

## US Customary Units of Weight

**Weight:** It is a measure of how strongly the earth is pulling on an object. Whereas, in the US, the unit of weight is called **pound**, which is a weight solid kept at the Bureau of Standards in Washington, D.C, in other countries, the unit weight used is kilogram.

The US Customary System units of weight are **pound, ounce, and ton.**

It is very important to know the relationship between them:

$$\begin{aligned} 16 \text{ ounces (oz)} &= 1 \text{ pound (lb)} \\ 2000 \text{ pound} &= 1 \text{ ton} \\ 1000 \text{ kg} &= 1 \text{ ton} \end{aligned}$$

### First Application

Conversion method:

You will start with the measure that is given, the know measure. Then, set up a rate by putting the unit desired in the answer in the numerator, and the original unit in the denominator.

Example:

Convert 62 oz to pounds.

Because the ozs are located on the top and the bottom, they will reduce each other.

$$\frac{\cancel{\text{oz}}}{\cancel{\text{oz}}} =$$

Convert 1.5 tons to pounds

The tons will reduce each other.

$$\frac{\cancel{\text{ton}}}{\cancel{\text{ton}}}$$

**Second Application**

Performing arithmetic operations with measurements of weight.

Example: Find the difference between 14 lb 5 oz and 8 lb 14oz.

First of all you have to subtract 14 oz from the 5 oz. Because 5 are less than 14, you have to borrow one lb unit in order to increase the oz for doing the subtraction.

Now, we have instead 14 lb and 5 oz, we have 13 lb and 21 oz (5+16).

So, let's subtract 21 oz – 14oz = 17 oz.

Finally, subtract 8 lb from 13lb = 5 lb

$$14 \text{ lb } 5 \text{ oz} - 8 \text{ lb } 14 \text{ oz} = 5 \text{ lb } 17 \text{ oz.}$$

**Third Application:**

Word Problem:

Sirina purchased 4 lb 8oz of oat bran and 2 lb 11 oz of wheat bran. She intends to mix and makes a 3-ounce package for a diet supplement. How many 3-oz packages can she make?

Strategy:

Add the amount of oat bran and the amount of wheat bran.

Convert the sum to ounces

Divide the total of ounces by weight of each package (3oz)

$$4 \text{ lb } 8 \text{ oz} + 2 \text{ lb } 11 \text{ oz} = 6 \text{ lb } 19 \text{ oz} = 115 \text{ oz}$$

We convert the 6 lb into ounces by multiplying it by 16.

$$115 \text{ oz} / 3 \text{ oz} = 38.3 = 38 \text{ packages.}$$