



Dear Eighth Grade Families,

In Unit 3, students will work on the following eighth grade Common Core standards in the Expressions and Equations (EE) domain.

8.EE.3	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. <i>For example, estimate the population of the United States as 3 times 10^8 and the population of the world as 7 times 10^9, and determine that the world population is more than 20 times larger.</i>
8.EE.4	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.

Unit 3 Concepts:

- Scientific Notation
- Add, subtract, multiply, and divide with scientific notation

Unit 3 Vocabulary:

- Scientific notation
- Powers of ten
- Coefficient
- Exponent

	Meaning	Value
10^4	$10 \cdot 10 \cdot 10 \cdot 10$	10,000
10^3	$10 \cdot 10 \cdot 10$	1000
10^2	$10 \cdot 10$	100
10^1	10	10
10^0	1	1
10^{-1}	$\frac{1}{10}$	0.1
10^{-2}	$\frac{1}{10} \cdot \frac{1}{10}$	0.01
10^{-3}	$\frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10}$	0.001
10^{-4}	$\frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10} \cdot \frac{1}{10}$	0.0001

Ask questions like these to help your eighth grader as a productive mathematical thinker:

- Why might 25 be called a “perfect square” of 5? Why might 125 be a “perfect cube”?
- Scientific notation is meant to be an efficient way to write very large or very small numbers. Explain how that works.
- What are some real-world examples in which you might need to use scientific notation?
- When you solve a problem, how do you know the solution is reasonable?
- If you know that the area of a square is 36 units² and that the length of one side is 6 units, how could you find the length of the other side?
- What models can you create to help you conceptualize your work with exponents?

We encourage you to talk with your child daily about what was learned in math class.
Thank you for your support!

Need a review? Check out our lesson videos online!

swunmath.com/student-videos
If you don't know the class's special name, ask your child's teacher.