Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

Collaboration / Math 8* / Grade 8 (Math Regional Curriculum)

Wednesday, October 31, 2012, 2:08PM

Standard/Module: Proficiency with Geometry: 8.NS.1 (Week 32, 8 Weeks)

Stage 1: Desired Results

Standards Focus

- Supporting (20%) 8.NS.2
  8.EE.2
  8.G.6
  8.G.7
  8.G.8

Grade 8 Map

Standards

NYS: CCLS:Mathematics, NYS: 8th Grade , The Number System

8.NS Know that there are numbers that are not rational, and approximate them by rational numbers.

- 1. Understand informally that every number has a decimal expansion; the rational numbers are those with decimal expansions that terminate in 0s or eventually repeat. Know that other numbers are called irrational.

Enduring Understandings	Essential Questions
1. Within the real number system, there are rational and irrational numbers. 2. Rational numbers can be expressed in equivalent forms (fraction and decimal).	1. What does an irrational number look like? 2. Why is a repeating decimal not irrational? 3. How do you know if a real number is rational or irrational? 4. How do you convert a repeating decimal to a fraction?

Critical Content

1. Rational number

- Subsets of rational numbers: natural, whole, integers
- Can be expressed as a/b where b≠0, and a and b are integers
- Repeating decimal
- Terminating decimal

2. Irrational number

- Subsets of real numbers: rational, irrational
- Not rational

3. Decimal expansion

- Repeating decimal
- Terminating decimal

- Long division

Skills	Vocabulary
1. Understand the subsets of the real number system 2. Know that real numbers that are not rational are irrational. 3. Understand that decimal expansions of irrational numbers are approximations. 4. Show that rational numbers have decimal expansions that repeat eventually. 5. Convert a decimal expansion (terminating and repeating) into a rational number. 6. Convert a rational number to a decimal using long division (7.NS.2d).	Tier 2: approximate, convert, decimal, finite, fraction, infinite, repeating, terminating Tier 3: Decimal expansion, irrational number, rational number, repeating decimal, square root, terminating decimal, √, π

Stage 2: Assessment Evidence

Assessments

Label numbers as rational or irrational
Formative: Test: Written

Students identify numbers as rational or irrational and justify their answers.

Stage 3: Learning Plan

Learning Activities	Resources
1. Examine the subsets of the real number system and determine that real numbers that are not rational are irrational. Understand that decimal expansions of irrational numbers are approximations. Show that rational numbers have decimal expansions that repeat eventually. Convert a decimal expansion (terminating and repeating) into a rational number.Convert a rational number to a decimal using long division (7.NS.2d). 2. Examine square numbers and determine that the inverse of "squaring" is the "square root." Write out square numbers to 10 x 10 and draw the squares on graph paper. Determine that the square root is the same as the length of one side of the square. 3. Make a number line of square numbers and	www.illustrativemathematics.org www.illuminations.nctm.org

square roots in consecutive order. Show where irrational numbers fit on the number line in between perfect squares in order to approximate any irrational number.	

Differentiation Opportunities

Put the squares from the graph paper on a large number line to provide a visual of perfect square numbers and the irrational numbers that are in between.

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