WAKE COUNTY PUBLIC SCHOOL SYSTEM

Middle School Programs
Building Healthy Core Learning
8th Grade Math, Unit 2

8th Grade UNIT 2 OVERVIEW: The Real Number System

Unit Outcomes At the end of this unit, your student should be able to:	**Key Vocabulary** Terms to deepen the student's understanding	
✓ Articulate the relationship between fractions and decimals, convert fractions to decimals, and recognize that numbers with decimal expansion that terminate in 0s or eventually repeat can be written as a fraction ✓ Identify irrational numbers in various forms and estimate their value ✓ Distinguish between rational and irrational numbers ✓ Convert a repeating decimal to a fraction ✓ Compare and order rational and irrational numbers ✓ Locate numbers, particularly approximations of irrational numbers, on a number line	✓ Cube Root ✓ Fraction ✓ Integer ✓ Irrational number ✓ Natural Number ✓ Perfect Cubes ✓ Perfect Square ✓ Radical ✓ Radicand	✓ Rational Number ✓ Real Number ✓ Repeating Decimal ✓ Square Roots ✓ Terminating Decimal ✓ Truncate ✓ Whole Number

Key Standards Addressed Connections to Common Core/NC Essential Standards	**Where This Unit Fits** Connections to prior and future learning
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. 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). *For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*	**Coming into this unit, students should have a strong foundation in:** ✓ Converting rational fractions to decimals ✓ Converting rational decimals to fractions ✓ Comparing rational numbers ✓ Ordering rational numbers on a number line **This unit builds to the following future skills and concepts:** ✓ Solving equations with real numbers ✓ Solving Pythagorean Theorem equations ✓ Utilizing Volume formulas

Additional Resources Materials to support understanding and enrichment	**"Learning Checks"** Questions Parents Can Use to Assess Understanding
✓ Teaching videos made by Wake County teachers ✓ WCPSS YouTube Channel – Math Playlist ✓ Repeating Decimals Overview ✓ Converting Overview ✓ Real Numbers Overview ✓ Repeating Decimals Practice ✓ Fractions to Decimals Practice ✓ Decimals to Fractions Practice ✓ Converting Fractions and Decimals Video ✓ Real Numbers Video ✓ Repeating Decimals Video ✓ Professions that use Rational Numbers	✓ When is fraction form more helpful than decimal form and vice-versa? ✓ Where are fractions and decimals used in the real world? ✓ When is a decimal approximation more helpful than an exact number? ✓ Where are irrational numbers used in the real world? ✓ Why do we classify numbers? ✓ Where else are classifications used? Why?

*** Please note**, the unit guides are a work in progress. If you have feedback or suggestions on improvement, please feel free to contact wakemiddle@wcpss.net.