Measurement

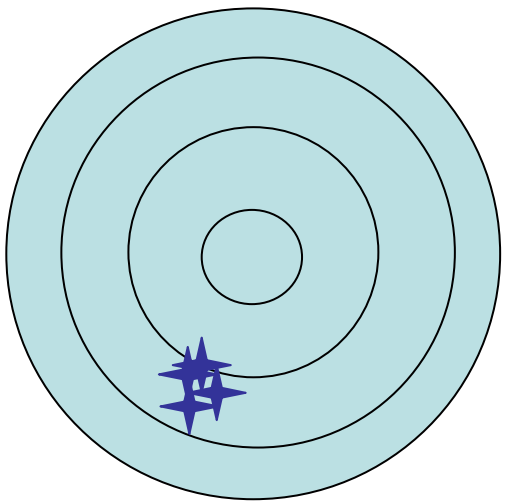
ACCURACY: How close it is to the real or "accepted" value

PRECISION: How repeatable it is

L1

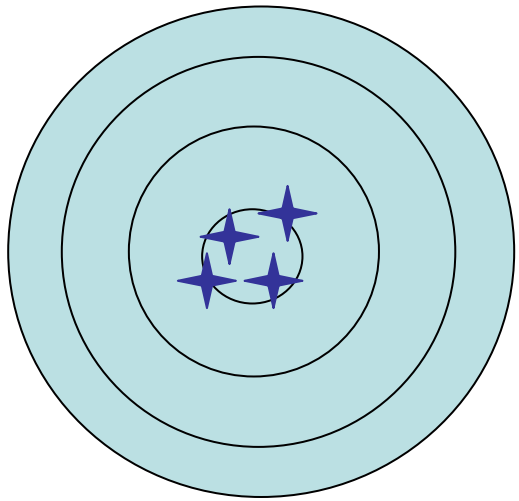
Accurate, Precise, or Both?

Precise



Accurate

(but not as precise)



L1

Precision

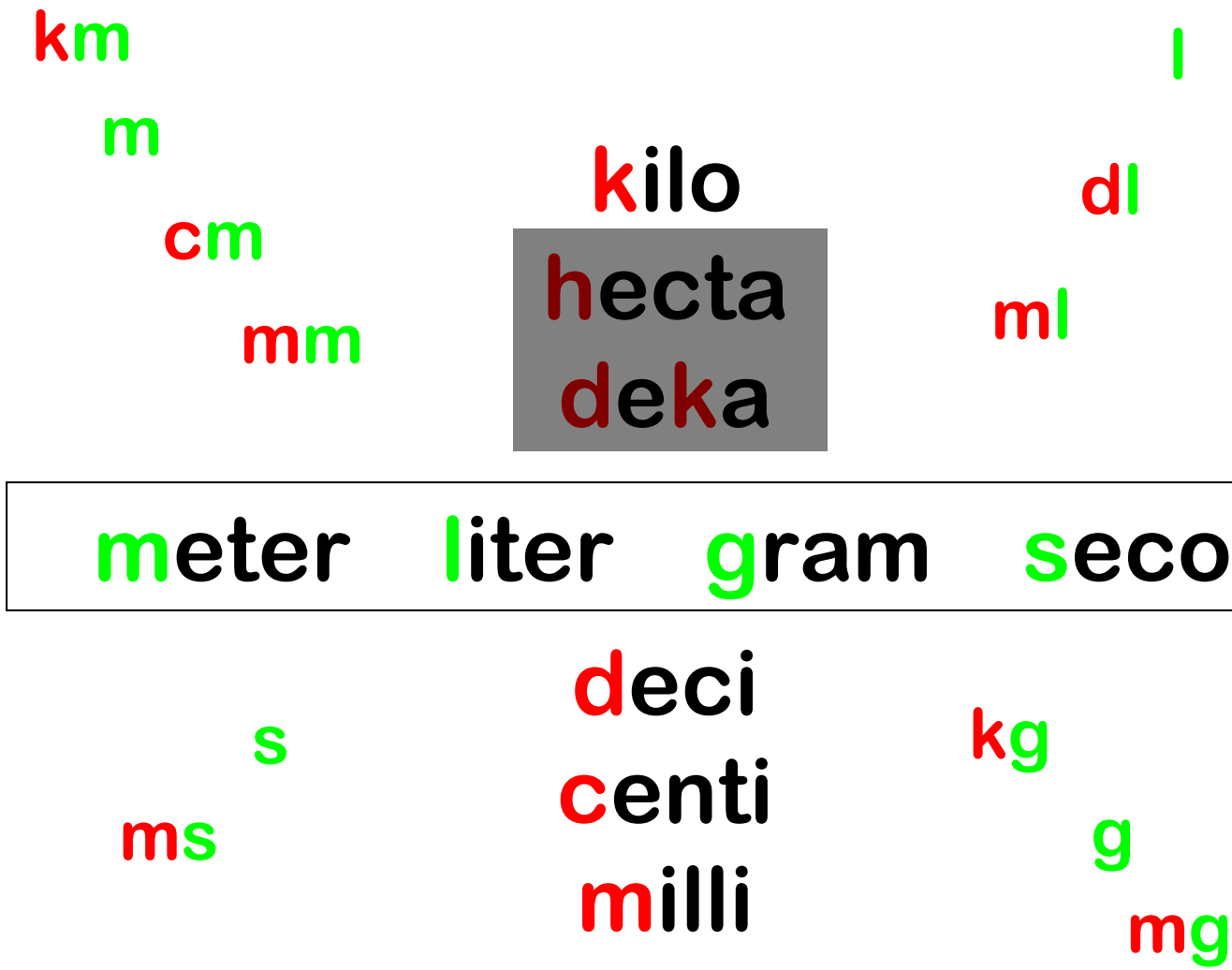
More Precise

Trial	Measurement
1	100.01
2	100.01
3	99.98
4	100.00
Avg	***100.00***

Less Precise

Trial	Measurement
1	100.10
2	100.00
3	99.88
4	100.02
Avg	***100.00***

L1


km
m
cm
mm
kilo
hecta
deka
l
dl
ml
meter liter gram second
deci
centi
milli
s
ms
kg
g
mg

Ya Gotta Know...

1000 meters = 1 kilometer

1 meter = 10 decimeters*
1 meter = 100 centimeters
1 meter = 1000 millimeters

*Really only useful for liters, but easier to just learn for everything

1,000,000,000,000,000	Peta	quadrillion
1,000,000,000,000	Tera	trillion
1,000,000,000	Giga	billion
1,000,000	Mega	million
1,000	kilo	thousand
100	hecta	hundred
10	deka	ten

meter liter gram second

0.1	deci	tenth
0.01	centi	hundredth
0.001	milli	thousandth
0.000 001	μ micro	millionth
0.000 000 001	nano	billionth
0.000 000 000 001	pico	trillionth
0.000 000 000 000 001	femto	quadrillionth

L1

1,000,000,000,000,000	Peta	10^{15}
1,000,000,000,000	Tera	10^{12}
1,000,000,000	Giga	10^{9}
1,000,000	Mega	10^{6}
1,000	kilo	10^{3}
100	hecta	10^{2}
10	deka	10^{1}

meter liter gram second

0.1	deci	10^{-1}
0.01	centi	10^{-2}
0.001	milli	10^{-3}
0.000 001	μ micro	10^{-6}
0.000 000 001	nano	10^{-9}
0.000 000 000 001	pico	10^{-12}
0.000 000 000 000 001	femto	10^{-15}

L1

Scientific Notation
Really BIG numbers

1,000,000,000,000	1E12	$1x10^{12}$
1,200,000,000,000	1.2E12	$1.2x10^{12}$
2,048,000,000,000	2.048E12	$2.048x10^{12}$

2.048E12 bytes = 2.048 Terabytes

12.1E6 tons =

167E3 meters =

Positive exponents are BIG numbers

Scientific Notation
Really SMALL numbers

0.000 001	1E-6	$1x10^{-6}$
0.000 000 000 004	4E-12	$4x10^{-12}$
0.000 000 001 024	1.024E-9	$1.024x10^{-9}$

1.024E-9 seconds = 1.024 nanoseconds

12.1E-12 farads =

185E-3 meters =

Negative exponents are SMALL numbers

Scientific Notation

6×10^3 grams	6 kilograms
1.23×10^6 bytes	1.23 megabytes
8×10^{-3} meters	8 millimeters
3.45×10^{-6} seconds	3.45 microseconds

L1