

MHS Forensic Science Test Outline 2018

- Safety, Careers, metric-English conversions, class and individual characters in evidence
- Bells 5 and 7 – Test is Friday, 10/12
- Bell 6 - Test is Monday, 10/15

Locard's Exchange Principle

- Principle that states that we take something away from where we have been and we leave something behind.
- How does this apply to criminal investigation

Locard's Principle: Whenever 2 objects come into contact material is exchanged.

Safety

- Eye care and PPE (Personal Protective Equipment)
 - What are the usual things you might wear in lab
 - When do you wear goggles
 - How do you use an eyewash station (4 steps), include how long you would use it if you got something in your eyes
- Location and use of:
 - Eyewash stations
 - Safety Shower
 - Broken Glass container
 - Fire extinguisher
 - Sharps containers
 - Chemical Waste Disposal

Metric System and English-Metric Conversions

- Metric conversions
- English – metric conversions
- Remember that there are practice problems worked on Edmodo.
- I will provide the English-metric conversions but you must remember that there are:
 - 4 quarts in a gallon
 - 16 ounces in a pound
 - 36 inches in a yard, 3 feet in a yard
 - 12 inches in a foot

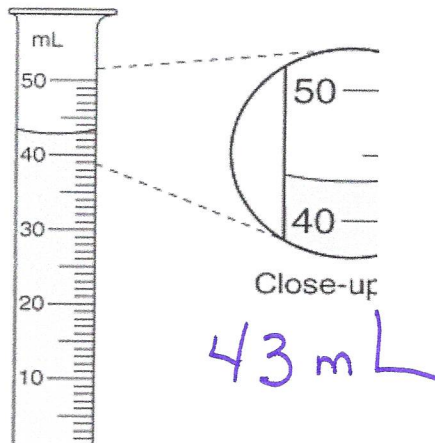
- Order the following from smallest to largest and then add them together:

○ 100 dl, 0.01 ml, 250 cl, 0.015 ml

Don't Do.

○ 2.5 dg, 250 cg, 0.025 mg, 2.5 g

- How to properly read the volume and find the meniscus using a graduated cylinder.



Solve the following:

1. 2 km = _____ ft.

$$\begin{array}{r} 2 \text{ km} \quad | \quad 100000 \text{ ft} \\ \hline 1 \text{ km} \quad | \quad 30.5 \text{ cm} \\ \hline = 6557.4 \text{ ft} \end{array}$$

2. 82 oz - _____ g

$$\begin{array}{r} 82 \text{ oz} \quad | \quad 28.35 \text{ g} \\ \hline 1 \text{ oz} \\ \hline = 2324.7 \text{ g} \end{array}$$

3. $3\text{ft}^3 = \underline{\hspace{2cm}} \text{m}^3$

$$\frac{3\text{ft}^3}{1^3} \times \frac{30.5^3 \text{cm}^3}{39^3} \times \frac{1^3 \text{m}^3}{100^3 \text{cm}^3} = 0.085 \text{m}^3$$

4. $2680 \text{mg} = \underline{\hspace{2cm}} \text{cg}$

$$\frac{2680 \text{mg}}{10 \text{mg}} = 268.0 \text{cg}$$

Careers and Vocabulary

- Botanist - Plant Parts
- Entomologist - Insects
- Engineer - Structures
- Anthropologist - Human Remains
- Pathologist - performs autopsies / tissue
- Forensic - to debate on diseased tissue
- Medical Examiner - argue
- Cyber Technologist - Darkweb, Hacking
- CSI - Crime Scene Investigation
- Accountant - Money trails
- Biologist - DNA
- Chemist - drugs, poisons, paint
- Odontologist - Teeth = Dental records
- ~~Anthropologist~~

Performs autopsies also a pathologist

Class, Wear, and Individual Characteristics

- Distinguish between class and individual characteristics
- Can accidental and wear characteristics be individualized? Be able to say how.
- Identify the following as one of the four categories of evidence
 - o Over-use on a tire tread *wear*
 - o Brown Hair *class*
 - o Blue Eyes *"*
 - o Tall *"*
 - o DNA Fingerprint *Individual*
 - o Fingerprint *"*
 - o Tear in the pattern of the tread on your shoe *"*
 - o Timberland logo *class*
 - o Chevy equinox *class*
 - o Broken taillight *- Depends*
 - o Scratches on the front fender of a car *I*
 - o ~~License plate of a car~~ *I*
 - o Nail in a tire *I*
 - o Piece of glass that fits together with other pieces of glass. *I*
 - o License plate number *I*
 - o Vehicle Identification Number *I*
 - o Type O negative blood *class*

NOTES

- Calculate probability to determine the value of evidence in securing an arrest or a conviction.

1. For 24 students, 8 of whom are at least 15 years old, and 15 are female, determine the probability of being at 15 years old and female.

age: $8/24 = .333$
 Female $15/24 = .625$

$.333 \times .625 \times 24 = 4.99$
 5 individuals