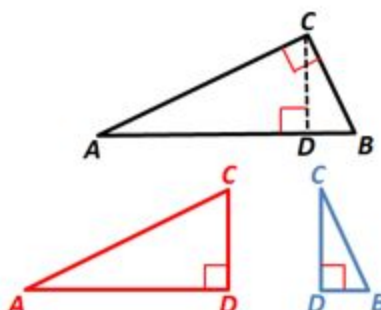


Richmond Public Schools
Curriculum Framework
Geometry

Strand: Triangles	
G.7 The student, given information in the form of a figure or statement, will prove two triangles are similar.	
Suggested Pacing	Cognitive Demand
Second Nine Weeks	G.7
4 instructional days (including assessment)	Analyze
Spiraling Down Standards	Spiraling Up Standards
7.5 The student will solve problems, including practical problems, involving the relationship between corresponding sides and corresponding angles of similar quadrilaterals and triangles.	N/A
Essential Questions	Common Misconceptions
<p>When is a proportion necessary to solve a problem? <i>Use proportions to find the measure of a missing side when given information about corresponding sides.</i></p> <p>What is the difference between congruence and similarity? <i>Congruent figures have corresponding parts that have equal measures while similar figures have corresponding angles congruent but corresponding sides with proportional measures.</i></p>	<ul style="list-style-type: none"> • Students interchange the words proportional and similar. Remind them that proportional describes a relationship between numbers, and similar describes a relationship between figures, like equal and congruent. • Sometimes the corresponding sides can be obvious, but when the triangles look almost congruent or in different positions, this can confuse students. Remind students to pay attention to the similarity statement and that the smallest and longest sides correspond to the smallest and longest sides, respectively. • Students sometimes carelessly switch which polygon's measurements are in the numerator and denominator. Tell students to decide from the beginning which polygon's

Richmond Public Schools
Curriculum Framework
Geometry

	<p>measurements will be in the numerator to help them stay consistent throughout the problem.</p>
<p style="text-align: center;">Understanding the Standard</p>	<p style="text-align: center;">Essential Knowledge and Skills</p>
<ul style="list-style-type: none"> • Deductive or inductive reasoning is used in mathematical proofs. In this course, deductive reasoning and logic are used in direct proofs. Direct proofs are presented in different formats (typically two-column or paragraph) and employ definitions, postulates, theorems, and algebraic justifications including coordinate methods. • Similarity has practical applications in a variety of areas, including art, architecture, and the sciences. • Similarity does not depend on the position of the triangles. • Similar triangles are created using dilations. • Congruent figures are also similar, but similar figures are not necessarily congruent. • Corresponding sides of similar triangles are proportional. • Corresponding angles of similar triangles are congruent. • The altitude in a right triangle creates three similar right triangles. <div style="text-align: center;">  <p style="margin-left: 20px;"> $\triangle ABC \sim \triangle CBD$ $\triangle ABC \sim \triangle ACD$ $\triangle CBD \sim \triangle ACD$ </p> </div> <ul style="list-style-type: none"> • Two triangles can be proven similar using the following criterion: 	<p>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to</p> <ul style="list-style-type: none"> • Prove two triangles similar given relationships among angles and sides of triangles expressed numerically or algebraically. • Prove two triangles similar given representations in the coordinate plane and using coordinate methods (distance formula and slope formula). • Use direct proofs to prove triangles similar.

Richmond Public Schools
Curriculum Framework
Geometry

Side-Angle-Side (SAS) Similarity; Side-Side-Side (SSS) Similarity; and Angle-Angle (AA) Similarity			
Vocabulary			Instructional Activities Organized by Learning Objective
AA Similarity	SSS Similarity	SAS Similarity	Text <ul style="list-style-type: none"> ● Geometry, ©2012, Price, et al, McGraw-Hill School Education Group page(s) 474-502 ● Coach book, Virginia edition, Lesson 16 page(s) 131-137 ● Mulligan Math in Minutes Virginia Department of Education <ul style="list-style-type: none"> ● Similar Triangles Geogebra <ul style="list-style-type: none"> ● AA Similarity DIsccovery Activity ● SAS Similarity Discovery Activity ● SSS Similarity Activity Youtube Videos <ul style="list-style-type: none"> ● The difference between similar and congruent figures (Mashup Math) ● Similar Figures (Shmoop) ● Properties of Similar Triangles (MATHguide) Quizizz Practice <ul style="list-style-type: none"> ● G.7 (Algebra Practice) ● G.7 Practice ● G.7 Proofs Practice ● G.7 Coordinate Proof Practice Notes and Homework <ul style="list-style-type: none"> ● G.7 Notes and Keys ● G.7 Homework and Keys Instructional Activities 2-column proof practice
Scale Factor	Proportion	Ratio	
Similar Figures			
Assessment			
1. Powerschool Assessment G.7 (E:1R XR8H) 2. Mulligan Checkpoint G.7 Checkpoint G.7 3. Formative Assessments (paper) G.7 FA 4. Cumulative Assessment #6 (SOLs G.1, G.2, G.3, G.5, G.6, G.7,G.12) Cumulative Assessment #6			

Richmond Public Schools
Curriculum Framework
Geometry

Cross-Curricular Connections	Tiered Interventions
<p>Real World: Similar triangles can be used for many different things. In architecture similar triangles are used to represent doors and how far they swing open. Also when you use shadows that make triangles to find the height of an object. You can use that find the height of actual objects and they can also be used to stabilize a bridge. Similar triangles can be used to stabilize a bridge. They are used in aerial photography to see the distance from the sky to the ground. They are used in construction to measure out the room and scale size. They are used in light beams to see the distance from light to the target. The Wright Brothers used similar triangles to prepare their landing.</p> <p>Students will use applications of similar triangles to measure the heights of objects that are difficult to measure directly. If you place a mirror on the ground between you and the object you are measuring and then position yourself so that you can see the top of the object in the mirror, you can use similar triangles to estimate the height of the object. Similar Triangles Project</p>	<p>Tier 3: Recall and Reproduction Vocabulary Have students study flashcards, create their own flashcards, play a matching game or test themselves on Quizlet. Similar Triangles Flashcards on Quizlet</p> <p>Students might benefit by using a graphic organizer or foldable with the different methods of proving triangles are similar.</p> <p>Tier 2: Basic Skills and Concepts Practice and Drill Similar Triangles Drills Similar Triangles SOL Practice problems Create task cards in which students must sort triangles as similar or not similar, justifying their answers with the correct Similarity postulate.</p> <p>Tier 1: Strategic Thinking and Reasoning Application Applications of Similar Triangles worksheet</p>