Triangle Geometry

4.1 Prove congruence theorems

CCSS	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No Evidence
Explain triangle congruence (G.CO.8)	Can extend thinking beyond the standard, including tasks that may involve one of the following: • Designing • Connecting • Synthesizing • Applying • Justifying • Critiquing • Analyzing • Creating • Proving	**Prove (two column, paragraph, etc.)** SSS, SAS, and ASA triangle congruence using rigid motion.	**Find missing sides or angles to show** SSS, SAS, and ASA triangle congruence using rigid motion.	**Identify** SSS, SAS, and ASA triangle congruence using rigid motion.	Little evidence of reasoning or application to solve the problem Does not meet the criteria in a level 1
Prove triangle theorems (G.CO.10, G.SRT.5, 8.EE.7)		Show mathematically for problems about triangles with rational numbers, that require both distributing and combining like terms **in both** of the following theorems • measures of interior angles of a triangle sum to 180° • base angles of isosceles triangles are congruent Prove (informally) **both** of the following theorems about triangles • measures of interior angles of a triangle sum to 180° • base angles of isosceles triangles are congruent	**Show mathematically** for problems about triangles **with rational numbers and that require both distributing or combining like terms in one** of the following theorems • measures of interior angles of a triangle sum to 180° • base angles of isosceles triangles are congruent Prove (informally) **one** of the following theorems about triangles • measures of interior angles of a triangle sum to 180° • base angles of isosceles triangles are congruent	**Show numerically** for problems about triangles • measures of interior angles of a triangle sum to 180° • base angles of isosceles triangles are congruent	

G.CO.8 Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.

G.CO.10 Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; ~~the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.~~

G.SRT.5 Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.

8.EE.7 Solve linear equations in one variable. a - Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). b - Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

Triangle Geometry

4.2 Construct special triangles and angles

CCSS	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No Evidence
Construction of lines and angles (G.CO.12, G.CO.13, G.CO.9)	Can extend thinking beyond the standard, including tasks that may involve one of the following: • Designing • Connecting • Synthesizing • Applying • Justifying • Critiquing • Analyzing • Creating • Proving	Use a variety of tools to **perform all** of the following: • Bisect a segment • Bisect an angle • Construct the perpendicular bisector of a segment • Construct an equilateral triangle	Use a variety of tools to **perform 3** of the following: • Bisect a segment • Bisect an angle • Construct the perpendicular bisector of a segment • Construct an equilateral triangle	Use a variety of tools to **perform 2** of the following: • Bisect a segment • Bisect an angle • Construct the perpendicular bisector of a segment • Construct an equilateral triangle	Little evidence of reasoning or application to solve the problem Does not meet the criteria in a level 1

G.CO.9 Prove theorems about lines and angles: points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.

G.CO.13 Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.

G.CO.12 Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.