



# Curriculum Calendar Map

## Geometry Standards for the First Six Weeks Grading Period 2015-2016

The Curriculum Calendar Map is a guide for teachers regarding which standards are taught during each six-week grading period. It is a planning tool to assist with aligning the curriculum to instruction and assessment and details the skills and concepts that are taught over the course of the instructional year. The map lists the Texas Essential Knowledge and Skills Student Expectations (TEKS SEs). The TEKS SEs are the required curriculum from the Texas Legislature and specify what students must learn in order to be proficient at each grade level. “Possible Lesson Objectives” encompass the content (what students should know), skills (what students should be able to do), and processes (what students should be able to do) that indicate proficiency of the TEKS SEs. The possible lesson objectives have been aligned to the TEKS SEs with the **Readiness Standards printed in red**, the **Supporting Standards printed in blue**, and standards not eligible for testing on STAAR in black. If an SE has a “strike-through”, that part of the SE is not being taught during that six-week grading period.

The District-wide use of the Curriculum Calendar Maps provides all Dallas ISD students an equal opportunity to learn the same viable content. The implementation of the curriculum ensures our students are poised for future academic success and are college or career ready.

	TEKS Student Expectations	Possible Lesson Objectives	Resources
<p>The Texas Essential Knowledge and Skills Student Expectation (TEKS SE)</p> <p><b>R</b> Readiness Standard <b>S</b> Supporting Standard</p>	<p><b>2A.2C</b> 2A.2 Attributes of functions and their inverses. The student applies mathematical processes to understand that functions have distinct key attributes and understand the relationship between a function and its inverse. <i>The student is expected to:</i>  <span style="color: red;">(C) describe and analyze the relationship between a function and its inverse (quadratic and square root, logarithmic and exponential), including the restriction(s) on domain, which will restrict its range. <b>R</b></span></p>	<ul style="list-style-type: none"> <li>Students will describe the relationship between a function and its inverse.</li> <li>Students will analyze the relationship between a function and its inverse including the restriction(s) on domain, which will restrict its range.</li> </ul>	
<p><b>2A.8 Data. The student applies mathematical processes to analyze data, select appropriate models, write corresponding functions, and make predictions. <i>The student is expected to:</i></b>  <span style="color: blue;">(B) use regression methods available through technology to write a linear function, a quadratic function, and an exponential function from a given set of data. <b>S</b></span></p>	<p><b>2A.8B</b> 2A.8 Data. The student applies mathematical processes to analyze data, select appropriate models, write corresponding functions, and make predictions. <i>The student is expected to:</i>  <span style="color: blue;">(B) use regression methods available through technology to write a linear function, a quadratic function, and an exponential function from a given set of data. <b>S</b></span></p>	<ul style="list-style-type: none"> <li>Students will use regression methods available through technology to write a linear function from a given set of data.</li> <li>Students will use regression methods available through technology to write a quadratic function from a given set of data.</li> </ul>	

~~Strike-through~~ indicates that part of the SE is not required to be taught during the current six-weeks grading period.

## Planning Calendar



# Curriculum Calendar Map

## Geometry Standards for the First Six Weeks Grading Period 2015-2016

**August 24, 2015 – October 2, 2015**

Mon	Tues	Wed	Thurs	Fri	Sat/Sun
Aug. 24	Aug. 25	Aug. 26	Aug. 27	Aug. 28	Aug. 29 - 30
Aug. 31	Sep. 1	Sep. 2	Sep. 3	Sep. 4	Sep. 5 - 6
Sep. 7 Labor Day	Sep. 8	Sep. 9	Sep. 10	Sep. 11	Sep. 12 - 13
Sep. 14	Sep. 15	Sep. 16	Sep. 17	Sep. 18	Sep. 19 - 20
Sep. 21	Sep. 22	Sep. 23	Sep. 24	Sep. 25	Sep. 26 - 27
Sep. 28	Sep. 29	Sep. 30	Oct. 1	Oct. 2	Oct. 3 - 4

Notes:

### Mathematical Process Standards



# Curriculum Calendar Map

## Geometry Standards for the First Six Weeks Grading Period 2015-2016

*The mathematical process standards will not be listed under a separate recording category. They will be incorporated into at least 75% of the STAAR/EOC questions in reporting categories 1 – 4 and will be identified along with content standards. These processes must be embedded in student-centered tasks on a daily basis.*

**G.1 Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:**

- (A) apply mathematics to problems arising in everyday life, society, and the workplace.
- (B) 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.
- (C) 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.
- (D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.
- (E) create and use representations to organize, record, and communicate mathematical ideas.
- (F) analyze mathematical relationships to connect and communicate mathematical ideas.
- (G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

## Lesson Objectives

*A Lesson Objective (LO) answers the question “What are students expected to learn?”. Effective LOs a) are specific, b) are connected with at*



# Curriculum Calendar Map

## Geometry Standards for the First Six Weeks Grading Period 2015-2016

least a portion of the standard or skill needed to master the student expectation, c) follow the mapped curriculum, d) are understood by parents and students, and e) can be accomplished within at most two instructional sessions or class periods. Below are possible LOs for each TEKS/SE.

	TEKS Student Expectations	Possible Lesson Objectives	Resources
<b>G.2A</b>	<p><b>G.2 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:</b></p> <p>(A) 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>Students will:</p> <ul style="list-style-type: none"> <li>determine the coordinates of a point that is a given fractional distance less than one from one end of a line to the other in one-dimensional coordinate systems.</li> <li>determine the coordinates of a point that is a given fractional distance less than one from one end of a line to the other in two-dimensional coordinate systems.</li> </ul> <p><i>Note: To the rigor of the student expectation, students should work with situations that involve that fractional distance being one-half (the midpoint) and other positive fractional differences less than one. Situations other than the midpoint may involve students giving the location of a point one-fourth the distance from point A to point B.</i></p> <p><i>While multiple Process Standards may apply within the development of this concept, students are primarily expected to:</i></p> <ul style="list-style-type: none"> <li><i>apply mathematics to problems arising in everyday life, society, and the workplace TEKS SE G.1A</i></li> <li><i>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 TEKS SE G.1C</i></li> <li><i>communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate, TEKS SE G.1D</i></li> </ul>	

# Curriculum Calendar Map

## Geometry Standards for the First Six Weeks Grading Period 2015-2016

<p><b>G.2B</b></p>	<p><b>G.2 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:</b> (B) 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>Students will use coordinate geometry measures including distance, slope, and midpoint to verify:</p> <ul style="list-style-type: none"> <li>● congruence of segments (length)</li> <li>● parallelism or perpendicularity (direction)</li> </ul> <p><i>Note: In the context of the Knowledge and Skills statement, students must be able to apply knowledge of attributes of linear functions and undefined lines including finding slope and coordinates of points on the lines. TEKS 8.7D introduced the distance between two points using the Pythagorean Theorem. The distance formula is formalized in this SE and applied to establish congruence.</i></p> <p><i>While multiple Process Standards may apply within the development of this concept, students are primarily expected to:</i></p> <ul style="list-style-type: none"> <li>● 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. TEKS SE G.1B</li> <li>● 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 TEKS SE G.1C</li> <li>● analyze mathematical relationships to connect and communicate mathematical ideas, TEKS SE G.1F</li> </ul>	
<p><b>G.4A</b></p>	<p><b>G.4 Logical argument and constructions. The student uses the process skills with deductive reasoning to understand geometric relationships. The student is expected to:</b> (A) distinguish between undefined terms, definitions, postulates, conjectures, and theorems.</p>	<p>Students will distinguish between:</p> <ul style="list-style-type: none"> <li>● undefined terms</li> <li>● definitions</li> <li>● postulates</li> <li>● conjectures</li> <li>● theorems</li> </ul> <p><i>Note: To the rigor of the student expectation, students are expected contrast the different terms associated with this</i></p>	



# Curriculum Calendar Map

## Geometry Standards for the First Six Weeks Grading Period 2015-2016

		<p><i>standard. Students will later use the entire continuum from undefined terms to theorems to justify logical arguments and constructions.</i></p> <p><i>While multiple Process Standards may apply within the development of this concept, students are primarily expected to:</i></p> <ul style="list-style-type: none"> <li>● <i>apply mathematics to problems arising in everyday life, society, and the workplace TEKS SE A.1A</i></li> <li>● <i>communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate, TEKS SE G.1D</i></li> <li>● <i>analyze mathematical relationships to connect and communicate mathematical ideas, TEKS SE G.1F</i></li> </ul>	
<p><b>G.4B</b></p>	<p><b>G.4 Logical argument and constructions. The student uses the process skills with deductive reasoning to understand geometric relationships. The student is expected to:</b>          (B) 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>Students will:</p> <ul style="list-style-type: none"> <li>● identify the converse of a conditional statement and determine its validity</li> <li>● identify the inverse of a conditional statement and determine its validity</li> <li>● identify the contrapositive of a conditional statement and determine its validity</li> <li>● recognize the connection between a biconditional statement and a true conditional with a true converse.</li> </ul> <p><i>Note: While multiple Process Standards may apply within the development of this concept, students are primarily expected to display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication, TEKS SE G.1G</i></p>	
<p><b>G.4C</b></p>	<p><b>G.4 Logical argument and constructions. The student uses the process skills with deductive reasoning to understand geometric relationships. The student is</b></p>	<p>Students will verify that a conjecture is false using a counterexample.</p> <p><i>Note: While multiple Process Standards may apply within the development of this concept, students are primarily expected to:</i></p>	

# Curriculum Calendar Map

## Geometry Standards for the First Six Weeks Grading Period 2015-2016

	<p><i>expected to:</i> (C) verify that a conjecture is false using a counterexample.</p>	<ul style="list-style-type: none"> <li>● <i>apply mathematics to problems arising in everyday life, society, and the workplace TEKS SE G.1A</i></li> <li>● <i>communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate, TEKS SE G.1D</i></li> <li>● <i>display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication, TEKS SE G.1G</i></li> </ul>	
<b>G.5A</b>	<p><b>G.5 Logical argument and constructions. The student uses constructions to validate conjectures about geometric figures.</b> <i>The student is expected to:</i> (A) 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>Students will investigate patterns using a variety of tools to make conjectures about geometric relationships including angles formed by parallel lines cut by a transversal.</p> <p><i>Note: To the rigor of the student expectation, students must be involved in classroom-based investigations. Investigations include data gathering and forming conjectures based on those observations.</i></p> <p><i>While multiple Process Standards may apply within the development of this concept, students are primarily expected to:</i></p> <ul style="list-style-type: none"> <li>● <i>communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate, TEKS SE G.1D</i></li> <li>● <i>create and use representations to organize, record, and communicate mathematical ideas, TEKS SE G.1E</i></li> </ul>	
<b>G.5.B</b>	<p><b>G.5 Logical argument and constructions. The student uses constructions to validate conjectures about geometric figures.</b> <i>The student is expected to:</i> (B) construct congruent segments, congruent angles, a segment bisector, an angle bisector, perpendicular lines, the perpendicular</p>	<p>Students will construct:</p> <ul style="list-style-type: none"> <li>● congruent segments</li> <li>● congruent angles</li> <li>● a segment bisector</li> <li>● an angle bisector</li> </ul> <p>using a compass and a straightedge.</p> <p><i>Note: To the rigor of the student expectation, students must perform constructions. This SE does not directly reference</i></p>	



# Curriculum Calendar Map

## Geometry Standards for the First Six Weeks Grading Period 2015-2016

	<p>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><i>coordinate geometry. Students are encouraged to use language such as equidistant, bisect, intersect, congruent, and parallel to describe the construction process.</i></p> <p><i>While multiple Process Standards may apply within the development of this concept, students are primarily expected to:</i></p> <ul style="list-style-type: none"> <li>● <i>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 TEKS SE G.1C</i></li> <li>● <i>communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate, TEKS SE G.1D</i></li> <li>● <i>display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication, TEKS SE G.1G</i></li> </ul>	
<p><b>G.5C</b></p>	<p><b>G.5 Logical argument and constructions. The student uses constructions to validate conjectures about geometric figures. The student is expected to:</b> (C) use the constructions of congruent segments, congruent angles, angle bisectors, and <del>perpendicular bisectors</del> to make conjectures about geometric relationships.</p>	<p>Students will make conjectures about geometric relationships based on constructions of:</p> <ul style="list-style-type: none"> <li>● congruent segments</li> <li>● congruent angles</li> </ul> <p><b>Note:</b> <i>While multiple Process Standards may apply within the development of this concept, students are primarily expected to:</i></p> <ul style="list-style-type: none"> <li>● <i>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 TEKS SE G.1C</i></li> <li>● <i>communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate, TEKS SE G.1D</i></li> <li>● <i>display, explain, and justify mathematical ideas and arguments using precise mathematical language in</i></li> </ul>	





# Curriculum Calendar Map

## Geometry Standards for the First Six Weeks Grading Period 2015-2016

		<i>written or oral communication, TEKS SE G.1G</i>	
<b>G.6A</b>	<p><b>G.6 Proof and congruence. The student uses the process skills with deductive reasoning to prove and apply theorems by using a variety of methods such as coordinate, transformational, and axiomatic and formats such as two-column, paragraph, and flow chart. The student is expected to:</b></p> <p>(A) 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>	<ul style="list-style-type: none"> <li>● Students will verify theorems about angles formed by the intersection of lines and line segments including:             <ul style="list-style-type: none"> <li>○ vertical angles</li> <li>○ angles formed by parallel lines cut by a transversal</li> </ul> </li> <li>● Students will prove equidistance between the endpoints of a segment and points on its perpendicular bisector.</li> <li>● Students will apply these relationships to solve problems.</li> </ul> <p><i>Note: While multiple Process Standards may apply within the development of this concept, students are primarily expected to:</i></p> <ul style="list-style-type: none"> <li>● <i>apply mathematics to problems arising in everyday life, society, and the workplace TEKS SE G.1A</i></li> <li>● <i>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. TEKS SE G.1B</i></li> <li>● <i>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 TEKS SE G.1C</i></li> <li>● <i>communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate, TEKS SE G.1D</i></li> <li>● <i>analyze mathematical relationships to connect and communicate mathematical ideas, TEKS SE G.1F</i></li> </ul>	
<b>G.11B</b>	<p><b>G.11 Two-dimensional and three-dimensional figures. The</b></p>	<p>Students will determine the area of composite two-dimensional figures comprised of:</p>	



# Curriculum Calendar Map

## Geometry Standards for the First Six Weeks Grading Period 2015-2016

	<p><b>student uses the process skills in the application of formulas to determine measures of two- and three-dimensional figures. The student is expected to:</b></p> <p>(B) 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>	<ul style="list-style-type: none"><li>• triangles</li><li>• parallelograms</li></ul> <p><i>Note: While multiple Process Standards may apply within the development of this concept, students are primarily expected to:</i></p> <ul style="list-style-type: none"><li>• <i>apply mathematics to problems arising in everyday life, society, and the workplace TEKS SE G.1A</i></li><li>• <i>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. TEKS SE G.1B</i></li><li>• <i>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 TEKS SE G.1C</i></li><li>• <i>communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate, TEKS SE G.1D</i></li><li>• <i>analyze mathematical relationships to connect and communicate mathematical ideas, TEKS SE G.1F</i></li></ul>	
--	--	---	--



# Curriculum Calendar Map

## Geometry Standards for the First Six Weeks Grading Period 2015-2016

### Demonstrations of Learning

A *Demonstration of Learning (DOL)* is an assessment or product through which students demonstrate that they learned the objective of the lesson. Effective DOLs are tied directly to the lesson objective (LO), are aligned to the rigor of the TEKS SE, are usually accomplished in five to ten minutes, and require the student to demonstrate what they have learned over the last one or two class periods in the subject area. A few possible DOLs are provided below.

TEKS Student Expectations	Possible Lesson Objectives	Possible Demonstrations of Learning
<p><b>G.4 Logical argument and constructions. The student uses the process skills with deductive reasoning to understand geometric relationships. The student is expected to:</b>            (B) 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>Students will identify the contrapositive of a conditional statement and determine its validity.</p>	<p>Given 3 conditional statements, the students will identify the contrapositive of each conditional statement and determine its validity with 100% accuracy.</p>
<p><b>G.6 Proof and congruence. The student uses the process skills with deductive reasoning to prove and apply theorems by using a variety of methods such as coordinate, transformational, and axiomatic and formats such as two-column, paragraph, and flow chart. The student is expected to:</b>            (A) 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>Students will verify theorems about angles formed by the intersection of lines and line segments including:</p> <ul style="list-style-type: none"> <li>• vertical angles</li> <li>• angles formed by parallel lines cut by a transversal</li> </ul>	<p>Given 4 pairs of intersecting line segments, students will verify theorems about angles formed by these intersections with 100% accuracy.</p>
<p><b>G.11 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:</b>            (B) 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>Students will determine the composite area of combined quadrilaterals.</p>	<p>Given 3 composite quadrilaterals, students will determine the area of each with 100% accuracy.</p>