

# TIME LINE OF DEVELOPMENT IN MUSLIM CIVILIZATION

632 - 1796

For more than a thousand years from the seventh century onward, the Muslim world stretched from southern Spain as far as China. During this period, scholars, male and female and of many beliefs, worked collaboratively to build and improve upon ancient knowledge. They made breakthroughs that led to an incredible expansion of knowledge and prosperity - a Golden Age of Muslim Civilization.

Follow this time line to trace the progress of mathematics, science, architecture, exploration, education, and medicine during Muslim Civilization. And see how ideas and knowledge migrated from the East, paving the way for the Western Renaissance - another great age of development.

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THE ENDURING LEGACY OF MUSLIM CIVILIZATION



Dome of the Rock Mosque

"Who so ever treats people without knowledge of medicine, becomes liable."  
Prophet Muhammad, narrated by Al-Bukhari and Muslim



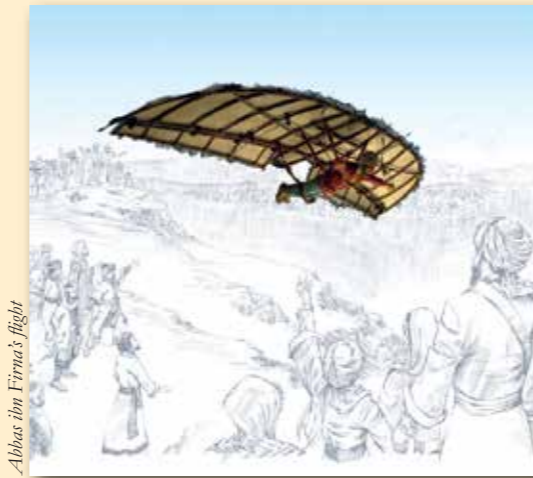
Distillation



Astrolabe



Gold Manna



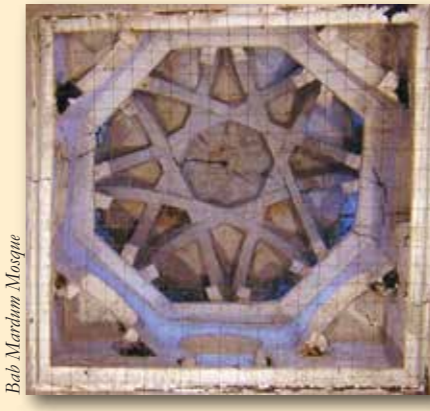
Abbas ibn Firnas's flight



A valiullah, ancestor of the violin



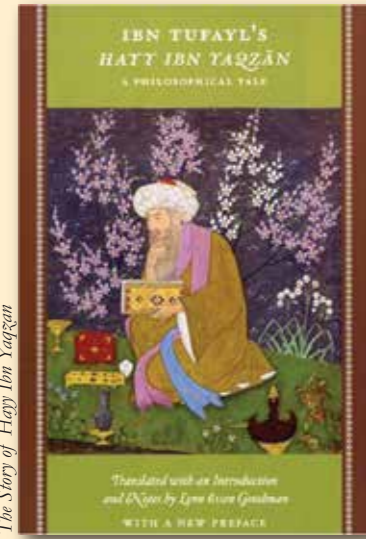
Al-Azhar University



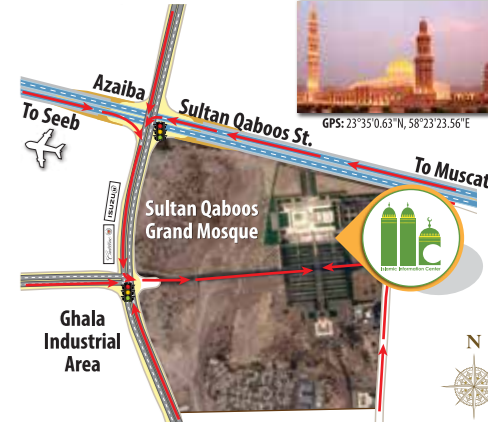
Bab Marwan Mosque



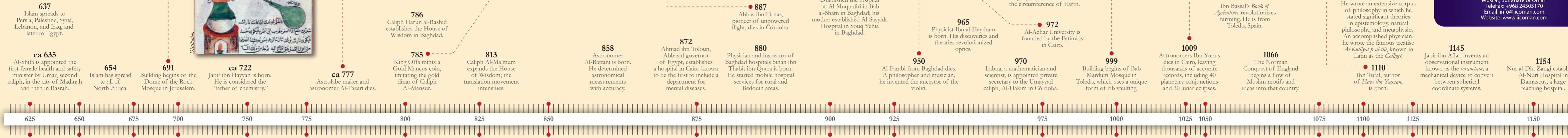
Lunar Eclipse



The Story of Hayy ibn Yaqzan



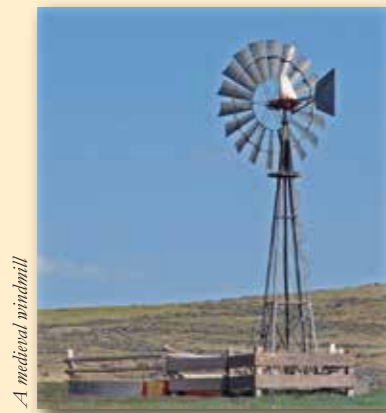
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**632** Prophet Muhammad dies and Abu Bakr becomes first caliph, or Muslim ruler.

**644**

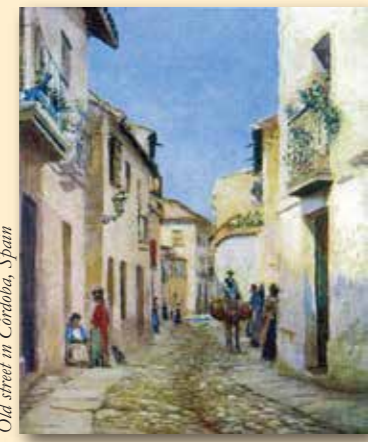
A windmill powering a millstone is built in Persia.



A modern windmill

**661** The Umayyad dynasty rules the caliphate from Damascus.

**711** Islam reaches Spain.



Old street in Cordoba, Spain

**750** Abbasids overthrow the Umayyads and in 762 build a new capital in Baghdad. Spain is ruled by an Umayyad family descendant.

**780** Mathematician Al-Khwarizmi is born. His book *Algebra and Muqabala* developed modern algebra.



Al-Kindi

"Seek knowledge from cradle to the grave."  
Muslim Proverb

**795** First mention of a paper mill in Baghdad.



Al-Razi, known as Hippocrates of the Arabs

**801** Al-Kindi is born. He was a mathematician, philosopher, physicist, chemist, and musician.

**813** Caliph Al-Ma'mun expands the House of Wisdom; the translation movement intensifies.

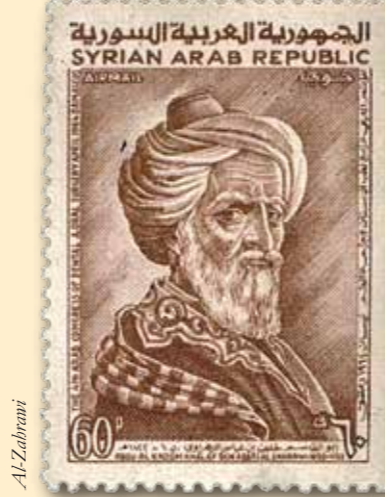


Al-Qarawiyyin University

**850** Banu Musa bothers publish their Book of Ingenious Devices.

**864** Al-Razi (Rhazes) is born. A physician, chemist, and medical teacher, he is considered the "father of clinical and experimental medicine." His writings were later translated into Latin.

**895** Ibn al-Jazzar al-Qayrawani (Aljizar) is born. He wrote the first independent book on pediatrics and social pediatrics: *Risalah fi Siyasat as-Sibyan wa Tadbirihim* (A Treatise on Infant and Child Care and Treatment).



Al-Zuhri

**872** Ahmad ibn Tuloun, Abbasid governor of Egypt, establishes a hospital in Cairo known to be the first to include a department for mental diseases.

**880** Physician and inspector of Baghdad hospitals Sinan ibn Thabit ibn Qurra is born. He started mobile hospital services for rural and Bedouin areas.

**887** Abbas ibn Firnas, pioneer of unpowered flight, dies in Córdoba.

**913** Abbasid Caliph Al-Muqtader issues the first licensing regulation for medical practice. He established the hospital of Al-Muqtadiri in Bab al-Sham in Baghdad; his mother established Al-Sayyida Hospital in Souq Yehia in Baghdad.

**950** Al-Farabi from Baghdad dies. A philosopher and musician, he invented the ancestor of the violin.

**970** Labna, a mathematician and scientist, is appointed private secretary to the Umayyad caliph, Al-Hakim in Córdoba.

**972** Al-Azhar University is founded by the Fatimids in Cairo.

**999** Building begins of Bab Mardum Mosque in Toledo, which uses a unique form of rib vaulting.

**1009** Astronomers Ibn Yunus dies in Cairo, leaving thousands of accurate records, including 40 planetary conjunctions and 30 lunar eclipses.

**1066** The Norman Conquest of England begins a flow of Muslim motifs and ideas into that country.

**1085** Christians take Toledo. A center at Toledo is established, translating Arabic books into Latin. Ibn Bassal's *Book of Agriculture* revolutionizes farming. He is from Toledo, Spain.

**1109** Ibn Tufal, author of *Hayy ibn Yaqzan*, is born.

**1126** Ibn Rushd (Averroes) is born. He wrote an extensive corpus of philosophy in which he stated significant theories in epistemology, natural philosophy, and metaphysics. An accomplished physician, he wrote the famous treatise *Al-Kulliyat fi al-tib*, known in Latin as the *Colliget*.

**1145** Jabir ibn Aflah invents an observational instrument known as the *torquetum*, a mechanical device to convert between spherical coordinate systems.

**1154** Nur al-Din Zangi establishes Al-Nuri Hospital in Damascus, a large teaching hospital.

**1140** Daniel of Morley travels to Córdoba to learn mathematics and astronomy, returning to lecture at Oxford.

**1143** Robert of Chester translate the Qur'an and works of Al-Khwarizmi.

**1091** Abu Marwan ibn Zuhr (Avenzoar) is born. He is a pioneer of experimental surgery and co-author, with Ibn Rushd (Averroes), of an original encyclopedic medical text. His two daughters became doctors.

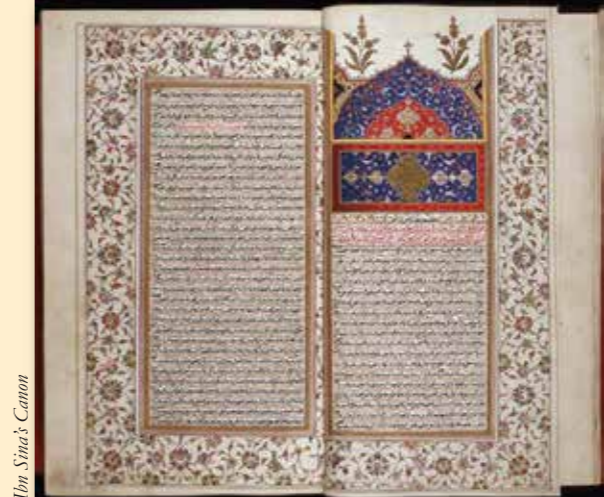
**1096** The first Crusades begin.

**1099** Al-Idrisi is born. He produced a world map for Norman King Roger II of Sicily.



Al-Khwarizmi

**936** Surgeon Al-Zahrawi (Albucasis) is born in Córdoba. He refined the science of surgery, invented dozens of surgical instruments, and wrote the first illustrated surgical book.



Im. Vime's Canon

**957** Cartographer and writer Al-Masudi describes his visit to the oil fields of Baku.

**980** Prince of physicians Ibn Sina (Avicenna) is born. He wrote the influential *Canon of Medicine*.

**987** Sutratra al-Mahamli, a mathematician and expert witness in courts, dies in Baghdad.



Constantine the African

**1050** Constantine the African moves from Tunisia to Salerno initiating the transfer of Islamic medicine to Europe.

**1065** The Nizamiyya madrasa, the first school in Baghdad, is established by Nizam al-Mulk, the Seljuk minister who appointed distinguished philosopher and theologian Al-Ghazali as a professor.



Al-Idrisi's world map



**1197**  
Botanist Ibn al-Baytar is born in Malaga. He wrote a famous pharmacopoeia.

**1187**  
Salah al-Din al-Ayyubi (Saladin) regains Jerusalem. He established Al-Nasiri Hospital in Cairo.

**1186**  
Queen Dhaifa Khatoon is born in Aleppo, Syria. She was the daughter-in-law to Saladin, and a supporter of science and learning.

**1185**  
Temple Church is built in London by the Templars, imitating the Dome of the Rock in Jerusalem.



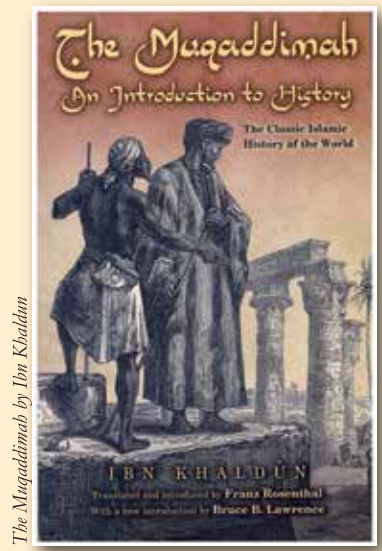
**1255**  
Queen Eleanor, Castilian bride of King Edward I, brings Andalusian carpets to England in her dowry.

**1233**  
Ibn al-Quff is born. A Christian surgeon and author, he continued Al-Zahrawi's efforts to develop surgery as a science and independent medical speciality. He wrote *Kitab al-Umda fi al-Jirahab* (The Main Pillars of Surgery).

**1254**  
King Alfonso el Sabio establishes Latin and Arabic colleges in Seville and commissions the translation of Arabic texts.

**1260**  
Roger Bacon publishes *Secrets of Art and Nature* praising influences of Muslim scholars.

**1325**  
Ibn Battuta leaves Tangier on his 29-year journey.



**1332**  
Ibn Khaldun, the "Father of Sociology", is born.

*"Read! In the Name of your Lord Who has created. He has created man from a clot. Read! And your Lord is the Most Generous. Who has taught man that which he knew not"*  
(Qur'an, 96: 1-5)

**1385**  
Serafeddin Sabuncuoglu is born. An Ottoman surgeon, he continued the work of Al-Zahrawi and Ibn al-Quff by writing an independent surgical textbook.

**1383**  
Chemist Maryam al-Zanatiyeh dies in Qarawiyyin, Tunisia.



**1437**  
Ulugh Beg publishes his star catalog.

**1432**  
Ahmed Ibn Majid is born in Arabia. He was a master navigator and is said to have guided Vasco da Gama from South Africa to India. (Cape of Good Hope)



**1492**  
Christopher Columbus lands in the New World.

**1489**  
Koca Mimar Sinan is born. A renowned architect, he built Turkey's Selimiye and Suleymaniye mosques, as well as many others.

**1513**  
Piri Reis constructs the earliest known map showing America.

*"If anyone travels on a road in search of knowledge, Allah will cause him to travel on one of the roads of Paradise."*  
Prophet Muhammad, Narrated by Abu Al-Dardah



**1593**  
The Canon of Ibn Sina is printed in Rome and, along with *Al-Hawi* by Al-Razi, becomes a standard text in the European medical curriculum.



**1634**  
King Charles I requests that the Levant Company send home Arabic manuscripts on every ship returning to England.

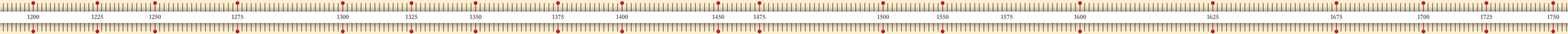
**1633**  
Lagari Hasan Celebi flies the first manned rocket over the Bosphorus.



**1664**  
At the request of Hevelius, the Royal Society agrees to translate the astronomical manuscript of Ulugh Beg from Persian to Latin in its entirety.

**1682**  
Moroccan ambassador to London Muhammed Ibn Haddu is elected a fellow of the Royal Society in London.

**1796**  
Edward Jenner tests inoculation with cowpox.



**1202**  
Leonardo of Pisa, known as Fibonacci, introduces Arabic numerals and mathematics to Europe in his book *Liber Abaci*.

**1206**  
Al-Jazari completes his *Book of Ingenious Mechanical Devices*.

**1210**  
Ibn al-Nafis is born. He was a scholar of jurisprudence and doctor who was first to discover pulmonary circulation. He wrote *Al-Seerab al-Kamiliyab* refuting the ideas of Ibn Tufayl's novel *Hayy ibn Yaqzan* on the oneness of existence.

**1229**  
Robert Grosseteste, who studied in Córdoba, becomes first chancellor of Oxford University. He was elected bishop of Lincoln in 1253.



Mamluk vase

**1250**  
Mamluk dynasty rules Egypt after the Ayyubids and later defeats the Mongols.

**1256**  
Ibn abi al-Mahasin al-Halabi writes his comprehensive scholarly and illustrated work on eye diseases, *Al-Kafi fi al-Kabl* (The Book of Sufficient Knowledge in Ophthalmology).

**1258**  
Mongols devastate and rule Baghdad and conquer Syria.

*"And say: 'My Lord! Increase me in knowledge'"*  
(Qur'an, 20:114)

**1267**  
Marco Polo starts his 24-year journey.

**1284**  
Al-Mansuri Hospital Cairo is completed after 11 months of construction.

**1293**  
The first paper mill outside Islamic Spain in Europe is established in Bologna.



Lion Fountain

**1311**  
The Ecumenical Council of Vienne decides to establish schools of Arabic and Islamic studies at universities in Paris, Oxford, Bologna, and Salamanca.

**1320**  
Giotto's painting "Madonna and Child" uses tiraz, bands of Arabic inscriptions, which mark loyal garments and other textiles from the Muslim world.

**1347**  
The Black Death reaches Alexandria and Cairo from Europe.



Statue of Zheng He

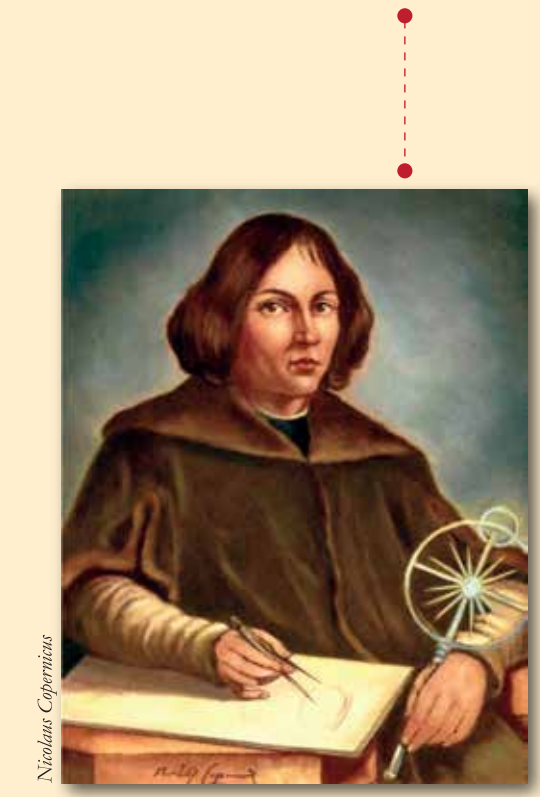
**1405**  
Muslim Zheng He starts his seven epic sea voyages from China. In the largest wooden boats the world had seen, he established China as a leading power in the Indian Ocean, brought back exotic species like the giraffe, and drew tribute from many nations.

**1452**  
Leonardo Da Vinci is born. He was a major contributor to the foundation of the Renaissance.



Leonardo Da Vinci

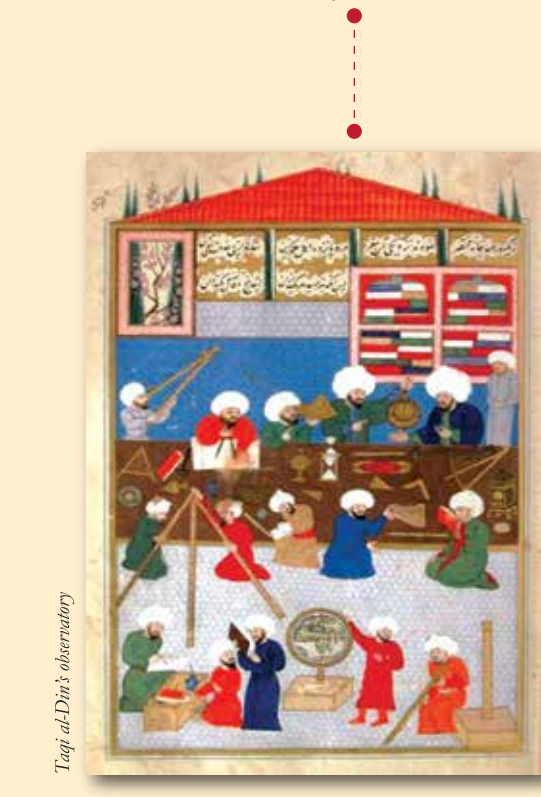
**1497**  
Venice publishes a translation of Al-Tasrif by Al-Zahrawi. Basel and Oxford follow suit.



Nicolaus Copernicus

**1543**  
Nicolaus Copernicus publishes *De Revolutionibus*, drawing on the work of Nasir al-Din al-Tusi and Ibn al-Shatir.

**1558**  
The first German, and probably European, observatory is built in Kassel.



Taqi al-Din's observatory

**1577**  
Istanbul observatory of Taqi al-Din is founded. It will close a few years later, in 1580.

**1604**  
Edward Pocolcke is born. He spent five years in Aleppo learning Arabic; he also translated *Hayy ibn Yaqzan*, a precursor to Robinson Crusoe.

**1606**  
Edmund Castell is born. He lectured on the use of Avicenna's medical work. For more than 18 years, he compiled a dictionary of seven Asian languages.

**1616**  
John Wallis is born. A renowned mathematician and member of the Royal Society in London, he translated and lectured on the work of Arabic mathematicians. He included Al-Tusi's work in his *Opera Mathematica*.

**1627**  
Robert Boyle, England's most famous chemist, is born. He sought Arabic manuscripts and had them translated.

*"Anyone who wants to be a good doctor must be an Avicennist."*  
Old European Common Saying

**1642**  
Isaac Newton is born. He kept a copy of the Latin translation of Ibn al-Haytham's *Book of Optics* in his library.

**1650**  
Turkish merchants bring coffee to the United Kingdom.



Edmund Castell's Coffee House, London

**1678**  
John Greeves publishes a paper in the Royal Society Philosophical *Transactions* on Egyptian's use of large ovens to hatch thousands of chicken eggs at a time.

**1721**  
Lady Mary Montagu tests smallpox inoculation in Britain, having witnessed the practice in Turkey.



Lady Mary Wortley Montagu

**1725**  
Moroccan ambassador to London Mohammed Ben Ali Abgali is elected a fellow of the Royal Society in London.