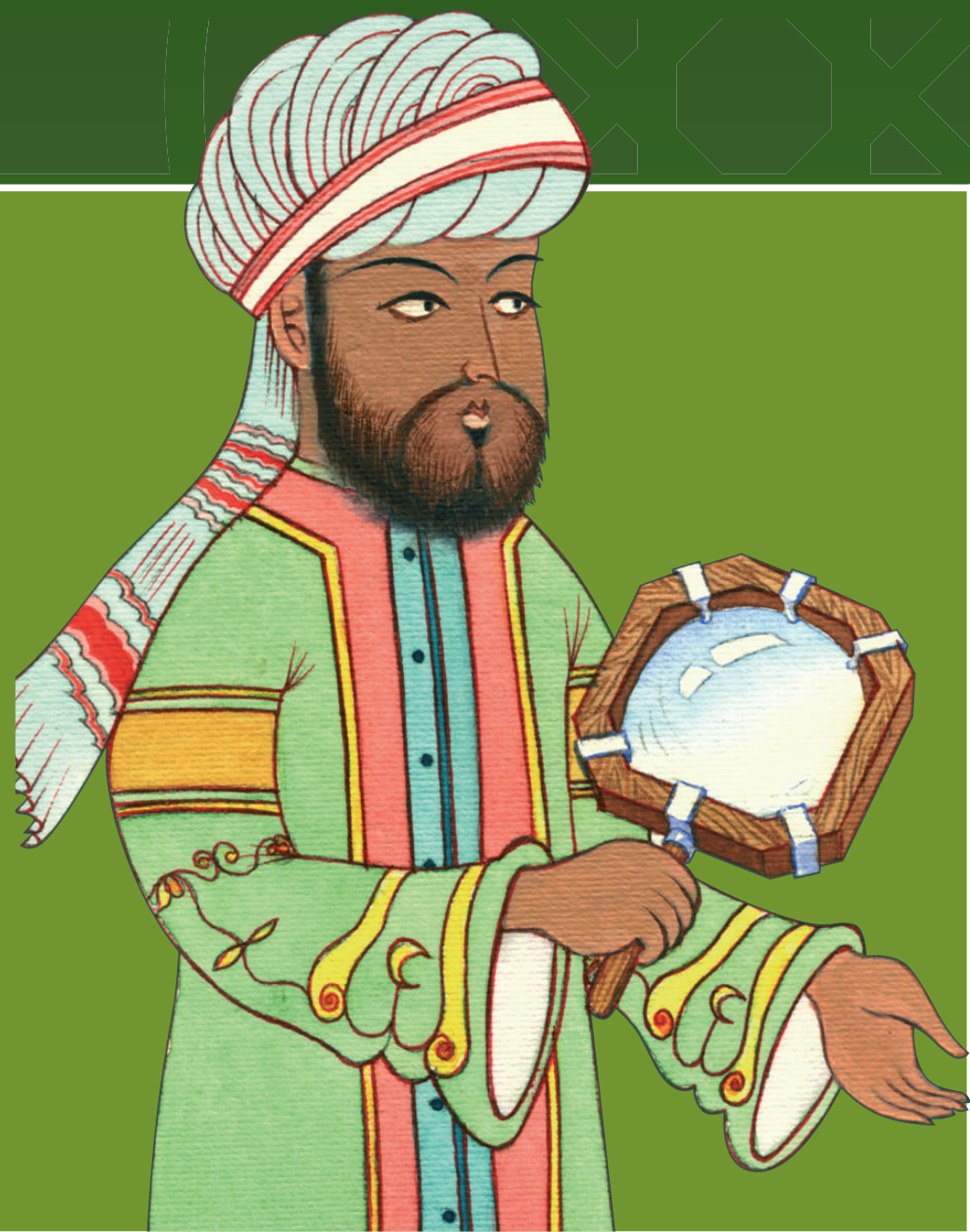


Meet Men and Women Scholars from Muslim Civilisation



Ibn al-Haytham



Eleventh-century scholar Al-Hasan Ibn al-Haytham was a pioneering scientific thinker who, inspired by observing light entering a dark room, developed experiments which led him to make major breakthroughs in understanding light and vision.

He laid out new ideas about light, colour and vision in his *Book of Optics*, probably completed around 1027 while he was in Egypt. Later, European scholars drew on the book's Latin translation.

Born in Basra around the year 965, Ibn al-Haytham not only changed people's understanding of how we see, but he laid the foundation for experimental science. He died in Cairo in around 1040.



Fatima al-Fihriya



Many women supported the intellectual effort during Muslim civilisation, for example in financing schools, hospitals, and other institutions.

Fatima al-Fihriya was a young woman from Fez, Morocco. When she inherited a fortune from her businessman father, she spent it building a mosque that was dedicated to learning called Al-Qarawiyyin.

Completed in 859, Al-Qarawiyyin soon developed into a centre for religious instruction and discussion, gradually extending its education to include the natural sciences, and so it earned its name as one of the earliest universities in history.

Al-Jazari



Al-Jazari was an early 13th-century engineer from Diyarbakir, south east Turkey. His most distinguished work was his *Book of Knowledge of Ingenious Mechanical Devices* which described 50 machines. He used technical terminology, and provided manufacturing instructions.

Al-Jazari was fascinated by every kind of mechanism, describing elaborate clocks, water-powered devices and even an automated musical band. His greatest legacy is the application of the 'crank and connecting-rod' system crucial to pumps and engines.



Sinan



A staggering 477 buildings were designed and built by Sinan during his long service under three Sultans in Turkey during the 15th century.

His Selimiye Mosque in Edirne has the tallest, most earthquake-defying, minarets in the whole of Turkey. His Suleymaniye Mosque had a filter room to clean the smoke from the numerous oil lamps inside before it was expelled into the atmosphere. The collected soot was then used in ink.

Al-Zahrawi



Scalpels and knives, drills and forceps: in 10th-century Spain a surgeon called Al-Zahrawi developed and used many of the instruments we still know today. He wrote up his findings in a medical encyclopedia called *Al-Tasrif*.

Al-Zahrawi's book illustrates surgical instruments. He listed over two hundred tools, showing sketches of their form and describing how and when each one should be used. Although surgery was still dangerous and painful, suitable tools would have helped to treat patients suffering from bone diseases, tumours, bladder stones and wounds, as well as assisting in childbirth. In the second part of the book he describes numerous pharmaceutical processes, including the use of moulds to produce pills with identifiers engraved on the surface.



Zheng He



Zheng He, also called Cheng Ho, was a 15th-century Muslim Chinese admiral who led seven epic world voyages in the largest wooden ships ever built. Although only a rudder survives, records of the ships show they could hold hundreds of crew and large cargoes of silk, porcelain, gold and other goods. Described as floating cities or swimming dragons, his biggest wooden ships were some 137 metres long.

During the seven voyages, which took place over a period of 28 years, fleets of Zheng He's ships visited 37 countries throughout Asia, the Middle East and parts of East Africa. He brought back exotic species like the giraffe, drew tribute from many of the nations with whom he traded and made diplomatic links.

Maryam al-Astrulabiya

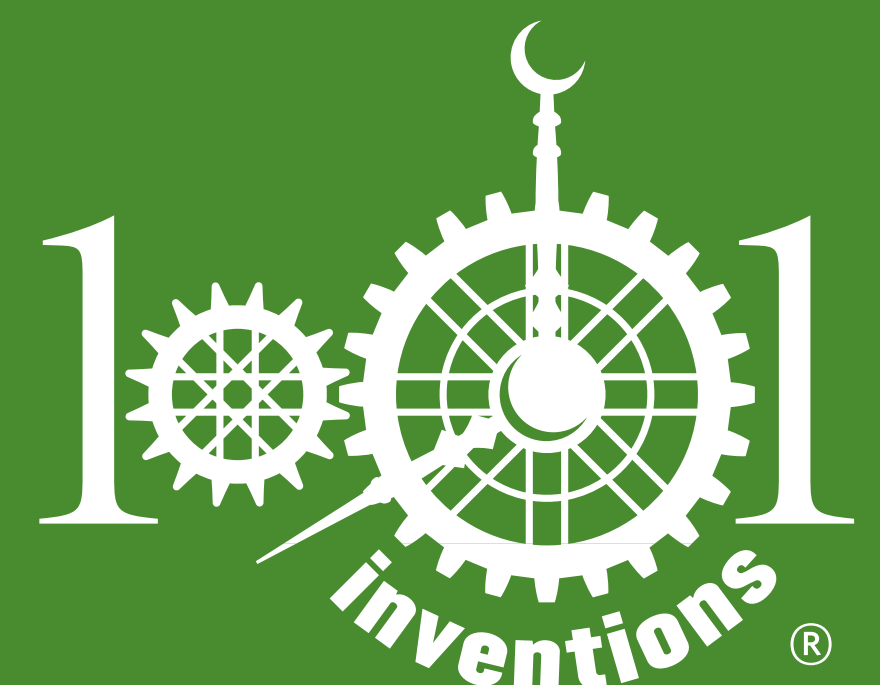


Maryam, daughter of Al-Ijli al-Astrulabiya, was born in 944 in Aleppo, Syria. Unlike most other women of the 10th century, she took up the trade of instrument-making, including astrolabes, for which she is remembered today.



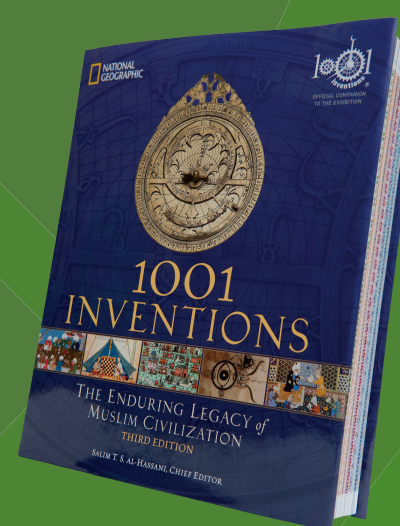
A golden age of discovery flourished from the seventh century until the sixteenth century in the Muslim world. During this period, scholars of various faiths and cultures built and improved upon the knowledge of ancient civilisations, making breakthroughs that helped pave the way for the European Renaissance.

Great men and women of the past – mathematicians, astronomers, chemists, physicians, architects, engineers, economists, sociologists, artists, artisans, historians, geographers, and educators – worked together to improve society in ways that still impact our world today.



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Find out more about the Giants of Muslim civilisation in the flagship book '1001 Inventions: The Enduring Legacy of Muslim Civilization'