

**Unit Title: “Urban Sprawl: Polygons, Area, and Proof”**

**Course: Geometry**

**Subject Area: Mathematics**

**Time Frame: 15 days**

**Standards**

<b>DCPS Geometry Standards</b>	<b>Sunshine state Standards Benchmarks</b>	<b>NCEE New Standards</b>
<p>The student will:</p> <p>4.1 Solve problems related to the measures of the interior and exterior angles of polygons.</p> <p>4.2 Solve problems related to properties of quadrilaterals.</p> <p>9.1 Solve problems related to areas of polygons, including areas of triangles, squares, rectangles, parallelograms, and trapezoids.</p>	<p>MA.B.1.4.1 The student will use concrete and graphic models to derive formulas for finding perimeter, area, surface area, circumference, and volume of two- and three-dimensional spheres, including rectangular solids, cylinders, cones, and pyramids.</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>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 Uses congruence and similarity in describing relationships between figures.</p> <p>M2e Knows, uses, and derives formulas for perimeter, circumference, area, surface area, and volume of many types of figures.</p>

## Desired Results

Enduring Understanding	Essential Questions	Knowledge and Skills
<p>Students will understand:</p> <ul style="list-style-type: none"> <li>Combinations of side lengths influence the shape of a polygon.</li> <li>The combined lengths of two sides of any triangle will always exceed the length of the third side.</li> </ul>	<ul style="list-style-type: none"> <li>Why do things have the shapes that they do?</li> <li>How do the lengths of sides in a polygon determine its possible shapes and uses?</li> <li>How do measures of angles in a polygon determine its possible shapes and uses?</li> </ul>	<p>Students will know</p> <ul style="list-style-type: none"> <li>Key terms (e.g., diagonal, side, interior angle, exterior angle, regular, convex, rhombus).</li> </ul> <p>Students will be able to</p> <ul style="list-style-type: none"> <li>Solve problems related to the measures of the interior and exterior angles of polygons.</li> <li>Solve problems related to properties of quadrilaterals.</li> <li>Solve problems related to areas of polygons, including areas of triangles, squares, rectangles, parallelograms, and trapezoids.</li> </ul>

## Acceptable Evidence

Performance Tasks	Quizzes, Test, and Work Samples	Observations and Dialogues
<ul style="list-style-type: none"> <li><b>Interior Angles of Polygons</b> Students complete hands-on investigations of patterns related to the measures of the interior and exterior angles of polygons.</li> <li><b>Area by Dissection</b> Students develop flexibility in “reading” shapes by dissecting polygons into triangles or rectangles.</li> <li><b>Properties of Quadrilaterals</b> This investigation focuses attention on some basic properties of familiar quadrilateral.</li> </ul>	<p>Check-Up 1 Quiz A Check-Up 2 Quiz B Unit Test Unit Project – Tessellations</p>	<p>Teacher observations of students during work on performance tasks. Accountable talk during work on performance tasks.</p>

