**The Bell tower or Tower of Pisa.**

It is curious that a bell tower that does not even bear the name of its creator has become, thanks to its lean, the most famous monument in the world. Sometimes 'mistakes are necessary, useful as bread and often also beautiful: for example the tower of Pisa' (Gianni Rodari).
1173 was the starting year of the construction works for a column made of columns (Rudolf Borchardt), circular like the Baptistery and visible from all over the Pisan plain. After the first subsidence, five years after the laying of the first stone and after numerous attempts to correct its inclination by **Giovanni di Simone**, in the eighties of the fourteenth century the construction was completed by **Tommaso Pisano**. Finally the Cathedral had its bell tower.
The lean became more and more threatening over the centuries and from 1990 to 2001 the tower was subjected to major consolidation works. Thanks to a commission of scientists from all over the world, the project was developed in two main phases: the first involved the aid of lead counterweights and steel cables, the second the extraction of clay and sand on the side opposite the slant, which allowed a slight subsidence of about half a meter.
The result obtained has brought the slant of the tower back to about three centuries ago.

The **gravity experiment**: unlike what we find written in many manuals, Galileo never carried out the gravity experiment from the famous Tower, but he studied Aristotelian notions and questioned them in a theoretical way, or with limited experimental evidence. Aristotle claimed that bodies fall in direct proportion to their own weight, so the heavier a body, the faster it falls.
Galileo, however, only remained faithful to the notion, also Aristotelian, according to which bodies fall with a uniform speed depending on their density. He knew perfectly well the resistance that air exerts on the volume of a body, therefore he deduced that: *…and for this [the experiment can be carried out] we need a space entirely devoid of air and any other body [...] since we lack such space, we will observe what happens in the subtlest and least resistant mediums [...] it seems to me that we can very probably believe that in vacuum their speeds would be quite equal*.
With this statement he makes us understand that, in the absence of friction, in a condition that we today define as ideal, the fall would be the same. Of course, the Tower would never have been that ideal place, so it is reasonable to say that this experiment never took place.

The strange reliefs: on the sides of the entrance door we can see curious reliefs representing some animals. On the left, a bear attacks a dragon-snake, which in turn tries to take a ram; on the right the same scene, except that the prey is a bull.

A reading hypothesis:

- **The bear**, or rather **she-bear** refers to the figure of the mother, an allegory of the Virgin, or in a broader sense of Pisa itself.
- The **dragon-snake**, is an iconographic representation of evil or of the devil, in this case a threat.
- The ram and bull (**Aries** and **Taurus**) are two zodiac signs, representing the time interval between 25 March and 21 April, within which Easter falls.

We can therefore deduce that the Virgin Mary (the bear), or the city of Pisa, is protecting the Easter period (between ram and bull) from the threat of the devil (dragon-snake).
Above, to the right of the entrance door, there is a bas-relief depicting two ships in the act of returning to port, represented by a turreted construction. In the Middle Ages, when the sun reached the Zenith on All Saints' Day, a blade of shadow was projected from the capital to the right of the bas-relief. This phenomenon decreed the end of the navigation period for the Republic of Pisa.

But what is its real purpose?
It is called the Leaning Tower or the Tower of Pisa but actually it was never used for defending the city; it is part of the religious complex in the Duomo Square and acts as its bell tower. It played an active role in both human and divine timekeeping with its seven bells – one for each musical note – the largest of which, cast in 1655, weighs a full three and a half tonnes! It is known throughout the world for the beauty of its architecture, for its extraordinary tilt, which makes it an authentic miracle of statics, and for the fact that it stands in the universally renowned Piazza dei Miracoli, of which it is certainly the prize jewel. And this is why it is one of the 7 Wonders of the World.

How does the tower measure up?
Height: 58,36 metres
External diameter: 15 metres
Weight: 14.453 tonnes
Inclination: (current) about 5.5°
Hewn stones: 29.424
Stone surfaces: 7.735 square metres
Capitals: 207
Staircase: 273 steps