

**Unit Title: “Congruence and Triangle”**

**Course: Geometry**

**Subject Area: Mathematics**

**Time Frame: 15 days**

**Standards**

<b>DCPS Geometry Standards</b>	<b>Sunshine State Standards</b>	<b>NCEE New Standards</b>
<p>The student will:</p> <p>1.5 Determine slope of lines parallel and perpendicular to given lines.</p> <p>2.4 Use inequalities in one triangle and inequalities between two triangles to solve problems.</p> <p>3.1 State the postulate or theorem (SSS, SAS, ASA, AAS, HL) which justifies the congruence of two triangles.</p> <p>3.2 Write paragraph proofs to demonstrate the congruence of triangles and its corresponding parts.</p> <p>5.1 Determine the image of given figures under specified translations, reflections, rotations, and dilations.</p> <p>5.2 Describe the type of symmetry for given designs.</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, cylinders, cones, and spheres.</p> <p>M2c Uses congruence and similarity in describing relationships between figures.</p> <p>M2f Uses 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>M2o Represent geometric curves and graphs of functions in standard coordinate systems.</p> <p>M2p Analyzes geometric figures and proves simple things about them using deductive methods.</p>

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		M6d Uses basic geometric terminology accurately, and deduces information about basic geometric figures in solving problems.

## Desired Results

Enduring Understanding	Essential Questions	Knowledge and Skills
<p>Students will understand:</p> <ul style="list-style-type: none"> <li>If we want to prove that two triangles are congruent, we need to set up a matching scheme between the vertices of the first triangle and those of the second and observe that the matching scheme “works.”</li> <li>The idea of correspondence is crucial both in establishing triangle congruence and in using them.</li> </ul>	<ul style="list-style-type: none"> <li>What strategies are needed to set up a matching scheme in establishing the corresponding parts for two triangles?</li> <li>How can transformations be used to help us visualize the corresponding parts for two triangles?</li> <li>What roles do the Properties of Equality (symmetric, transitive, substitution) play in establishing triangle congruence?</li> </ul>	<p>Students will know</p> <ul style="list-style-type: none"> <li>Key terms (e.g., line of symmetry, transformation, reflection, translation, rotation, Triangle Inequality).</li> </ul> <p>Students will be able to</p> <ul style="list-style-type: none"> <li>Determine slope of lines parallel and perpendicular to given lines.</li> <li>Use inequalities in one triangle and inequalities between two triangles to solve problems.</li> <li>State the postulate or theorem (SSS, SAS, ASA, ASA, AAS, HL) which justifies the congruence of two triangles.</li> <li>Write paragraph proofs to demonstrate the congruence of triangles and its corresponding parts.</li> <li>Determine the image of given figures under specified translations, reflections, rotations, and dilations.</li> <li>Describe the type of symmetry for given designs.</li> </ul>

## Acceptable Evidence

Performance Tasks	Quizzes, Test, and Work Samples	Observations and Dialogues
<ul style="list-style-type: none"> <li><b>Transformations</b> Students use tracing paper and plastic shapes to complete hands-on investigations relating to the properties of geometric</li> </ul>	Check-Up 1 Quiz A Check-Up 2	Teacher observations of students during work on performance tasks. Accountable talk during work on

<b>Performance Tasks</b>	<b>Quizzes, Test, and Work Samples</b>	<b>Observations and Dialogues</b>
<p>figures upon reflections, translations, and rotations.</p> <ul style="list-style-type: none"> <li>• <b>Congruent Triangles</b> Students use resource pages to investigate conditions for establishing congruence between two triangles.</li> <li>• <b>Triangle Inequality</b> Students use dry linguini as manipulatives to establish the maximum and minimum limits for the length of the third side of any triangle.</li> </ul>	<p>Quiz B Unit Test Unit Project – Creating Escher-Like Drawings</p>	<p>performance tasks.</p>