

Galileo Galilei

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- **Occupation:** Scientist, mathematician, and Astronomer
- **Born:** February 15, 1564 in Pisa, Italy
- **Died:** January 8, 1642 Tuscany, Italy
- **Best known for:** Improving the telescope to be used to study the planets and stars

Biography:

Early Life

Galileo was born in Pisa, Italy where he grew up with his brothers and sisters during the Italian [Renaissance](#). His father was a music teacher and a famous musician. His family moved to the city of Florence when he was ten years old. It was in Florence that Galileo began his education at the Camaldolese monastery.



Galileo by Ottavio Leoni

Galileo was an accomplished musician and an excellent student. At first he wanted to become a doctor, so he went to the University of Pisa to study medicine in 1581.

A Budding Scientist

While at university, Galileo became interested in physics and mathematics. One of his first scientific observations was with a lamp hanging from the ceiling in the cathedral. He noticed that despite how far the lamp swung, it took the same amount of time to swing back and forth. This observation didn't agree with the common scientific principals of the day.

In 1585, Galileo left the university and got a job as a teacher. He began to experiment with pendulums, levers, balls, and other objects. He tried to describe how they moved using mathematic equations. He even invented an advanced measuring device called the hydrostatic balance.

The Scientific Method

During the time of Galileo, there weren't really "scientists" as we know them today. People

studied the works of the classical philosophers and thinkers such as Aristotle. They didn't run experiments or test out the ideas. They just believed them to be true.

Galileo, however, had different ideas. He wanted to test the principals and see if he could observe them in the real world. This was a new concept to the people of his time and laid the foundation for the [scientific method](#).

Tower of Pisa Experiment

One of the traditional beliefs was that if you dropped two items of different weights, but the same size and shape, the heavier item would land first. Galileo tested this idea by going to the top of the Leaning Tower of Pisa. He dropped two balls of the same size, but different weights. They landed at the same time!

Galileo's experiments made some people angry, however. They didn't want the traditional views to be questioned. In 1592, Galileo moved from Pisa to the University of Padua, where he was permitted to experiment and discuss new ideas.

Copernicus

Copernicus was an [astronomer](#) who lived in the early 1500s. He came up with the idea that the [Sun](#) was the center of the universe. This was very different from the current belief that the Earth was the center. Galileo began to study Copernicus' work and felt that his observations of the planets supported the view that the Sun was the center. This view was highly controversial.

Telescope

In 1609, Galileo heard of an invention from Holland called the [telescope](#) that could make far away items appear much closer. He decided to build his own telescope. He made great improvements to the telescope and began to use it to view the planets. Soon Galileo's version of the telescope was used throughout Europe.

Astronomer

Galileo made many discoveries using his telescope including the four large moons around [Jupiter](#) and the phases of the planet Venus. He also discovered sunspots and learned that the Moon was not smooth, but was covered with craters.

Prison

As Galileo studied the planets and the Sun, he became convinced that the Earth and the other planets orbited the Sun. In 1632, he wrote a book called the *Dialogue Concerning the Two Chief World Systems*. In this book he described why he thought the Earth orbited the Sun. However, the powerful Catholic Church considered Galileo's ideas as heresy. At first they sentenced him to life in prison, but later allowed him to live at his home in Tuscany under house arrest.

Death

Galileo continued to write while under house arrest. In his later years he became blind. He

died on January 8, 1642.

Interesting Facts about Galileo

- Galileo published the first scientific paper based on observations made through a telescope in 1610. It was called *The Starry Messenger*.
- In later years, the Catholic Church changed their views on Galileo and stated that they regretted how he was treated.
- Galileo noticed that the planet Saturn wasn't round. It was later discovered that Saturn had rings.
- A year before his death he came up with a pendulum design used for keeping time.
- He once said that "The Sun, with all those planets revolving around it...can still ripen a bunch of grapes as if it had nothing else in the universe to do."