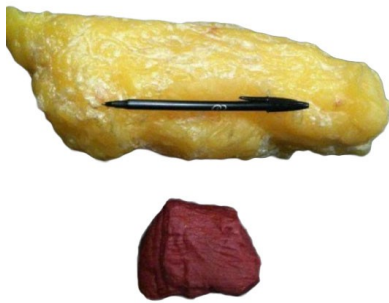


What is Mass?

Mass is the measure of how much matter, or particles, there are in an object. It is often measured by how much something weighs, BUT weight can change in different locations, like the moon, but mass always stays the same.



2kg of FAT

vs

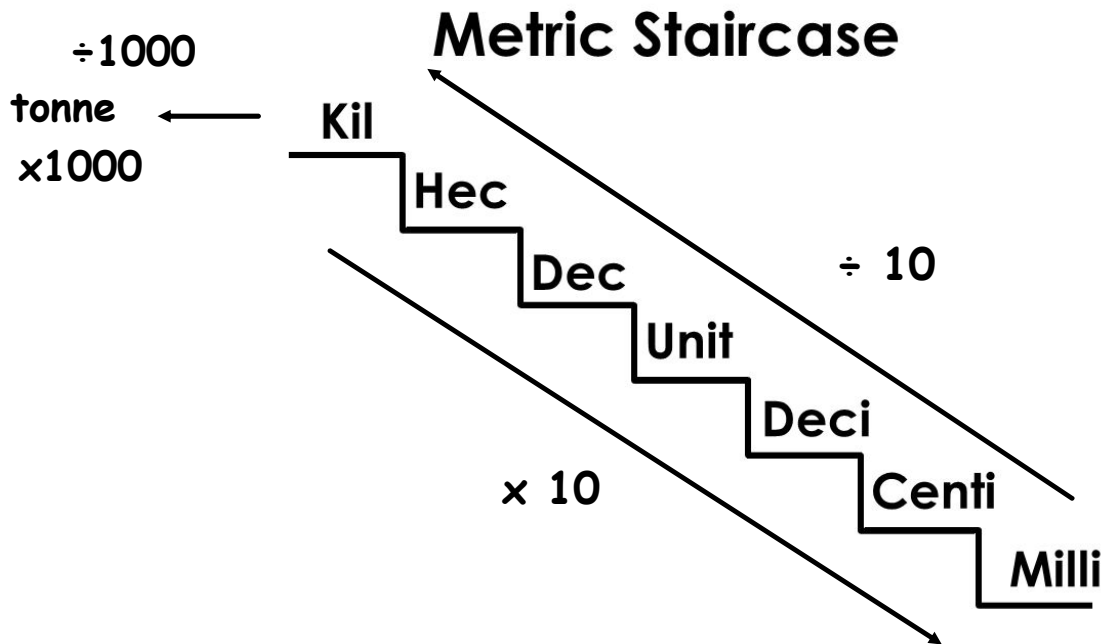
2kg of Muscle

Do they both have the same amount of matter?
Why are they different sizes?

5.9 - Using Metric Units for Mass

The Metric system uses the basic unit gram (g) and also:

- kilogram (kg)
- hectogram (hg)
- decagram (dg)
- decigram (dg)
- centigram (cg)
- milligram (mg)
- tonne (t)



5.9 - Using Metric Units for Mass page 143

Example:

Some tree planters plant 1 600 trees a day,
which is equal to lifting about 250 kg.

a) How many kilograms is this in 5 days?



b) How many tonnes is this in 5 days?

Your Turn!

complete # 1 and 2 page 143

5.8 - Using Imperial Units for Mass

The American Imperial system uses:

-Ounces (oz)

-Pounds (lb)

Tons (T)

Ratios:

$$\frac{0.063 \text{ lb}}{1 \text{ oz}}$$

$$\frac{16 \text{ oz}}{1 \text{ lb}}$$

$$\frac{0.0005 \text{ tons}}{1 \text{ lb}}$$

$$\frac{32000 \text{ oz}}{1 \text{ ton}}$$

$$\frac{2000 \text{ lb}}{1 \text{ ton}}$$

5.8 - Using Imperial Units for Mass page 141

Example:

Chloe is renting a 15 ft box truck to move the contents of her store to a new location. The truck can carry $1\frac{3}{4}$ T (US). How many pounds can it carry?



Your Turn!

complete # 1, 3, and 4 on page 141

5.10 - Mass in Different Systems

When converting between systems, using the following ratios:

Metric to Imperial

$\frac{0.04 \text{ oz}}{1 \text{ g}}$	$\frac{2.21 \text{ lb}}{1 \text{ kg}}$	$\frac{1.1 \text{ T}}{1 \text{ t}}$
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Imperial to Metric

$\frac{28.35 \text{ g}}{1 \text{ oz}}$	$\frac{0.45 \text{ kg}}{1 \text{ lb}}$	$\frac{0.91 \text{ t}}{1 \text{ T}}$
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5.10 - Mass in Different Systems

page 14

Example:

Alex is researching on the Internet before buying a laptop computer. What is the difference in mass, in kilograms, of these two computers?



Your Turn!

complete #5 and 6 on page 146