



## LEONARDO DA VINCI'S "VITRUVIAN MAN"

**The Vitruvian Man** - you may not know his name, but you've seen him plenty of times before. He's that multi-limbed man in the square and the circle. You may even know that **Leonardo da Vinci** drew him. But do you know anything else? Who is this guy, who has somehow become so famous that of 'squaring the circle? This involves drawing a circle and square that have the same area without measuring. Some argue that this diagram shows that **Leonardo** had a sophisticated understanding of the problem, which other mathematicians would not develop until much later.

**Leonardo's** famous drawings of the **Vitruvian's** proportions of a man's body first standing inscribed in a square and then with feet and arms outspread inscribed in a circle provides an excellent early example of the way in which his studies of proportion fuse artistic and scientific objectives. Leonardo points out that 'If you open the legs so as to reduce the stature by one-fourteenth and open and raise your arms so that your middle fingers touch the line through the top of the head, know that the centre of the extremities of the outspread limbs will be the umbilicus, and the space between the legs will make an equilateral triangle. Here he provides one of his simplest illustrations of a shifting 'centre of magnitude' without a corresponding change of 'centre of normal gravity'. This remains passing through the central line from the pit of the throat through the umbilicus and pubis between the legs. Leonardo repeatedly distinguishes these two different 'centres' of a body, i.e. the centers of 'magnitude' and 'gravity'.

These ideas were not entirely Leonardo's, but were taken from the writings of Roman architect (\*) **Vitruvius** hence the name - **Vitruvian Man**. Both men believed that the same principles should be used when designing buildings. However, **Leonardo** tried to take these ideas further, and spent much of his life searching for connections between the structure of the human body, and other patterns in nature. In some of his notes he proclaimed that "Man is the model of the world." The rendering of Vitruvian Man was completed in 1490.

(\*) **Marcus Vitruvius Pollio** was a famous Roman architect in the 1st century BC. He is thought to have been born in Verona. In his lifetime, **Vitruvius** became famous as an architect to the emperor Augustus and wrote "De Architectura", which is a summary of his own experience in the field of architecture. The work, consisting of 10 volumes, was written around 15 BC and dedicated to the emperor. It is thought to be the only direct source on antique architecture and had a considerable influence on the Middle Ages and Renaissance. In the books, **Vitruvius** explained the theory of the architectural order of pillars, as well as shapes and types of temples and introduced rules for the design of houses. Alongside actual architecture, he also dealt with technical objects, e.g. the so-called 'Tympanum' (for the transport of water), flour mills, water screws, thermal springs, sundials and various technical tools aiding construction. Great architectural writers of the 15th to 17th century, based their theories on **Vitruvius' 'De Architectura'**. The first printed edition of **Marcus Vitruvius Pollio's** work appeared in Rome in 1486, and the illustrated edition in 1511 in Venice.