**The Metric System:**  8/3

\_\_\_\_\_measurements\_\_\_\_\_\_\_\_\_\_\_\_\_in physics must always have a \_\_\_\_\_\_\_\_unit\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

In physics, we use the \_\_\_\_\_\_Metric\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_system\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_to \_\_\_\_\_\_\_\_measure\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

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

Length—\_\_meters\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( m )

Example: The length of the room is 20 m.

Mass – \_\_\_\_grams\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( g )

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

Volume – \_\_\_\_Liters\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( L )

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

Time- \_\_\_\_\_\_seconds\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_( s )

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

These base units may have \_\_\_prefixes\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_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** |
| **kilo** | **hecto** | **Decka** | **base unit** | **deci** | **centi** | **milli** |

**m**

**g**

**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 = \_\_\_\_\_8000\_\_\_\_\_\_\_\_\_ 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**

**5,111 L to hL**

**37mm to Dm**

**0.482 kg to mg**

**0.0046 Dg to dg**

**17,000 cL to hL**

**8,000 mm to m**