I can perform calculations using scientific notation, significant figures, and unit conversions.

4.1. I can define metric units and prefixes and explain how metric units are used in measurement.

4.2. I can express numbers in scientific notation and standard notation.

4.3. I can perform calculations using significant figures.

4.4. I can convert between units, both metric and US standard.

4.5. I can distinguish between accuracy and precision in a given set of data

9/18 __Measurements__

Units (labels) - represent the item being measured based on a specific scale.

Metric System (SI)

prefix to represent #of 10s + base unit to represent type of measurement

- Giga
- Mega
- Kilo
- Hecto (hecta)
- Deca (deka)

- deci
- centi
- milli
- micro
- nano

- meter (length) m
- gram (mass) g
- liter (volume) l/L
- seconds (time) s

Prefix	Symbol	# meaning pc = pieces	word meaning	
Giga	G	1 Giga = 1 000 000 000 pc.	billion	10^9
Mega	M	1 Mega = 1 000 000 pc	million	10^6
Kilo	K	1 Kilo = 1000 pc.	thousand	10^3
Hecto	H	1 Hecto = 100 pc	hundred	10^2
Deka	Da	1 Deka = 10 pc.	ten	10^1
— Base —	meter, liter gram, second	1	one	10^0
deci	d	1 base = 10 parts ($^1/_{10}$)	tenth	10^{-1}
centi	c	1 base = 100 parts ($^1/_{100}$)	hundredth	10^{-2}
milli	m	1 base = 1000 parts ($^1/_{1000}$)	thousandth	10^{-3}
micro	μ	1 base = 1 000 000 parts ($\frac{1}{1 000 000}$)	millionth	10^{-6}
nano	n	1 base = 1 000 000 000 parts ($\frac{1}{1 000 000 000}$)	billionth	10^{-9}

6 (Giga)   1 (Deci)

7 (Mega)   2 (Centi)

8 (Kilo)   3 (Milli)

9 (Hecto)   4 (micro)

10 (Deca)   5 (nano)

Front

1 1 base = 10 parts (d)

2 1 base = 100 parts (c)

3 1 base = 1000 parts (m)

4 1 base = 1 000 000 parts (μ)

5 1 base = 1 000 000 000 parts (n)

6 1 000 000 000 pcs. (G)

7 1 000 000 pcs. (M)

8 1 000 pcs. (K)

9 1 00 pcs (H)

10 10 pcs (Da)

Back

Goodness
Me!
King
Henry
Died
by

drinking
Chocolate
milk
monday
night!

9/18   Metric System (SI)

Prefixes ⟶ bases
   Base 10   How you're measuring (type of
   Quantity   measurement)

units/labels

Prefix	Symbol	# meaning	10^x	word meaning	
Giga	G	1 Giga = 1000 000 000 pieces	10^9	billion	Goodness
Mega	M	1 Mega = 1 000 000 pieces	10^6	million	Me!
Kilo	K	1 Kilo = 1000 pieces	10^3	thousand	King
Hecto	H	1 Hecto = 100 pieces	10^2	hundred	Henry
Deca	Da	1 Deca = 10 pieces	10^1	ten	Died
Base		mass = grams (g) volume = liters (L)	10^0	length/distance = meter (m) time = seconds (s) By	
Deci	d	1 Base = 10 deci	10^{-1}	tenth	Drinking
Centi	c	1 Base = 100 centi	10^{-2}	hundredth	Chocolate
milli	m	1 Base = 1000 milli	10^{-3}	thousandth	Milk
micro	μ	1 Base = 1000 000 micro	10^{-6}	millionth	Monday
nano	n	1 Base = 1000 000 000 nano	10^{-9}	billionth	Night

6 (Giga)	1 (Deci)
7 (Mega)	2 (Centi)
8 (Kilo)	3 (milli)
9 (Hecto)	4 (micro)
10 (Deca)	5 (nano)

1   1 Base = 10 deci
2   1 Base = 100 Centi
3   1 Base = 1000 milli
4   1 Base = 1000 000 micro
5   1 Base = 1 000 000 000 nano
6   1 Giga = 1000 000 000 pcs
7   1 Mega = 1000 000 pcs
8   1 Kilo = 1000 pcs
9   1 Hecto = 100 pcs
10 1 Deca = 10 pcs

1 inch = 2.54 cm

1 ml = 1 cm^3

1 cm
1 cm
1 cm