**The Metric System:**

Measurements in physics must always have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

In physics, we use the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_to measure.

Commonly used metric system units: Each physical quantity has a\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Length—\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( )

Example: The length of the room is 20 m.

Mass – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( )

Example: The mass of a person on the moon is 47 g.

Volume – \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( )

Example: I am going to the store to buy a 2 L bottle of Sprite.

Time- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_( )

Example: In 360 s, we are going to begin the quiz.

These base units may have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_which make them a different quantity.

**Metric System Prefixes:** A *prefix* is an affix which is placed before the stem of a word. Adding it to the beginning of one word changes it into another word.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **King** | **Henry** | **Died** | **by** | **drinking** | **chocolate** | **milk** |
| **k** | **h** | **D** | **b** | **d** | **c** | **m** |
|  |  |  | **base unit** |  |  |  |

 **m**

**1000 100 10 g .1 .01 .001**

 **L**

**Examples: Underline the prefixes:**

1 meter = 100 centimeters

 0.001 kilometers = 1 meter

 1 gram = 1000 milligrams

**Converting from one unit to another:**

**8 km = \_\_\_\_\_\_\_\_\_\_\_\_\_\_ m**

* **Move your decimal place over 3 places to the right from k to the base unit (m)**

**15,000 mL = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_DL**

* **Move your decimal places 4 places to the left to get from mL to DL.**

**K H D b d c m**

**You try some:**

**13 km to dm**

130,000 dm

**5,111 L to HL**

51.11 HL

**37mm to Dm**

.0037 Dm

**0.482 kg to mg**

482,000 mg

**0.0046 Dg to dg**

.46 dg

**17,000 cL to HL**

1.7 HL

**8,000 mm to m**

8 m