

Richmond Public Schools
Department of Curriculum and Instruction
Curriculum Pacing and Resource Guide – Unit Plan



Course Title/ Course #: Math Grade 7

Unit Title/ Marking Period # (MP): 2

Start day:

Meetings (Length of Unit): 10 days

Desired Results ~ What will students be learning?

Standards of Learning/ Standards

SOL 7.1 a - d

The student will

- a) investigate and describe the concept of negative exponents for powers of ten;
- b) determine scientific notation for numbers greater than zero;
- c) compare and order fractions, decimals, percents and numbers written in scientific notation;
- d) determine square roots;

Essential Understandings/ Big Ideas

When should scientific notation be used?

Scientific notation should be used whenever the situation calls for use of very large or very small numbers.

How are fractions, decimals and percents related?

Any rational number can be represented in fraction, decimal and percent form.

What does a negative exponent mean when the base is 10?

A base of 10 raised to a negative exponent represents a number between 0 and 1.

How is taking a square root different from squaring a number?

Squaring a number and taking a square root are inverse operations

Key Essential Skills and Knowledge

- Recognize powers of 10 with negative exponents by examining patterns.
- Write a power of 10 with a negative exponent in fraction and decimal form.

- Write a number greater than 0 in scientific notation.
- Recognize a number greater than 0 in scientific notation.
- Compare and determine equivalent relationships between numbers larger than 0 written in scientific notation.
- Represent a number in fraction, decimal, and percent forms.
- Compare, order, and determine equivalent relationships among fractions, decimals, and percents. Decimals are limited to the thousandths place, and percents are limited to the tenths place. Ordering is limited to no more than 4 numbers.
- Order no more than 3 numbers greater than 0 written in scientific notation.
- Determine the square root of a perfect square less than or equal to 400.

Vocabulary

<u>Academic Vocabulary</u>	<u>Content Vocabulary</u>
Scientific Notation Powers of Ten Exponent Greater Than Less Than Squared Square Root Perfect Square	Simplify Model Illustrate Identify Evaluate Compare Fractions Decimals Percents Place Value

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

Assessment/ Evidence

Interactive Achievement 5 – 10 questions

Gizmo Assessments

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

Learning Experiences/ Best Practice

Teacher Resources:

- Use Frayer Model and/or Marzano for new vocabulary terms
- Task Cards to review concepts when students are finished working on an activity
- Allow students to use benchmark estimation
- Use square cubes to illustrate perfect squares

Interactive Skill Practice:

- [Scientific Notation Concentration Game](#)
- [Learn Alberta – Scientific Notation and Powers of Tens](#)
- [Square Roots Concentration Game](#)
- [Learn Alberta – Exploring Square Roots](#)
- [Fractions, Decimals, and Percents Jeopardy](#)
- [Equivalent Fractions, Decimals, and Percents](#)
- [Comparing Fractions and Percents](#)

Technology Integrations

Technology:

[BrainPop Videos:](#)

Square Roots

Standard and Scientific Notation

Exponents

[Gizmo Lessons:](#)

Square Roots

Fractions, Decimals, and Percents (Area and Grid Models)

Fractions, Decimals, and Percents

Ordering, Percents, Fractions, and Decimals

Resources

Text:

Virginia Math Connects, Course 2, ©2012, Price, et al, McGraw-Hill School Education Group 1:

Negative Powers of Ten, page(s) 827 -828;
Scientific Notation, page(s) 185 – 189
Comparing Fractions, Decimals, and Percents, page(s) 127; 133 – 138
Square Roots, page(s) 52, 53 – 56, 57 – 61, 821 - 822

Virginia, SOL Coach, New Gold Edition, Mathematics, Grade 7,

Powers of Tens, page(s) 10 – 14
Scientific Notation, page(s) 15 – 19
Relate Fractions, Decimals, and Percents, page(s) 20 – 26
Compare and Order Numbers, page(s) 27 – 32
Square Roots, page(s) 33 – 36

Other Sites:

Lesson Plans and Activities:

- [Writing and Comparing Scientific Notation](#)
- [Engage NY- Fractions, Decimals and Percents](#)

Cross Curricular Connection

Materials

Manipulatives

Fractions Pieces
Square blocks

Technology Resources

LCD Projector
Speakers
Computer w/Internet Connection and SmartBoard
Software
SmartBoard
Computer Cart

Student Supplies

Whiteboards/Markers
Frayer Model/ Marzano
Interactive Student Notes