Unit 2F-Exponents and Scientific Notation

Content Area: **Math**
Course(s): **Math 7 Pre-Algebra Honors**
Time Period: **Marking Period 2**
Length: **WK 8-10 Go Math! Advanced 2 Module 10**
Status: **Published**

Essential Questions

- How can you develop and use the properties of integer exponents?
- How can you use scientific notation to express very large and very small quantities?
- How do you add, subtract, multiply and divide using scientific notation?

Big Ideas

- Simplify and compute with radicals and integer exponents.
- Use properties of exponents to add, subtract, multiply and divide exponents.

Enduring Understandings

Expressions and Equations

8.EE.1[M] Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $32 \times 3^{-5} = 3^{-3} = 1/33 = 1/27$.

8.EE.2[M] Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.

8.EE.3[M] Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 times 108 and the population of the world as 7 times 109, and determine that the world population is more than 20 times larger.

8.EE.4[M] Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.

Mathematical Practices Focus

1. Make sense of problems and persevere in solving them. Lesson 10.1,10.4

2. Reason abstractly and quantitatively. Lesson 10.3

3. Construct viable arguments and critique the reasoning of others. Lesson 10.1, 10.2, 10.3, 10.4

4. Model with mathematics. Lesson 10.1,10.3,10.4

6. Attend to precision. Lesson 10.4

7. Look for and make use of structure. Lesson 10.1,10.2,10.3

8. Look for and express regularity in repeated reasoning. Lesson 10.1