Metric Mass (Weight)

Most common units of measure:

 Grams

 Kilograms

Grams

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| --- | --- |
| paperclip | A paperclip weighs about 1 gram.  Hold one small paperclip in your hand. Does that weigh a lot? No! A gram is very light. That is why you often see things measured in hundreds of grams. |

Grams are often written as g (for short), so "300 g" means "300 grams". A loaf of bread weighs about 700 g (for a nice sized loaf)

Kilograms

Once we have 1,000 grams, we have 1 **kilogram**.

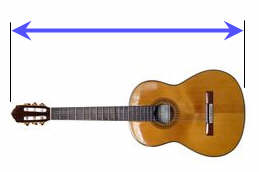
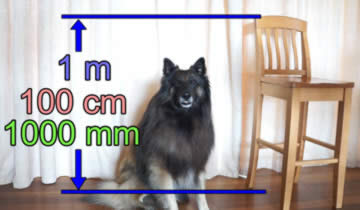
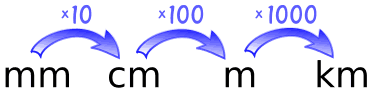
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| 1 kilogram = 1,000 grams  A dictionary has a mass of about one kilogram. | Dictionary |

Kilograms are great for measuring things that can be lifted by people (sometimes very strong people are needed of course!).

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| bathroom-scales | Kilograms are often written as kg (that is a "k" for "kilo" and a "g" for "gram), so "10 kg" means "10 kilograms". Scales measure our weight using kilograms. An adult weighs about 70 kg. How much do you weigh? |

Metric Length

These are the most common measurements:

* **Millimeters**
* **Centimeters**
* **Meters**
* **Kilometers**
* Small units of length are called **millimeters**.
* A millimeter is about the **thickness of a plastic id card** (or credit card).
* Or about the thickness of 10 sheets of paper on top of each other.
* This is a very small measurement!
* When we have 10 millimeters, it can be called a **centimeter**.
* 1 centimeter = 10 millimeters
* A fingernail is about **one centimeter wide**.
*   
  Two tape measures, one in mm, the other in cm
* We can use millimeters or centimeters to measure how tall we are, or how wide a table is, but to measure the length of football field it is better to use **meters**.
* A **meter** is equal to 100 centimeters.
* 1 meter = 100 centimeters
* The length of this guitar is about 1 meter
* Meters can be used to measure the length of a house, or the size of a playground.
* And because a centimeter is 10 millimeters:
* 1 meter = 1000 millimeters
*   
  The back of this kitchen chair is 1 meter
* A **kilometer** is equal to 1000 meters.
* When we need to get from one place to another, we measure the distance using **kilometers**.
* The distance from one city to another or how far a plane travels can be measured using kilometers.
* Final thoughts about measuring length:
* 
* 1 centimeter = 10 millimeters
* 1 meter = 100 centimeters
* 1 kilometer = 1000 meters

Metric Volume

These are the two most common measurements:

* **Milliliters**
* **Liters**

A**milliliter** (that is "milli" and "liter" put together) is a very small amount of liquid.

Here is a milliliter of milk in a teaspoon.

It doesn't even fill the teaspoon!

|  |
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| If you collect about 20 drops of water, you will have 1 milliliter: |
|  |
| 20 drops of water droplets makes about 1 milliliter |
|  |
| And a teaspoon can hold about **five** milliliters: |
| 1 teaspoon of liquid Teaspoonful is about 5 milliliters |

Milliliters are often written as ml (for short), so "100 ml" means "100 milliliters".

Here we have **150 ml** of milk in a [measuring cup](https://www.mathsisfun.com/measure/measuring-cups.html).

It doesn't say "150" ... it says "50" ... but it is half-way between 100 and 200 so you can figure out it is 150 ml.

Liter

A **liter** is just a bunch of milliliters put all together. In fact, 1000 milliliters makes up 1 liter:

1 liter = 1,000 milliliters

This jug has exactly 1 liter of water in it.

Liters are often written as L (for short), so "3 L" means "3 Liters" (some people use lowercase **l**, but that looks too much like **1**).

Milk, soda and other drinks are often sold in liters.