

Geometry
Khan Academy Video Correlations
By SpringBoard Activity

SB Activity	Video(s)
Unit 1: Proof, Parallel and Perpendicular Lines	
Activity 1 <i>Geometric Figures</i> 1-1 Learning Targets: <ul style="list-style-type: none"> Identify, describe, and name points, lines, line segments, rays, and planes using correct notation. Identify and name angles. 1-2 Learning Targets: <ul style="list-style-type: none"> Describe angles and angle pairs. Identify and name parts of circles. 	Basic Geometry Figures Basic geometry: language and labels Intro to lines, line segments, and rays Language and notation of the circle Angle basics Complementary and supplementary angles
Activity 2 <i>Logical Reasoning</i> 2-1 Learning Targets: <ul style="list-style-type: none"> Make conjectures by applying inductive reasoning. Recognize the limits of inductive reasoning. 2-2 Learning Targets: <ul style="list-style-type: none"> Use deductive reasoning to prove that a conjecture is true. Develop geometric and algebraic arguments based on deductive reasoning. 	Reasoning Difference between inductive and deductive reasoning Inductive Reasoning Inductive patterns Patterns in sequences 1 Patterns in sequences 2 Equations of sequence patterns Finding the 100th term in a sequence Sum of consecutive odd integers Challenge example: Sum of integers
Activity 3 <i>The Axiomatic System of Geometry</i> 3-1 Learning Targets: <ul style="list-style-type: none"> Distinguish between undefined and defined terms. Use properties to complete algebraic two-column proofs. 3-2 Learning Targets: <ul style="list-style-type: none"> Identify the hypothesis and conclusion of a conditional statement. Give counterexamples for false conditional statements 3-3 Learning Targets:	N/A

<ul style="list-style-type: none"> Write and determine the truth value of the converse, inverse, and contrapositive of a conditional statement. Write and interpret biconditional statements. 	
Activity 4 <i>Segment and Angle Measurement</i> 4-1 Learning Targets: <ul style="list-style-type: none"> Apply the Segment Addition Postulate to find lengths of segments. Use the definition of midpoint to find lengths of segments 4-2 Learning Targets: <ul style="list-style-type: none"> Apply the Angle Addition Postulate to find angle measures. Use the definition of angle bisector to find angle measures. 	<i>Segments and Midpoints</i>
	Algebraic midpoint of a segment exercise
	<i>Vertical Angles</i>
	Introduction to vertical angles Find measure of vertical angles
Activity 5 <i>The Distance and Midpoint Formulas</i> 5-1 Learning Targets: <ul style="list-style-type: none"> Derive the Distance Formula. Use the Distance Formula to find the distance between two points on the coordinate plane. 5-2 Learning Targets: <ul style="list-style-type: none"> Use inductive reasoning to determine the Midpoint Formula. Use the Midpoint Formula to find the coordinates of the midpoint of a segment on the coordinate plane. 	<i>Distance on the Coordinate Plane</i>
	Distance formula
	<i>Midpoint on the Coordinate Plane</i> Midpoint formula
Activity 6 <i>Proofs about Line Segments and Angles</i> 6-1 Learning Targets: <ul style="list-style-type: none"> Use definitions, properties, and theorems to justify a statement. Write two-column proofs to prove theorems about lines and angles. 6-2 Learning Targets: <ul style="list-style-type: none"> Complete two-column proofs to prove theorems about segments. Complete two-column proofs to prove theorems about angles. 	N/A
Activity 7 <i>Parallel and Perpendicular Lines</i> 7-1 Learning Targets:	<i>Parallel and Perpendicular Lines</i> Identifying parallel and perpendicular lines

<ul style="list-style-type: none"> • Make conjectures about the angles formed by a pair of parallel lines and a transversal. • Prove theorems about these angles <p>7-2 Learning Targets:</p> <ul style="list-style-type: none"> • Develop theorems to show that lines are parallel. • Determine whether lines are parallel. <p>7-3 Learning Targets:</p> <ul style="list-style-type: none"> • Develop theorems to show that lines are perpendicular. • Determine whether lines are perpendicular. 	<p>Two column proof showing segments are perpendicular</p>
<p>Activity 8 <i>Equations of Parallel and Perpendicular Lines</i></p> <p>8-1 Learning Targets:</p> <ul style="list-style-type: none"> • Make conjectures about the slopes of parallel and perpendicular lines. • Use slope to determine whether lines are parallel or perpendicular. <p>8-2 Learning Targets:</p> <ul style="list-style-type: none"> • Write the equation of a line that is parallel to a given line. • Write the equation of a line that is perpendicular to a given line. 	<p><i>Parallel Lines</i></p> <p>Parallel lines 3</p> <p><i>Perpendicular Lines</i></p> <p>Perpendicular lines</p> <p>Perpendicular lines 2</p> <p><i>Writing Equations of Parallel and Perpendicular Lines</i></p> <p>Equations of parallel and perpendicular lines</p>
<p>Unit 2: Transformations, Triangles, and Quadrilaterals</p>	
<p>Activity 9 <i>Translations, Reflections, and Rotations</i></p> <p>9-1 Learning Targets:</p> <ul style="list-style-type: none"> • Perform transformations on and off the coordinate plane. • Identify characteristics of transformations that are rigid motions and characteristics of transformations that are non-rigid motions. • Represent a transformation as a function using coordinates, and show how a figure is transformed by a function. <p>9-2 Learning Targets:</p> <ul style="list-style-type: none"> • Perform translations on and off the coordinate plane. • Predict the effect of a translation on a figure. <p>9-3 Learning Targets:</p> <ul style="list-style-type: none"> • Perform reflections on and off the coordinate plane. 	<p><i>Translations</i></p> <p>Translations of polygons</p> <p>Determining a translation for a shape</p> <p>Determining a translation between points</p> <p><i>Reflection</i></p> <p>Reflecting line across another line example</p> <p>Reflection and mapping points example</p> <p>Determining the line of reflection</p> <p><i>Rotations</i></p> <p>Performing a rotation to match figures</p> <p>Rotating segment about origin example</p>

<ul style="list-style-type: none"> Identify reflectional symmetry in plane figures. <p>9-4 Learning Targets:</p> <ul style="list-style-type: none"> Perform rotations on and off the coordinate plane. Identify and distinguish between reflectional and rotational symmetry. 	
<p>Activity 10 <i>Compositions and Congruence</i></p> <p>10-1 Learning Targets:</p> <ul style="list-style-type: none"> Find the image of a figure under a composition of rigid motions. Find the pre-image of a figure under a composition of rigid motions. <p>10-2 Learning Targets:</p> <ul style="list-style-type: none"> Determine whether given figures are congruent. Specify a sequence of rigid motions that will carry a given figure to a congruent figure. 	<p><i>Transformations and Congruence</i></p> <p>Example of rigid transformation and congruence</p> <p>Another example of rigid transformations for congruence</p> <p>Testing congruence by transformations example</p> <p>Another congruence by transformation example</p>
<p>Activity 11 <i>Congruence Transformations and Triangle Congruence</i></p> <p>11-1 Learning Targets:</p> <ul style="list-style-type: none"> Use the fact that congruent triangles have congruent corresponding parts. Determine unknown angle measures or side lengths in congruent triangles. <p>11-2 Learning Targets:</p> <ul style="list-style-type: none"> Develop criteria for proving triangle congruence. Determine which congruence criteria can be used to show that two triangles are congruent. <p>11-3 Learning Targets:</p> <ul style="list-style-type: none"> Prove that congruence criteria follow from the definition of congruence. Use the congruence criteria in simple proofs. <p>11-4 Learning Targets:</p> <ul style="list-style-type: none"> Apply congruence criteria to figures on the coordinate plane. Prove the AAS criterion and develop the HL criterion. 	<p><i>Congruent Triangles</i></p> <p>Congruent triangles and SSS</p> <p>Other triangle congruence postulates</p> <p>Finding congruent triangles</p> <p>Congruent triangle proof example</p> <p>Congruent triangle example 2</p>
<p>Activity 12 <i>Flowchart Proofs</i></p>	N/A

<p>12-1 Learning Targets:</p> <ul style="list-style-type: none"> Write a simple flowchart proof as a two-column proof. Write a flowchart proof. <p>12-2 Learning Targets:</p> <ul style="list-style-type: none"> Write a proof in three different formats. Write proofs using the fact that corresponding parts of congruent triangles are congruent. 	
<p>Activity 13 <i>Properties of Triangles</i></p> <p>13-1 Learning Targets:</p> <ul style="list-style-type: none"> Prove theorems about angle measures in triangles. Apply theorems about angle measures in triangles. <p>13-2 Learning Targets:</p> <ul style="list-style-type: none"> Develop theorems about isosceles triangles. Prove theorems about isosceles triangles. 	<p>Angles Relationships in Triangles</p> <p>Proof: Sum of measures of angles in a triangle are 180</p> <p>Triangle angle example 1</p> <p>Triangle angle example 2</p> <p>Triangle angle example 3</p> <p>Isosceles Triangles</p> <p>Congruent legs and base angles of isosceles triangles</p> <p>Another isosceles example problem</p> <p>Example involving an isosceles triangle and parallel lines</p>
<p>Activity 14 <i>Concurrent Segments in Triangles</i></p> <p>14-1 Learning Targets:</p> <ul style="list-style-type: none"> Determine the point of concurrency of the altitudes of a triangle. Use the point of concurrency of the altitudes of a triangle to solve problems. <p>14-2 Learning Targets:</p> <ul style="list-style-type: none"> Determine the point of concurrency of the medians of a triangle. Use the point of concurrency of the medians of a triangle to solve problems. <p>14-3 Learning Targets:</p> <ul style="list-style-type: none"> Determine the points of concurrency of the perpendicular bisectors and the angle bisectors of a triangle. Use the points of concurrency of the perpendicular bisectors and the angle bisectors of a triangle to solve problems. 	<p>Altitudes of a Triangle: Orthocenter</p> <p>Proof: Triangle altitudes are concurrent (orthocenter)</p> <p>Common orthocenter and centroid</p> <p>Medians of a Triangle: Centroids</p> <p>Triangle medians and centroids</p> <p>Proving that the centroid is 2-3rds along the median</p> <p>Perpendicular Bisector of Sides of a Triangle: Circumcenter</p> <p>Circumcenter of a triangle</p> <p>Circumcenter of a right triangle</p>
<p>Activity 15 <i>Quadrilaterals and Their Properties</i></p> <p>15-1 Learning Targets:</p> <ul style="list-style-type: none"> Develop properties of kites. Prove the Triangle Midsegment Theorem. 	<p>Kites</p> <p>Quadrilaterals: kites as a geometric shape</p> <p>Parallelograms</p> <p>Proof: Opposite sides of parallelogram congruent</p> <p>Proof: Diagonals of a parallelogram bisect each other</p>

<p>15-2 Learning Targets:</p> <ul style="list-style-type: none"> • Develop properties of trapezoids. • Prove properties of trapezoids. <p>15-3 Learning Targets:</p> <ul style="list-style-type: none"> • Develop properties of parallelograms. • Prove properties of parallelograms. <p>15-4 Learning Targets:</p> <ul style="list-style-type: none"> • Develop properties of rectangles, rhombuses, and squares. • Prove properties of rectangles, rhombuses, and squares. 	<p>Proof: Opposite angles of parallelogram congruent</p> <p>Rhombus</p> <p>Proof: Rhombus diagonals are perpendicular bisectors</p> <p>Proof: Rhombus area half product of diagonal length</p>
<p>Activity 16 <i>More About Quadrilaterals</i></p> <p>16-1 Learning Targets:</p> <ul style="list-style-type: none"> • Develop criteria for showing that a quadrilateral is a parallelogram. • Prove that a quadrilateral is a parallelogram.. <p>16-2 Learning Targets:</p> <ul style="list-style-type: none"> • Develop criteria for showing that a quadrilateral is a rectangle. • Prove that a quadrilateral is a rectangle.. <p>16-3 Learning Targets:</p> <ul style="list-style-type: none"> • Develop criteria for showing that a quadrilateral is a rhombus. • Prove that a quadrilateral is a rhombus.. <p>16-4 Learning Targets:</p> <ul style="list-style-type: none"> • Develop criteria for showing that a quadrilateral is a square. • Prove that a quadrilateral is a square. 	<p>N/A</p>
<p>Unit 3: Similarity and Trigonometry</p>	
<p>Activity 17 <i>Dilations and Similarity Transformations</i></p> <p>17-1 Learning Targets:</p> <ul style="list-style-type: none"> • Perform dilations on and off the coordinate plane. • Describe dilations. <p>17-2 Learning Targets:</p> <ul style="list-style-type: none"> • Understand the meaning of similarity transformations. • Use similarity transformations to determine whether figures are similar. <p>17-3 Learning Targets:</p> <ul style="list-style-type: none"> • Identify properties of similar figures. • Apply properties of similar figures. 	<p>Dilations</p> <p>Thinking about dilations</p> <p>Scaling down a triangle by half</p> <p>Comparing side lengths after dilation</p> <p>Dilating from an arbitrary point example</p> <p>Similarity Transformations</p> <p>Testing similarity through transformations</p>
<p>Similar Triangles</p>	

<p>Activity 18 <i>Similar Triangles</i> 18-1 Learning Targets:</p> <ul style="list-style-type: none"> • Develop criteria for triangle similarity. • Prove the AA similarity criterion. <p>18-2 Learning Targets:</p> <ul style="list-style-type: none"> • Show triangles are similar. • Use similar triangles to solve problems. <p>18-3 Learning Targets:</p> <ul style="list-style-type: none"> • Prove the Triangle Proportionality Theorem and its converse. • Apply the Triangle Proportionality Theorem and its converse. 	<p>Similar triangle basics</p> <p>Similarity postulates</p> <p>Similarity example problems</p>
<p>Activity 19 <i>Geometric Mean</i> 19-1 Learning Targets:</p> <ul style="list-style-type: none"> • Identify the relationships that exist when an altitude is drawn to the hypotenuse of a right triangle. • Prove the Right Triangle Altitude Theorem. <p>19-2 Learning Targets:</p> <ul style="list-style-type: none"> • Identify the relationships that exist when an altitude is drawn to the hypotenuse of a right triangle. • Apply the relationships that exist when an altitude is drawn to the hypotenuse of a right triangle. 	<p>N/A</p>
<p>Activity 20 <i>The Pythagorean Theorem and Its Converse</i> 20-1 Learning Targets:</p> <ul style="list-style-type: none"> • Use similar triangles to prove the Pythagorean Theorem. • Apply the Pythagorean Theorem to solve problems. <p>20-2 Learning Targets:</p> <ul style="list-style-type: none"> • Use the converse of the Pythagorean Theorem to solve problems. • Develop and apply Pythagorean inequalities. 	<p>Pythagorean Theorem</p> <p>Pythagorean theorem</p> <p>Pythagorean theorem 1</p> <p>Pythagorean theorem proof using similarity</p> <p>Another Pythagorean theorem proof</p>
<p>Activity 21 <i>Special Right Triangles</i> 21-1 Learning Targets:</p> <ul style="list-style-type: none"> • Describe the relationships among the side lengths of 45°-45°-90° triangles. 	<p>45°-45°-90° Triangles</p> <p>45-45-90 triangles</p> <p>45-45-90 triangle side ratios</p> <p>30°-60°-90° Triangles</p> <p>30-60-90 triangle example problem</p>

<ul style="list-style-type: none"> Apply relationships in special right triangles to solve problems. <p>21-2 Learning Targets:</p> <ul style="list-style-type: none"> Describe the relationships among the side lengths of 30°-60°-90° triangles. Apply relationships in special right triangles to solve problems. 	30-60-90 triangle side ratios proof
<p>Activity 22</p> <p><i>Basic Trigonometric Relationships</i></p> <p>22-1 Learning Targets:</p> <ul style="list-style-type: none"> Find ratios of side lengths in similar right triangles. Given an acute angle of a right triangle, identify the opposite leg and adjacent leg. <p>22-2 Learning Targets:</p> <ul style="list-style-type: none"> Understand the definitions of sine, cosine, and tangent ratios. Calculate the trigonometric ratios in a right triangle. Describe the relationship between the sine and cosine of complementary angles. <p>22-3 Learning Targets:</p> <ul style="list-style-type: none"> Use trigonometric ratios to find unknown side lengths in right triangles. Solve real-world problems using trigonometric ratios. <p>22-4 Learning Targets:</p> <ul style="list-style-type: none"> Calculate angle measures from trigonometric ratios. Solve right triangles. 	<p>Similarity Right Triangles</p> <p>Similarity to define sine, cosine, and tangent</p> <p>Trigonometric Ratios</p> <p>Example with trig functions and ratios</p> <p>Example relating trig function to side ratios</p> <p>Basic trigonometry</p> <p>Basic trigonometry II</p> <p>Sine and Cosine of Complementary Angles</p> <p>Sine and cosine of complements example</p> <p>Showing relationship between cosine and sine of complements</p> <p>Solving Right Triangles</p> <p>Example: Trig to solve the sides and angles of a right triangle</p> <p>Example: Using soh cah toa</p>
<p>Activity 23</p> <p><i>The Laws of Sines and of Cosines</i></p> <p>23-1 Learning Targets:</p> <ul style="list-style-type: none"> Prove the Law of Sines. Apply the Law of Sines. <p>23-2 Learning Targets:</p> <ul style="list-style-type: none"> Understand when the ambiguous case of the Law of Sines occurs. Solve problems using the Law of Sines. <p>23-3 Learning Targets:</p> <ul style="list-style-type: none"> Prove the Law of Cosines. Solve problems using the Law of Cosines. <p>23-4 Learning Targets:</p> <ul style="list-style-type: none"> Determine when to use the Law of Sines and when to use the Law of Cosines. 	<p>The Law of Sines</p> <p>Law of sines</p> <p>Law of sines for missing angle</p> <p>Proof: Law of sines</p> <p>The Law of Cosines</p> <p>Law of cosines</p> <p>Law of cosines to determine grade</p> <p>Law of cosines for star distance</p> <p>Proof of the law of cosines</p>

<ul style="list-style-type: none"> Solve problems using the Law of Cosines and/or the Law of Sines. 	
Unit 4: Circles, Coordinates, and Constructions	
Activity 24 <i>Tangents and Chords</i> 24-1 Learning Targets: <ul style="list-style-type: none"> Describe relationships among tangents and radii of a circle. Use arcs, chords, and diameters of a circle to solve problems. 24-2 Learning Targets: <ul style="list-style-type: none"> Describe relationships among diameters and chords of a circle. Prove and apply theorems about chords of a circle. 24-3 Learning Targets: <ul style="list-style-type: none"> Prove that tangent segments to a circle from a point outside the circle are congruent. Use tangent segments to solve problems. 	<i>Tangents and Chords in Circles</i> Language and notation of the circle Circles: radius, diameter, circumference and Pi Example with tangent and radius Perpendicular radius bisects chord
Activity 25 <i>Arcs and Angles</i> 25-1 Learning Targets: <ul style="list-style-type: none"> Understand how to measure an arc of a circle. Use relationships among arcs and central angles to solve problems. 25-2 Learning Targets: <ul style="list-style-type: none"> Describe the relationship among inscribed angles, central angles, and arcs. Use inscribed angles to solve problems. 25-3 Learning Targets: <ul style="list-style-type: none"> Describe a relationship among the angles formed by intersecting chords in a circle. Use angles formed by chords to solve problems. 25-4 Learning Targets: <ul style="list-style-type: none"> Describe relationships among the angles formed by tangents to a circle or secants to a circle. Use angles formed by tangents or secants to solve problems. 	<i>Angles in Circles</i> Inscribed and central angles Measure of circumscribed angle
Activity 26 <i>Coordinate Proofs</i> 26-1 Learning Targets: <ul style="list-style-type: none"> Write coordinate proofs. 	N/A

<ul style="list-style-type: none"> • Prove the midpoint formula. <p>26-2 Learning Targets:</p> <ul style="list-style-type: none"> • Write coordinate proofs. • Prove the slope criteria for parallel and perpendicular lines. <p>26-3 Learning Targets:</p> <ul style="list-style-type: none"> • Write coordinate proofs. • Prove that the medians of a triangle are concurrent. <p>25-4 Learning Targets:</p> <ul style="list-style-type: none"> • Find the coordinates of the point that is a given fractional distance along a line segment. • Find the coordinates of the point that partitions a line segment in a given ratio. 	
<p>Activity 27 <i>Equation of a Circle</i></p> <p>27-1 Learning Targets:</p> <ul style="list-style-type: none"> • Derive the general equation of a circle given the center and radius. • Write the equation of a circle given three points on the circle. <p>27-2 Learning Targets:</p> <ul style="list-style-type: none"> • Find the center and radius of a circle given its equation. • Complete the square to write the equation of a circle in the form $(x - h)^2 + (y - k)^2 = r^2$. 	<p>Writing the Equation of a Circle</p> <p>Equation for a circle using the Pythagorean theorem</p> <p>Identifying Key Components of a Circle</p> <p>Radius and center for a circle equation in standard form</p> <p>Recognizing points on a circle</p> <p>Pythagorean theorem and radii of circles</p> <p>Completing the square to write equation in standard form of a circle</p>
<p>Activity 28 <i>Equations of Parabolas</i></p> <p>28-1 Learning Targets:</p> <ul style="list-style-type: none"> • Derive the general equation of a parabola given the focus and directrix. • Write the equation of a parabola given a specific focus and directrix. <p>28-2 Learning Targets:</p> <ul style="list-style-type: none"> • Derive the general equation of a parabola given the vertex and directrix. • Write the equation of a parabola given a specific vertex and directrix. 	<p>Writing the Equation of a Parabola</p> <p>Focus and directrix introduction</p> <p>Using the focus and directrix to find the equation of a parabola</p> <p>Equation for parabola from focus and directrix</p> <p>Finding focus and directrix from vertex</p>
<p>Activity 29 <i>Constructions</i></p> <p>29-1 Learning Targets:</p> <ul style="list-style-type: none"> • Use constructions to copy a segment or an angle. 	<p>Constructions with Segments and Angles</p> <p>Constructing an angle bisector using a compass and straightedge</p> <p>Constructions with Parallel and Perpendicular Lines</p> <p>Constructing a perpendicular bisector using a compass and straightedge</p>

<ul style="list-style-type: none"> Use constructions to bisect a segment or an angle. <p>29-2 Learning Targets:</p> <ul style="list-style-type: none"> Construct parallel and perpendicular lines. Use constructions to make conjectures about geometric relationships. <p>29-3 Learning Targets:</p> <ul style="list-style-type: none"> Construct inscribed and circumscribed circles. Construct tangents to a circle. 	<p>Constructing a perpendicular line using a compass and straightedge</p> <p>Constructions with Circles</p> <p>Constructing square inscribed in circle</p> <p>Constructing equilateral triangle inscribed in circle</p> <p>Constructing regular hexagon inscribed in circle</p> <p>Constructing circle inscribing triangle</p> <p>Constructing circumscribing circle</p>
Unit 5: Extending Two Dimensions to Three Dimensions	
<p>Activity 30 <i>Deriving Area Formulas</i></p> <p>30-1 Learning Targets:</p> <ul style="list-style-type: none"> Solve problems using the areas of rectangles, parallelograms, and composite figures. Use coordinates to compute perimeters and areas of figures. <p>30-2 Learning Targets:</p> <ul style="list-style-type: none"> Solve problems using the areas of triangles and composite figures. Use coordinates to compute perimeters and areas of figures. <p>30-3 Learning Targets:</p> <ul style="list-style-type: none"> Solve problems using the areas of rhombuses, trapezoids, and composite figures. Solve problems involving density. 	<p>Areas of Quadrilaterals</p> <p>Area of a parallelogram</p> <p>Perimeter of a parallelogram</p> <p>Area of a trapezoid</p> <p>Areas of Triangles</p> <p>Triangle area proofs</p> <p>Area of diagonal generated triangles of rectangle are equal</p> <p>Area of an equilateral triangle</p> <p>Area of shaded region made from equilateral triangles</p> <p>Composite Figures</p> <p>Perimeter and area of a non-standard polygon</p>
<p>Activity 31 <i>Regular Polygons</i></p> <p>31-1 Learning Targets:</p> <ul style="list-style-type: none"> Develop a formula for the sum of the measures of the interior angles of a polygon. Determine the sum of the measures of the interior angles of a polygon. <p>31-2 Learning Targets:</p> <ul style="list-style-type: none"> Develop a formula for the measure of each interior angle of a regular polygon. Determine the measure of the exterior angles of a polygon. <p>31-3 Learning Targets:</p> <ul style="list-style-type: none"> Develop a formula for the area of a regular polygon. Solve problems using the perimeter and area of regular polygons. 	<p>Sum of the Measures of the Interior Angles of a Polygon</p> <p>Sum of interior angles of a polygon</p> <p>Sum of the exterior angles of convex polygon</p> <p>Area of Regular Polygons</p> <p>Area of a regular hexagon</p> <p>Area of a Circle</p>

<p>Activity 32 <i>Length and Area of Circles</i></p> <p>32-1 Learning Targets:</p> <ul style="list-style-type: none"> Develop and apply a formula for the circumference of a circle. Develop and apply a formula for the area of a circle. <p>32-2 Learning Targets:</p> <ul style="list-style-type: none"> Develop and apply a formula for the area of a sector. Develop and apply a formula for arc length. <p>32-3 Learning Targets:</p> <ul style="list-style-type: none"> Prove that all circles are similar. Describe and apply radian measure. 	<p>Area of a circle</p> <hr/> <p><i>Area of a Sector</i></p> <p>Area of a sector given a central angle</p> <hr/> <p><i>Arc Length</i></p> <p>Length of an arc that subtends a central angle</p>
<p>Activity 33 <i>Three-Dimensional Figures</i></p> <p>33-1 Learning Targets:</p> <ul style="list-style-type: none"> Describe properties and cross sections of prisms and pyramids. Describe the relationship among the faces, edges, and vertices of a polyhedron. <p>33-2 Learning Targets:</p> <ul style="list-style-type: none"> Describe properties and cross sections of a cylinder. Describe properties and cross sections of a cone. <p>33-3 Learning Targets:</p> <ul style="list-style-type: none"> Describe properties and cross sections of a sphere. Identify three-dimensional objects generated by rotations of two-dimensional objects. 	<p><i>Cross Sections</i></p> <p>Slice a rectangular pyramid</p> <p>Rotating 2D shapes in 3D</p>
<p>Activity 34 <i>Prisms and Cylinders</i></p> <p>34-1 Learning Targets:</p> <ul style="list-style-type: none"> Solve problems by finding the lateral area or total surface area of a prism. Solve problems by finding the lateral area or total surface area of a cylinder. <p>34-2 Learning Targets:</p> <ul style="list-style-type: none"> Solve problems by finding the volume of a prism. Solve problems by finding the volume of a cylinder. 	<p><i>Surface Area</i></p> <p>Finding surface area: nets of polyhedra</p> <p>Cylinder volume and surface area</p> <hr/> <p><i>Volume</i></p> <p>Cylinder volume and surface area</p> <p>Find the volume of a triangular prism and cube</p>

<p>Activity 35 <i>Pyramids and Cones</i> 35-1 Learning Targets:</p> <ul style="list-style-type: none"> Solve problems by finding the lateral area or total surface area of a pyramid. Solve problems by finding the lateral area or total surface area of a cone. <p>35-2 Learning Targets:</p> <ul style="list-style-type: none"> Solve problems by finding the volume of a pyramid. Solve problems by finding the volume of a cone. <p>35-3 Learning Targets:</p> <ul style="list-style-type: none"> Apply concepts of density in modeling situations. Apply surface area and volume to solve design problems. 	<p>Volume: Cones</p> <p>Volume of a cone</p>
<p>Activity 36 <i>Spheres</i> 36-1 Learning Targets:</p> <ul style="list-style-type: none"> Solve problems using properties of spheres. Solve problems by finding the surface area of a sphere. <p>36-2 Learning Targets:</p> <ul style="list-style-type: none"> Develop the formula for the volume of a sphere. Solve problems by finding the volume of a sphere. <p>36-3 Learning Targets:</p> <ul style="list-style-type: none"> Compare parallelism in Euclidean and spherical geometries. Compare triangles in Euclidean and spherical geometries. 	<p>Volume: Sphere</p> <p>Volume of a sphere</p>
<p>Activity 37 <i>Changing Dimensions</i> 37-1 Learning Targets:</p> <ul style="list-style-type: none"> Describe how changes in the linear dimensions of a shape affect its perimeter, area, surface area, or volume. Use geometric shapes and their measures to model real-world objects. <p>37-2 Learning Targets:</p> <ul style="list-style-type: none"> Describe how changes in the linear dimensions of a shape affect its perimeter, area, surface area, or volume. 	<p>N/A</p>

<ul style="list-style-type: none"> Use geometric shapes and their measures to model real-world objects. 	
Unit 6: Probability	
Activity 38 <i>Sample Spaces</i> 38-1 Learning Targets: <ul style="list-style-type: none"> Understand probability in real-world situations. Represent sample spaces as lists. Calculate the probability of a single event. 38-2 Learning Targets: <ul style="list-style-type: none"> Understand probability in real-world situations. Describe events as subsets of a sample space using the characteristics of the outcomes. Represent sample spaces as tables of outcomes and as two-way frequency tables. Calculate the probability of events involving “and” and “or.” 	Calculating Probability
	Probability explained Determining probability Finding probability example Finding probability example 2 Finding probability example 3
	Frequency Tables
	Filling out frequency table for independent events
Activity 39 <i>Venn Diagrams and Probability Notation</i> 39-1 Learning Targets: <ul style="list-style-type: none"> Use Venn diagrams to represent events. Translate Venn diagrams of counts into Venn diagrams of probabilities. 39-2 Learning Targets: <ul style="list-style-type: none"> Use Venn diagrams to represent “and,” “or,” and “not.” Use set notation to describe events. 	Using Venn Diagrams with Probability
	Probability with playing cards and Venn diagrams
Activity 40 <i>Addition Rule and Mutually Exclusive Events</i> 40-1 Learning Targets: <ul style="list-style-type: none"> Learn the Addition Rule and understand why it applies. Use the Addition Rule to calculate probabilities. 40-2 Learning Targets: <ul style="list-style-type: none"> Learn the meaning of “mutually exclusive” events. Use Venn diagrams to represent mutually exclusive events. Use the Addition Rule to calculate the probability of mutually exclusive events. 	Applying the Addition Rule for Probability
	Addition rule for probability
	Dependent Events

<p>Activity 41 <i>Dependent Events</i> 41-1 Learning Targets:</p> <ul style="list-style-type: none"> Understand the conditional probability of A given B. Determine conditional probabilities using two-way frequency tables and Venn diagrams. Interpret the answer in terms of the model/ <p>41-2 Learning Targets:</p> <ul style="list-style-type: none"> Develop the conditional probability formula. Use conditional probability for everyday situations. <p>41-3 Learning Targets:</p> <ul style="list-style-type: none"> Use tree diagrams to determine conditional probabilities. Apply the general Multiplication Rule. 	<p>Dependent probability introduction Dependent probability example Dependent probability example 2 Analyzing dependent probability</p> <hr/> <p><i>Conditional Probability</i></p> <p>Calculating conditional probability Conditional probability warmup Count outcomes using tree diagram Analyzing event probability for independence</p>
<p>Activity 42 <i>Independent Events</i> 42-1 Learning Targets:</p> <ul style="list-style-type: none"> Understand when two events are independent. Use the Multiplication Rule to determine if two events are independent. Understand independent and dependent events in real-world situations. <p>42-2 Learning Targets:</p> <ul style="list-style-type: none"> Discover ways probability is used in real-life situations. Determine the probability of an event involving area. Use a linear model to determine probability involving elapsed time <p>42-3 Learning Targets:</p> <ul style="list-style-type: none"> Use permutations and combinations to compute probabilities of compound events and solve problems. 	<p><i>Independent and Dependent Probabilities</i> Independent or dependent probability event?</p> <hr/> <p><i>Independent Events</i></p> <p>Compound probability of independent events Test taking probability and independent events Die rolling probability with independent events</p>