

# Pythagoras and his cult: Unravelling the mysteries of an ancient mathematical sect

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Pythagoras is synonymous with the Pythagorean theorem, a fundamental concept in mathematics that students encounter early on in their maths education. Today, we tend to think of mathematics as a pure science, the complete obverse of religion or spirituality. But in history, this distinction did not exist. In fact, one of the most famous mathematicians of all time was not only a philosopher but the founder of a religious sect: the Pythagorean Brotherhood.

## Pythagoras: a life in ancient Greece

Born around 570 BCE on the island of Samos in the Aegean Sea, Pythagoras' early life is shrouded in mystery. However, historical accounts suggest that he travelled extensively, gaining knowledge from various cultures and civilizations, including Egypt and Babylon. This cosmopolitan exposure would later significantly influence his philosophical and mathematical ideas. After his travels, Pythagoras settled in the Greek colony of Croton, in Southern Italy, where he established a school that would become the cradle of his distinctive philosophy. This was no ordinary institution; it was a place where knowledge, spirituality, and morality converged. Pythagoras believed that the pursuit of wisdom involved not only intellectual endeavours but also ethical and spiritual development.

## Teachings of Pythagoras

The philosophy of Pythagoras was multi-dimensional, combining elements of mathematics, spirituality, and ethics. Pythagoras and his followers saw numbers as the fundamental building blocks of reality. They believed that the entire universe operated according to mathematical principles, and through the study of numbers, one could uncover the hidden truths of existence. In Pythagorean philosophy, the number ten, or the sacred decad, was considered the most sacred of numbers. It represented unity, completeness, and perfection.

The Pythagoreans embraced the concept of reincarnation, wherein the soul is immortal and undergoes a cycle of rebirths until it achieves purity and perfection.

Pythagoras also believed that the beauty and harmony of the cosmos were the result of numerical proportions. This perspective laid the groundwork for later ideas about the harmony of the spheres.

The sect adhered to a strict diet that advocated vegetarianism, eschewing animal products. They also practised celibacy and engaged in regular physical exercise to maintain a healthy body and mind.

Pythagoras believed in the profound connection between mathematics and music. He theorised that musical intervals could be expressed mathematically, a concept now known as the mathematics of music.

The Pythagoreans practised a form of esoteric teaching known as Akousmata. These were oral traditions and secret doctrines, reserved only for the initiated, which covered a wide range of topics, from ethics to mathematics.

## A unique brotherhood

The followers of Pythagoras, known as Pythagoreans, formed a distinct religious community that adhered to a strict code of ethics and a set of unique principles. Initiates underwent a rigorous process of training and were bound by secrecy. The Pythagoreans embraced a way of life characterized by simplicity, asceticism, and intellectual pursuits.

The Pythagoreans practised asceticism, a lifestyle of self-discipline and restraint. Central to this was their vegetarian diet, which excluded meat and advocated for a diet based on grains, legumes, and vegetables. Interestingly, they refrained from consuming beans, as they believed beans contained the souls of the dead.

They were strong advocates of communal living. They shared their possessions and resources with fellow members, promoting a sense of unity and brotherhood within the community.

The Pythagoreans maintained a rule of silence during the daytime, speaking only when necessary. This practice aimed to encourage introspection and self-control, allowing members to contemplate the profound teachings of their leader. The sect considered mathematics a means to attain spiritual enlightenment. They believed that understanding the mathematical order of the cosmos was a path to achieving a deeper connection with the divine.

In contrast to many other ancient Greek societies, Pythagoras allowed women to participate in his school. Several female Pythagoreans, such as Theano, became prominent mathematicians and philosophers.

### **Zero sum**

As the Pythagoreans grew in influence and became increasingly involved in politics, the sect faced numerous challenges and conflicts. Involvement in the politics of Croton led to divisions within the community and eventually to a violent overthrow of the Pythagorean government by democratic forces. Following the fall of the Pythagorean government, the sect experienced persecution. Members were expelled, and the school was disbanded. Legend has it that Pythagoras, in a bid to safeguard the secrecy of his teachings, walked into a temple, ordered it to be set on fire, and chose to remain inside, ultimately perishing to preserve the secrets of the Brotherhood. However, the historical accuracy of this narrative remains a subject of debate.

### **Legacy**

Despite the eventual decline and suppression of the Pythagorean Brotherhood, the teachings of Pythagoras have left an indelible mark on mathematics, philosophy, and science. His mathematical discoveries, particularly the Pythagorean theorem, continue to be foundational in modern mathematics. Moreover, Pythagoras' emphasis on the interconnection of mathematics, spirituality, and the universe foreshadowed later philosophical and scientific advancements. The influence of his numerological and geometrical ideas can be discerned in the works of great thinkers, including Plato and Johannes Kepler.

In conclusion, Pythagoras was not merely a mathematician but also a philosopher who laid the groundwork for a unique sect that seamlessly blended mathematical wisdom with spirituality. The Pythagorean Brotherhood, characterised by its ascetic lifestyle, reverence for numbers, and spiritual beliefs, left an enduring legacy in both the mathematical and philosophical realms. While the sect ultimately faced challenges and dissolution, the teachings of Pythagoras continue to shape our understanding of the cosmos and the profound connection between mathematics and spirituality.