Khan Academy Video Correlation / Alignment
Other Courses

TEKS/SE	Curriculum Unit(s)	Video Title	Rationale (e.g., explanation, justification, etc.)

MATH.8.1C – approximate (mentally and with calculators) the value of irrational numbers as they arise from problem situations (such as π, $\sqrt{2}$).	2, 14	Understanding Square Roots
		Approximating Square Roots
		Square Roots and Real Numbers
			• These videos demonstrate how to:
			  ○ determine the square root of perfect squares; and
			  ○ estimate the square root of a non-perfect square.

MATH.8.5B – find and evaluate an algebraic expression to determine any term in an arithmetic sequence (with a constant rate of change).	7	Addition and Subtraction of Polynomials	• This video demonstrates how to:
			  ○ identify and classify polynomials; and
			  ○ add and subtract polynomials.

MATH.8.7C – use pictures or models to demonstrate the Pythagorean theorem.	14	Pythagorean Theorem 1 Pythagorean Theorem 2 Pythagorean Theorem 3	• These videos demonstrate: ○ applications of the Pythagorean theorem.

GEOM.1A – develop an awareness of the structure of a mathematical system, including the need for definitions and the use of logical reasoning to verify statements.	1, 4, 7	Angle Basics
		Introduction to angles (old)
		Measuring Angles in Degrees
		Acute Right and Obtuse Angles
		Acute Obtuse and Right Angles
		Complementary and Supplementary Angles
		Identifying Complementary and Supplementary Angles
		Proof - Sum of Measures of Angles in a Triangle are 180
			• These videos demonstrate how to:
			  ○ create angles;
			  ○ measure and classify angles;
			  ○ distinguish between complementary and supplementary angles; and
			  ○ find the measures of interior angles of a triangle.

GEOM.2B – make conjectures about angles, lines, polygons, circles, and three-dimensional figures and determine the validity of the conjectures, choosing from a variety of approaches such as coordinate, transformational, or axiomatic.	2, 5, 10, 15	Triangle Angle Example 1
		Angles at the intersection of two lines
		Proof-Vertical Angles are Equal
		Angles Formed by Parallel Lines and Transversals
		Point Line Distance and Angle Bisectors
		Proof - Sum of Measures of Angles in a Triangle are 180
			• These videos demonstrate how to:
			  ○ determine the measure of angles in a triangle;
			  ○ identify and determine the measure of remote interior and exterior angles;
			  ○ determine the shortest distance from a point to a line;
			  ○ recognize parallel lines cut by a transversal;
			  ○ use the Triangle Sum theorem;

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		Triangle Angle Example 1 Triangle Angle Example 2 Triangle Angle Example 3 Challenging Triangle Angle Problem Congruent Triangle Proof Example Congruent Triangle Example 2 Congruent legs and base angles of Isosceles Triangles Equilateral Triangle Sides and Angles Congruent Equilateral and Isosceles Example Problems Another Isosceles Example Problem Example involving an isosceles triangle and parallel lines Figuring out all the angles for congruent triangles example Koch Snowflake Fractal Area of Koch Snowflake (part 1) - Advanced Area of Koch Snowflake (part 2) - Advanced Similar triangles (part 2) Similar Triangle Example Problems	o prove vertical angles are congruent; o prove triangles are congruent; o prove corresponding parts of congruent triangles are congruent; and o identify similar triangles.
GEOM.4A – select an appropriate representation ([concrete,] pictorial, graphical, verbal, or symbolic) in order to solve problems.	1	Finding more angles	• This video demonstrates how to: o use triangle sum and algebra to determine missing measures in a triangle.

GEOM.5A – use numeric and geometric patterns to develop algebraic expressions representing geometric properties.	1, 2, 6, 7	Triangle Angle Example 1
		Angles at the intersection of two lines
		Proof-Vertical Angles are Equal
		Finding more angles
		Angle Game (part 2)
		Angle Bisector Theorem Examples
			• These videos demonstrate how to:
			  o determine the measure of angles in a triangle;
			  o identify and determine the measure of remote interior and exterior angles;
			  o bisect angles;
			  o prove vertical angles are congruent.

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GEOM.5B – use numeric and geometric patterns to make generalizations about geometric properties, including properties of polygons, ratios in similar figures and solids, and angle relationships in polygons and circles.	1, 2, 3, 6	Angle Bisector Theorem Proof Proof - Sum of Measures of Angles in a Triangle are 180 Triangle Angle Example 1 Challenging Triangle Angle Problem Congruent and Similar Triangles Congruent Triangle Example 2 Similar Triangle Basics Similarity Postulates Similar triangles Similar triangles (part 2) Similar Triangle Example Problems Similarity Example Problems Right Triangles Inscribed in Circles (Proof) Area of Diagonal Generated Triangles of Rectangle are Equal	• These videos demonstrate how to: o prove the angle bisector theorem; o use the Triangle Sum theorem; o prove two sides of a triangle are equal; o prove triangles are similar; and o identify angle relationships in inscribed polygons.
GEOM.5D – identify and apply patterns from special right triangles to solve meaningful problems, including special right triangles (45-45-90 and 30-60-90) and triangles whose sides are Pythagorean triples.	8, 9	45-45-90 Triangles 45-45-90 Triangle Side Ratios Intro to 30-60-90 Triangles 30-60-90 Triangles II 30-60-90 Triangle Example Problem	• These videos demonstrate how to: o derive ratios for 30-60-90 and 45-45-90 special right triangles; o rationalize denominators; and o apply special right triangles.
GEOM.7C – [derive and] use formulas involving length, slope, and midpoint.	1, 2, 5	Distance Formula Midpoint Formula	• These videos demonstrate how to: o determine the distance and midpoint between two points on a coordinate plane.
GEOM.8A – find areas of regular polygons, circles, and composite figures.	1, 11, 14	Triangle Area Proofs Area of an Equilateral Triangle Koch Snowflake Fractal Area of Koch Snowflake (part 1) - Advanced Area of Koch Snowflake (part 2) - Advanced	• These videos demonstrate how to: o determine areas of various figures; and o prove how determine a 'finite' area of a shape which has an infinite perimeter.

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GEOM.8C – [derive,] extend, and use the Pythagorean Theorem.	8	Square Roots and Real Numbers
		The Pythagorean Theorem
		Pythagorean Theorem II
			• This video demonstrates how to:
			  o use prime factorization to find square roots of non-perfect squares;
			  o determine whether a number is rational or irrational; and
			  o use the Pythagorean theorem.

GEOM.9A – formulate and test conjectures about the properties of parallel and perpendicular lines based on explorations and [concrete] models.	2	Angles (part 3)
		Angles formed between transversals and parallel lines
		Proof - Corresponding Angle Equivalence Implies Parallel Lines
		Angles of parallel lines 2
		Proof - Sum of Measures of Angles in a Triangle are 180
		Congruent Triangle Proof Example
		Example involving an isosceles triangle and parallel lines
		Similar triangles
		Similar triangles (part 2)
		Similar Triangle Example Problems
		Similarity Example Problems
			• These videos demonstrate how to:
			  o identify relationships from parallel lines cut by a transversal;
			  o determine whether lines are parallel using corresponding angles; and
			  o identify similar triangles.

GEOM.9B – formulate and test conjectures about the properties and attributes of polygons and their component parts based on explorations and [concrete] models.	6	Triangle Angle Example 2 Triangle Angle Example 3	• These videos demonstrate how to: o determine the measure of missing angles in a triangle.
GEOM.9C – formulate and test conjectures about the properties and attributes of circles and the lines that intersect them based on explorations and [concrete] models.	15	Inscribed and Central Angles Perpendicular Radius Bisects Chord	• These videos demonstrate how to: o prove that the measure of an inscribed angle is equal to one-half the measure of a central angle having the same intercepted arc.

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GEOM.10B – justify and apply triangle congruence relationships.	3	More on why SSA is not a postulate
		Point Line Distance and Angle Bisectors
		Two column proof showing segments are perpendicular
		Challenging Triangle Angle Problem
		Congruent and Similar Triangles
		Congruent Triangles and SSS
		SSS to Show a Radius is Perpendicular to a Chord that it Bisects
		Other Triangle Congruence Postulates
		Finding Congruent Triangles
		More on why SSA is not a postulate
		Congruent Triangle Proof Example
		Congruent Triangle Example 2
		Congruent legs and base angles of Isosceles Triangles
		Equilateral Triangle Sides and Angles Congruent
		Equilateral and Isosceles Example Problems
		Another Isosceles Example Problem
		Figuring out all the angles for congruent triangles example
		Similarity Postulates
		30-60-90 Triangle Side Ratios Proof
			● These videos demonstrate how to:
			   ○ determine the shortest distance from a point to a line;
			   ○ determine measures of angles;
			   ○ prove why the SSA (side-side-angle) theorem does not work;
			   ○ prove two triangles are congruent or similar;
			   ○ prove corresponding parts of congruent triangles are congruent; and
			   ○ prove SSS, SAS, ASA, and AAS triangle congruence theorems.

GEOM.11B – use ratios to solve problems involving similar figures.	7, 10	Congruent and Similar Triangles
		Similar Triangle Basics
		Similarity Postulates
		Similar triangles
		Similar Triangle Example Problems
		Similarity Example Problems
			● These videos demonstrate how to:
			   ○ solve problems involving ratio and proportion; and
			   ○ prove triangles are similar.

GEOM.11C – develop, apply, and justify triangle similarity relationships, such as those in right triangle ratios.	7, 8, 9	Pythagorean Theorem Proof Using Similarity	● This video demonstrates how to: ○ prove the Pythagorean theorem using similarity in right triangles.

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ALGII.2A – use tools including factoring and properties of exponents to simplify expressions and to transform and solve equations.	2, 3, 4, 5	Simplifying Square Roots
		Simplifying Square Roots Comment Response
		Finding Cube Roots
		Adding and Simplifying Radicals
		Subtracting and Simplifying Radicals
		Adding and Subtracting Rational Expressions
		Multiply and Simplify a Radical Expression 1
		Multiply and Simplify a Radical Expression 2
			• These videos demonstrate how to:
			  o simplify square roots;
			  o connect the square root to absolute value and prime factorization;
			  o simplify a cube root using prime factorization and exponential rules; and
			  o add, subtract, multiply, and divide rational expressions.

ALGII.3A – analyze situations and formulate systems of equations in two or more unknowns or inequalities in two unknowns to solve problems.	4, 7	Patterns and Equations
		Word Problem Solving Strategies
		Problem Solving Word Problems 2
			• These videos demonstrate how to:
			  o write systems of equations from a table of values; and
			  o solve word problems by setting up systems of equations.

ALGII.3B – use algebraic methods, graphs, tables, or matrices, to solve systems of equations or inequalities.	4, 7	Patterns and Equations
		Word Problem Solving Strategies
		Problem Solving Word Problems 2
			• These videos demonstrate how to:
			  o write systems of equations from a table of values; and
			  o solve word problems by setting up systems of equations.

ALGII.5E – use the method of completing the square.	5, 7	Quadratic Functions 3	• This video demonstrates how to: o graph a quadratic function.

ALGII.6B – relate representations of quadratic functions, such as algebraic, tabular, graphical, and verbal descriptions.	5	Special Products of Binomials
		Quadratic Functions 3
		Applying Quadratic Functions 1
			• These videos demonstrate how to:
			  o square a binomial;
			  o graph a quadratic function; and
			  o apply quadratic functions.

ALGII.6C – determine a quadratic function from its roots (real and complex) or a graph.	5	Special Products of Binomials	• This video demonstrates how to: o square a binomial.
ALGII.8A – analyze situations involving quadratic functions and formulate quadratic equations or inequalities to solve problems.	5	Applying Quadratic Functions 2 Applying Quadratic Functions 3	• These videos demonstrate how to: o write and solve quadratic equations using the quadratic formula.

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ALGII.8B – analyze and interpret the solutions of quadratic equations using discriminants and solve quadratic equations using the quadratic formula.	5	[Applying Quadratic Functions 2](#) [Applying Quadratic Functions 3](#)	• These videos demonstrate how to: o write and solve quadratic equations using the quadratic formula.
ALGII.8C – compare and translate between algebraic and graphical solutions of quadratic equations.	5	[Quadratic Functions 3](#)	• This video demonstrates how to: o graph a quadratic function.
ALGII.8D – solve quadratic equations and inequalities using graphs, tables, and algebraic methods.	5	[Factoring Special Products](#) [Quadratic Functions 3](#) [Applying Quadratic Functions 1](#)	• These videos demonstrate how to: o solve quadratic equations by factoring; o graph a quadratic function; and o apply quadratic functions to real-world scenarios.
ALGII.9B – relate representations of square root functions, such as algebraic, tabular, graphical, and verbal descriptions.	6	[Simplifying Square Roots](#) [Simplifying Square Roots Comment Response](#) [Multiply and Simplify a Radical Expression 1](#) [Multiply and Simplify a Radical Expression 2](#)	• These videos demonstrate how to: o simplify square roots; o connect square roots to absolute value and prime factorization; and o add, subtract, multiply, and divide rational expressions.