Quadrilaterals & Other Polygons

9.1 Construct and explore polygons

CCSS	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No Evidence
Construct triangles and hexagons (G.CO.13)	Can extend thinking beyond the standard, including tasks that may involve one of the following: • Designing • Connecting • Synthesizing • Applying • Justifying • Critiquing • Analyzing • Creating • Proving	Construct an inscribed regular hexagon **and** an inscribed square	Construct an **inscribed regular hexagon or an inscribed square**	Construct a square given a side	Little evidence of reasoning or application to solve the problem Does not meet the criteria in a level 1
Prove quadrilateral properties (G.C.3)		**Prove** properties of angles for a quadrilateral inscribed in a circle.	**Show mathematically** properties of angles for a quadrilateral inscribed in a circle.	**Identify** properties of angles for a quadrilateral inscribed in a circle.	

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

G.C.3 Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.

Quadrilaterals & Other Polygons

9.2 Prove theorems about quadrilaterals

CCSS	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No Evidence
Prove parallelogram theorems (G.CO.11, 8.EE.7)	Can extend thinking beyond the standard, including tasks that may involve one of the following: • Designing • Connecting • Synthesizing • Applying • Justifying • Critiquing • Analyzing • Creating • Proving	Show mathematically for problems about parallelograms with rational numbers and variables on both sides, **that require both distributing and combining like terms** all of the following theorems • opposite sides are congruent, • opposite angles are congruent, • the diagonals of a parallelogram bisect each other, • rectangles are parallelograms with congruent diagonals **Prove algebraically** two of the following theorems about parallelograms • opposite sides are congruent, • opposite angles are congruent, • the diagonals of a parallelogram bisect each other, • rectangles are parallelograms with congruent diagonals	**Show mathematically** for problems about parallelograms with rational numbers and **variables on both sides**, that require distributing **or** combining like terms all of the following theorems • opposite sides are congruent, • opposite angles are congruent, • the diagonals of a parallelogram bisect each other, • rectangles are parallelograms with congruent diagonals **Prove algebraically** one of the following theorems about parallelograms • opposite sides are congruent, • opposite angles are congruent, • the diagonals of a parallelogram bisect each other, • rectangles are parallelograms with congruent diagonals	**Identify all and solve linear equations with rational numbers and variable(s) on one side for two** of the following theorems about parallelograms • opposite sides are congruent, • opposite angles are congruent, • the diagonals of a parallelogram bisect each other, • rectangles are parallelograms with congruent diagonals	Little evidence of reasoning or application to solve the problem Does not meet the criteria in a level 1
Prove with coordinates (G.GPE.4)		Using coordinate geometry and the Pythagorean, slope, distance, and midpoint formulas to **prove the types of quadrilaterals**	Using coordinate geometry and the Pythagorean, slope, distance, and midpoint formulas to **identify the types of quadrilaterals**	Using coordinate geometry and the Pythagorean, slope, distance, and midpoint formulas to **identify properties of quadrilaterals**	

G.CO.11 Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.

G.GPE.4 Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1, √3) lies on the circle centered at the origin and containing the point (0, 2).

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.