


8th Grade Math Curriculum Bundle # 6

Title		Suggested Dates
Pythagorean Theorem and Applications, Square Roots		December 7 – December 18 (10 days)

Big Idea/Enduring Understanding	Guiding Questions
The square root of a number, n , can be represented by the length of the side of a square with area = n .	<ol style="list-style-type: none"> 1. What is the relationship between the area of a square and the side lengths of the square? 2. What methods can be used to estimate the values of square roots of whole numbers?
The Pythagorean Theorem can be used to find unknown measurements on right triangles, which can model many real life situations. (Such as finding dimensions of a television, building a fence, building a deck, etc...)	<ol style="list-style-type: none"> 1. What type of triangle is used with the Pythagorean Theorem? 2. What is the relationship between the legs and the hypotenuse of a right triangle? 3. What process can be used to determine if 3 lengths can be put together to form a right triangle? 4. What are some real-world situations in which the Pythagorean Theorem can be useful?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	District Specificity/Examples	Suggested Resources (See Note Above)	
<p>8.7 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world.</p> <p>8.7B use geometric concepts and properties to solve problems in fields such as art and architecture</p> <p><i>Note: Repeated in bundle 7 for area and perimeter of complex shapes</i></p>	<ul style="list-style-type: none"> • Find missing measurements - Angles, triangles, quadrilaterals, etc 		<p>Prentice Hall Chapter 7 Section 1-5 Pg. 303-327</p>

8th Grade Math Curriculum Bundle # 6

<p>8.1 Number, operation, and quantitative reasoning. The student understands that different forms of numbers are appropriate for different situations.</p> <p>8.1E compare and order real numbers with a calculator</p> <p>Note: Integrate with 8.1C - compare and order numbers including irrationals here– NEW TEKS to 8th grade this year.</p>	<ul style="list-style-type: none"> • Using a calculator, change numbers to the same form and then compare 		
<p>8.1 Number, operation, and quantitative reasoning. The student understands that different forms of numbers are appropriate for different situations.</p> <p>8.1C approximate (mentally and with calculators) the value of irrational numbers as they arise from problem situations (such as π, $\sqrt{2}$)</p>	<ul style="list-style-type: none"> • geometric problems using the square root of a number • state answer as a range • Example: $\sqrt{5}$ is between 2 and 3 • convert between squares and square roots • arrange square roots on a number line • use squares up to $25^2=625$ and corresponding square root • use approximations and calculators with non-perfect squares Example: $\sqrt{5} \approx 2.23$ 	<p><u>CMP2 Looking for Pythagoras</u> Pearson Investigations 1.2, 1.3, 2, 3 (combine 1.2, 1.3 to shorten times)</p>	<p><u>Prentice Hall</u> Chapter 3-Section 1 Pg 106-110</p> <p><u>Understanding Math</u> Understanding Exponents: Topic 5</p>
<p>8.7 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world.</p> <p>8.7C use pictures or models to demonstrate the Pythagorean Theorem</p>	<ul style="list-style-type: none"> • illustrate the sum of the squares of the lengths of the legs equals the square of the length of the hypotenuse using models • use problems to promote understanding of theorem focusing on model representation • justify whether or not a set of 3 side lengths can form a right triangle • apply theorem to find area of the square on a given side 		<p><u>A.I.R.R.</u> Activity 226- Using the Pythagorean Theorem</p> <p><u>Understanding Math</u> Understanding Exponents: Topic 6</p>
<p>8.9 Measurement. The student uses indirect measurement to solve problems.</p> <p>8.9A use the Pythagorean Theorem to solve real-life problems</p>	<ul style="list-style-type: none"> • use real life pictorial examples • solve problems for missing leg or hypotenuse • verbal problems that require drawing a diagram to solve 		<p><u>Accelerated Curriculum for Mathematics 8th Grade</u> Unit 6 Lesson 2 Pythagorean Theorem</p> <p><u>A.I.R.R.</u> Activity 227-Picture This</p> <p>Activity 228- What Is The Missing Measure?</p>

8th Grade Math Curriculum Bundle # 6

<p>8.16 Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions.</p> <p>8.16A make conjectures from patterns or sets of examples and non-examples</p> <p>Note: Emphasize throughout bundles.</p>	<ul style="list-style-type: none"> • Discover a pattern and describe the rule 		<p>Covered by prior activities</p>
<p>8.16 Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions.</p> <p>8.16B validate his/her conclusions using mathematical properties and relationships.</p> <p>Note: Emphasize throughout bundles.</p>	<ul style="list-style-type: none"> • Prove or disprove a method 		<p>Covered by prior activities</p>