

# Exponents and Scientific Notation

Math 2, Unit 5

Anaheim Union High School District

## Why are we studying this?

In this unit we will learn that any number, measure, numerical expression, algebraic expression or equation can be represented in an infinite number of ways that have the same value. This will also for us to be able to solve problems involving population growth, scientific phenomena and other problems that involve very large or very small numbers. Some careers in which people use exponents and scientific notation, besides scientists are:

- Engineers
- Computer Programmers
- Market and Survey Researchers
- Financial Managers

Sample question we will be able to answer:  
Would you rather have a salary of \$1,000,000 per year for 25 years, or start with a salary of \$1 that doubles each year for 25 years?

Year	Total Salary: \$1,000,000 year	Total Salary: Doubling each year
1	\$1,000,000	\$1
2	\$2,000,000	\$3
3	\$3,000,000	\$6
4	\$4,000,000	\$10
...25	?	?

### Real World Applications in this Unit

- Applications in Science (Such as, Sound Waves; Bacteria Growth; Mass of the Earth)
- Salary Comparison
- Population Growth

### Math Topics Addressed in this Unit

- Properties of Integer Exponents
- Use of Scientific Notation to Express Very Small or Large Quantities
- Perform Operations with Numbers Express in Scientific Notation

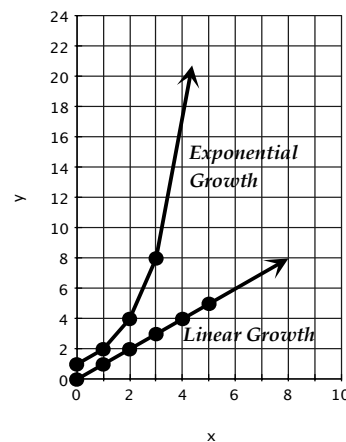
Dear Student & Parent/Guardian,

In this unit students will use reasoning to look for patterns to learn the properties of exponents, such as when multiplying two powers the base remains the same and the exponents are added.

Students will also extend their exponent work to include operations with numbers expressed in scientific notation. Students learn that scientific notation is useful in that very large, or very small numbers can be expressed as a condensed, scientific number.

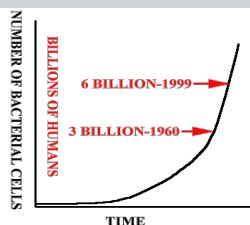
-AUHSD Math Teachers

Students will be able to compare and contrast exponential growth (multiplicative) and linear growth (additive) and apply this information to real-world situations.



### A Note About Homework

Homework in this unit will focus on concepts learned prior units, necessary for success in Math Two, as well as current topics of working with the rules of exponents and using scientific notation to solve real world problems.



Describe the relationship between population growth over time and the number of bacteria cells present.