The assessment will help to identify whether students mastered the following learning goals:

* Students will be able to identify different types of units in measurements such as weight, distance and volume and will understand the concept of metric and English system of measurements
* Students will identify the unit 1 (given unit) and unit 2 (new unit) and write correct equation to solve unit conversions in metric as well as English system.
* Students will be able to develop QL and QR skills in comparing the values of units such as mega (106 ), kilo (103 ), micro (10-6 ), and nano (10-9 ).
* Students will understand the equivalent of English units values such as lb., feet, inches, gallon in terms of metric system
* Students will learn to write equations with proper unit

**Please answer the following questions:**

**Show your detailed work wherever it is necessary!!!!!!!(You can use calculator)**

**Please note: The relationship between the Metric and English system will be provided wherever it is necessary to solve the problem. But it is your responsibility to know the relationship between the metric systems conversion!!!!**

1. **1.      For each unit listed below, identify whether the measurement is for length, volume, or weight?**

i)                    Feet     \_\_\_\_\_\_\_\_\_\_

ii)                  mL       \_\_\_\_\_\_\_\_\_\_

iii)                dg        \_\_\_\_\_\_\_\_\_

iv)                lb         \_\_\_\_\_\_\_\_\_\_

v)                  nm       \_\_\_\_\_\_\_\_\_\_

vi)                gallon  \_\_\_\_\_\_\_\_\_\_\_

1. **2.      True or false:**

i)                    A mega gram is smaller than a milligram        \_\_\_

ii)                  One nano meter is smaller than a decimeter   \_\_\_

iii)                1000 mL is equal to a liter      \_\_\_

iv)                1 µL is bigger than 1 mL        \_\_\_

1. **3.      Calculate the density (d) of piece of lead that weighs 5.5 lb and has a volume of 221mL?**

**Hint: (d= mass in gram/ volume in mL)**

1. **4.      John adds 250 ml of water to a jug that already contains 1.2 liters of water.  
   How many liters of water are now in the jug?**

**Assessment for Question 1.**

Were Students able to identify the measurements for each unit?

Correct answer 1, wrong answer 2

|  |  |  |  |
| --- | --- | --- | --- |
| unit | measurement | Correct Answer | Wrong answer |
| Feet | Length | 1 | 0 |
| mL | Volume | 1 | 0 |
| dg | Weight | 1 | 0 |
| lb | Weight | 1 | 0 |
| nm | length | 1 | 0 |
| gallon | volume | 1 | 0 |

**Assessment for Question 2**

Were students acquired the knowledge QL and QR skills by identifying values of the prefix mega, kilo, micro, milli, and nano.

                   Correct answer 1, wrong answer 2

|  |  |  |  |
| --- | --- | --- | --- |
| question | Answer | Correct  answer | Wrong answer |
| i | false | 1 | 0 |
| ii | true | 1 | 0 |
| iii | true | 1 | 0 |
| iv | false | 1 | 0 |

**Assessment for Question 3**

Were students able to identify the English system unit and convert it to metric system to solve the problem? If the student was able to convert mass in **lb to gram they get partial credit 1 point**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **mass** | | **volume** | **density** | **Wrong answer but correct mass conversion** | **Correct answer** | **Wrong answer** |
| lb | gram | 221mL | 11.28 g/mL | 1 | 2 | 0 |
| 5.5 | 2494.76 |

**Assessment for Question 4**

Were students able to write the correct conversion factor?

|  |  |  |
| --- | --- | --- |
| Answer | Correct answer | Wrong answer |
| 1.45 L | 3 | 0 |