

Unit Title: “The One-Eyed Jack Mine: Circles and Solids”

Course: Geometry

Subject Area: Mathematics

Time Frame: 15 days

Standards

DCPS Geometry Standards	Sunshine State Standards Benchmarks	NCEE New Standards
<p>The student:</p> <p>8.1 Draw and label figures to illustrate definitions for chords, diameters, secants, tangents, inscribed angles, and central angles.</p> <p>8.2 Solve problems related to properties for tangents of circles.</p> <p>8.3 Solve problems related to properties of chords.</p> <p>8.4 Solve problems related to properties of arcs and angles.</p> <p>9.2 Solve problems related to area of circles.</p> <p>9.4 Find volume of prisms, pyramids, cylinders, cones, and spheres.</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.A.2.4.1 The student will understand and use the basic concepts of limits and infinity.</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 shapes, including rectangular solids, cylinders, cones, and pyramids.</p> <p>MA.B.1.4.2 The student will use concrete and graphic models to derive formulas for finding rate, distance, time, angle measures, and arc</p>	<p>The student:</p> <p>M2a Model situations geometrically to formulae 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>M2f Uses the Pythagorean Theorem in many types of situations, and works through more than one proof of this theorem.</p> <p>M2p Analyzes geometric figures and proves simple things about them using deductive methods.</p> <p>M2k Works with geometric measure of length, area, volume, and angles; and non-geometric measures such as weight and time.</p>

DCPS Geometry Standards	Sunshine State Standards Benchmarks	NCEE New Standards
	lengths.	

Desired Results

Enduring Understanding	Essential Questions	Knowledge and Skills
<p>Students will understand:</p> <ul style="list-style-type: none"> Expressing the relations of circles and line, spheres and planes help us visualize how circles are used in the world around us. Pi is the ratio between the circumference and the diameter of a circle. 	<ul style="list-style-type: none"> Why do things have the shapes that they do? Is the ratio between the circumference and the diameter of a circle always the same? What is the difference between rational and irrational numbers? 	<p>Students will know</p> <ul style="list-style-type: none"> Key terms (e.g., circle, center, radius, diameter, circumference, arc, central angle, major arc, minor arc, sector, inscribed angles, intercepted arc, semi-circle, secant, tangent, chord, pyramid, cone). <p>Students will be able to</p> <ul style="list-style-type: none"> Draw and label figures to illustrate definitions for chords, diameters, secants, tangents, inscribed angles, and central angles. Solve problems related to properties for tangents of circles. Solve problems related to properties of chords. Solve problems related to properties of arcs and angles. Solve problems related to area of circles. Find volume of prisms, pyramids, cylinders, cones, and spheres.

Acceptable Evidence

Performance Tasks	Quizzes, Test, and Work Samples	Observations and Dialogues
<ul style="list-style-type: none"> Pi and Circumference Students measure the diameters and circumferences of different sized circular disks. They calculate the ratio of the 	Check-Up 1 Quiz A Check-Up 2	Teacher observations of students during work on performance tasks. Accountable talk during work on

Performance Tasks	Quizzes, Test, and Work Samples	Observations and Dialogues
<p>circumference to the diameter for each disk and write a conjecture about the ratio.</p> <ul style="list-style-type: none"> • Inscribed Angles Students investigate the relation between the measures of the inscribed angle with the intercepted arc and make conjectures. • Prisms, Cylinders, and Cones Students construct paper models of prisms, cylinders, and cones. The models are use to help visualization of finding the surface area and volume. 	<p>Quiz B Unit Test Unit project – The One-Eyed Jack Mine</p>	<p>performance tasks.</p>