Unit 2e-Real Numbers

Content Area: **Math**
Course(s): **Math 7 Pre-Algebra Honors**
Time Period: **Marking Period 3**
Length: **MP3**
Status: **Published**

Essential Questions

- How do you rewrite rational numbers and decimals, take square and cube roots, and approximate irrational numbers?
- How can you describe relationships between sets of real numbers?
- How do you order a set of real numbers?

Big Ideas

- Know that there are numbers that are not rational, and approximate them by rational numbers.
- Sets of real numbers can be ordered and compared.

Cross Curricular Integration

Integration area: Science

MS-PS1-3 Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

MS-ESS3-1 Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

MS-ESS3-4 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

MS-ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

Activity: Students will represent the depletion rate of natural resources in a table and graph. They will explore other natural resources and describe their uses, depletion rates, and impact on the environment.

Students will write a report focusing on the sustainability of a natural resource.

CSDT Technology Connection

8.1.8.DA.1 Organize and transform data collected using computational tools to make it usable for a specific purpose.

Enduring Understandings

The Number System

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., $\pi 2$). 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.

Mathematical Practices Focus

2. Reason abstractly and quantitatively. Lesson 9.1,9.2,9.3

3. Construct viable arguments and critique the reasoning of others. Lesson 9.1,9.2,9.3

4. Model with mathematics. Lesson 9.1,9.2,9.3

5. Use appropriate tools strategically. Lesson 9.3

6. Attend to precision. Lesson 9.1,9.2,9.3

7. Look for and make use of structure. Lesson 9.1,9.2

8. Look for and express regularity in repeated reasoning. Lesson 9.2