

My Welcome: Welcome to Advance Geometry! It is my distinct pleasure to be your instructor this semester! This course will provide you with the tools to help you be successful in high school, college and after. Take this course seriously because it could be one of the most important courses you take throughout your academic career. One of my goals this semester is to help you feel confident as you embark upon the rest of your studies. I will guide you, cheer for you, coach you, and hold you accountable. This class as well as your other courses will require time management.

Course Description: Advance Geometry blends written, oral, and graphic communication in a career-based environment. Careers in the global economy require individuals to be creative and have a strong background in computer and technology applications, a strong and solid academic foundation, and a proficiency in professional oral and written communication. Within this context, students will be expected to develop and expand the ability to write, read, edit, speak, listen, apply software applications, manipulate computer graphics, and conduct Internet research.

Course Objective: I hope to increase your appreciation of reading and writing by exposing you to as much diverse texts as possible. I want you to leave this class feeling confident about your academic abilities and to truly enjoy reading and writing. By the end of this course, you will be able to:

- Monitor your comprehension and utilize reading strategies that help increase your individual comprehension.
- Write academically and be able to express your thoughts by engaging in academic discourse with your peers.
- Develop strong study skills that will help you be successful in the classroom.
- Analyze characteristics of effective goals and create personal goals for your education and future career.
- Strengthen your research and writing skills through reasoning, intellectual curiosity, and the use of technology.
- Increase problem solving skills to find effective and actionable solutions.

Contact Information:

Preferred Mode of Communication: TEAMS Chat or Email

Email: Tawhidul.islam@houstonisd.org

Web Address: houstonisd.org/Tawhidul.islam

Room: 229

Materials:

- HISD issued laptop and charger
- 1 composition notebook (Journal check gradebook will be coming out of here once per week)
- Pencil/Pen

Grade Weight and Grading Scale:

Formative- 60% (Participation grade, Homework, Journal Check, Assignments)

Summative- 40% (Quizzes, Projects, Tests, Essays)

(A=100-90)

(B=89-80)

(C=79-75)

(D=74-70)

(F=69-0)

Honor Code: East Early College High School embodies a spirit of mutual trust and intellectual honesty that is central to the very nature of learning and represents the highest possible expression of shared values among the members of the school community. The core values underlying and reflected in the Honor Code are:

- Academic honesty is demonstrated by students when the ideas and the writing of others are properly cited; students submit their own work for tests and assignments without unauthorized assistance; students do not provide unauthorized assistance to others; and students report their research or accomplishments accurately
- Respect for others and the learning process to demonstrate academic honesty
- Trust in others to act with academic honesty as a positive community-building force in the school
- Responsibility is recognized by all to demonstrate their best effort to prepare and complete academic tasks
- Fairness and equity are demonstrated so that every student can experience an academic environment that is free from the injustices caused by any form of intellectual dishonesty
- Integrity of all members of the school community as demonstrated by a commitment to academic honesty and support of our quest for authentic learning.

Policy on Electronic Devices: Once students enter classroom, all electronic devices should be silenced and put away such that they are not visible. **There is no exception until it is authorized by the teacher.** These include cell phones, headphones, ear buds, etc. Students may only use electronic devices if authorized by teacher. Teachers may use electronic devices for instruction purposes at their discretion.

Make Up and Late Work: Homework and daily class work will not be given full credit, if accepted late. You will have one complete week to turn in the assignments. After the due date, you can earn a maximum of 70 points for assignment. Without turning in it would be remained as zero. It is the responsibility of the student to get make-up work and to return it to the instructor in a timely manner.

Student Success: Expect to spend at least twice as many hours per week outside of class as you do in class studying the course content. Additional time will be required for written assignments. The assignments provided will help you use your study hours wisely. Successful completion of this course requires a combination of the following:

- Reading the textbook
- Attending class in person.
- Completing assignments
- Participating in class activities

There is no short cut for success in this course; it requires reading (and probably re-reading) and studying the material using the course objectives as a guide.

As your teacher, it is my responsibility to:

- Provide the grading scale and detailed grading formula explaining how student grades are to be derived
- Facilitate an effective learning environment through learner-centered instructional techniques
- Provide a description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness, and making up assignments
- Provide the course outline and class calendar that will include a description of any special projects or assignments
- Arrange to meet with individual students before and after class as required

As a student, it is your responsibility to:

- Attend class on time
- Participate actively by reviewing course material, interacting with classmates, and responding promptly in your communication with me
- Read and comprehend the textbook
- Complete the required assignments and exams
- Ask for help when there is a question or problem
- Keep copies of all paperwork, including this syllabus, handouts, and all assignments

Cycle 1		29 Days
		The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)
		<p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unfolded concepts are addressed in other units of this course.</p> <p>The student will:</p> <p><i>The Mathematical Process Standards are integrated throughout the course in all activities and lessons. Teachers should refer to these standards for instructional strategies and depth of rigor. Specific process standards have been highlighted to each unit, but these process standards should not be the only process standards associated with the daily lessons.</i></p> <p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <ul style="list-style-type: none"> Ⓟ GEOM.1A Apply mathematics to problems arising in everyday life, society, and the workplace. Ⓟ GEOM.1B Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Ⓟ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems. Ⓟ GEOM.1D Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate. Ⓟ GEOM.1E Create and use representations to organize, record, and communicate mathematical ideas. Ⓟ GEOM.1F Analyze mathematical relationships to connect and communicate mathematical ideas. Ⓟ GEOM.1G Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.
<p>Unit 1: Geometric Foundations with Algebraic Connections Students compare geometric relationships, explore geometry topics, and verify geometric conjectures.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p> <p style="text-align: center;"><i>Teachers Report to Campuses Aug. 8</i></p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <ul style="list-style-type: none"> Ⓟ GEOM.1E Create and use representations to organize, record, and communicate mathematical ideas. Ⓟ GEOM.1F Analyze mathematical relationships to connect and communicate mathematical ideas. <p>Coordinate and Transformational Geometry. The student uses the process skills to understand the connections between algebra and geometry and uses the one- and two-dimensional coordinate systems to verify geometric conjectures. The student is expected to:</p>

Cycle 1	29 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
	Aug. 22-Sept. 30, 2022	
Unit	# Class Periods	<p>Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)</p> <p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course.</p> <p>The student will:</p>
	<p><i>Teacher Service Days</i> Aug. 8-12, Aug. 16-19</p> <p><i>Teacher Prep Day (no students)</i> Aug. 15</p> <p><i>Labor Day</i> Sept. 5</p>	<p>☐ GEOM.2A Determine the coordinates of a point that is a given fractional distance less than one from one end of a line segment to the other in one- and two-dimensional coordinate systems, including finding the midpoint.</p> <p>☐ GEOM.2B Derive and use the distance, slope, and midpoint formulas to verify geometric relationships, including congruence of segments and parallelism or perpendicularity of pairs of lines.</p> <p>Logical Argument and Constructions. The student uses the process skills with deductive reasoning to understand geometric relationships. The student is expected to:</p> <p>☐ GEOM.4A Distinguish between undefined terms, definitions, postulates, conjectures, and theorems.</p>
<p>Unit 2: Conditional Statements Students identify and determine the validity of conditional statements.</p>	<p>2 class periods (90-min. each) or 4 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>☑ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.</p> <p>☑ GEOM.1F Analyze mathematical relationships to connect and communicate mathematical ideas.</p> <p>Logical Argument and Constructions. The student uses the process skills with deductive reasoning to understand geometric relationships. The student is expected to:</p> <p>☐ GEOM.4A Distinguish between undefined terms, definitions, postulates, conjectures, and theorems.</p> <p>☐ GEOM.4B Identify and determine the validity of the converse, inverse, and contrapositive of a conditional statement and recognize the connection between a biconditional statement and a true conditional statement with a true converse.</p> <p>☐ GEOM.4C Verify that a conjecture is false using a counterexample.</p>
<p>Unit 3: Parallel and Perpendicular Lines Students analyze relationships among lines that are parallel,</p>	<p>2 class periods (90-min. each) or 4 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>☑ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.</p>

Cycle 1		29 Days Aug. 22-Sept. 30, 2022
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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course. The student will:
perpendicular, or skew.		<p>Ⓟ GEOM.1F Analyze mathematical relationships to connect and communicate mathematical ideas.</p> <p>Logical Arguments and Constructions. The student uses constructions to validate conjectures about geometric figures. The student is expected to:</p> <p>▣ GEOM.5A Investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal, criteria required for triangle congruence, special segments of triangles, diagonals of quadrilaterals, interior and exterior angles of polygons, and special segments and angles of circles choosing from a variety of tools.</p> <p>▣ GEOM.5B Construct congruent segments, congruent angles, a segment bisector, an angle bisector, perpendicular lines, the perpendicular bisector of a line segment, and a line parallel to a given line through a point not on a line using a compass and a straightedge.</p> <p>▣ GEOM.5C Use the constructions of congruent segments, congruent angles, angle bisectors, and perpendicular bisectors to make conjectures about geometric relationships.</p> <p>Proof and Congruence. The student uses the process skills with deductive reasoning to prove and apply theorems by utilizing a variety of methods such as coordinate, transformational, axiomatic and formats such as two-column, paragraph, flow chart. The student is expected to:</p> <p>▣ GEOM.6A Verify theorems about angles formed by the intersection of lines and line segments, including vertical angles, and angles formed by parallel lines cut by a transversal and prove equidistance between the endpoints of a segment and points on its perpendicular bisector and apply these relationships to solve problems.</p>
Unit 4: Equations of Parallel and Perpendicular Lines Students apply properties of linear equations to parallel and perpendicular lines.	2 class periods (90-min. each) or 4 class periods (45-min. each)	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓟ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.</p> <p>Ⓟ GEOM.1D Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.</p>

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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course. The student will:
		Coordinate and Transformational Geometry. The student uses the process skills to understand the connections between algebra and geometry and uses the one- and two-dimensional coordinate systems to verify geometric conjectures. The student is expected to: ☐ GEOM.2B Derive and use the distance, slope , and midpoint formulas to verify geometric relationships, including congruence of segments and parallelism or perpendicularity of pairs of lines. ☐ GEOM.2C Determine an equation of a line parallel or perpendicular to a given line that passes through a given point.
Unit 5: Triangle Inequality Students verify the triangle inequality theorem and apply the theorem to solve problems.	2 class periods (90-min. each) or 4 class periods (45-min. each)	Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to: ☐ GEOM.1D Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate. ☐ GEOM.1F Analyze mathematical relationships to connect and communicate mathematical ideas. Logical Arguments and Constructions. The student uses constructions to validate conjectures about geometric figures. The student is expected to: ☐ GEOM.5A Investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal, criteria required for triangle congruence, special segments of triangles, diagonals of quadrilaterals, interior and exterior angles of polygons , and special segments and angles of circles choosing from a variety of tools. ☐ GEOM.5D Verify the Triangle Inequality theorem using constructions and apply the theorem to solve problems. Proof and Congruence. The student uses the process skills with deductive reasoning to prove and apply theorems by utilizing a variety of methods such as coordinate, transformational, axiomatic and formats such as two-column, paragraph, flow chart. The student is expected to: ☐ GEOM.6D Verify theorems about the relationships in triangles, including proof of the Pythagorean Theorem, the sum of interior angles , base angles of isosceles triangles, midsegments, and medians and apply these relationships to solve problems.

Cycle 2	23 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
	Oct. 3 - Nov. 4, 2022	
Unit	# Class Periods	<p>Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)</p> <p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course.</p> <p>The student will:</p>
<p>Unit 6: Spherical and Euclidean Geometry Students compare geometric relationships between Euclidean and spherical geometries.</p>	<p>1 class period (90-min. each) or 2 class periods (45-min. each)</p> <p><i>Teacher Service Day (no students) Oct. 4</i></p> <p><i>Fall Holiday Oct. 5</i></p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓢ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.</p> <p>Ⓢ GEOM.1F Analyze mathematical relationships to connect and communicate mathematical ideas.</p> <p>Logical Arguments and Constructions. The student uses constructions to validate conjectures about geometric figures. The student is expected to:</p> <p>☐ GEOM.4D Compare geometric relationships between Euclidean and spherical geometries, including parallel lines and the sum of the angles in a triangle.</p>
<p>Unit 7: Rigid Transformations Students apply transformations to various geometric figures and make conjectures about coordinate notation after a transformation.</p>	<p>2 class period (90-min. each) or 4 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓢ GEOM.1A Apply mathematics to problems arising in everyday life, society, and the workplace.</p> <p>Ⓢ GEOM.1D Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.</p> <p>Coordinate and Transformational Geometry. The student uses the process skills to generate and describe rigid transformations (translation, reflection, and rotation) and non-rigid transformations (dilations that preserve similarity and reductions and enlargements that do not preserve similarity). The student is expected to:</p> <p>☐ GEOM.3A Describe and perform transformations of figures in a plane using coordinate notation.</p> <p>☐ GEOM.3B Determine the image or pre-image of a given two-dimensional figure under a composition of rigid transformations, a composition of non-rigid transformations, and a composition of both, including dilations where the center can be any point in the plane.</p> <p>☐ GEOM.3C Identify the sequence of transformations that will carry a given pre-image onto an image on and off the coordinate plane.</p> <p>☐ GEOM.3D Identify and distinguish between reflectional and rotational symmetry in a plane figure.</p>

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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)	
		<p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course.</p> <p>The student will:</p>	
		<p>Proof and Congruence. The student uses the process skills with deductive reasoning to prove and apply theorems by utilizing a variety of methods such as coordinate, transformational, axiomatic and formats such as two-column, paragraph, flow chart. The student is expected to:</p> <p>☐ GEOM.6C Apply the definition of congruence, in terms of rigid transformations, to identify congruent figures and their corresponding sides and angles.</p>	
<p>Unit 8: Generalizations About Triangles Students apply and make conjectures about triangle properties and triangle congruence.</p>	<p>2 class period (90-min. each) or 4 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>☐ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.</p> <p>☐ GEOM.1D Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.</p> <p>Logical Arguments and Constructions. The student uses constructions to validate conjectures about geometric figures. The student is expected to:</p> <p>☐ GEOM.5A Investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal, criteria required for triangle congruence, special segments of triangles, diagonals of quadrilaterals, interior and exterior angles of polygons, and special segments and angles of circles choosing from a variety of tools.</p> <p>☐ GEOM.5C Use the constructions of congruent segments, congruent angles, angle bisectors, and perpendicular bisectors to make conjectures about geometric relationships.</p> <p>Proof and Congruence. The student uses the process skills with deductive reasoning to prove and apply theorems by utilizing a variety of methods such as coordinate, transformational, axiomatic and formats such as two-column, paragraph, flow chart. The student is expected to:</p> <p>☐ GEOM.6D Verify theorems about the relationships in triangles, including proof of the Pythagorean Theorem, the sum of interior angles, base angles of isosceles triangles, midsegments, and medians and apply these relationships to solve problems.</p>	

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Unit 9: Corresponding Parts of Congruent Triangles Students apply the definition of congruence to identify congruent triangles and their corresponding sides and angles.	2 class period (90-min. each) or 4 class periods (45-min. each)	Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to: PS GEOM.1F Analyze mathematical relationships to connect and communicate mathematical ideas. PS GEOM.1G Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication. Proof and Congruence. The student uses the process skills with deductive reasoning to prove and apply theorems by utilizing a variety of methods such as coordinate, transformational, axiomatic and formats such as two-column, paragraph, flow chart. The student is expected to: R GEOM.6B Prove two triangles are congruent by applying the Side-Angle-Side, Angle-Side-Angle, Side-Side-Side, Angle-Angle-Side, and Hypotenuse-Leg congruence conditions. R GEOM.6C Apply the definition of congruence, in terms of rigid transformations, to identify congruent figures and their corresponding sides and angles.
Unit 10: Triangle Proofs Students use reasoning and proofs in applying properties of triangles.	3 class period (90-min. each) or 6 class periods (45-min. each)	Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to: PS GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems. PS GEOM.1D Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate. Logical Arguments and Constructions. The student uses constructions to validate conjectures about geometric figures. The student is expected to: R GEOM.5A Investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal, criteria required for triangle congruence, special segments of triangles, diagonals of quadrilaterals, interior and exterior angles of polygons, and special segments and angles of circles choosing from a variety of tools. Proof and Congruence. The student uses the process skills with deductive reasoning to prove and apply theorems by utilizing a variety of methods such as coordinate, transformational, axiomatic and formats such as two-column, paragraph, flow chart. The student is expected to:

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		☐ GEOM.6B Prove two triangles are congruent by applying the Side-Angle-Side, Angle-Side-Angle, Side-Side-Side, Angle-Angle-Side, and Hypotenuse-Leg congruence conditions. ☐ GEOM.6D Verify theorems about the relationships in triangles, including proof of the Pythagorean Theorem, the sum of interior angles, base angles of isosceles triangles, midsegments, and medians and apply these relationships to solve problems.

Cycle 3		28 Days
		Nov. 7 - Dec. 21, 2022
<i>The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.</i>		
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The student will:		
Unit 11: Relationships Within Triangles Students perform constructions within the triangle to analyze their attributes.	4 class periods (90-min. each) or 8 class periods (45-min. each) <i>Thanksgiving Break</i> <i>Nov. 21-25</i> <i>Winter Break (students)</i> <i>Dec. 22 - Jan. 6</i> <i>Winter Break (teachers)</i> <i>Dec. 22 - Jan. 4</i>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓟ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.</p> <p>Ⓟ GEOM.1F Analyze mathematical relationships to connect and communicate mathematical ideas.</p> <p>Logical Arguments and Constructions. The student uses constructions to validate conjectures about geometric figures. The student is expected to:</p> <p>☐ GEOM.5A Investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal, criteria required for triangle congruence, special segments of triangles, diagonals of quadrilaterals, interior and exterior angles of polygons, and special segments and angles of circles choosing from a variety of tools.</p> <p>☐ GEOM.5C Use the constructions of congruent segments, congruent angles, angle bisectors, and perpendicular bisectors to make conjectures about geometric relationships.</p> <p>Proof and Congruence. The student uses the process skills with deductive reasoning to prove and apply theorems by utilizing a variety of methods such as coordinate, transformational, axiomatic and formats such as two-column, paragraph, flow chart. The student is expected to:</p> <p>☐ GEOM.6A Verify theorems about angles formed by the intersection of lines and line segments, including vertical angles, and angles formed by parallel lines cut by a transversal and prove equidistance between the endpoints of a segment and points on its perpendicular bisector and apply these relationships to solve problems.</p> <p>☐ GEOM.6D Verify theorems about the relationships in triangles, base angles of isosceles triangles, midsegments, and medians and apply these relationships to solve problems.</p>
Unit 12: Non-Rigid Transformations Students apply transformations to various geometric figures and make conjectures about coordinate notation	2 class periods (90-min. each) or 4 class periods (45-min. each)	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓟ GEOM.1A Apply mathematics to problems arising in everyday life, society, and the workplace.</p>

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		Nov. 7 - Dec. 21, 2022
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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)
<p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course.</p> <p>The student will:</p>		
after a transformation.		<p>Ⓟ GEOM.1D Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.</p> <p>Coordinate and Transformational Geometry</p> <p>The student uses the process skills to generate and describe rigid transformations (translation, reflection, and rotation) and non-rigid transformations (dilations that preserve similarity and reductions and enlargements that do not preserve similarity). The student is expected to:</p> <p>☑ GEOM.3A Describe and perform transformations of figures in a plane using coordinate notation.</p> <p>☑ GEOM.3B Determine the image or pre-image of a given two-dimensional figure under a composition of rigid transformations, a composition of non-rigid transformations, and a composition of both, including dilations where the center can be any point in the plane.</p> <p>☑ GEOM.3C Identify the sequence of transformations that will carry a given pre-image onto an image on and off the coordinate plane.</p> <p>☑ GEOM.3D Identify and distinguish between reflectional and rotational symmetry in a plane figure.</p>
<p>Unit 13: Similarity Students solve geometric problems involving similarity.</p>	<p>4 class periods (90-min. each) or 8 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓟ GEOM.1B Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.</p> <p>Logical Arguments and Constructions. The student uses constructions to validate conjectures about geometric figures. The student is expected to:</p> <p>☑ GEOM.5A Investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal, criteria required for triangle congruence, special segments of triangles, diagonals of quadrilaterals, interior and exterior angles of polygons, and special segments and angles of circles choosing from a variety of tools.</p> <p>☑ GEOM.5C Use the constructions of congruent segments, congruent angles, angle bisectors, and perpendicular bisectors to make conjectures about geometric relationships.</p>

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	Nov. 7 - Dec. 21, 2022	
Unit	# Class Periods	<p align="center">Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)</p> <p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course.</p> <p>The student will:</p>
		<p>Similarity, Proof, and Trigonometry. The student uses the process skills in applying similarity to solve problems. The student is expected to:</p> <ul style="list-style-type: none"> ☐ GEOM.7A Apply the definition of similarity in terms of a dilation to identify similar figures and their proportional sides and the congruent corresponding angles. ☐ GEOM.7B Apply the Angle-Angle criterion to verify similar triangles and apply the proportionality of the corresponding sides to solve problems. <p>Similarity, Proof, and Trigonometry. The student uses the process skills with deductive reasoning to prove and apply theorems by utilizing a variety of methods such as coordinate, transformational, axiomatic and formats such as two-column, paragraph, flow chart. The student is expected to:</p> <ul style="list-style-type: none"> ☐ GEOM.8A Prove theorems about similar triangles, including the Triangle Proportionality theorem, and apply these theorems to solve problems. ☐ GEOM.8B Identify and apply the relationships that exist when an altitude is drawn to the hypotenuse of a right triangle, including the geometric mean, to solve problems.

Cycle 4		33 Days
		<i>The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.</i>
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)
		<p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course.</p> <p>The student will:</p>
<p>Unit 14: Right Triangles and Trigonometry Students apply the Pythagorean Theorem to real-world situations, develop a pattern for special right triangles, and apply properties of triangles to the study of right-triangle trigonometry.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p> <p><i>Winter Break (students) Dec. 22 - Jan. 6</i></p> <p><i>Winter Break (teachers) Dec. 22 - Jan. 4</i></p> <p><i>MLK Jr. Day Jan. 16</i></p> <p><i>Teacher Prep Day (no students) Jan. 5</i></p> <p><i>Teacher Service Day (no students) Jan. 6</i></p> <p><i>Teacher Service Day (no students) Feb. 20</i></p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <ul style="list-style-type: none"> ☞ GEOM.1A Apply mathematics to problems arising in everyday life, society, and the workplace. ☞ GEOM.1G Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication. <p>Coordinate and Transformational Geometry. The student uses the process skills to understand the connections between algebra and geometry and uses the one- and two-dimensional coordinate systems to verify geometric conjectures. The student is expected to:</p> <ul style="list-style-type: none"> ☞ GEOM.2B Derive and use the distance, slope, and midpoint formulas to verify geometric relationships, including congruence of segments and parallelism or perpendicularity of pairs of lines. <p>Proof and Congruence. The student uses the process skills with deductive reasoning to prove and apply theorems by utilizing a variety of methods such as coordinate, transformational, axiomatic and formats such as two-column, paragraph, flow chart. The student is expected to:</p> <ul style="list-style-type: none"> ☞ GEOM.6D Verify theorems about the relationships in triangles, including proof of the Pythagorean Theorem, the sum of interior angles, base angles of isosceles triangles, midsegments, and medians and apply these relationships to solve problems. <p>Similarity, Proof, and Trigonometry. The student uses the process skills to understand and apply relationships in right triangles. The student is expected to:</p> <ul style="list-style-type: none"> ☞ GEOM.9A Determine the lengths of sides and measures of angles in a right triangle by applying the trigonometric ratios sine, cosine, and tangent to solve problems. ☞ GEOM.9B Apply the relationships in special right triangles (30°-60°-90° and 45°-45°-90°) and the Pythagorean Theorem, including Pythagorean triples, to solve problems.

Cycle 4		33 Days
		<i>The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.</i>
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)
<p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course.</p> <p>The student will:</p>		
<p>Unit 15: Circle Measurement Students apply properties of circles to determine the area.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <ul style="list-style-type: none"> Ⓟ GEOM.1B Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Ⓟ GEOM.1F Analyze mathematical relationships to connect and communicate mathematical ideas. <p>Circles. The student uses the process skills to understand geometric relationships and apply theorems and equations about circles. The student is expected to:</p> <ul style="list-style-type: none"> ☑ GEOM.12B Apply the proportional relationship between the measure of an arc length of a circle and the circumference of the circle to solve problems. ☑ GEOM.12C Apply the proportional relationship between the measure of the area of a sector of a circle and the area of the circle to solve problems. ☑ GEOM.12D Describe radian measure of an angle as the ratio of the length of an arc intercepted by a central angle and the radius of the circle
<p>Unit 16: Circles in the Coordinate Plane Students write the equation of a circle and graph the circle in the coordinate plane.</p>	<p>2 class periods (90-min. each) or 4 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <ul style="list-style-type: none"> Ⓟ GEOM.1G Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication. <p>Coordinate and Transformational Geometry. The student uses the process skills to understand the connections between algebra and geometry and uses the one- and two-dimensional coordinate systems to verify geometric conjectures. The student is expected to:</p> <ul style="list-style-type: none"> ☑ GEOM.2B Derive and use the distance, slope, and midpoint formulas to verify geometric relationships, including congruence of segments and parallelism or perpendicularity of pairs of lines. <p>Circles. The student uses the process skills to understand geometric relationships and apply theorems and equations about circles. The student is expected to:</p> <ul style="list-style-type: none"> ☑ GEOM.12E Show that the equation of a circle with center at the origin and radius r is $x^2 + y^2 = r^2$ and determine the equation for the graph of a circle with radius r and center (h, k), $(x - h)^2 + (y - k)^2 = r^2$.

Cycle 4		33 Days
		<i>The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.</i>
Jan. 9 - Feb. 24, 2023		
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)
<p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course.</p> <p>The student will:</p>		
<p>Unit 17: Circle Theorems Students analyze and apply properties of tangents to a circle and the angles and polygons formed within.</p>	<p>4 class periods (90-min. each) or 8 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓟ GEOM.1G Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.</p> <p>Logical Arguments and Constructions. The student uses constructions to validate conjectures about geometric figures. The student is expected to:</p> <p>☑ GEOM.5A Investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal, criteria required for triangle congruence, special segments of triangles, diagonals of quadrilaterals, interior and exterior angles of polygons, and special segments and angles of circles choosing from a variety of tools.</p> <p>☑ GEOM.5C Use the constructions of congruent segments, congruent angles, angle bisectors, and perpendicular bisectors to make conjectures about geometric relationships.</p> <p>Proof and Congruence. The student uses the process skills with deductive reasoning to prove and apply theorems by utilizing a variety of methods such as coordinate, transformational, axiomatic and formats such as two-column, paragraph, flow chart. The student is expected to:</p> <p>☑ GEOM.6A Verify theorems about angles formed by the intersection of lines and line segments, including vertical angles, angles formed by parallel lines cut by a transversal, and prove equidistance between the endpoints of a segment and points on its perpendicular bisector, and apply these relationships to solve problems.</p> <p>Circles. The student uses the process skills to understand geometric relationships and apply theorems and equations about circles. The student is expected to:</p> <p>☑ GEOM.12A Apply theorems about circles, including relationships among angles, radii, chords, tangents, and secants, to solve non- contextual problems.</p>
<p>Unit 18: Polygonal Angle Sum Theorem Students determine the sum of interior angle measures of polygons.</p>	<p>1 class period (90-min. each) or 2 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓟ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.</p>

Cycle 4	33 Days	<i>The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.</i>
	Jan. 9 - Feb. 24, 2023	
Unit	# Class Periods	<p>Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)</p> <p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course.</p> <p>The student will:</p>
		<p>Logical Arguments and Constructions. The student uses constructions to validate conjectures about geometric figures. The student is expected to:</p> <p>☐ GEOM.5A Investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal, criteria required for triangle congruence, special segments of triangles, diagonals of quadrilaterals, interior and exterior angles of polygons, and special segments and angles of circles choosing from a variety of tools.</p>

Cycle 5	28 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
	Feb. 27 - Apr. 14, 2023	
		Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)
Unit	# Class Periods	<p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course.</p> <p>The student will:</p>
<p>Unit 19: Properties of Quadrilaterals Students examine the properties of quadrilaterals and polygons using algebraic, concrete, and geometric methods.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p> <p><i>Spring Break Mar. 13-17</i></p> <p><i>Chávez-Huerta Day Mar. 31</i></p> <p><i>Spring Holiday Apr. 7</i></p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓜ GEOM.1G Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.</p> <p>Logical Arguments and Constructions. The student uses constructions to validate conjectures about geometric figures. The student is expected to:</p> <p>Ⓜ GEOM.5A Investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal, criteria required for triangle congruence, special segments of triangles, diagonals of quadrilaterals, interior and exterior angles of polygons, and special segments and angles of circles choosing from a variety of tools.</p> <p>Proof and Congruence. The student uses the process skills with deductive reasoning to prove and apply theorems by utilizing a variety of methods such as coordinate, transformational, axiomatic and formats such as two-column, paragraph, flow chart. The student is expected to:</p> <p>Ⓜ GEOM.6E Prove a quadrilateral is a parallelogram, rectangle, square or rhombus using opposite sides, opposite angles, or diagonals and apply these relationships to solve problems.</p>
<p>Unit 20: Area of Circles and Polygons Students determine the area of circles and various polygons including area and perimeter of similar figures.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓜ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.</p> <p>Proof and Congruence. The student uses the process skills with deductive reasoning to prove and apply theorems by utilizing a variety of methods such as coordinate, transformational, axiomatic and formats such as two-column, paragraph, flow chart. The student is expected to:</p> <p>Ⓜ GEOM.6D Verify theorems about the relationships in triangles, including proof of the Pythagorean Theorem, the sum of interior angles, base angles of isosceles triangles, midsegments, and medians and apply these relationships to solve problems.</p>

Cycle 5	28 Days Feb. 27 - Apr. 14, 2023	<i>The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.</i>
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course. The student will:
		<p>Similarity, Proof, and Trigonometry. The student uses the process skills to understand and apply relationships in right triangles. The student is expected to:</p> <p>☐ GEOM.9B Apply the relationships in special right triangles (30°-60°-90° and 45°-45°-90°) and the Pythagorean Theorem, including Pythagorean triples, to solve problems.</p> <p>Two-dimensional and three-dimensional figures. The student uses the process skills to recognize characteristics and dimensional changes of two- and three-dimensional figures. The student is expected to:</p> <p>☐ GEOM.10B Determine and describe how changes in the linear dimensions of a shape affect its perimeter, area, surface area, or volume, including proportional and non-proportional dimensional change.</p> <p>Two-dimensional and Three-dimensional Figures. The student uses the process skills in the application of formulas to determine measures of two- and three-dimensional figures. The student is expected to</p> <p>☐ GEOM.11A Apply the formula for the area of regular polygons to solve problems using appropriate units of measure.</p> <p>☐ GEOM.11B Determine the area of composite two- dimensional figures comprised of a combination of triangles, parallelograms, trapezoids, kites, regular polygons, or sectors of circles to solve problems using appropriate units of measure.</p>
<p>Unit 21: Trigonometry and Area Students use trigonometry to determine the area of regular polygons.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓟ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.</p> <p>Ⓟ GEOM.1F Analyze mathematical relationships to connect and communicate mathematical ideas.</p> <p>Similarity, Proof, and Trigonometry The student uses the process skills to understand and apply relationships in right triangles. The student is expected to:</p> <p>☐ GEOM.9A Determine the lengths of sides and measures of angles in a right triangle by applying the trigonometric ratios sine, cosine, and tangent to solve problems.</p>

Cycle 5		28 Days Feb. 27 - Apr. 14, 2023	<i>The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.</i>
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)	
		<p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course.</p> <p>The student will:</p>	
		<p>Two-dimensional and Three-dimensional Figures. The student uses the process skills in the application of formulas to determine measures of two- and three-dimensional figures. The student is expected to:</p> <p>☐ GEOM.11A Apply the formula for the area of regular polygons to solve problems using appropriate units of measure.</p>	
<p>Unit 22: Surface Area Students build and deconstruct three dimensional figures, calculate their total and lateral surface areas, and determine how changes in the linear dimensions of a shape affect its surface area.</p> <p>(continues in cycle 6)</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>☐ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.</p> <p>☐ GEOM.1E Create and use representations to organize, record, and communicate mathematical ideas.</p> <p>Similarity, Proof, and Trigonometry. The student uses the process skills to understand and apply relationships in right triangles. The student is expected to:</p> <p>☐ GEOM.9B Apply the relationships in special right triangles (30°-60°-90° and 45°-45°-90°) and the Pythagorean Theorem, including Pythagorean triples, to solve problems.</p> <p>Two-dimensional and Three-dimensional Figures. The student uses the process skills to recognize characteristics and dimensional changes of two- and three-dimensional figures. The student is expected to:</p> <p>☐ GEOM.10A Identify the shapes of two-dimensional cross- sections of prisms, pyramids, cylinders, cones, and spheres and identify three- dimensional objects generated by rotations of two-dimensional shapes.</p> <p>☐ GEOM.10B Determine and describe how changes in the linear dimensions of a shape affect its perimeter, area, surface area, or volume, including proportional and non-proportional dimensional change.</p> <p>Two-dimensional and Three-dimensional Figures. The student uses the process skills in the application of formulas to determine measures of two- and three-dimensional figures. The student is expected to:</p> <p>☐ GEOM.11C Apply the formulas for the total and lateral surface area of three-dimensional figures, including prisms, pyramids, cones, cylinders, spheres, and composite figures, to solve problems using appropriate units of measure.</p>	

Cycle 6		31 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
		Apr. 17 - May 31, 2023	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course. The student will:	
Unit 22: Surface Area Students build and deconstruct three dimensional figures, calculate their total and lateral surface areas, and determine how changes in the linear dimensions of a shape affect its surface area. (continued from cycle 5)	3 class periods (90-min. each) or 6 class periods (45-min. each) <i>Memorial Day May 29</i> <i>Teacher Prep Day (no students) June 1</i>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <ul style="list-style-type: none"> Ⓟ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems. Ⓟ GEOM.1E Create and use representations to organize, record, and communicate mathematical ideas. <p>Similarity, Proof, and Trigonometry. The student uses the process skills to understand and apply relationships in right triangles. The student is expected to:</p> <ul style="list-style-type: none"> ☑ GEOM.9B Apply the relationships in special right triangles (30°-60°-90° and 45°-45°-90°) and the Pythagorean Theorem, including Pythagorean triples, to solve problems. <p>Two-dimensional and Three-dimensional Figures. The student uses the process skills to recognize characteristics and dimensional changes of two- and three-dimensional figures. The student is expected to:</p> <ul style="list-style-type: none"> ☑ GEOM.10A Identify the shapes of two-dimensional cross- sections of prisms, pyramids, cylinders, cones, and spheres and identify three- dimensional objects generated by rotations of two-dimensional shapes. ☑ GEOM.10B Determine and describe how changes in the linear dimensions of a shape affect its perimeter, area, surface area, or volume, including proportional and non-proportional dimensional change. <p>Two-dimensional and Three-dimensional Figures. The student uses the process skills in the application of formulas to determine measures of two- and three-dimensional figures. The student is expected to:</p> <ul style="list-style-type: none"> ☑ GEOM.11C Apply the formulas for the total and lateral surface area of three-dimensional figures, including prisms, pyramids, cones, cylinders, spheres, and composite figures, to solve problems using appropriate units of measure. 	

Cycle 6		31 Days Apr. 17 - May 31, 2023	<i>The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.</i>
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)	
		<p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course.</p> <p>The student will:</p>	
<p>Unit 23: Volume Students calculate the volume of a figure and determine how changes in the linear dimensions of a shape affect its volume.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓟ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.</p> <p>Ⓟ GEOM.1E Create and use representations to organize, record, and communicate mathematical ideas.</p> <p>Similarity, Proof, and Trigonometry. The student uses the process skills to understand and apply relationships in right triangles. The student is expected to:</p> <p>Ⓟ GEOM.9B Apply the relationships in special right triangles (30°-60°-90° and 45°-45°-90°) and the Pythagorean Theorem, including Pythagorean triples, to solve problems.</p> <p>Two-dimensional and Three-dimensional Figures. The student uses the process skills to recognize characteristics and dimensional changes of two- and three-dimensional figures. The student is expected to:</p> <p>Ⓟ GEOM.10B Determine and describe how changes in the linear dimensions of a shape affect its perimeter, area, surface area, or volume, including proportional and non-proportional dimensional change.</p> <p>Two-dimensional and Three-dimensional Figures. The student uses the process skills in the application of formulas to determine measures of two- and three-dimensional figures. The student is expected to:</p> <p>Ⓟ GEOM.11D Apply the formulas for the volume of three- dimensional figures, including prisms, pyramids, cones, cylinders, spheres, and composite figures, to solve problems using appropriate units of measure.</p>	
<p>Unit 24: Experimental and Theoretical Probability Students determine probabilities based on area to solve contextual problems.</p>	<p>2 class periods (90-min. each) or 4 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓟ GEOM.1C Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.</p> <p>Ⓟ GEOM.1E Create and use representations to organize, record, and communicate mathematical ideas.</p>	

Cycle 6		31 Days
		Apr. 17 - May 31, 2023
<p><i>The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.</i></p>		
Unit	# Class Periods	<p>Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)</p> <p>The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course.</p> <p>The student will:</p>
		<p>Probability. The student uses the process skills to understand probability in real-world situations and how to apply independence and dependence of events. The student is expected to:</p> <p>☐ GEOM.13B Determine probabilities based on area to solve contextual problems.</p>
<p>Unit 25: Permutations and Combinations Students solve contextual problems using permutations and combinations.</p>	<p>2 class periods (90-min. each) or 4 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓟ GEOM.1B Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.</p> <p>Ⓟ GEOM.1D Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.</p> <p>Probability. The student uses the process skills to understand probability in real-world situations and how to apply independence and dependence of events. The student is expected to:</p> <p>☐ GEOM.13A Develop strategies to use permutations and combinations to solve contextual problems.</p>
<p>Unit 26: Compound Probability Students compute the probability of two events occurring together with or without replacement and apply independence in contextual problems.</p>	<p>1 class period (90-min. each) or 2 class periods (45-min. each)</p>	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <p>Ⓟ GEOM.1F Analyze mathematical relationships to connect and communicate mathematical ideas.</p> <p>Probability. The student uses the process skills to understand probability in real-world situations and how to apply independence and dependence of events. The student is expected to:</p> <p>☐ GEOM.13C Identify whether two events are independent and compute the probability of the two events occurring together with or without replacement.</p> <p>☐ GEOM.13E Apply independence in contextual problems.</p>

Cycle 6		31 Days
		Apr. 17 - May 31, 2023
<i>The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.</i>		
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The bold face words in the TEKS/SEs indicate concepts addressed specifically in this unit; the unbolded concepts are addressed in other units of this course. The student will:
Unit 27: Conditional Probability Students solve contextual problems involving conditional probability.	1 class period (90-min. each) or 2 class periods (45-min. each)	<p>Mathematical Process Standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</p> <ul style="list-style-type: none"> Ⓟ GEOM.1F Analyze mathematical relationships to connect and communicate mathematical ideas. Ⓟ GEOM.1G Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication. <p>Probability. The student uses the process skills to understand probability in real-world situations and how to apply independence and dependence of events. The student is expected to:</p> <ul style="list-style-type: none"> ☑ GEOM.13C Identify whether two events are independent and compute the probability of the two events occurring together with or without replacement. ☑ GEOM.13D Apply conditional probability in contextual problems.