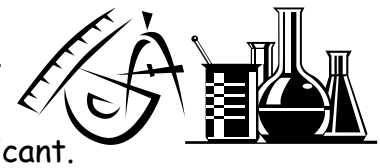
Significant Digits

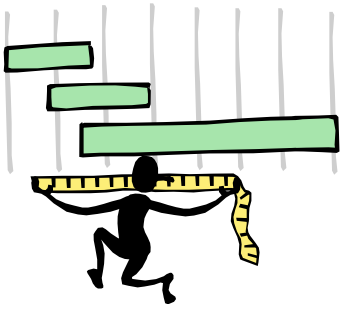
Measuring with Significant Digits



1. Read instruments to 1/10 the last division on the instrument.
2. That last value is an educated guess.
3. Any values that you can measure are significant.

Identifying Significant Digits

1. All reported non zero digits in a value are significant.
   893 - 3 sig digs 12.345 – 5 sig digs
2. All digits are significant if the value ends with a decimal point.
   8000. – 4 sig digs 987. – 2 sig digs
3. Zeros to the right of the decimal point and to the right of a significant digit in a value are significant.
   5.0 – 2 sig digs 0.00341 – 3 sig digs 500 – 1 sig dig

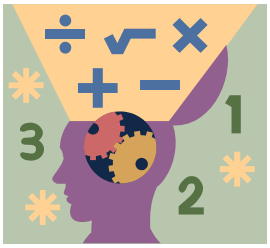


4. Zeros between significant digits in a value are significant.
   4002 – 4 sig digs 3400.0 – 5 sig digs

Multiplication/Division with Significant Digits

1. Identify the number of significant digits in each value.
2. Multiply or divide the values
3. The value with the fewest significant digits will determine the number of significant digits in the answer.

	42 (2)	234 (3)	3780 (3)
	x 2 (1)	x 56 (2)	x 45.6 (3)
	84	13184	172368
with sig digs	**80** (1)	**13000** (2)	**172000** (3)



Addition/Subtraction with Significant Digits

1. Line up the decimal point of each value to be added or subtracted.
2. Locate the last significant digit in each value
3. Add or subtract the values
4. The significant digit furthest to the left of the original values will determine the location of the significant digit of the answer.

346.1 + 45.98=? 65.85 + 2100=? 92.6 - .212=?

	346.1	65.85	92.6
	+ 45.98	+ 2100	- .212
	392.08	2165.85	92.388
With sig digs	**392.1**	**2200**	**92.4**