Metric System and Conversion Lab

Station 1: School Desk

1. Measure one side of your desk in both cm and inches.

     __60.5____ cm _____23.8____ inches

2. Divide the number of cm by the number of inches. (cm/in) _____

3. Find 2 other groups and **average** the 3 values for cm/in: _____

4. The actual conversion factor from cm to inches is **2.54**. Find the **percent error** of your average. <u>(accepted value – experimental value)</u> x 100%
   Accepted value
   SHOW WORK!

   _____ % error

Station 2: Lab Station

1. Measure the length and width of a lab station in meters.

     Length = _____1.83_____ m   Width = ____0.91_____ m

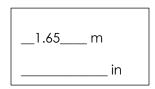2. Determine the area (l x w) of a lab station in m² _____

3. Convert the area to cm²

   cm² = _____

Station 3: Horizontal Jump
1. Measure in meters how far you or a group member can **jump horizontally**.

2. Convert the meters into **inches**. **SHOW YOUR WORK.**

   __1.65____ m

   _____ in

Station 4: Weight
1. Find your weight in pounds ____150_____. ***You can make up a weight if you like** ☺
2. Convert it to kilograms AND grams:

   _____ lbs

   _____ kg

   _____ g

Station 5: Speed
1. One of you needs to run 20 meters (track in hallway) and time it. Calculate your average speed in **meters/second** (m/s) and convert it to **mph**.

Speed = $\dfrac{\text{Distance (m)}}{\text{Time (sec)}}$ = $\dfrac{20\ m}{2.25\ sec}$

_____ m/s

_____mph

Harder Conversions:
1. How many miles are in 246 inches? **SHOW YOUR WORK**! (0.00388 miles)

2. Which is a better value, a 2 L of pop for $1.25 or a 12 pack of 12 oz cans for $3.75? (There are 29.6 mL in 1 oz) ***Figure out the mL/cent of each and compare.
   SHOW YOUR WORK!

   2L in mL/cent = _____

   12 pack in mL/cent = _____

   The better value is: (circle 1)

   2 L   or   12 pack

3. Convert the density of Al (2.7 g/mL) into lb/oz. Use the following conversion factors: 237 mL in 1 cup, 8 ounces in 1 cup. **SHOW YOUR WORK!** (0.18 lb/oz)