

**Unit Title: “Problem Solving and Geometry Fundamental”**

**Course: Geometry**

**Subject Area: Mathematics**

**Time Frame: 11 days**

**Standards**

<b>DCPS Geometry Standards</b>	<b>Sunshine State Standards Benchmarks</b>	<b>NCEE New Standards</b>
<p>The student will:</p> <p>1.1 Make conjectures relating to vertical angles, complementary angles, supplementary angles, and angles formed by perpendicular lines.</p> <p>1.2 Make conjectures related to angles and parallel lines, including alternate interior/exterior angles, and same-side interior/exterior angles.</p> <p>1.3 Solve problems related to angles and parallel lines.</p> <p>1.5 Determine the slope of lines parallel and perpendicular to given lines.</p> <p>2.1 Solve problems involving interior and exterior angles of triangles.</p>	<p>MA.C.1.4.1 The student will use properties and relationships of geometric shapes to construct formal and informal proofs.</p> <p>MA.C.2.4.1 The student will understand geometric concepts such as perpendicularity, parallelism, tangency, congruency, similarity, reflections, symmetry, and transformations including flips, slides, turns, enlargements, rotations, and fractals.</p> <p>MA.C.3.4.2 The student will use a rectangular coordinate system (graph) applies and algebraically verifies properties of two- and three-dimensional figures, including distance, midpoint, slope, parallelism, and perpendicularity.</p>	<p>The student:</p> <p>M2a Models situations geometrically to formulate and solve problems.</p> <p>M2b Works with two- and three-dimensional figures and their properties, including polygons and circles, cubes and pyramids, and cylinders, cones, and spheres.</p> <p>M2c Use congruence and similarity in describing relationships between figures.</p> <p>M2f Use the Pythagorean Theorem in many types of situations, and works through more than one proof of this theorem.</p> <p>M2h Analyzes figures in terms of their symmetries using, for example, concepts of reflection, rotation, and translation.</p> <p>M2p Analyzes geometric figures and proves simple things about them using deductive methods.</p> <p>M6d Uses basic geometric terminology accurately, and deduces information about basic geometric figures in solving</p>

<b>DCPS Geometry Standards</b>	<b>Sunshine State Standards Benchmarks</b>	<b>NCEE New Standards</b>
		problems.

### Desired Results

Enduring Understanding	Essential Questions	Knowledge and Skills
<p>Students will understand:</p> <ul style="list-style-type: none"> <li>Many generalizations in mathematics are developed through the use of finding patterns.</li> <li>Labeling is essential to communicating understanding.</li> </ul>	<ul style="list-style-type: none"> <li>Why is looking for patterns systematically helpful in making generalizations?</li> <li>What kind of problems can be solved by knowing properties related to angles and angle relations?</li> <li>How can angle relations be expressed algebraically?</li> <li>How can algebraic equations be used to solve problems related to angles and parallel lines?</li> </ul>	<p>Students will know</p> <ul style="list-style-type: none"> <li>Key terms (e.g., alternate interior angles, corresponding angles, vertical angles, exterior angles).</li> </ul> <p>Students will be able to</p> <ul style="list-style-type: none"> <li>Make conjectures relating to vertical angles, complementary angles, supplementary angles, and angles formed by perpendicular lines.</li> <li>Make conjectures related to angles and parallel lines, including alternate interior/exterior angles, and same-side interior/exterior angles.</li> <li>Solve problems related to angles and parallel lines.</li> <li>Determine the slope of lines parallel and perpendicular to given lines.</li> <li>Solve problems involving interior and exterior angles of triangles.</li> </ul>

### Acceptable Evidence

Performance Tasks	Quizzes, Test, and Work Samples	Observations and Dialogues
<ul style="list-style-type: none"> <li><b>Patterns</b> Students investigate numerical and geometric patterns, record findings systematically, and make generalizations.</li> <li><b>Rays and Angles</b> Students are introduced to the vocabulary, terminology, and</li> </ul>	<p>Check-Up 1 Quiz A Check-Up 2 Quiz B Unit Test</p>	<p>Teacher observations of students during work on performance tasks. Accountable talk during work on performance tasks.</p>

Performance Tasks	Quizzes, Test, and Work Samples	Observations and Dialogues
<p>naming conventions used in geometry.</p> <ul style="list-style-type: none"> <li>• <b>Parallel Lines and Angle Relationships</b> Students investigate relations of angles and parallel lines and make conjectures pertaining to alternate interior/exterior angles, corresponding angles, and same-side interior/exterior angles. Students use the conjectures to solve problems relating to angles and parallel lines.</li> <li>• <b>Adjacent and Vertical Angles</b> Students investigate relations of adjacent angles and vertical angles and solve problems pertaining to adjacent angles and vertical angles.</li> <li>• <b>Exterior Angles</b> Student use properties of supplementary angles and sum of the measures of interior angles of a triangle to make conjecture relating the measure of the exterior angle to the sum of the remote interior angles.</li> </ul>	<p>Unit Project – Numerical and Geometric Representation of patterns.</p>	