevere in solving them</p> <p>SMP4 - Model with</p> | <p>Write an equation of the line passing through the point $(-1, 1)$ that is parallel to the line $y = 2x - 3$.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> |

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| | mathematics | Write an equation of the line passing through the point (2, 3) that is perpendicular to the line $2x + y = 2$. | | Specific other accommodation and/or modifications per a student's IEP or 504 plan. |
| <p>■ G.GPE.B.6: Find the point on a directed line segment between two given points that partitions the segment in a given ratio</p> | SMP1 - Make sense of problems and persevere in solving them | <p>Find the coordinates of point P along the directed line segment AB so that the ratio of AP to PB is 3 to 2.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan.</p> |
| <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Not applicable | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | | |
| <p>Summative Assessment(s)</p> <ul style="list-style-type: none"> ● Unit 3 Common Assessment 1 <ul style="list-style-type: none"> ○ G.CO.A.1 ○ G.CO.D.12 ● Unit 3 Common Assessment 2 <ul style="list-style-type: none"> ○ G.CO.D.12 ○ G.GPE.B.5 ○ G.GPE.B.6 ● Unit 3 Performance Task | | | | |

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| Unit Title: Unit 4 Transformations | Timeframe/Pacing: 13 days |
| <p>Essential Questions</p> <ul style="list-style-type: none"> ● How can we use transformations to represent algebraic changes? ● How can we use geometric language to describe spatial relationships? ● How can we best represent and verify geometric/algebraic relationships? | |
| <p>Enduring Understandings</p> <ul style="list-style-type: none"> ● Shape and area can be conserved during mathematical transformations. ● Geometric relationships provide a means to make sense of a variety of phenomena. ● Coordinate geometry can be used to represent and verify geometric/algebraic relationships. | |
| <p>Standards Taught and Assessed</p> <ul style="list-style-type: none"> ● <input type="checkbox"/> G.CO.A.2: Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch). ● <input type="checkbox"/> G.CO.A.3: Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself. ● <input type="checkbox"/> G.CO.A.4: Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. ● <input type="checkbox"/> G.CO.A.5: Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another. ● <input checked="" type="checkbox"/> G.CO.B.6: Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent. ● <input checked="" type="checkbox"/> G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★ ● <input checked="" type="checkbox"/> G.SRT.A.1a: A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. ● <input checked="" type="checkbox"/> G.SRT.A.1b: The dilation of a line segment is longer or shorter in the ratio given by the scale factor. ● <input checked="" type="checkbox"/> G.SRT.A.2: Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides. (HONORS ONLY) | |

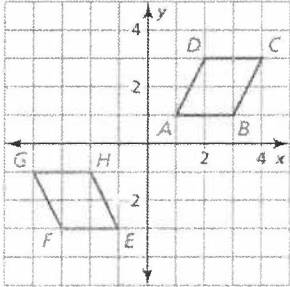
Key: Major Cluster Supporting Cluster Additional Cluster

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| <p>Highlighted Interdisciplinary Connections</p> <ul style="list-style-type: none"> ● English Language Arts: NJLSA.R4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. ● Computer Science & Design Thinking: 8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models. | | | | |
| <p>Highlighted Career Ready Practices and 21st Century Themes and Skills</p> <ul style="list-style-type: none"> ● 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3). ● 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3). ● 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a). | | | | |
| <p>Social Emotional Learning Competencies</p> <ul style="list-style-type: none"> ● 2.1.12.EH.1: Recognize one’s personal traits, strengths, and limitations and identify how to develop skills to support a healthy lifestyle. ● 2.1.12.EH.3: Describe strategies to appropriately respond to stressors in a variety of situations (e.g., academics, relationships, shootings, death, car accidents, illness). ● 2.1.12.EH.4: Analyze and adapt mental and emotional health messages and communication techniques to peers and other specific target audiences (e.g., dimensions of health). | | | | |
| <p>Pre-Assessment</p> <ul style="list-style-type: none"> ● G.CO.A.2 ● G.CO.A.5 ● G.CO.B.6 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● ELL - Spanish student edition, reviews, assessments and videos are available via Big Ideas Math teacher resources. ● Specific other accommodations/modifications per a student’s IEP or 504 plan | | |
| <p>Student Learning Objectives: We are learning to/that...</p> | <p>Student Strategies (Mathematical Practices)</p> | <p>Formative Assessment</p> | <p>Activities and Resources</p> | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> |
| <p><input type="checkbox"/> G.CO.A.2: Represent transformations in the plane using, e.g., transparencies and geometry software; describe</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>Use dynamic software to draw any triangle and label it $\triangle ABC$. Copy the triangle and translate</p> | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes</p> |

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| <p>transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).</p> | <p>SMP5 - Use appropriate tools strategically</p> | <p>(slide) to form a new figure $\triangle A'B'C'$.</p> | | <p>-Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan.</p> |
| <p><input type="checkbox"/> G.CO.A.3: Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself</p> | <p>SMP1 - Make sense of problems and persevere in solving them</p> | <p>Describe a congruence transformation that maps $\square ABCD$ to $\square EFGH$.</p>  | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p><input type="checkbox"/> G.CO.A.4: Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments</p> | <p>SMP2 - Reason abstractly and quantitatively</p> | <p>Find the measure of the acute or right angle formed by intersecting lines so that C can be mapped to C'' using two reflections. A rotation of 84° maps C to C''.</p> | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |

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| <p>☐ G.CO.A.5: Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>Graph $\triangle ABC$ with vertices A (2, -1), B (5, 2), C (8, -2) and its image after a glide reflection. Translation: $(x, y) \rightarrow (x, y + 6)$ Reflection: in the y-axis</p> | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.CO.B.6: Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent</p> | <p>SMP7-Look for and make use of structure SMP8 - Look for and express regularity in repeated reasoning</p> | <p>Determine whether the polygons are congruent. Use transformations to explain your reasoning. Q (2, 4), R (5, 4), S (4, 1) and T (6,4), U (9, 4), V (8,1)</p> | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★</p> | <p>SMP1 - Make sense of problems and persevere in solving them SMP7-Look for and make use of structure</p> | <p>You are designing a favicon for a golf website. In an image-editing program, you move the red rectangle 2 units left and 3 units down. Then you move the red rectangle 1 unit right and 1 unit up. Rewrite the composition as a single translation.</p> | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |

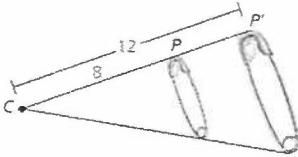
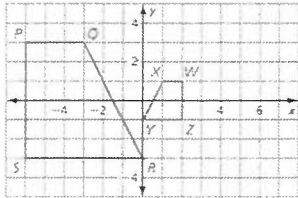
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| <p>■ G.SRT.A.1a: A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged</p> | <p>SMP5 - Use appropriate tools strategically</p> <p>SMP7-Look for and make use of structure</p> | <p>Find the scale factor of the dilation. Then tell whether the dilation is a reduction or an enlargement.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <ul style="list-style-type: none"> -Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.SRT.A.1b: The dilation of a line segment is longer or shorter in the ratio given by the scale factor</p> | <p>SMP7-Look for and make use of structure</p> | <p>Find the scale factor of the dilation. Then tell whether the dilation is a reduction or an enlargement.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <ul style="list-style-type: none"> -Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating |

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| | |  | | <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.SRT.A.2: Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides (HONORS ONLY)</p> | <p>SMP2 - Reason abstractly and quantitatively</p> <p>SMP3 - Construct viable arguments and critique the reasoning of other</p> <p>SMP6 - Attend to precision</p> | <p>Describe a similarity transformation that maps trapezoid PQRS to trapezoid WXYZ.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Quarterly 1 | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | | | |
| <p>Summative Assessment(s)</p> <ul style="list-style-type: none"> ● Unit 4 Common Assessment 1 <ul style="list-style-type: none"> ○ G.CO.A.2 ○ G.CO.A.3 ○ G.CO.A.4 ○ G.CO.A.5 | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time | | | |

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| <ul style="list-style-type: none">○ G.CO.B.6● Unit 4 Common Assessment 2<ul style="list-style-type: none">○ G.CO.A.2○ G.CO.A.5○ G.CO.B.6○ G.SRT.A.1a○ G.SRT.A.1b○ G.SRT.A.2 (Honors Only)● Unit 4 Performance Task | <ul style="list-style-type: none">● Specific other accommodations/modifications per a student's IEP or 504 plan.● Challenge questions |
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| Unit Title: Unit 5 Congruent Triangles | Timeframe/Pacing: 18 days |
| Essential Questions <ul style="list-style-type: none"> ● How can we best represent and verify geometric/algebraic relationships? ● How can we use geometric language and mathematical models to describe spatial and physical relationships? | |
| Enduring Understandings <ul style="list-style-type: none"> ● Reasoning and/or proof can be used to verify or refute conjectures or theorems in geometry. ● Mathematical models can be used to describe and quantify physical relationships. ● Geometric relationships provide a means to make sense of a variety of phenomena. | |
| Standards Taught and Assessed <ul style="list-style-type: none"> ● ■ G.CO.B.7: Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent. ● ■ G.CO.B.8: Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions. ● ■ G.CO.C.10: Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point. ● □ G.CO.D.13: Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle. ● ■ G.GPE.B.4: Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point $(1, \sqrt{3})$ lies on the circle centered at the origin and containing the point $(0, 2)$. (<i>HONORS ONLY</i>) ● ■ G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★ ● ■ G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★ ● ■ G.SRT.B.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. | |
| Highlighted Interdisciplinary Connections <ul style="list-style-type: none"> ● English Language Arts: NJLSA.R4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. | |

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- **Computer Science & Design Thinking: 8.2.5.ED.2:** Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.

Highlighted Career Ready Practices and 21st Century Themes and Skills

- **9.4.5.IML.2:** Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3).
- **9.4.12.CT.1:** Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).
- **9.4.12.CT.2:** Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a).

Social Emotional Learning Competencies

- **2.1.12.EH.1:** Recognize one’s personal traits, strengths, and limitations and identify how to develop skills to support a healthy lifestyle.
- **2.1.12.EH.3:** Describe strategies to appropriately respond to stressors in a variety of situations (e.g., academics, relationships, shootings, death, car accidents, illness).
- **2.1.12.EH.4:** Analyze and adapt mental and emotional health messages and communication techniques to peers and other specific target audiences (e.g., dimensions of health).

Pre-Assessment

- G.CO.B.7
- G.CO.B.8

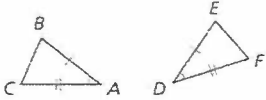
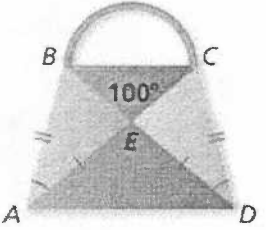
Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)

- ELL - Spanish student edition, reviews, assessments and videos are available via Big Ideas Math teacher resources.
- Specific other accommodations/modifications per a student’s IEP or 504 plan

| Student Learning Objectives: We are learning to/that... | Student Strategies (Mathematical Practices) | Formative Assessment | Activities and Resources | Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504) |
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| <p>■ G.CO.B.7: Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP7-Look for and make use of structure</p> | <p>Reflect a triangle over the y-axis. Measure the angles and sides to show the preimage and the image have congruent angles and sides..</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> |

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| <p>pairs of angles are congruent.</p> | | | | <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan.</p> |
| <p>■ G.CO.B.8: Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions</p> | <p>SMP5 - Use appropriate tools strategically</p> | <p>Using rigid motions explain how $\triangle ABC \cong \triangle DEF$.</p>  | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.CO.C.10: Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>You are designing fabric purses to sell at the school fair. Explain why $\triangle ABE \cong \triangle DCE$.</p>  | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>□ G.CO.D.13: Construct an equilateral triangle, a square, and a regular hexagon inscribed in a</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>A logo in an advertisement is an equilateral triangle with a side length of 7 centimeters. Sketch the</p> | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes</p> |

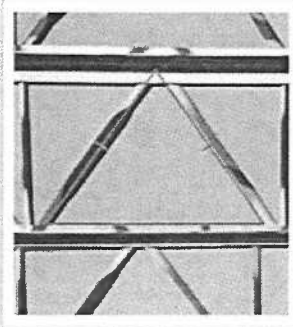
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| circle | SMP6 - Attend to precision | logo and give the measure of each side | | -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan |
| <p>■ G.GPE.B.4: Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point $(1, \sqrt{3})$ lies on the circle centered at the origin and containing the point $(0, 2)$ (HONORS ONLY)</p> | <p>SMP1 - Make sense of problems and persevere in solving the</p> <p>SMP2 - Reason abstractly and quantitatively</p> <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | Write a coordinate proof to prove that $\triangle ABC$ with vertices $A(0, 0)$, $B(6, 0)$, and $C(3, 3\sqrt{3})$ is an equilateral triangle. | The Dynamic Classroom <u>Student Journal with Exploration Activities</u> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★</p> | SMP3 - Construct viable arguments and critique the reasoning of others | Classify the triangular shape of the support beams in the diagram by its sides and by measuring its angles. | The Dynamic Classroom <u>Student Journal with Exploration Activities</u> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |

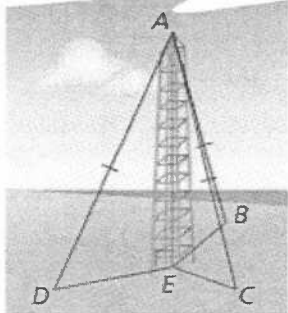

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| <p>■ G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★</p> | <p>SMP4 - Model with mathematics</p> | <p>The television antenna is perpendicular to the plane containing points B, C, D, and E. Each of the cables running from the top of the antenna to B, C, and D has the same length. Prove that $\triangle AEB$, $\triangle AEC$, and $\triangle AED$ are congruent. Given $\overline{AE} \perp \overline{EB}$, $\overline{AE} \perp \overline{EC}$, $\overline{AE} \perp \overline{ED}$, $\overline{AB} \cong \overline{AC} \cong \overline{AD}$ Prove $\triangle AEB \cong \triangle AEC \cong \triangle AED$.</p> | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |

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| <p>■ G.SRT.B.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures</p> | <p>SMP1 - Make sense of problems and persevere in solving them</p> | <p>Given $\angle 1 \cong \angle 2$, $\angle RTQ \cong \angle RTS$ Prove $\underline{QT} \cong \underline{ST}$</p>  | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Benchmark 2 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | | |
| <p>Summative Assessment(s)</p> <ul style="list-style-type: none"> ● Unit 5 Common Assessment 1 <ul style="list-style-type: none"> ○ G.CO.B.7 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use | | |

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| <ul style="list-style-type: none">○ G.MG.A.1● Unit 5 Common Assessment 2<ul style="list-style-type: none">○ G.CO.B.8○ G.MG.A.1○ G.MG.A.3○ G.SRT.B.5○ G.GPE.B.4 (Honors Only)● Unit 5 Performance Task | <ul style="list-style-type: none">● Read/clarify directions● Modify questions● Extra time● Specific other accommodations/modifications per a student's IEP or 504 plan.● Challenge questions |
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Key: ■ Major Cluster □ Supporting Cluster ⊙ Additional Cluster

**Hillsborough Township Public Schools
Geometry Mathematics Curriculum**

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| Unit Title: Unit 6 Relationships Within Triangles | Timeframe/Pacing: 14 days |
| Essential Questions <ul style="list-style-type: none"> ● How can we best represent and verify geometric/algebraic relationships? ● How can we use geometric language and mathematical models to describe spatial and physical relationships? | |
| Enduring Understandings <ul style="list-style-type: none"> ● Reasoning and/or proof can be used to verify or refute conjectures or theorems in geometry. ● Geometric properties can be used to construct geometric figures. ● Mathematical models can be used to describe and quantify physical relationships. | |
| Standards Taught and Assessed <ul style="list-style-type: none"> ● <input checked="" type="checkbox"/> G.C.A.3: Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle. ● <input checked="" type="checkbox"/> G.CO.C.9: Prove theorems about lines and angles. Theorems include: 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. ● <input checked="" type="checkbox"/> G.CO.C.10: Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point. ● <input type="checkbox"/> G.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, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line. ● <input checked="" type="checkbox"/> G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★ ● <input checked="" type="checkbox"/> G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★ | |
| Highlighted Interdisciplinary Connections <ul style="list-style-type: none"> ● English Language Arts: NJLSA.R4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. | |

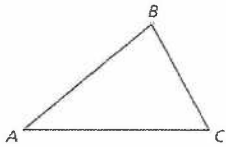
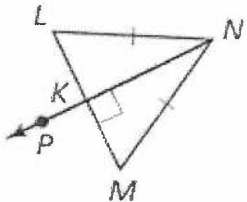
Key: Major Cluster Supporting Cluster Additional Cluster

**Hillsborough Township Public Schools
Geometry Mathematics Curriculum**

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| <ul style="list-style-type: none"> ● Computer Science & Design Thinking: 8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models. | | | | |
| <p>Highlighted Career Ready Practices and 21st Century Themes and Skills</p> <ul style="list-style-type: none"> ● 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3). ● 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3). ● 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a). | | | | |
| <p>Social Emotional Learning Competencies</p> <ul style="list-style-type: none"> ● 2.1.12.EH.1: Recognize one’s personal traits, strengths, and limitations and identify how to develop skills to support a healthy lifestyle. ● 2.1.12.EH.3: Describe strategies to appropriately respond to stressors in a variety of situations (e.g., academics, relationships, shootings, death, car accidents, illness). ● 2.1.12.EH.4: Analyze and adapt mental and emotional health messages and communication techniques to peers and other specific target audiences (e.g., dimensions of health). | | | | |
| <p>Pre-Assessment</p> <ul style="list-style-type: none"> ● G.CO.C.9 ● G.CO.C.10 ● G.MG.A.1 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● ELL - Spanish student edition, reviews, assessments and videos are available via Big Ideas Math teacher resources. ● Specific other accommodations/modifications per a student’s IEP or 504 plan | | |
| <p>Student Learning Objectives: We are learning to/that...</p> | <p>Student Strategies (Mathematical Practices)</p> | <p>Formative Assessment</p> | <p>Activities and Resources</p> | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> |
| <p>⊙ G.C.A.3: Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP7-Look for and make use of structure</p> | <p>Use a compass and straightedge to construct a circle that is circumscribed and inscribed about $\triangle ABC$.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> |

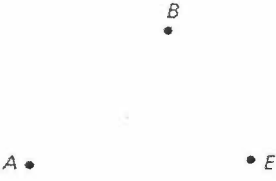
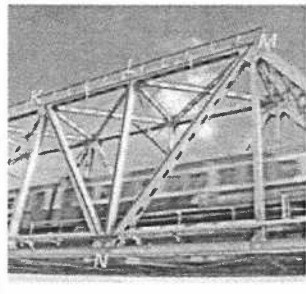
Key: ■ Major Cluster □ Supporting Cluster ⊙ Additional Cluster

**Hillsborough Township Public Schools
Geometry Mathematics Curriculum**

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| | |  | | <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.CO.C.9: Prove theorems about lines and angles. Theorems include: 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</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP5 - Use appropriate tools strategically</p> | <p>Tell whether the information in the diagram allows you to conclude that point P lies on the perpendicular bisector of LM. Explain your reasoning.</p> <div style="text-align: center;">  </div> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.CO.C.10: Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP7-Look for and make use of structure</p> | <p>Find the coordinates of the centroid of the triangle with the given vertices A(2,3), B(8,1), C(5,7).</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |

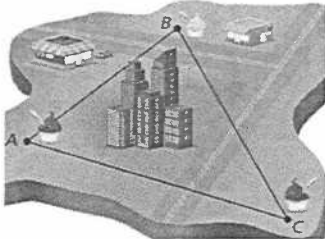
Key: ■ Major Cluster □ Supporting Cluster ⊙ Additional Cluster

**Hillsborough Township Public Schools
Geometry Mathematics Curriculum**

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| <p>☐ G.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, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP6 - Attend to precision</p> | <p>Three snack carts sell hot pretzels from points A, B, and E. What is the location of the pretzel distributor if it is equidistant from the three carts? Sketch the triangle and show the location.</p> <div style="text-align: center;">  </div> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>Is there enough information in the diagram to conclude that point N lies on the perpendicular bisector of ?</p> <div style="text-align: center;">  </div> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |

Key: ■ Major Cluster ☐ Supporting Cluster ⊙ Additional Cluster

**Hillsborough Township Public Schools
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| <p>■ G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★</p> | <p>SMP7-Look for and make use of structure</p> | <p>Three snack carts sell frozen yogurt from points A, B, and C outside a city. Each of the three carts is the same distance from the frozen yogurt distributor. Find the location of the distributor.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Quarterly 2 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> | | |
| <p>Summative Assessment(s)</p> <ul style="list-style-type: none"> ● Unit 6 Assessment 1 <ul style="list-style-type: none"> ○ G.C.A.3 ○ G.MG.A.1 ○ G.MG.A.3 ● Unit 6 Common Assessment 2 <ul style="list-style-type: none"> ○ G.CO.C.10 ○ G.MG.A.1 ● Unit 6 Performance Task | | <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | | |

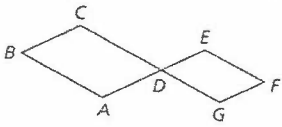
Key: ■ Major Cluster □ Supporting Cluster ⊙ Additional Cluster

**Hillsborough Township Public Schools
Geometry Mathematics Curriculum**

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| Unit Title: Unit 7 Quadrilaterals & Other Polygons | Timeframe/Pacing: 15 days |
| Essential Questions <ul style="list-style-type: none"> ● How can we best represent and verify geometric/algebraic relationships? ● How can we use geometric language and mathematical models to describe spatial and physical relationships? | |
| Enduring Understandings <ul style="list-style-type: none"> ● Reasoning and/or proof can be used to verify or refute conjectures or theorems in geometry. ● Mathematical models can be used to describe and quantify physical relationships. ● Geometric relationships provide a means to make sense of a variety of phenomena. | |
| Standards Taught and Assessed <ul style="list-style-type: none"> ● ■ G.CO.C.11: Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals. ● ■ G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★ ● ■ G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★ ● ■ G.SRT.B.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. | |
| Highlighted Interdisciplinary Connections <ul style="list-style-type: none"> ● English Language Arts: NJLSA.R4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. ● Computer Science & Design Thinking: 8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models. | |
| Highlighted Career Ready Practices and 21st Century Themes and Skill <ul style="list-style-type: none"> ● 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3). ● 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3). ● 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a). | |

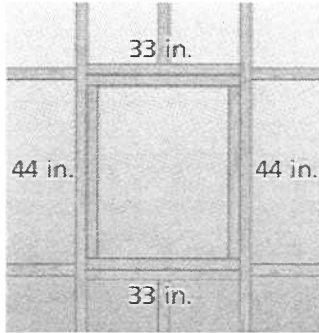
Key: ■ Major Cluster □ Supporting Cluster ⊙ Additional Cluster

**Hillsborough Township Public Schools
Geometry Mathematics Curriculum**

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| <p>Social Emotional Learning Competencies</p> <ul style="list-style-type: none"> ● 2.1.12.EH.1: Recognize one's personal traits, strengths, and limitations and identify how to develop skills to support a healthy lifestyle. ● 2.1.12.EH.3: Describe strategies to appropriately respond to stressors in a variety of situations (e.g., academics, relationships, shootings, death, car accidents, illness). ● 2.1.12.EH.4: Analyze and adapt mental and emotional health messages and communication techniques to peers and other specific target audiences (e.g., dimensions of health). | | | | |
| <p>Pre-Assessment</p> <ul style="list-style-type: none"> ● G.MG.A.1 ● G.SRT.B.5 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● ELL - Spanish student edition, reviews, assessments and videos are available via Big Ideas Math teacher resources. ● Specific other accommodations/modifications per a student's IEP or 504 plan | | |
| <p>Student Learning Objectives: We are learning to/that...</p> | <p>Student Strategies (Mathematical Practices)</p> | <p>Formative Assessment</p> | <p>Activities and Resources</p> | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> |
| <p>■ G.CO.C.11: Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals</p> | <p>SMP1 - Make sense of problems and persevere in solving them</p> <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>Given ABCD and GDEF are parallelograms. Prove that $\angle C$ and $\angle F$ are supplementary.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★</p> | <p>SMP2 - Reason abstractly and quantitatively</p> <p>SMP3 - Construct</p> | <p>The floor of the gazebo is shaped like a regular decagon. Find the measure of each interior and exterior angle.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> |

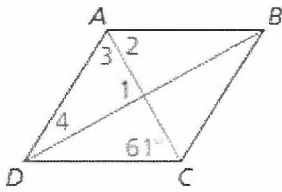
Key: ■ Major Cluster □ Supporting Cluster ⊙ Additional Cluster

**Hillsborough Township Public Schools
Geometry Mathematics Curriculum**

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| | <p>viable arguments and critique the reasoning of others</p> | | | <p>Specific other accommodation and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios). ★</p> | <p>SMP2 - Reason abstractly and quantitatively</p> <p>SMP8 - Look for and express regularity in repeated reasoning</p> | <p>You are building a frame for a window. The window will be installed in the opening shown in the diagram. a. The opening must be a rectangle. Given the measurements in the diagram, can you assume that it is? Explain. b. You measure the diagonals of the opening. The diagonals are 54.8 inches and 55.3 inches. What can you conclude about the shape of the opening?</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |

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| <p>■ G.SRT.B.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures</p> | <p>SMP1 - Make sense of problems and persevere in solving them</p> <p>SMP6 - Attend to precision.</p> <p>MP8 - Look for and express regularity in repeated reasoning</p> | <p>Find the measures of the numbered angles in rhombus ABCD.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Not Applicable | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | | |
| <p>Summative Assessment(s)</p> <ul style="list-style-type: none"> ● Unit 7 Common Assessment 1 <ul style="list-style-type: none"> ○ G.MG.A.1 ○ G.SRT.B.5 ● Unit 7 Common Assessment 2 <ul style="list-style-type: none"> ○ G.MG.A.1 ○ G.MG.A.3 ○ G.SRT.B.5 ● Unit 7 Performance Task | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | | |

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**Hillsborough Township Public Schools
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| Unit Title: Unit 8 Unit 8 Similarity | Timeframe/Pacing: 10 days days |
| <p>Essential Questions</p> <ul style="list-style-type: none"> ● How can we use transformations to represent algebraic changes? ● What makes two figures similar? ● How can we use geometric language and mathematical models to describe spatial and physical relationships? | |
| <p>Enduring Understandings</p> <ul style="list-style-type: none"> ● Shape and area can be conserved during mathematical transformations. ● Similar figures have corresponding congruent angles and corresponding proportional sides. ● Mathematical models can be used to describe and quantify physical relationships. ● Geometric relationships provide a means to make sense of a variety of phenomena. | |
| <p>Standards Taught and Assessed</p> <ul style="list-style-type: none"> ● ■ G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★ ● ■ G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★ ● ■ G.SRT.A.2: Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides. ● ■ G.SRT.A.3: Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar. ● ■ G.SRT.B.4: Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity. ● ■ G.SRT.B.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. | |
| <p>Highlighted Interdisciplinary Connections</p> <ul style="list-style-type: none"> ● English Language Arts: NJLSA.R4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. ● Computer Science & Design Thinking: 8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models. | |

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**Hillsborough Township Public Schools
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| <p>Highlighted Career Ready Practices and 21st Century Themes and Skills</p> <ul style="list-style-type: none"> ● 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3). ● 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3). ● 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a). | | | | |
| <p>Social Emotional Learning Competencies</p> <ul style="list-style-type: none"> ● 2.1.12.EH.1: Recognize one’s personal traits, strengths, and limitations and identify how to develop skills to support a healthy lifestyle. ● 2.1.12.EH.3: Describe strategies to appropriately respond to stressors in a variety of situations (e.g., academics, relationships, shootings, death, car accidents, illness). ● 2.1.12.EH.4: Analyze and adapt mental and emotional health messages and communication techniques to peers and other specific target audiences (e.g., dimensions of health). | | | | |
| <p>Pre-Assessment</p> <ul style="list-style-type: none"> ● G.SRT.A.2 ● G.SRT.A.3 ● G.SRT.B.5 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● ELL - Spanish student edition, reviews, assessments and videos are available via Big Ideas Math teacher resources. ● Specific other accommodations/modifications per a student’s IEP or 504 plan | | |
| <p>Student Learning Objectives: We are learning to/that...</p> | <p>Student Strategies (Mathematical Practices)</p> | <p>Formative Assessment</p> | <p>Activities and Resources</p> | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> |
| <p>■ G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>You and your cousin are trying to determine the height of a telephone pole. Your cousin tells you to stand in the pole’s shadow so that the tip of your shadow coincides with the tip of the pole’s shadow. Your cousin claims to be able to use the distance</p> | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student’s IEP or 504 plan</p> |

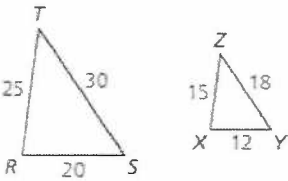
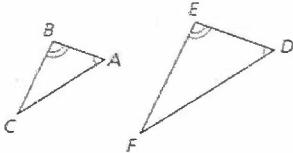
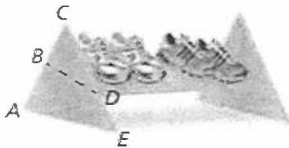
Key: ■ Major Cluster □ Supporting Cluster ⊙ Additional Cluster

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| | | between the tips of the shadows and you, the distance between you and the pole, and your height to estimate the height of the telephone pole. Is this possible? Explain. Include a diagram in your answer. | | |
| <p>■ G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★</p> | <p>SMP4 - Model with mathematics</p> <p>SMP7-Look for and make use of structure</p> | <p>In table tennis, the table is a rectangle 9 feet long and 5 feet wide. A tennis court is a rectangle 78 feet long and 36 feet wide. Are the two surfaces similar? If so, find the scale factor.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.SRT.A.2: Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides</p> | <p>SMP7-Look for and make use of structure</p> | <p>In the diagram, $\triangle RST \sim \triangle XYZ$. a. Find the scale factor from $\triangle RST$ to $\triangle XYZ$. b. List all pairs of congruent angles. c. Write the ratios of the corresponding side lengths in a statement of proportionality.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |

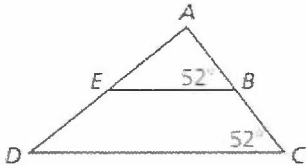
Key: ■ Major Cluster □ Supporting Cluster ⊙ Additional Cluster

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| <p>■ G.SRT.A.3: Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>Given $\angle A \cong \angle D$, $\angle B \cong \angle E$ Prove $\triangle ABC \sim \triangle DEF$</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.SRT.B.4: Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP7-Look for and make use of structure</p> | <p>On the shoe rack shown, $BA = 33$ centimeters, $CB = 27$ centimeters, $CD = 44$ centimeters, and $DE = 25$ centimeters. Explain why the shelf is not parallel to the floor.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.SRT.B.5: Use congruence and similarity</p> | <p>SMP3 - Construct viable arguments and critique the</p> | <p>Show that the two triangles are similar.</p> | <p>The Dynamic Classroom</p> | <p>-Calculator use -Read/clarify directions</p> |

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| <p>criteria for triangles to solve problems and to prove relationships in geometric figures</p> | <p>reasoning of others</p> <p>SMP4 - Model with mathematics</p> | <p>$\triangle ABE \sim \triangle ACD$</p>  | <p><u>Student Journal with Exploration Activities</u></p> | <p>-Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● 3rd Benchmark at end of Unit ● Quarterly 3 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | | |
| <p>Summative Assessment(s)</p> <ul style="list-style-type: none"> ● Unit 8 Common Assessment 1 <ul style="list-style-type: none"> ○ G.GPE.B.5 ○ G.MG.A.1 ○ G.MG.A.3 ○ G.SRT.A.2 ○ G.SRT.B.4 ○ G.SRT.B.5 ● Unit 8 Common Assessment 2 <ul style="list-style-type: none"> ○ G.SRT.B.4 ○ G.SRT.B.5 ● Unit 8 Performance Task | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | | |

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| Unit Title: Unit 9 Right Triangles & Trigonometry | Timeframe/Pacing: 15 days |
| <p>Essential Questions</p> <ul style="list-style-type: none"> ● What situations can be analyzed using similar triangles? ● How can we use geometric language and mathematical models to describe spatial and physical relationships? | |
| <p>Enduring Understandings</p> <ul style="list-style-type: none"> ● Similar triangles allow us to determine missing information. ● Geometric relationships provide a means to make sense of a variety of phenomena. ● Mathematical models can be used to describe and quantify physical relationships. | |
| <p>Standards Taught and Assessed</p> <ul style="list-style-type: none"> ● ■ G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★ ● ■ G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★ ● ■ G.SRT.B.4: Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity. ● ■ G.SRT.B.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. <i>(HONORS ONLY)</i> ● ■ G.SRT.C.6: Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles. ● ■ G.SRT.C.7: Explain and use the relationship between the sine and cosine of complementary angles. ● ■ G.SRT.C.8: Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. ● ◎ G.SRT.D.11: (+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces). <i>(HONORS ONLY)</i> | |
| <p>Highlighted Interdisciplinary Connections</p> <ul style="list-style-type: none"> ● English Language Arts: NJLSA.R4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. ● Computer Science & Design Thinking: 8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models. | |

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Highlighted Career Ready Practices and 21st Century Themes and Skills

- **9.4.5.IML.2:** Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3).
- **9.4.12.CT.1:** Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).
- **9.4.12.CT.2:** Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a).

Social Emotional Learning Competencies

- **2.1.12.EH.1:** Recognize one’s personal traits, strengths, and limitations and identify how to develop skills to support a healthy lifestyle.
- **2.1.12.EH.3:** Describe strategies to appropriately respond to stressors in a variety of situations (e.g., academics, relationships, shootings, death, car accidents, illness).
- **2.1.12.EH.4:** Analyze and adapt mental and emotional health messages and communication techniques to peers and other specific target audiences (e.g., dimensions of health).

Pre-Assessment

- G.SRT.C.6
- G.SRT.C.8

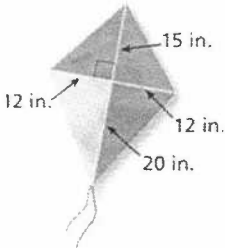
Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)

- ELL - Spanish student edition, reviews, assessments and videos are available via Big Ideas Math teacher resources.
- Specific other accommodations/modifications per a student’s IEP or 504 plan

| Student Learning Objectives: We are learning to/that... | Student Strategies (Mathematical Practices) | Formative Assessment | Activities and Resources | Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504) |
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| <p>■ G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★</p> | <p>SMP2 - Reason abstractly and quantitatively</p> <p>SMP6 - Attend to precision</p> | <p>In baseball, the lengths of the paths between consecutive bases are 90 feet, and the paths form right angles. The player on first base tries to steal second base. How far does the ball need to travel from home plate to second base to get the player out?</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student’s IEP or 504 plan</p> |

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| <p>■ G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP5 - Use appropriate tools strategically</p> | <p>You are standing on a footbridge that is 12 feet above a lake. You look down and see a duck in the water. The duck is 7 feet away from the footbridge. What is the angle of elevation from the duck to you?</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.SRT.B.4: Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP6 - Attend to precision</p> | <p>You are making a kite and need to figure out how much binding to buy. You need the binding for the perimeter of the kite. The binding comes in packages of two yards. How many packages should you buy?</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.SRT.B.5: Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. (HONORS ONLY)</p> | <p>SMP3 - Construct viable argument and critique the reasoning of others</p> <p>MP6 - Attend to precision</p> | <p>Identify the similar triangles.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or</p> |

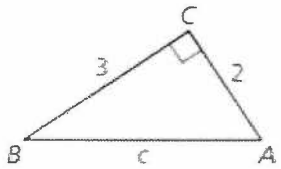
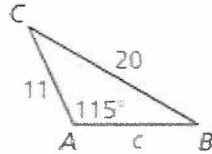
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| <p>■ G.SRT.C.6: Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles</p> | <p>SMP6 - Attend to precision</p> <p>SMP7-Look for and make use of structure</p> | <p>Find the value of each variable using sine and cosine. Round your answer to the nearest tenth.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.SRT.C.7: Explain and use the relationship between the sine and cosine of complementary angles</p> | <p>SMP1 - Make sense of problems and persevere in solving them</p> <p>SMP7-Look for and make use of structure</p> | <p>Write $\sin 56^\circ$ in terms of cosine.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.SRT.C.8: Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied</p> | <p>SMP2 - Reason abstractly and quantitatively</p> | <p>Solve the right triangle. Round decimal answers to the nearest tenth.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes</p> |

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| <p>problems</p> | <p>SMP4 - Model with mathematics</p> <p>SMP6 - Attend to precision</p> |  | <p><u>Exploration Activities</u></p> | <p>-Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>⊙ G.SRT.D.11: (+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces). (<i>HONORS ONLY</i>)</p> | <p>MP3 - Construct viable arguments and critique the reasoning of others. MP5 - Use appropriate tools strategically.</p> | <p>Write $\sin 56^\circ$ in terms of cosine.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Not Applicable | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | | |
| <p>Summative Assessment(s)</p> <ul style="list-style-type: none"> ● Unit 9 Common Assessment 1 <ul style="list-style-type: none"> ○ G.SRT.B.4 ○ G.SRT.B.5 (<i>HONORS ONLY</i>) ○ G.SRT.C.8 ○ G.MG.A.1 ● Unit 9 Common Assessment 2 <ul style="list-style-type: none"> ○ G.SRT.C.6 ○ G.SRT.C.7 ○ G.SRT.C.8 ○ G.SRT.C.11 (<i>HONORS ONLY</i>) ○ G.MG.A.1 ○ G.MG.A.3 ● Unit 9 Performance Task | | | | |

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| Unit Title: Unit 10 Circles | Timeframe/Pacing: 18 days |
| <p>Essential Questions</p> <ul style="list-style-type: none"> ● How can we use geometric language to describe spatial relationships? ● How do geometric relationships help to solve problems and/or make sense of phenomena? | |
| <p>Enduring Understandings</p> <ul style="list-style-type: none"> ● Geometric properties can be used to construct geometric figures. ● Geometric relationships provide a means to make sense of a variety of phenomena. ● Mathematical models can be used to describe and quantify physical relationships. | |
| <p>Standards Taught and Assessed</p> <ul style="list-style-type: none"> ● <input type="checkbox"/> G.CO.A.1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. ● <input type="checkbox"/> G.CO.D.13: Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle. ● <input checked="" type="radio"/> G.C.A.1: Prove that all circles are similar. ● <input checked="" type="radio"/> G.C.A.2: Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle. ● <input checked="" type="radio"/> G.C.A.3: Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle. ● <input checked="" type="radio"/> G.GPE.A.1: Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation. ● <input checked="" type="checkbox"/> G.GPE.B.4: Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point $(1, \sqrt{3})$ lies on the circle centered at the origin and containing the point $(0, 2)$. ● <input checked="" type="checkbox"/> G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★ ● <input checked="" type="checkbox"/> G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★ | |

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Highlighted Interdisciplinary Connections

- **English Language Arts: NJLSA.R4:** Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
- **Computer Science & Design Thinking: 8.2.5.ED.2:** Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.

Highlighted Career Ready Practices and 21st Century Themes and Skills

- **9.4.5.IML.2:** Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3).
- **9.4.12.CT.1:** Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3).
- **9.4.12.CT.2:** Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a).

Social Emotional Learning Competencies

- **2.1.12.EH.1:** Recognize one’s personal traits, strengths, and limitations and identify how to develop skills to support a healthy lifestyle.
- **2.1.12.EH.3:** Describe strategies to appropriately respond to stressors in a variety of situations (e.g., academics, relationships, shootings, death, car accidents, illness).
- **2.1.12.EH.4:** Analyze and adapt mental and emotional health messages and communication techniques to peers and other specific target audiences

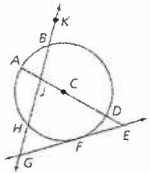
Pre-Assessment

- G.CO.A.1
- G.C.A.2
- G.GPE.B.4
- G.MG.A.1

Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)

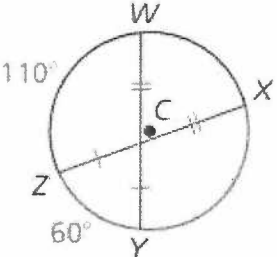
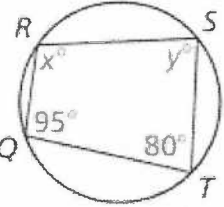
- ELL - Spanish student edition, reviews, assessments and videos are available via Big Ideas Math teacher resources.
- Specific other accommodations/modifications per a student’s IEP or 504 plan

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| Student Learning Objectives: We are learning to/that... | Student Strategies (Mathematical Practices) | Formative Assessment | Activities and Resources | Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504) |
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| <p><input type="checkbox"/> G.CO.A.1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP5 - Use appropriate tools strategically</p> <p>SMP6 - Attend to precision</p> | <p>Name the circle. Name two radii. Name two chords. Name a diameter. Name a secant. Name a tangent and a point of tangency.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p><input type="checkbox"/> G.CO.D.13: Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP6 - Attend to precision</p> | <p>The side length of an inscribed regular hexagon is equal to the radius of the circumscribed circle. Use this fact to construct a regular hexagon inscribed in a circle.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p><input checked="" type="checkbox"/> G.C.A.1: Prove that all circles are similar</p> | <p>SMP5 - Use appropriate tools strategically</p> <p>SMP6 - Attend to precision</p> | <p>Find the ratio of the circumference of a circle to its diameter and show that it is the same for every circle.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> |

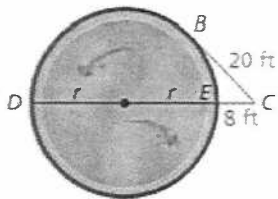
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| | | | | Specific other accommodations and/or modifications per a student's IEP or 504 plan |
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| <p>⊙ G.C.A.2: Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle</p> | <p>SMP1 - Make sense of problems and persevere in solving them</p> <p>SMP2 - Reason abstractly and quantitatively</p> <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>Find the measure of the red arc and chord in circle C.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>⊙ G.C.A.3: Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP6 - Attend to precision</p> | <p>Find the value of each variable.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>⊙ G.GPE.A.1: Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the</p> | <p>SMP1 - Make sense of problems and persevere in solving them</p> | <p>The point $(-5, 6)$ is on a circle with center $(-1, 3)$. Write the standard equation of the circle.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> |

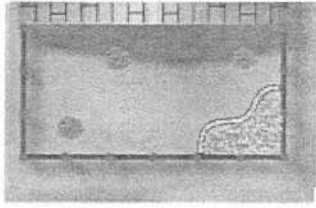
Key: ■ Major Cluster □ Supporting Cluster ⊙ Additional Cluster

**Hillsborough Township Public Schools
Geometry Mathematics Curriculum**

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| center and radius of a circle given by an equation | SMP5 - Use appropriate tools strategically | | | Specific other accommodations and/or modifications per a student's IEP or 504 plan |
| <p>■ G.GPE.B.4: Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point $(1, \sqrt{3})$ lies on the circle centered at the origin and containing the point $(0, 2)$</p> | <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> <p>SMP8 - Look for and express regularity in repeated reasoning</p> | Prove or disprove that the point $(\sqrt{-2}, \sqrt{-2})$ lies on the circle centered at the origin and containing the point $(2, 0)$. | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★</p> | <p>MP2 - Reason abstractly and quantitatively.</p> <p>MP3 - Construct viable arguments and critique the reasoning of others.</p> | <p>Find the radius of the aquarium tank.</p>  <p>The diagram shows a circle with center E. A horizontal radius is labeled r and extends to point D on the left and point C on the right. A vertical line segment of length 8 ft extends downwards from point C to a point on the circle. A right triangle is formed with vertices at the center E, point C, and a point B on the circle. The hypotenuse EB is labeled 20 ft. The angle at C is a right angle.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations/modifications per a student's IEP or 504 plan</p> |
| <p>■ G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based</p> | <p>SMP4 - Model with mathematics.</p> <p>SMP7-Look for and make use of structure</p> | <p>Three bushes are arranged in a garden, as shown. Where should you place a sprinkler so that it is the same distance from each bush?</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> |

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| <p>on ratios).★</p> | |  | | <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Not Applicable | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | | |
| <p>Summative Assessment(s)</p> <ul style="list-style-type: none"> ● Unit 10 Common Assessment 1 <ul style="list-style-type: none"> ○ G.CO.A.1 ○ G.C.A.1 ○ G.C.A.2 ○ G.MG.A.3 ● Unit 10 Common Assessment 2 <ul style="list-style-type: none"> ○ G.C.A.2 ○ G.C.A.3 ○ G.CO.D.13 ● Unit 10 Common Assessment # ● 3 <ul style="list-style-type: none"> ○ G.C.A.2 ○ G.GPE.A.1 ○ G.GPE.B.4 ○ G.MG.A.1 ● Unit 10 Performance Task | | | | |

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| Unit Title: Unit 11 Circumference, Area & Volume | Timeframe/Pacing: 23 days |
| <p>Essential Questions</p> <ul style="list-style-type: none"> • How can we use geometric language and models to describe spatial and physical relationships? • How do geometric relationships help to solve problems and/or make sense of phenomena? | |
| <p>Enduring Understandings</p> <ul style="list-style-type: none"> • Geometric properties can be used to construct geometric figures. • Geometric relationships provide a means to make sense of a variety of phenomena. • Mathematical models can be used to describe and quantify physical relationships. | |
| <p>Standards Taught and Assessed</p> <ul style="list-style-type: none"> • ☉ G.C.B.5: Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector. • ☐ G.CO.A.1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. • ☉ G.GMD.A.1: Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri’s principle, and informal limit arguments. • ☉ G.GMD.A.2: (+) Give an informal argument using Cavalieri’s principle for the formulas for the volume of a sphere and other solid figures. • ☉ G.GMD.A.3: Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.★ • ☉ G.GMD.B.4: Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects. • ■ G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).★ • ■ G.MG.A.2: Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).★ • ■ G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★ | |
| <p>Highlighted Interdisciplinary Connections</p> <ul style="list-style-type: none"> • English Language Arts: NJLSA.R4: Interpret words and phrases as they are used in a text, including determining technical, | |

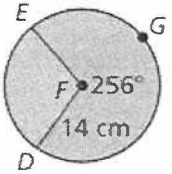
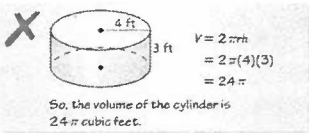
Key: ■ Major Cluster ☐ Supporting Cluster ☉ Additional Cluster

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| <p>connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.</p> <ul style="list-style-type: none"> ● Computer Science & Design Thinking: 8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models. | | | | |
| <p>Highlighted Career Ready Practices and 21st Century Themes and Skills</p> <ul style="list-style-type: none"> ● 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3). ● 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3). ● 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a). | | | | |
| <p>Social Emotional Learning Competencies</p> <ul style="list-style-type: none"> ● 2.1.12.EH.1: Recognize one’s personal traits, strengths, and limitations and identify how to develop skills to support a healthy lifestyle. ● 2.1.12.EH.3: Describe strategies to appropriately respond to stressors in a variety of situations (e.g., academics, relationships, shootings, death, car accidents, illness). ● 2.1.12.EH.4: Analyze and adapt mental and emotional health messages and communication techniques to peers and other specific target audiences (e.g., dimensions of health). | | | | |
| <p>Pre-Assessment</p> <ul style="list-style-type: none"> ● G.GMD.A.3 ● G.GMD.B.4 ● G.MG.A.2 ● G.MG.A.3 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● ELL - Spanish student edition, reviews, assessments and videos are available via Big Ideas Math teacher resources. ● Specific other accommodations/modifications per a student’s IEP or 504 plan | | |
| <p>Student Learning Objectives: We are learning to/that...</p> | <p>Student Strategies (Mathematical Practices)</p> | <p>Formative Assessment</p> | <p>Activities and Resources</p> | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> |
| <p>◎ G.C.B.5: Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of</p> | <p>SMP8 - Look for and express regularity in repeated reasoning</p> | <p>Find the area of the sectors formed by $\angle DFE$</p> | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> |

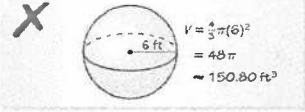
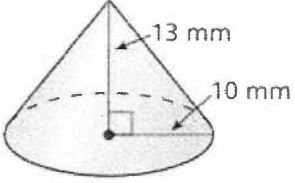
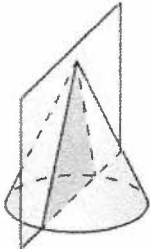
Key: ■ Major Cluster □ Supporting Cluster ◎ Additional Cluster

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| <p>proportionality; derive the formula for the area of a sector.</p> | |  | | <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p><input type="checkbox"/> G.CO.A.1: Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.</p> | <p>SMP6 - Attend to precision</p> <p>SMP8 - Look for and express regularity in repeated reasoning</p> | <p>Describe and define the circumference and area of a circle.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p><input checked="" type="checkbox"/> G.GMD.A.1: Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments</p> | <p>SMP1 - Make sense of problems and persevere in solving them</p> <p>SMP7-Look for and make use of structure</p> | <p>Describe and correct the error in finding the volume of the cylinder.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodation and/or modifications per a student's IEP or 504 plan</p> |
| <p><input checked="" type="checkbox"/> G.GMD.A.2: (+) Give an informal argument using Cavalieri's principle for the formulas for the volume of a</p> | <p>MP2 - Reason abstractly and quantitatively.</p> <p>MP6 - Attend to precision.</p> | <p>Describe and correct the error in finding the volume of the sphere.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions --Copy of notes -Preferential seating</p> |

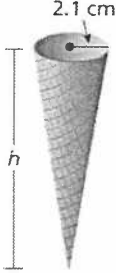
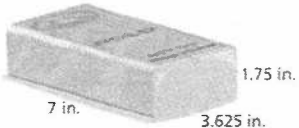
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| <p>sphere and other solid figures</p> | |  | | <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>⊙ G.GMD.A.3: Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems. ★</p> | <p>SMP2 - Reason abstractly and quantitatively</p> <p>SMP3 - Construct viable arguments and critique the reasoning of others.</p> | <p>Find the volume of the cone.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>⊙ G.GMD.B.4: Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects</p> | <p>SMP2 - Reason abstractly and quantitatively</p> <p>SMP3 - Construct viable arguments and critique the reasoning of others</p> | <p>Describe the cross section formed by the intersection of the plane and solid.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a</p> | <p>SMP4 - Model with mathematics. MP7-Look for and make use of</p> | <p>An ice cream cone has a base radius of 2.1 centimeters and a volume of 56.4 cubic centimeters.</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes</p> |

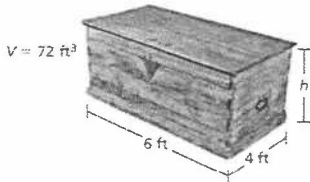
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| <p>human torso as a cylinder).★</p> | <p>structure</p> | <p>Find the height of the cone.</p>  | | <p>-Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.MG.A.2: Apply concepts of density based on area and volume in modeling situations★</p> | <p>SMP2 - Reason abstractly and quantitatively</p> <p>SMP4 - Model with mathematics</p> | <p>The diagram shows the dimensions of a standard gold bar at Fort Knox. Gold has a density of 19.3 grams per cubic centimeter. Find the mass of a standard gold bar to the nearest gram.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use</p> <p>-Read/clarify directions</p> <p>-Modify questions</p> <p>-Copy of notes</p> <p>-Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>■ G.MG.A.3: Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).★</p> | <p>SMP4 - Model with mathematics</p> <p>SMP5 - Use appropriate tools strategically.</p> | <p>You are building a rectangular chest. You want the length to be 6 feet, the width to be 4 feet, and the volume to be 72 cubic feet. What should the height be?</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use</p> <p>--Read/clarify directions</p> <p>-Modify questions</p> <p>-Copy of notes</p> <p>-Preferential seating</p> |

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| | |  <p>$V = 72 \text{ ft}^3$</p> <p>6 ft</p> <p>4 ft</p> <p>h</p> | | <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Quarterly 4 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | | |
| <p>Summative Assessment(s)</p> <ul style="list-style-type: none"> ● Unit 11 Common Assessment 1 <ul style="list-style-type: none"> ○ G.CO.A.1 ○ G.C.B.5 ○ G.MG.A.2 ○ G.GMD.A.1 ○ G.GMD.A.3 ● Unit 11 Common Assessment 2 <ul style="list-style-type: none"> ○ G.GMD.A.1 ○ G.GMD.A.2 ○ G.GMD.A.3 ○ G.GMD.B.4 ○ G.MG.A.1 ○ G.MG.A.2 ○ G.MG.A.3 ● Unit 11 Common Assessment # ● 3 <ul style="list-style-type: none"> ○ G.GMD.A.1 ○ G.GMD.A.2 ○ G.GMD.A.3 ○ G.MG.A.1 ● Unit 11 Performance Task | | | | |

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| Unit Title: Unit 12 Probability | Timeframe/Pacing: 13 days |
| Essential Questions | |
| <ul style="list-style-type: none"> ● How can experimental and theoretical probabilities be used to make predictions and draw conclusions? | |
| Enduring Understandings | |
| <ul style="list-style-type: none"> ● The message conveyed by the data depends on how the data is collected, represented, and summarized. ● The results of a statistical investigation can be used to support or refute an argument. | |
| Standards Taught and Assessed | |
| <ul style="list-style-type: none"> ● <input type="radio"/> S.CP.A.1: Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (“or,” “and,” “not”). ● <input type="radio"/> S.CP.A.2: Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent. ● <input type="radio"/> S.CP.A.3: Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B. ● <input type="radio"/> S.CP.A.4: Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results. ● <input type="radio"/> S.CP.A.5: Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer. ● <input type="radio"/> S.CP.B.6: Find the conditional probability of A given B as the fraction of B’s outcomes that also belong to A, and interpret the answer in terms of the model. ● <input type="radio"/> S.CP.B.8: (+) Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B A) = P(B)P(A B)$, and interpret the answer in terms of the model. ● <input type="radio"/> S.CP.B.9: (+) Use permutations and combinations to compute probabilities of compound events and solve problems | |

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| <p>Highlighted Interdisciplinary Connections</p> <ul style="list-style-type: none"> ● English Language Arts: NJLSA.R4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone. ● Computer Science & Design Thinking: 8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models. | | | | |
| <p>Highlighted Career Ready Practices and 21st Century Themes and Skills</p> <ul style="list-style-type: none"> ● 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3). ● 9.4.12.CT.1: Identify problem-solving strategies used in the development of an innovative product or practice (e.g., 1.1.12acc.C1b, 2.2.12.PF.3). ● 9.4.12.CT.2: Explain the potential benefits of collaborating to enhance critical thinking and problem solving (e.g., 1.3E.12profCR3.a). | | | | |
| <p>Social Emotional Learning Competencies</p> <ul style="list-style-type: none"> ● 2.1.12.EH.1: Recognize one’s personal traits, strengths, and limitations and identify how to develop skills to support a healthy lifestyle. ● 2.1.12.EH.3: Describe strategies to appropriately respond to stressors in a variety of situations (e.g., academics, relationships, shootings, death, car accidents, illness). ● 2.1.12.EH.4: Analyze and adapt mental and emotional health messages and communication techniques to peers and other specific target audiences (e.g., dimensions of health). | | | | |
| <p>Pre-Assessment</p> <ul style="list-style-type: none"> ● G.CP.A.1 ● G.CP.A.4 ● G.CP.B.9 | | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> <ul style="list-style-type: none"> ● ELL - Spanish student edition, reviews, assessments and videos are available via Big Ideas Math teacher resources. ● Specific other accommodations/modifications per a student’s IEP or 504 plan | | |
| <p>Student Learning Objectives: We are learning to/that...</p> | <p>Student Strategies (Mathematical Practices)</p> | <p>Formative Assessment</p> | <p>Activities and Resources</p> | <p>Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504)</p> |
| <p>⊙ S.CP.A.1: Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories)</p> | <p>SMP5 - Use appropriate tools strategically</p> | <p>Find the number of possible outcomes in the sample space and list the outcomes:</p> | <p>The Dynamic Classroom <u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes</p> |

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| of the outcomes, or as unions, intersections, or complements of other events | SMP7-Look for and make use of structure | You flip a coin and draw a marble at random from a bag containing two purple marbles and one white marble | | -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan |
| ⊙ S.C.P.A.2: Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent | SMP2 - Reason abstractly and quantitatively SMP6 - Attend to precision | Determine whether the events are independent: You play a game that involves spinning a wheel. Each section of the wheel shown has the same area. Use a sample space to determine whether randomly spinning blue and then green are independent events. | The Dynamic Classroom <u>Student Journal with Exploration Activities</u> | -Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan |
| ⊙ S.C.P.A.3: Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B. | SMP4 - Model with mathematics SMP5 - Use appropriate tools strategically | Events A and B are dependent. Suppose $P(B \text{ and } A) = 0.6$ and $P(A \text{ and } B) = 0.15$. Find $P(A)$. | The Dynamic Classroom <u>Student Journal with Exploration Activities</u> | -Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating Specific other accommodations and/or modifications per a student's IEP or 504 plan |
| ⊙ S.C.P.A.4: Construct and interpret two-way frequency tables of data when two | SMP4 - Model with mathematics | A survey asks 60 teachers and 48 parents whether school uniforms reduce | The Dynamic Classroom <u>Student Journal with</u> | -Calculator use -Read/clarify directions -Modify questions |

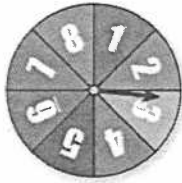
Key: ■ Major Cluster □ Supporting Cluster ⊙ Additional Cluster

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| <p>categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.</p> | <p>SMP7-Look for and make use of structure</p> | <p>distractions in school. Of those, 49 teachers and 18 parents say uniforms reduce distractions in school. Organize these results in a two-way table. Then find and interpret the marginal frequencies.</p> | <p><u>Exploration Activities</u></p> | <p>-Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> | | | | | | | | | | | | |
|---|--|---|--------------------------------------|---|---------------------|---------|--|--|---------|--|--|---------|--|--|--|--|
| <p>◎ S.CP.A.5: Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations</p> | <p>SMP4 - Model with mathematics</p> <p>SMP7-Look for and make use of structure.</p> | <p>A jogger wants to burn a certain number of calories during his workout. He maps out three possible jogging routes. Before each workout, he randomly selects a route, and then determines the number of calories he burns and whether he reaches his goal. The table shows his findings. Which route should he use?</p> <table border="1" data-bbox="995 1235 1300 1410"> <thead> <tr> <th></th> <th>Reaches Goal</th> <th>Does Not Reach Goal</th> </tr> </thead> <tbody> <tr> <td>Route A</td> <td> </td> <td> </td> </tr> <tr> <td>Route B</td> <td> </td> <td> </td> </tr> <tr> <td>Route C</td> <td> </td> <td> </td> </tr> </tbody> </table> | | Reaches Goal | Does Not Reach Goal | Route A | | | Route B | | | Route C | | | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| | Reaches Goal | Does Not Reach Goal | | | | | | | | | | | | | | |
| Route A | | | | | | | | | | | | | | | | |
| Route B | | | | | | | | | | | | | | | | |
| Route C | | | | | | | | | | | | | | | | |

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| <p>⊙ S.CP.B.6: Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model</p> | <p>SMP4 - Model with mathematics</p> <p>SMP5 - Use appropriate tools strategically</p> | <p>As part of a board game, you need to spin the spinner, which is divided into equal parts. Find the probability that you get a 5 on your first spin and a number greater than 3 on your second spin.</p>  | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>⊙ S.CP.B.8: (+) Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B A) = P(B)P(A B)$, and interpret the answer in terms of the model.</p> | <p>SMP2 - Reason abstractly and quantitatively</p> <p>SMP4 - Model with mathematics</p> | <p>A bag contains twenty \$1 bills and five \$100 bills. You randomly draw a bill from the bag, set it aside, and then randomly draw another bill from the bag. Find the probability that both events A and B will occur. Event A: The first bill is \$100. Event B: The second bill is \$100</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> <p>Specific other accommodations and/or modifications per a student's IEP or 504 plan</p> |
| <p>⊙ S.CP.B.9: (+) Use permutations and combinations to compute probabilities of compound events and solve problems</p> | <p>SMP2 - Reason abstractly and quantitatively</p> <p>SMP7-Look for and make use of structure.</p> | <p>Ten horses are running in a race. In how many different ways can the horses finish first, second, and third? (Assume there are no ties.)</p> | <p>The Dynamic Classroom</p> <p><u>Student Journal with Exploration Activities</u></p> | <p>-Calculator use -Read/clarify directions -Modify questions -Copy of notes -Preferential seating</p> |

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| | | | Specific other accommodations and/or modifications per a student's IEP or 504 plan |
| Benchmark Assessment <ul style="list-style-type: none"> ● Not applicable | | Modifications/Accommodations (ELL, Special Education, Gifted, At-Risk of Failure, 504) <ul style="list-style-type: none"> ● Calculator use ● Read/clarify directions ● Modify questions ● Extra time ● Specific other accommodations/modifications per a student's IEP or 504 plan. ● Challenge questions | |
| Summative Assessment(s) <ul style="list-style-type: none"> ● Unit 12 Common Assessment #1 <ul style="list-style-type: none"> ○ G.CP.A.1 ○ G.CP.A.2 ○ G.CP.A.3 ○ G.CP.A.5 ○ G.CP.B.6 ○ G.CP.B.8 ● Unit 12 Common Assessment #2 <ul style="list-style-type: none"> ○ G.CP.A.4 ○ G.CP.A.5 ○ G.CP.B.9 ● Unit 12 Performance Task | | | |

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Bibliography Geometry

Supplemental Materials/Resources:

Larson, R., Boswell, L. (2019). *Big ideas math: Geometry*. Erie, PA: Big Ideas Learning.

Digital Resources:

<https://www.bigideasmath.com> (textbook website, all print materials are also available digitally)