

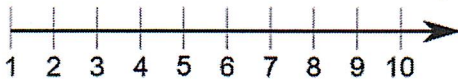
Grade 8
Unit 1 Vocabulary

Real Numbers

8.2A, 8.2B, 8.2D, 8.2C

Counting (natural) numbers – The set of positive numbers that begins at one and increases by increments of one each time. $\{1, 2, 3, \dots, n\}$.

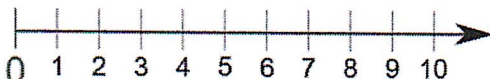
The numbers you say when you count.



A horizontal number line with arrows at both ends. It is marked with integers from 1 to 10. Each integer has a vertical tick mark and is labeled with its corresponding number.

Whole numbers – The set of counting (natural) numbers and zero $\{0, 1, 2, 3, \dots, n\}$.

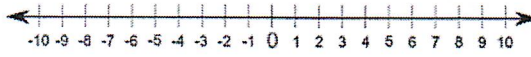
The numbers you say when you count and zero.



A horizontal number line with arrows at both ends. It is marked with integers from 0 to 10. Each integer has a vertical tick mark and is labeled with its corresponding number.

Integers – The set of counting (natural numbers), their opposites, and zero $\{-n, \dots, -3, -2, -1, 0, 1, 2, 3, \dots, n\}$.

Positive and negative numbers.



A horizontal number line with arrows at both ends. It is marked with integers from -10 to 10. Each integer has a vertical tick mark and is labeled with its corresponding number.

Rational numbers – The set of numbers that can be expressed as a fraction a/b , where a and b are integers and $b \neq 0$.

Integers, Fractions,
and Terminating & Repeating Decimals

Rational Number
numbers that can be written in the form $\frac{a}{b}$


Examples:
 $\frac{3}{5}$ $-2\frac{1}{6}$ 8.25
 $-3.\bar{6}$ $\sqrt{16}$

Irrational numbers – The set of numbers that cannot be expressed as a fraction, where a and b are integers and $b \neq 0$. They are the square roots of non-perfect squares. (e.g., $\sqrt{3}$)

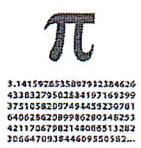
Decimals that do not terminate (...) or repeat a pattern

Π & $\sqrt{\text{of non-perfect squares}}$

Thus, it is an irrational number!

$\sqrt{2} = 1.4142135623730\dots$ 

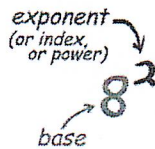
no digit pattern



The Greek letter pi (π) is shown. Below it is a long string of digits representing the decimal expansion of pi: 3.141592653589793238462643383279502884197169399375105820974946522078164062862089986280148253421172679821480855132823066470938446095505162...

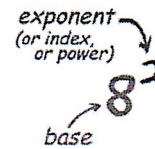
Base – The number in an expression or equation which is raised to a power or exponent.

Bottom number when you have an exponent.



Exponent A number or variable in the superscript place of the base which designates how many times the base will be multiplied by itself.

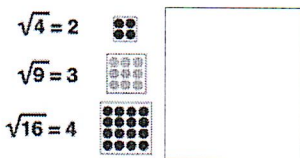
The number of times a base number is multiplied by itself. Also called power.



Square Root– A value that, when multiplied by itself, gives the number.

Opposite of squaring a number.

The symbol is $\sqrt{\quad}$



Scientific Notation– A representation of a number by using a method to write very large or very small numbers using powers of ten that is written as a decimal with exactly one nonzero digit to the left of the decimal point, multiplied by a power of ten (e.g., 2.3×10^{-2} , etc.)

A way of writing very large or very small numbers using a number between 0 and 10 multiplied by a power of ten.

Scientific Notation

$45,000 \rightarrow 4.5 \times 10^4$
 $7.6 \times 10^{-4} \rightarrow 0.00076$

E – A symbol used in a calculator to indicate that the preceding number should be multiplied by ten raised to the number that follows. Used for scientific notation.

How the calculator shows scientific notation

