


Numbers 1 & Concepts


Mathematics and Millennials – 6th



Classroom Activities

Interactive & Hands-On are encouraged by:

- National and State Standards
- The Learning Cycle
established pedagogy in Math and Science
- This Online Mathematics course



Number System

Decimal Numbers common and widely used system.
Based on Powers of Ten such as examples below:

Billion = 10^9 Million = 10^6 Thousand = 10^3

Hundred = 10^2 Ten = 10^1 One = 10^0

517, 324, 657, 978

Operational Terms

Addition: Combining two quantities or values
Addend + Addend = Sum

Subtraction: Taking one quantity from another
Minuend – Subtrahend = Difference

Multiplication: Repeated Addition or (x) = of
Factor x Factor = Product

Division: Repeated Subtraction or (/) = groups
Dividend / Divisor = Quotient

Place Value

Whole Numbers & Place Value

Have **unique order** and **special names**:

Billions, Millions, Thousands

Hundreds, Tens, Ones

487, 612, 789, 543

Reading Numbers

65,847,293

Sixty-five million, eight hundred forty-seven thousand,
two hundred ninety-three

36,785,462

Thirty-six million, seven hundred eighty-five thousand,
four hundred sixty-two

Writing Numbers

Six hundred thirty-two million, forty-nine thousand,
three hundred forty-one

632, 049, 341

Two Hundred sixty-one million, five hundred seven
thousand, eight hundred nineteen

261, 507, 819

Expanded Notation

Whole Number x Place Value

Six million, two hundred one thousand, five hundred nine
 $(6 \times 1,000,000) + (2 \times 100,000) + (1 \times 1,000) + (5 \times 100) + (9 \times 1)$

Forty-nine thousand, three hundred fifty-seven
 $(4 \times 10,000) + (9 \times 1,000) + (3 \times 100) + (5 \times 10) + (7 \times 1)$

Exponential Notation

Whole Number x Powers of Ten

Forty-nine thousand, three hundred fifty-one
 $(4 \times 10^4) + (9 \times 10^3) + (3 \times 10^2) + (5 \times 10^1) + (7 \times 10^0)$

Six million, three hundred forty-seven thousand,
five hundred eighty-nine
 $(6 \times 10^6) + (3 \times 10^5) + (4 \times 10^4) + (7 \times 10^3) + (5 \times 10^2) + (8 \times 10^1) + (9 \times 10^0)$

Rounding

Rounding provides **quick check** of result!

Round to nearest **Thousand**: 6,859 ~ 7,000

Round to nearest **Million**: 4, 372,891 ~ 4,000,000

Round to nearest **Hundred**: 850 ~ 900

Estimating

Estimating uses Rounding for quick predictions!

Estimate: $519 \times 6,859$

Round & Multiply: 3,500,000

Estimate: $87,213 \times 3,057$

Round & Multiply: 270,000,000

Round! Multiply Digits! How many Zeros?

Scientific Notation & Large Numbers

A number **between** 1 and 10 (x) a power of 10!

Large Numbers	Scientific Notation
5,730	5.7×10^3
918,500	9.2×10^5
654,000,000	6.5×10^8

Numbers: < = >

Compare Numbers with relation symbol in the blank!

< (Less Than) = (Equal) > (More Than)

Read Symbols < & > from left to right!

325 ___ 296 285 ___ 285 517 ___ 609

Fractions: < = >

Compare Fractions with relation symbol in the blank!

Read Symbols < and > from Left to Right!

< (Less Than) = (Equal) > (More Than)

$\frac{2}{3}$ ___ $\frac{1}{3}$ $\frac{3}{4}$ ___ $\frac{3}{4}$ $\frac{3}{8}$ ___ $\frac{7}{8}$

Decimals: < = >

Compare Decimals with relation symbol in the blank!

Read < and > from Left to Right!

< (Less Than) = (Equal) > (More Than)

.9 ___ .86 .07 ___ .40 .5 ___ .50

Ranking Numbers

Rank Numbers by placing in the requested Order!

Rank Numbers: **Increasing Order**
25, 72, 45, 17

Rank Numbers: **Decreasing Order**
472, 509, 329, 308

Ranking Fractions

Rank Fractions by placing in the requested Order!

Rank Fractions: **Increasing Order**
 $\frac{1}{5}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{1}{9}$

Rank Fractions: **Decreasing Order**
 $\frac{7}{8}$, $\frac{3}{8}$, $\frac{2}{8}$, $\frac{5}{8}$

Ranking Decimals

Rank Decimals by placing in the requested Order

Rank Decimals: **Increasing Order**
.7, .09, .3, .25

Rank Decimals: **Decreasing Order**
.35, .82, .09, .06

Types of Fractions

Proper Fraction:

Numerator < Denominator $N < D$ $\frac{4}{5}$

Improper Fraction:

Numerator > Denominator $N > D$ $\frac{7}{3}$

Mixed Number:

Whole Number & Proper Fraction $6 \frac{7}{8}$

Odd & Even Numbers

Even Numbers have no remainder divided by 2!

Odd Numbers have a remainder of 1 divided by 2!

Note the given numbers and circle their type:

32 Odd or Even

45 Odd or Even

Prime & Composite Numbers

Prime Numbers are only divisible by 1 and itself!

Composite Numbers are divisible by many factors!

Note the given numbers and circle their type:

11 Prime or Composite

48 Prime or Composite

Finite & Infinite Numbers

A set of **Finite Numbers** are countable!

A set of **Infinite Numbers** are not countable!

Check given numbers and circle their type

1,2,3,4... Finite or Infinite

1,2,3,4 Finite or Infinite

Conclusion
