

The Number System

Grade 8 Math Grade 8 Math

Start Date: August 27, 2013

End Date : September 06, 2013

<p>Unit Overview</p> <p>Students will be able to:</p> <p>Distinguish the difference between rational and irrational numbers.</p> <p>Approximate irrational numbers and graph them on a number line and estimate their values.</p>	<p>Content Elaborations</p> <p>Working with irrational, integers, exponents, and square roots.</p> <p>Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.</p> <p>Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). <i>For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.</i></p>	<p>Unit Resources</p> <p>Holt Pre-Algebra:</p> <p>3-1 3-2 3-3 3-4 3-5 2-6 2-7 3-8 3-9</p> <p>--Sq. Root Bingo</p> <p>3-10 + graphing on number line</p> <p>Assessment</p> <p>Smart Board lessons</p> <p>Common Core Model Curriculum</p> <p>Study Island</p>
<p>Unit Vocabulary</p> <p>Irrational Number</p> <p>Perfect Square</p> <p>Rational Numbers</p> <p>Real Numbers</p> <p>Prime</p> <p>exponent</p> <p>base</p>	<p>Enduring Understandings (Big Ideas)</p> <p>Classify rational and irrational numbers and demonstrate knowledge of the major subdivisions of the real-number system using number lines, calculator approximations, and memorization.</p>	<p>Connections</p> <p>This cluster goes beyond the Grade 8 Critical Areas of Focus to address Working with irrational numbers, integer exponents, and scientific notation.</p>

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Standards

CC_Common Core State Standards - Mathematics (2010) - Grade 8

Domain 8.NS The Number System

Cluster Statement Know that there are numbers that are not rational, and approximate them by rational numbers.

Standard 8.NS.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.

Standard 8.NS.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2).

Domain 8.EE Expressions and Equations

Cluster Statement Work with radicals and integer exponents.

Standard 8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions.

Standard 8.EE.2 Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that the square root of 2 is irrational.

Student Assessment	Unit Reflection
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Number Sense

Content	Skills	Assessment
A. Rational Numbers B. Operations of Rational Numbers C. Exponents D. Squares and Square Roots E. Real Numbers	A. Rational Numbers <ol style="list-style-type: none"> Write rational numbers. Place values B. Operations of Rational Numbers <ol style="list-style-type: none"> Adding Subtracting Multiplication Dividing C. Exponents <ol style="list-style-type: none"> Writing exponents Evaluating exponents Multiplying powers Dividing powers D. Squares and Square Roots <ol style="list-style-type: none"> Perfect squares Evaluating expressions Approximating square roots E. Real Numbers <ol style="list-style-type: none"> Classifying real numbers 	Daily work/Independent Practice- NWEA Map assessment- Student Observation- Unit Test-

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	2. Approximating on a number line	
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