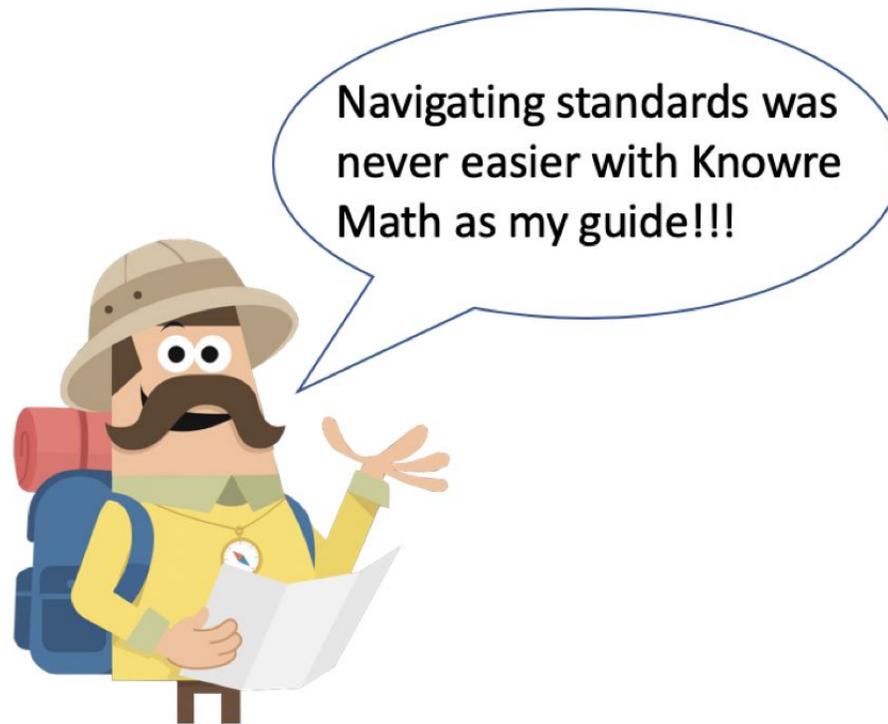


Knowre Math, an adaptive, digital core supplement is aligned to the Common Core Standards for Mathematics and provides extensive coverage of the skills and courses that students are required to master. The targeted standards for different grade levels are integrated into all chapters/courses/applications to bring educational equity to all students in the classroom or at home.



Geometry ~ Common Core State Standards: Mathematics		Knowre Geometry Lessons
G.CO.1	Know 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.	Lessons 1-1, 1-2, 1-3, 1-4, 3-4, 3-6, 10-1, 10-6
G.CO.2	Represent transformations in the plane using; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not.	Lessons 7-1, 7-2, 7-3, 7-4
G.CO.3	Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.	Lesson 7-5
G.CO.4	Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.	Lessons 7-1, 7-2, 7-3, 7-5
G.CO.5	Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.	Lessons 7-1, 7-2, 7-3, 7-4, 7-5
G.CO.6	Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.	Lessons 4-4, 4-5, 7-1
G.CO.7	Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.	Lessons 4-4, 4-5
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.	Lessons 4-4, 4-5
G.CO.9	Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.	Lessons 2-4, 3-2, 3-3, 3-4, 5-1
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	Lessons 4-1, 4-3, 5-2, 5-3,

	the third side and half the length; the medians of a triangle meet at a point.	8-4, 8-5, 8-6
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.	Lessons 6-3, 6-4, 6-5, 6-6
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.	Lessons 1-2, 1-3, 1-4, 3-1, 3-4, 4-2, 5-1
G.CO.13	Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.	Lessons 5-2, 6-1
G.SRT.1.a	A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.	Lesson 7-4
G.SRT.1.b	The dilation of a line segment is longer or shorter in the ratio given by the scale factor.	Lesson 7-4
G.SRT.2	Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.	Lessons 8-3, 8-4
G.SRT.3	Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.	Lesson 8-4
G.SRT.4	Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.	Lessons 8-5, 9-1
G.SRT.5	Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.	Lesson 9-1
G.SRT.6	Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.	Lessons 9-3, 9-4, 9-5
G.SRT.7	Explain and use the relationship between the sine and cosine of complementary angles.	Lesson 9-5
G.SRT.8	Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.	Lessons 9-6, 11-4
G.SRT.9	Derive the formula $A = \frac{1}{2} ab \sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.	Lesson 9-7

G.SRT.10	Prove the Laws of Sines and Cosines and use them to solve problems.	Lesson 9-7
G.SRT.11	Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles.	Lessons 9-7, 9-8
G.C.1	Prove that all circles are similar.	Lesson 10-6
G.C.2	Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.	Lessons 10-1, 10-2, 10-3, 10-5
G.C.3	Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.	Lessons 5-2, 10-3
G.C.4	Construct a tangent line from a point outside a given circle to the circle.	Not covered
G.C.5	Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.	Lesson 11-5
G.GPE.1	Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.	Lesson 10-6
G.GPE.2	Derive the equation of a parabola given a focus and directrix.	Not covered
G.GPE.4	Use coordinates to prove simple geometric theorems algebraically.	Lessons 1-3, 3-5, 3-6
G.GPE.5	Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).	Lesson 3-6
G.GPE.6	Find the point on a directed line segment between two given points that partitions the segment in a given ratio.	Lesson 8-2
G.GPE.7	Use coordinates to compute perimeters of polygons and areas of triangles and rectangles.	Lessons 1-6, 6-3
G.GMD.1	Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments.	Lessons 1-6, 12-4, 12-5
G.GMD.3	Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.	Lessons 12-4, 12-5, 12-6,

		12-7
G.GMD.4	Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.	Lessons 12-1, 12-5
G.MG.1	Use geometric shapes, their measures, and their properties to describe objects.	Lessons 11-1, 11-5, 12-2, 12-3, 12-4, 12-5
G.MG.2	Apply concepts of density based on area and volume in modeling situations.	Lessons 12-6, 12-7
G.MG.3	Apply geometric methods to solve design problems.	Lessons 11-3, 11-4
S.CP.1	Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").	Not covered
S.CP.2	Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.	Not covered
S.CP.3	Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.	Not covered
S.CP.4	Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities.	Not covered
S.CP.5	Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations.	Not covered Not covered
S.CP.6	Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.	Not covered
S.CP.7	Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.	Not covered
S.CP.8	Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B A) = P(B)P(A B)$, and interpret the answer in terms of the model.	Not covered

S.CP.9	Use permutations and combinations to compute probabilities of compound events and solve problems.	Not covered
S.MD.6	Use probabilities to make fair decisions.	Not covered
S.MD.7	Analyze decisions and strategies using probability concepts.	Not covered