

Any standard **highlighted in yellow** has been determined by our WCSD teachers, district and state experts as essential for students to master.

Strand: I can experiment with transformations in the plane. (9.G.CO.1-5)

Strand: I can understand congruence in terms of rigid motions. (9.G.CO.6-8)

Strand: I can make geometric constructions (9.G.CO.12-13)

Standard 9.G.CO.1: I can use precise definitions of angle, circle, perpendicular line, parallel line, and line segment based on the undefined notions of point, line, distance along a line, and distance around a circular arc.

Learning Targets	Academic Vocabulary & Notation	Question Stems	Possible Assessments
<ul style="list-style-type: none"> • I can define angle, circle, perpendicular line, parallel line, and line segment. • I can use precise definitions to identify and model an angle, circle, perpendicular line, parallel line, and line segment. • I can demonstrate mathematical notation for each term. 	<ul style="list-style-type: none"> • angle, circle, perpendicular line, parallel line, line segment, distance, arc, point, line 	<ul style="list-style-type: none"> • How do these concepts relate to what you already know? • Justify your answer 	<ul style="list-style-type: none"> • <u>District CFAs</u>

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Standard 9.G.CO.2: I can represent transformations on the plane and describe them as functions.			
<p>Learning Targets</p> <ul style="list-style-type: none"> I can describe transformations as functions that take points in the plane as inputs and give other points as outputs. I can compare transformations that preserve distance and angle to those that do not. I can represent reflections, rotations, and translations using a variety of media. I can compare and contrast rigid and non-rigid transformations. I understand transformations as functions. 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> plane, transformation, reflection, rotation, translation, preserve, function in terms of input and output, rigid transformation, non-rigid transformation 	<p>Question Stems</p> <ul style="list-style-type: none"> The hardest part of this concept is..... What do transformations remind you of? What would happen if.....? 	<p>Possible Assessments</p> <ul style="list-style-type: none"> District CFAs
Standard 9.G.CO.3: I can describe the rotations and reflections when given a rectangle, parallelogram, trapezoid, or regular polygon.			
<p>Learning Targets</p> <ul style="list-style-type: none"> I can describe and identify lines and points of symmetry. I can describe rotations and reflections which take a rectangle, parallelogram, trapezoid, or regular polygon onto itself. 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> rectangle, parallelogram, trapezoid, regular polygon, rotation, reflection, symmetry 	<p>Question Stems</p> <ul style="list-style-type: none"> Find a polygon that has rotational symmetry and justify. How could you describe this? 	<p>Possible Assessments</p> <ul style="list-style-type: none"> District CFAs

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Standard 9.G.CO.4: I can develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.			
<p>Learning Targets</p> <ul style="list-style-type: none"> I can use precise definitions of angles, circles, perpendicular lines, parallel lines, and line segments to develop definitions of rotations, reflections, and translations. 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> angle, circle, perpendicular lines, parallel lines, line segment, rotation, reflection, translation 	<p>Question Stems</p> <ul style="list-style-type: none"> Describe the similarities and differences of the vocabulary words. Justify your answer. 	<p>Possible Assessments</p> <ul style="list-style-type: none"> <u>District CFAs</u>

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Standard 9.G.CO.5: I can draw a transformed figure and identify the transformation.

Learning Targets	Academic Vocabulary & Notation	Question Stems	Possible Assessments
<ul style="list-style-type: none"> • I can draw a transformed figure by performing rotations, reflections, and translations using a variety of methods. • I can identify a sequence of transformations that will carry a given figure to another. • I understand and can use rigid motions, including that translations move points a specified distance along a line parallel to a specified line and that rotations move objects along a circular arc with a specified center through a specified angle. 	<ul style="list-style-type: none"> • rotation, reflection, translation, rigid motion 	<ul style="list-style-type: none"> • What did you learn today? • I solved the problem by..... 	<ul style="list-style-type: none"> • <u>District CFAs</u>

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Standard 9.G.CO.6: I can use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure.			
<p>Learning Targets</p> <ul style="list-style-type: none"> I can transform figures using geometric descriptions of rigid motions. I can predict the effect of rotation, reflection or translating a given figure using prior experience with rigid motions. I can justify the congruence of two figures using properties of rigid motions. 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> rigid motion, congruent, rotate, translate, reflect 	<p>Question Stems</p> <ul style="list-style-type: none"> Explain what you have done so far. What strategy did you use? Prove that there is only one possible answer to this problem. 	<p>Possible Assessments</p> <ul style="list-style-type: none"> <u>District CFAs</u>
Standard 9.G.CO.7: I can use the definition of congruence in terms of rigid motions to show that two triangles are congruent.			
<p>Learning Targets</p> <ul style="list-style-type: none"> I can identify corresponding parts of two triangles. I can show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent. 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> if and only if (iff), corresponding, rigid motion, congruent 	<p>Question Stems</p> <ul style="list-style-type: none"> What other math can you connect with this? Justify your answer. 	<p>Possible Assessments</p> <ul style="list-style-type: none"> <u>District CFAs</u>

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Standard 9.G.CO.8: I can explain how the criteria for triangle congruence follow from the definition of congruence in terms of rigid motions.			
<p>Learning Targets</p> <ul style="list-style-type: none"> I can identify the minimum conditions necessary for triangle congruence (ASA, SAS, and SSS) I can understand, explain, and demonstrate why ASA, SAS, or SSS are sufficient to show congruence. I can understand, explain, and demonstrate why SSA and AAA are not sufficient to show congruence. I can explain the connection between ASA and AAS congruence theorems. 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> ASA, SAS, SSS, AAA, SSA, included angle, included side, corresponding parts 	<p>Question Stems</p> <ul style="list-style-type: none"> What does this make you think of? What questions arose as you worked? I found _____ challenging because..... 	<p>Possible Assessments</p> <ul style="list-style-type: none"> <u>District CFAs</u>

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Standard 9.G.CO.12: I can make formal geometric constructions with a variety of tools and methods.			
<p>Learning Targets</p> <ul style="list-style-type: none"> I can perform the following constructions using a variety of tools and methods: copying a segment, copying an angle, bisecting a segment, bisecting an angle, constructing perpendicular lines (including the perpendicular bisector of a line segment, and constructing a line parallel to a given line through a point not on the line. I can explain why these constructions result in the desired objects. I can modify an already created construction to build other constructions. I recognize that constructions develop from one another. 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> segment, angle, bisect, perpendicular, parallel, construction 	<p>Question Stems</p> <ul style="list-style-type: none"> Justify your answer. How did you solve the problem? What were the steps involved? 	<p>Possible Assessments</p> <ul style="list-style-type: none"> <u>District CFAs</u>

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Standard 9.G.CO.13: I can construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.			
<p>Learning Targets</p> <ul style="list-style-type: none"> I can construct an equilateral triangle, a square, and a regular hexagon each inscribed in a circle. I can modify an already created construction to build other constructions. I recognize that constructions develop from one another. 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> equilateral triangle, square, regular hexagon, inscribed, construction 	<p>Question Stems</p> <ul style="list-style-type: none"> The steps I followed were.... My strategy was successful because 	<p>Possible Assessments</p> <ul style="list-style-type: none"> <u>District CFAs</u>