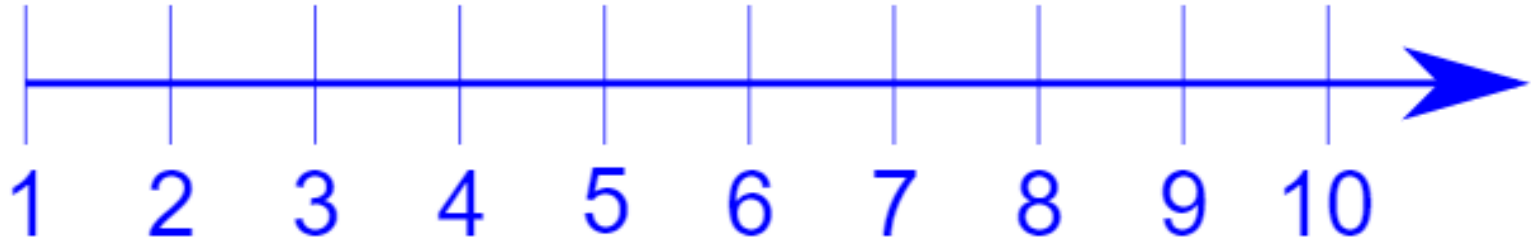
Grade 8
Unit 1 Vocabulary

Real Numbers

8.2A, 8.2B, 8.2D, 8.2C

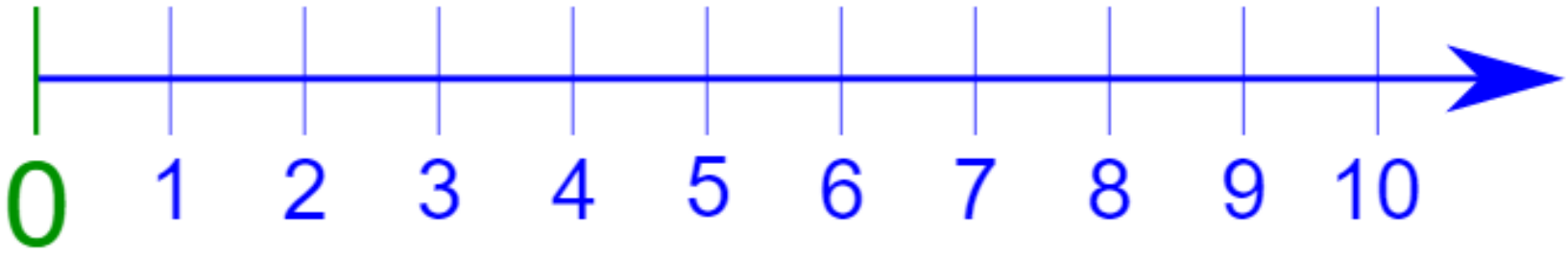
Counting (natural) numbers – The set of positive numbers that begins at one and increases by increments of one each time. {1, 2, 3, ..., *n*}.

The numbers you say when you count.



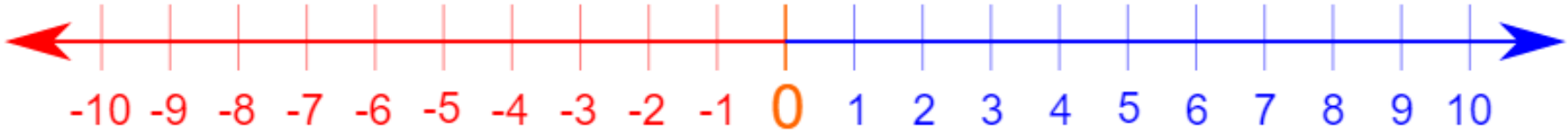
Whole numbers – The set of counting (natural) numbers and zero {0, 1, 2, 3, ..., *n*}.

The numbers you say when you count and zero.



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

Positive and negative numbers.



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

$-3.\overline{6}$ $\sqrt{16}$

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

$\prod$ & $\sqrt{}$ of non-perfect squares

Thus, it is an irrational number!

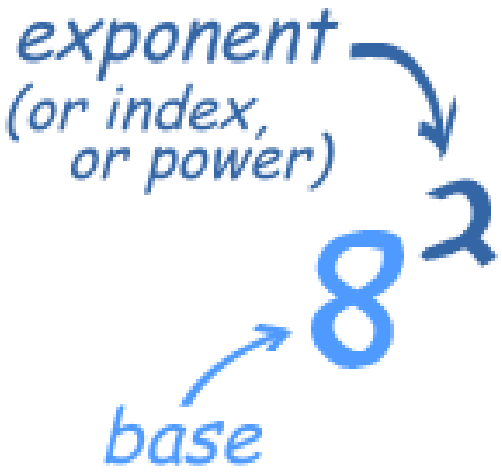
$$\sqrt{2} = 1.41421356237\underbrace{30\ldots}$$

no digit pattern

3.14159265358979323846
43383279502884197169399
37510582097494459230781
64062862089986280348253
42117067982148086513282
30664709384460955082...

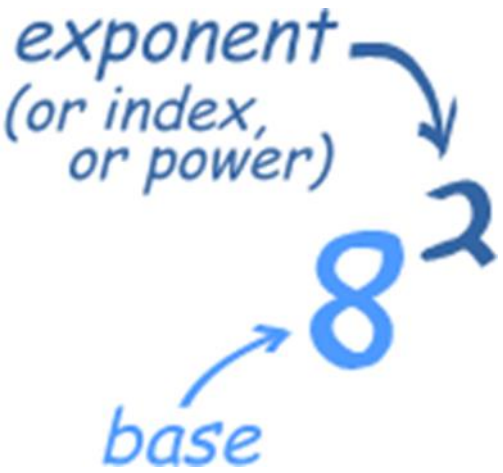
Base – The number in an expression or equation which is raised to a power or exponent.

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 √

$\sqrt{4} = 2$ 

$\sqrt{9} = 3$ 

$\sqrt{16} = 4$ 

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

$45{,}000 \longrightarrow 4.5 \times 10^{4}$

$7.6 \times 10^{-4} \longrightarrow 0.00076$

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