Measurements Worksheet

When we record measurements, the least significant digit (the last digit we record) is the one we are estimating. This digit is usually one place beyond the value of the smallest tick mark on the scale.

1. 

2. 

3. 

4. 

5. 

6. 

7. 

8. 

9. 

10. 

11. 

12. 

13.
Chemistry 110
Team Activity
Calculations that involve measurements

When we perform calculations that involve measurements, we must decide where the least significant digit is in the answer. Then we round the answer to that digit.

Addition and Subtraction
When adding or subtracting measurements, the result has the same number of decimal places as the least number of decimal places in the measurements being added or subtracted.

Assignment: As a team, decide which digit in the answer is the least significant digit and what the correct answer for each problem is.

Goals: As always, the primary goal is for every team member to understand the material. A secondary goal is to answer all the questions.

Time: Your team has 2 minutes to work on these three problems.

1. $0.7856 \text{ cm} + 0.47 \text{ cm} =$
2. $143.266 \text{ g} - 24.6 \text{ g} =$
3. $40.0 \text{ mL} + 75.3 \text{ mL} =$

Significant digits

Assignment: As a team, decide which digit is the most significant digit and which digit is the least significant digit. Then determine the number of significant digits in each measurement.

Time: Your team has 2 minutes to work on these six problems.

1. $37.829 \text{ g}$
2. $70.05 \text{ mL}$
3. $0.0379 \text{ cm}$
4. $8.300 \mu\text{g}$
5. $0.03080 \text{ kg}$
6. $2.040 \times 10^6 \text{ s}$

Multiplication and Division
When multiplying or dividing measurements, the result has the same number of significant digits as the least number of significant digits in the measurements being multiplied or divided.

Assignment: As a team, decide which digit in the answer is the least significant digit and what the correct answer for each problem is.

Time: Your team has 3 minutes to work on these three problems.

1. $40.0 \text{ mL} \times \frac{1.562 \text{ g}}{\text{mL}} =$
2. $0.350 \text{ g} \times \frac{\text{mL}}{8.403 \text{ g}} =$
3. $143.206 \text{ g} \times \frac{\text{mL}}{2.702 \text{ g}} =$

College Wide Student Learning Outcomes addressed: Communication (COM), critical thinking (CRT), responsibility (RES), information & information technology (IIT), living and working cooperatively (LWC)