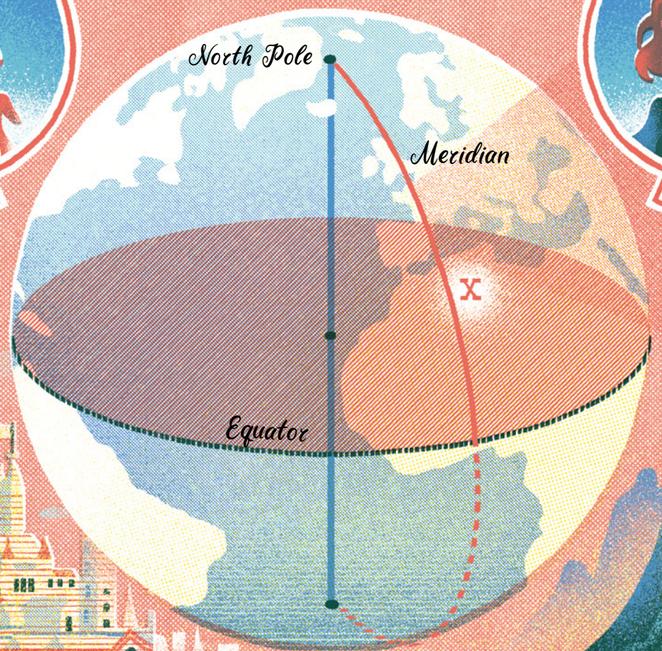
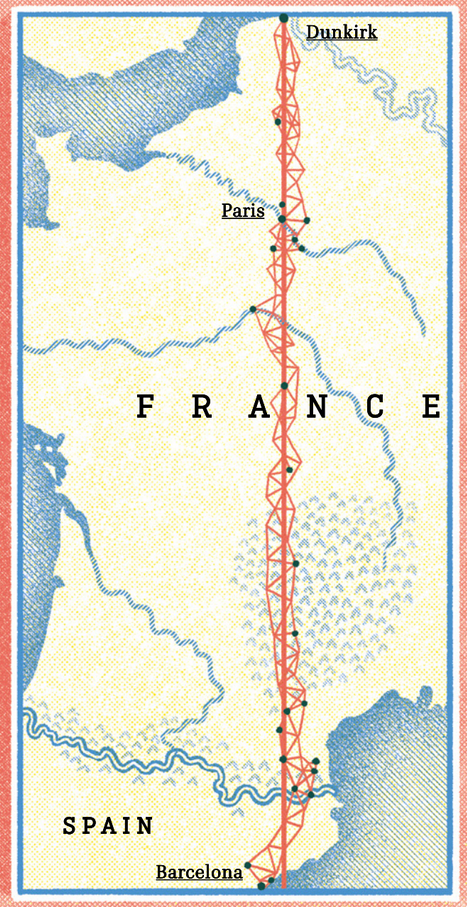
From the North Pole to the equator: the invention of the meter

Before the French Revolution there were many different systems of measuring distances that people had devised in the centuries before. The new universal unit of length, the meter, replaced these in 1793. It was very tricky to get it right at first, but the meter has become the world's standard unit for measuring length.





From Dunkirk to Barcelona

It was too difficult to travel to the North Pole to measure the distance between the poles, but Méchain and Delambre figured out a trick: They chose a small section of the meridian, running from Dunkirk in the north of France to Barcelona in Spain. By measuring the distance between the two cities and taking into account the curvature of the Earth, they could work out the total length.

$$\frac{X}{10\,000\,000} = \text{mètre}$$

A new standard

It took the two scientists more than six years to complete their task. The final result, measured in an older unit called a *toise*, was divided by 10,000,000 to create the new measure: the *mètre*. The French made a 1 meter bar out of platinum, a precious metal, and placed it in the National Archives in Paris. Copies of it were later sent to other countries, but it took another 150 years before most of the world accepted the meter as the standard.

Measuring the size of the Earth

The French Academy of Sciences decided that the meter should be based on the size of the Earth. In order to do so, two scientists, Pierre-François-André Méchain and Jean-Baptiste Delambre, set out to measure the distance between the equator (an imaginary circle around the Earth, right in the middle between the North and South poles) and the North Pole along a straight line (called the meridian) running through Paris.

Kilometers and millimeters

Using the meter as the starting point, we can today measure any length, from the distance you travel on your way to school to the microscopic size of bacteria cells. Bigger distances are often measured in kilometers (1 km = 1,000 meters), while smaller things are measured in millimeters (1 mm = 1,000th of a meter).