Richmond Public Schools

Department of Curriculum and Instruction
Curriculum Pacing And Resource Guide – Unit Plan

Course Title/ Course #: Algebra 1

Unit Title/ Marking Period # (MP#3): Roots & Radicals

Start day:

Meetings (Length of Unit): 3

Desired Results ~ What will students be learning?

Standards of Learning/ Standards

A.3
The student will express the square roots and cube roots of whole numbers and the square root of a monomial algebraic expression in simplest radical form.

Essential Understandings/ Big Ideas

- A square root in simplest form is one in which the radicand (argument) has no perfect square factors other than one.
- A cube root in simplest form is one in which the argument has no perfect cube factors other than one.
- The cube root of a perfect cube is an integer.
- The cube root of a nonperfect cube lies between two consecutive integers.
- The inverse of cubing a number is determining the cube root.
- In the real number system, the argument of a square root must be nonnegative while the argument of a cube root may be any real number

Key Essential Skills and Knowledge

The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

- Express square roots of a whole number in simplest form.
- Express the cube root of a whole number in simplest form.
- Express the principal square root of a monomial algebraic expression in simplest form where variables are assumed to have positive values.

Vocabulary

Square
Cube
Square Root
Cube Root
Monomial
Simplify
Perfect Squares and Cubes
Non-Perfect Squares and Cubes
Consecutive Integers

Assessment Evidence ~ What is evidence of mastery? What did the students master & what are they missing?

Assessment/ Evidence

Mulligan Checkpoint A.3

Interactive Achievement

York County Practice Items

Learning Plan ~ What are the strategies and activities you plan to use?

Learning Experiences/ Best Practice

Create a foldable:
-Simplify Perfect and Non-perfect squares and cube roots and square root monomials

All Things Algebra → Radicals → Activities

- Simplifying Radical Notes & Puzzle
- Simplifying Radicals Task Cards
- Simplifying Radicals Math Lib

Technology Integrations

Gizmo
Khan Academy
Graphing Calculator

Resources

Text
Virginia Glencoe, Algebra I, ©2012, Carter, et al,
McGraw-Hill School Education Group, page(s) 612 - 623

Coach book, Virginia edition, page(s) 10 -15

Mulligan Math in Minutes A.3

Technology
- Gizmo
    - Simplifying Radical Expressions – Activity A

- Khan Academy
    - Exponents

Virginia Department of Education
Simplifying Square Roots
http://www.doe.virginia.gov/testing/solsearch/sol/math/A/m_ess_a-3_2.pdf

Other Sites
Simply Radical

Cross Curricular Connection

Writing: Have students write a letter to one of their peers on how to simplify a radical.

Research: Why is a square roots the inverse operation of squaring a number? Why is the cube root the inverse operation of cubing a number?