

**2014c Geometry**  
**Khan Academy Video Correlations**  
**By SpringBoard Activity**

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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