EXPERIMENT #2
MASS AND VOLUME RELATIONSHIPS

SEPTEMBER 9, 2014

MASS AND VOLUME OF SODA

ENROLLED STUDENTS

SEPTEMBER 9, 2014

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DETERMINE THE DENSITY OF COKE & DIET COKE

REGULAR COKE

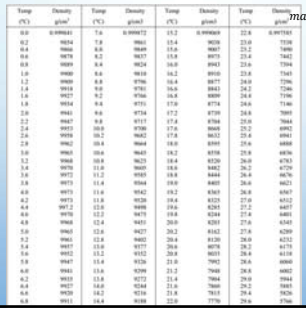
- DETERMINE THE MASS OF THE COKE
  - MASS OF EACH CAN OF COKE
  - FIND AVERAGE MASS
  - SUBTRACT THE MASS OF AN EMPTY CAN
- DETERMINE IF A CAN OF COKE WILL SINK OR FLOAT
  - PUT THE COKE IN A BUCKET OF WATER AND OBSERVE
- DETERMINE THE VOLUME OF THE COKE
  - READ THE CAN LABEL FOR THE VOLUME CONTENTS
- DETERMINE THE DENSITY OF THE COKE
  - USE D=M/V TO DETERMINE THE DENSITY

DIET COKE

- DETERMINE THE MASS OF THE COKE
  - MASS OF EACH CAN OF COKE
  - FIND AVERAGE MASS
  - SUBTRACT THE MASS OF AN EMPTY CAN
- DETERMINE IF A CAN OF COKE WILL SINK OR FLOAT
  - PUT THE COKE IN A BUCKET OF WATER AND OBSERVE
- DETERMINE THE VOLUME OF THE COKE
  - READ THE CAN LABEL FOR THE VOLUME CONTENTS
- DETERMINE THE DENSITY OF THE COKE
  - USE D=M/V TO DETERMINE THE DENSITY

WHEN USING A BALANCE

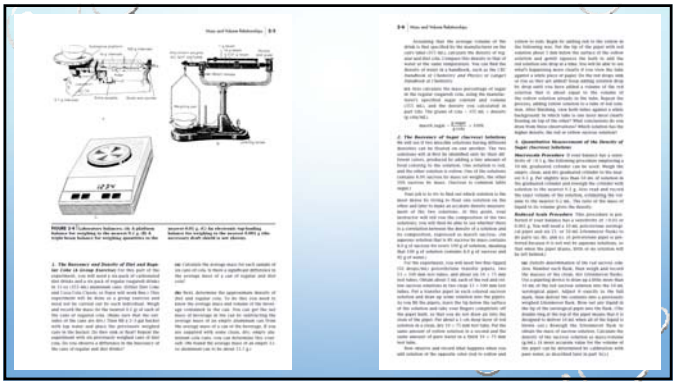
1. ***KEEP THE BALANCE PANS CLEAN AND DRY.***
   CLEAN UP *IMMEDIATELY* ANY CHEMICAL THAT IS SPILLED.
2. ***MAKE CERTAIN THE BALANCE IS LEVEL.***
   SENSITIVE BALANCES USUALLY HAVE A BUBBLE LEVEL. THE BALANCE IS LEVEL WHEN THE BUBBLE IS CENTERED IN THE BLACK CIRCLE ON THE BUBBLE LEVEL. ERROR WILL BE INTRODUCED INTO THE READING IF THE BALANCE IS NOT LEVEL.
3. ***CHECK THE REST POINT (OR TARE) OF THE EMPTY BALANCE.***
   ELECTRONIC BALANCES HAVE NO SWINGING BEAM BUT USUALLY HAVE A TARE BUTTON THAT ALLOWS YOU TO ZERO THE READING. IF YOU HAVE A PLATFORM OR TRIPLE-BEAM BALANCE, FIRST BE SURE ALL MOVABLE BEAM WEIGHTS ARE AT THEIR ZERO POSITION. THEN RELEASE THE BEAM RELEASE (IF THE BALANCE HAS ONE), GIVE THE PAN A LITTLE PUSH TO CAUSE IT TO SWING GENTLY, AND NOTE THE CENTRAL POSITION ON THE SCALE ABOUT WHICH THE POINTER OSCILLATES. USE THIS POINT AS THE REFERENCE-ZERO REST POINT IN YOUR WEIGHINGS. NEVER TAKE READINGS WITH THE BEAM AND POINTER AT REST. WHEN THE BALANCE BEAM IS STATIONARY, IT IS POSSIBLE FOR THE BALANCE BEAM SUSPENSION TO STICK IN A POSITION THAT IS NOT THE TRUE EQUILIBRIUM POSITION. IF THE POINTER READING DIFFERS BY MORE THAN TWO TO THREE SCALE DIVISIONS FROM THE MARKED ZERO POINT, HAVE YOUR INSTRUCTOR ADJUST THE BALANCE. *DO NOT CHANGE THE BALANCE ADJUSTMENTS YOURSELF.*
4. ***NEVER WEIGH AN OBJECT WHILE IT IS WARM.*** **THE CONVECTION**
   CURRENTS OF WARM AIR WILL AFFECT THE MASS READING OF AN ELECTRONIC BALANCE OR THE REST POINT OF A BALANCE BEAM.
5. ***AFTER WEIGHING AN OBJECT, RETURN THE BEAM WEIGHTS***
   TO THE ZERO POSITION, AND RESTORE THE BEAM RELEASE TO ITS REST POSITION.



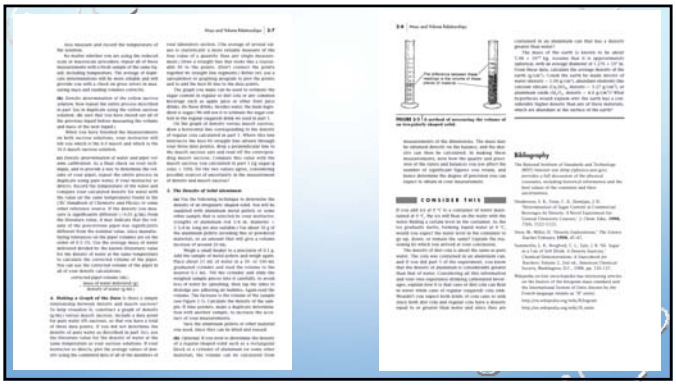
$$mass\ \%\ sugar = \frac{g\ sugar}{g\ cola} * 100\%$$

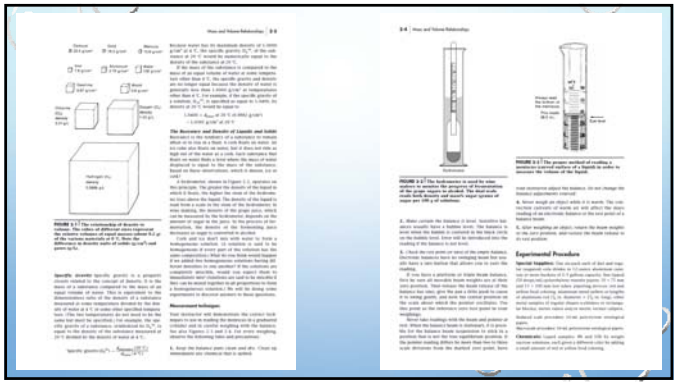
$$density = \frac{mass}{volume}$$

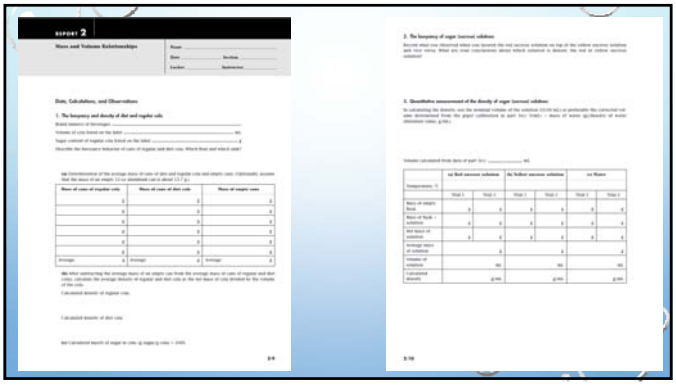

The Arnold Palmer
Ice Tea
Lemonade




EXPERIMENT 2
Mass and Volume Relationships






REPORT 2
Mass and Volume Relationships