

Richmond Public Schools
Curriculum Framework
Grade 8

Strand: Measurement and Geometry	
8.5 The student will use the relationships among pairs of angles that are vertical angles, adjacent angles, supplementary angles, and complementary angles to determine the measure of unknown angles.	
Suggested Pacing	
Third Nine Weeks – 5 Instructional Days (including common assessment)	
Related Standards	
<p>Spiral Down 7.6 The student will b) determine unknown side lengths or angle measures of quadrilaterals</p> <p>6.9 The student will determine congruence of segments, angles, and polygons.</p>	<p>Spiral Up G.2 The student will use the relationships between angles formed by two lines intersected by a transversal to b) solve problems, including practical problems, involving angles formed when parallel lines are intersected by a transversal.</p>
Essential Questions	Common Misconceptions
<p>How are vertical, complementary, and supplementary angles related? <i>Adjacent angles are formed by two non-overlapping angles that share a common side and common vertex. Vertical angles will always be nonadjacent angles. Supplementary and complementary angles may or may not be adjacent.</i></p>	<ul style="list-style-type: none"> ● Students need to practice describing and identify angles. ● Students need practice identifying whether an angle is complementary or supplementary when angles are not adjacent.
Understanding the Standard	Essential Knowledge and Skills
<ul style="list-style-type: none"> ● Vertical angles are a pair of nonadjacent angles formed by two intersecting lines. Vertical angles are congruent and share a common vertex. 	<p>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to</p>

Richmond Public Schools

Curriculum Framework

Grade 8

<ul style="list-style-type: none"> • Complementary angles are any two angles such that the sum of their measures is 90°. • Supplementary angles are any two angles such that the sum of their measures is 180°. • Complementary and supplementary angles may or may not be adjacent. • Adjacent angles are any two non-overlapping angles that share a common ray and a common vertex. 	<ul style="list-style-type: none"> • Identify and describe the relationship between pairs of angles that are vertical, adjacent, supplementary, and complementary. • Use the relationships among supplementary, complementary, vertical, and adjacent angles to solve problems, including practical problems, involving the measure of unknown angles.
Vocabulary	Instructional Activities Organized by Learning Objective
Vertical Angles Adjacent Adjacent Angles Non-adjacent Angles Intersecting Lines Congruent Vertex Complementary Angles Supplementary Angles Non-overlapping Angles Ray Angles Degree Right Angle Straight Angle	<p>Virginia Department of Education What Are Your Angles? – Lesson Plan(measuring of angles only used to build conceptual understanding in this lesson).</p> <p>Textbook <i>Virginia Pre-Algebra</i>, ©2012, Glencoe/McGraw-Hill</p> <ul style="list-style-type: none"> • Angle and Line Relationships, page(s) 619 – 625 (in part) <p>Notes Angle Relationships Foldable - Angle Relationships(only front)</p> <p>Resources</p> <ul style="list-style-type: none"> • Print <i>Virginia Coach</i>, NEW SOL Edition, Grade 8, Mathematics Lesson 7 – page 50 (Vertical, Supplementary, and Complementary Angles) • Technology-based
Assessment	
RPS PowerSchool Unit Test – RPS 8.5 Common Assessment Test ID#:	

Richmond Public Schools

Curriculum Framework

Grade 8

<p>Formative Assessments White Board Checks Kahoot.it Plickers Exit Tickets Graphic Organizers Venn Diagrams</p>	<ul style="list-style-type: none">○ <i>ExploreLearning.com (Gizmo)</i> – Investigating Angle Theorems – Interactive Skill Review *Sign-in required○ <i>BrainPop.com (BrainPop)</i> – Angles – Interactive Skills Practice○ <i>VirtualNerd.com</i> – What are Complementary Angles?, What are Supplementary Angles, and What are Vertical Angles? – Instructional Video <p>Station Activities</p> <ul style="list-style-type: none">● Task Cards - Have students complete problems in small groups Think-Pair-Share.● Foldable - Have students create a foldable, describing characteristics, providing examples, and relationships.● Angle Sort - Have students sort cards with angles into their appropriate category.● Angle Measures Task Cards(exclude questions 15 and 16)
Cross-Curricular Connections	Differentiation
<p>English Have students write a journal prompt describing how angles are connected.</p> <p>History Create different routes on a world map that create angles. Name the angle measures or find missing angles.</p>	<ul style="list-style-type: none">● Have students model with their arms and peers; each type of angle.● Have students use different color markers to help identify angle types.● Have students write a capital c “C”, turn the “C” into a 9 and add a zero behind. Have students write a capital s “S”, turn the “S” into an 8 and add a 1 in front and a 0 behind. <p style="text-align: center;">90 180</p>