

Muslims' Contributions to Civilization (Physics)

The study of experimental physics began with Ibn al-Haytham. The experimental scientific method was soon introduced into mechanics by al-Biruni. The law of inertia, known as Newton's first law of motion, and the concept of momentum were discovered by  ${\bf lbn}$   ${\bf al\text{-}Haytham}$  (Alhacen) and Avicenna. The proportionality between force and acceleration, considered "the fundamental law of classical mechanics" and foreshadowing Newton's second law of motion, was discovered by **Hibat** Allah Abu'l-Barakat al-Baghdaadi, while the concept of reaction,

foreshadowing Newton's third law of motion, was discovered by Ibn Bajjah (Avempace). Theories foreshadowing Newton's law of universal gravitation were developed by Ja'far Muhammad ibn Musa ibn Shakir, Ibn al-Haytham, and al-Khazini.

**2014** January يناير - كانون الثاني

Safar - Rabi' ا **1435** مفر - ربيع الأول

الأحد Sunday	Monday الإثنين	الثلاثاء Tuesday	الأربعاء Wednesday	الخميس Thursday	الجمعة Friday	السبت Saturday
DECEMBER 2013           Su         Mo         Tu         We         Th         Fr         Sa           1         2         3         4         5         6         7           8         9         10         11         12         13         14           15         16         17         18         19         20         21           22         23         24         25         26         27         28	FEBRUARY  Su Mo Tu We Th Fr Sa  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22		New Year's Day (U.S. & Canada)	2	3	4
29 30 31	23 24 25 26 27 28		29 Safar	<b>1</b> Rabi' I	2	3
5	6	7	8	9	10	11
4	5	6	7	8	9	10
12	13	14	15	16	17	18
11	12	13	14	15	16	17
19	Martin Luther King Day (U.S.)	21	22	23	24	25
18	19	20	21	22	23	24
26	27	28	29	30	31	
25	26	27	28	29	30	



A thousand years before the Wright brothers a Muslim poet, astronomer, musician and engineer named Abbas ibn Firnas made several attempts to construct a flying machine. In 852 he jumped from the minaret of the Grand Mosque in Cordoba using a loose cloak stiffened with wooden struts. He hoped to glide like a bird. He didn't. But the cloak slowed his fall, creating what is

thought to be the first parachute, and leaving him with only minor injuries. In 875, aged 70, having perfected a machine of silk and eagles' feathers he tried again, jumping from a mountain. He flew to a significant height and stayed aloft for ten minutes but crashed on landing - concluding, correctly, that it was because he had not given his device a tail so it would stall on landing. Baghdad

international airport and a crater on the Moon are named after him. **Abbas ibn Firnas** (810 - 887 AD): A Berber born in Izn-Rand Onda, Al-Andalus (Ronda, Spain) and lived in the Emirate of Cordoba. He was an inventor, engineer, aviator, physician, Arabic poet, and Andalusian musician.

**2014** February مبرایر - شباط

Rabi' II 1435

الأحد Sunday	Monday الإثنين	الثلاثاء Tuesday	الأربعاء Wednesday	الخميس Thursday	الجمعة Friday	السبت Saturday
JANUARY       Su     Mo     Tu     We     Th     Fr     Sa       1     2     3     4       5     6     7     8     9     10     11       12     13     14     15     16     17     18       19     20     21     22     23     24     25       26     27     28     29     30     31	MARCH  Su Mo Tu We Th Fr Sa  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29					1
	30 31	1	Г	<u>C</u>	7	1 Rabi' II
2	3	4	5	6	7	8
9	10	11	12	13	14	15
9	10	11	12	13	14	15
16	President's Day (U.S.)	18	19	20	21	22
16	17	18	19	20	21	22
23	24	25	26	27	28	
23	24	25	26	27	28	



Muslims' Contributions to Civilization (Optics)

The ancient Greeks thought our eyes emitted rays, like a laser, which enabled us to see. The first person to realize that light enters the eye, rather than leaving it, was the 10th-century Muslim mathematician, astronomer and physicist Ibn al-Haitham (Alhazen). He invented the first pin-hole camera after noticing the way light came through a hole in window shutters. The smaller the hole, the

better the picture, he worked out, and set up the first Camera Obscura (from the Arab word gamara for a dark or private room). He is also credited with being the first man to shift physics from a philosophical activity to an experimental one. John Draper expressed his amazement that Ibn Al-Haythem wrote about these subjects in the 11th century and for several centuries Ibn Al-Haytham's

work on optics was the main source of study in Europe. Al-Hasan Ibn al-Haitham (965 - 1040 AD): Born circa 965, in Basra, Iraq and lived mainly in Cairo, Egypt. He is regarded as the "father of modern optics". **Book(s)**: Kitab-al-Manadhir, Mizan al Hikmah. 200 plus books.

**2014** March

Rabi' II - Jumada I **1435** ربيع الثاني - جمادي الأولى

الأحد Sunday	Monday الإثنين	الثلاثاء Tuesday	الأربعاء Wednesday	الخميس Thursday	الجمعة Friday	السبت Saturday
FEBRUARY  Su Mo Tu We Th Fr Sa  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	Su Mo Tu We Th Fr Sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30					<b>1</b> 29 Rabi' II
2	3	4	5	6	7	8
1 Jumada I	2	3	4	5	6	7
9	10	11	12	13	14	15
8	9	10	11	12	13	14
16	17	18	19	20	21	22
15	16	17	18	19	20	21
23 30	24 31	25	26	27	28	29
22	23	24	25	26	27	28



with a plumb line and two hooks, and a «reed level». They also invented a rotating alidade used for accurate alignment, and a surveying astrolabe used for alignment, measuring angles, triangulation, finding the width of a river, and the distance between two points separated by an impassable obstruction. The streets of Baghdad were the first to be paved with tar from the 8th century AD. The first ventilators were invented in Islamic Egypt and were widely used in many houses throughout Cairo during the

Middle Ages. **Muhammad ibn Zakariya Al-Razi** (865 - 925 AD): Born in Ragha, Persia. Shifted his interest from music to alchemy and when his experimentation caused him an eye-disease, he shifted his interest to medicine.

**2014** April بريـل - نيسـان

Al-Jazari invented a variety of machines for raising water in 1206, as well as water mills

and water wheels with cams on their axle used to operate automata in the late 12th

century. Cordoba had the first facilities and waste containers for litter collection. The

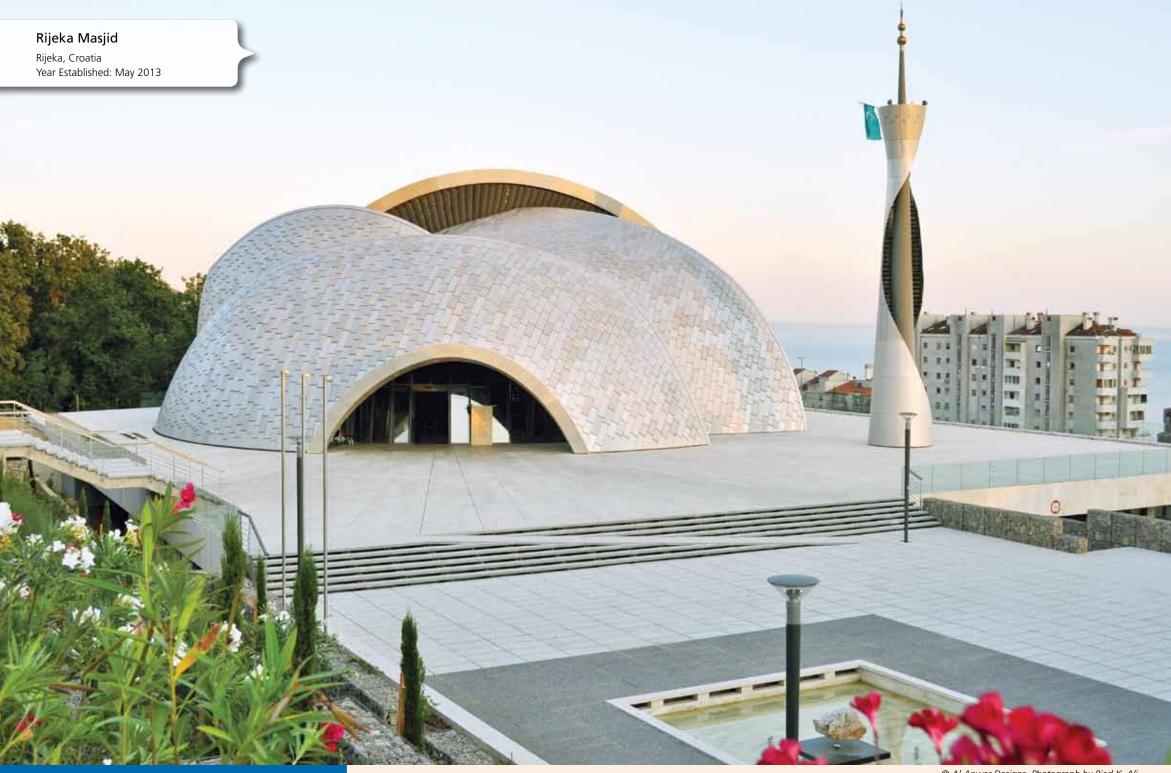
first kerosene lamp was invented by Muhammad ibn Zakariya Razi in the 9th century.

Muslim engineers invented a variety of surveying instruments for accurate levelling,

including a wooden board with a plumb line and two hooks, an equilateral triangle

Jumada II - Rajab 1435 جمادی الأخرة - رجــب

الأحد Sunday	الإثنين Monday	الثلاثاء Tuesday	الأربعاء Wednesday	Thursday الخميس	الجمعة Friday	السبت Saturday
		1	2	3	4	5
		1 Jumada II	2	3	4	5
6	7	8	9	10	11	12
6	7	8	9	10	11	12
13	14	15	16	17	18	19
					Good Friday (Canada)	
13	14	15	16	17	18	19
	<b>\rightarrow</b>	<b>•</b>		<b>•</b>		
20	21	22	23	24	25	26
20	21	22	23	24	25	26
27	28	29	30	,	MARCH	MAY
					Su Mo Tu We Th Fr Sa  1 2 3 4 5 6 7 8	Su Mo Tu We Th Fr Sa 1 2 3 4 5 6 7 8 9 10
					9 10 11 12 13 14 15 16 17 18 19 20 21 22	11 12 13 14 15 16 17 18 19 20 21 22 23 24
27	28	29	1 Rajab		23 24 25 26 27 28 29 30 31	25 26 27 28 29 30 31



Muslims' Contributions to Civilization (Chemistry)

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Distillation, the means of separating liquids through differences in their boiling points, was invented around the year 800 by Islam's foremost scientist, Jabir ibn Hayyan, who transformed alchemy into chemistry, inventing many of the basic processes and apparatus still in use today - liquefaction, crystallization, distillation, purification, oxidization, evaporation and filtration. As well as

discovering sulphuric and nitric acid, he invented the alembic still, giving the world intense rosewater and other perfumes and alcoholic spirits (although drinking them is haram, or forbidden, in Islam). Ibn Hayyan emphasized systematic experimentation and was the founder of modern chemistry.

Jabir ibn Hayyan (Geber) (721 - 815 AD): He is considered by some to be

the "father of chemistry". His fame rests on over 100 monumental treatises, of which 22 relate to chemistry and alchemy. Apart from chemistry, he also contributed to other sciences such as medicine and astronomy.

**Book(s):** Kitab-al-Kimya, Kitab al-Sabíeen.

Rajab - Sha'ban **1435** 

الأحد Sunday	الإثنين Monday	الثلاثاء Tuesday	الأربعاء Wednesday	الخميس Thursday	الجمعة Friday	السبت Saturday
Su Mo Tu We Th Fr Sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	JUNE       Su     Mo     Tu     We     Th     Fr     Sa       1     2     3     4     5     6     7       8     9     10     11     12     13     14       15     16     17     18     19     20     21       22     23     24     25     26     27     28       29     30			1	2	3
				2 Rajab	3	4
4	5	6	7	8	9	10
5	6	7	8	9	10	11
11	12	13	14	15	16	17
12	13	14	15	16	17	18
18	19 Victoria Day (Canada)	20	21	22	23	24
19	20	21	22	23	24	25
25 الإسراء والمعراج Al-Israa" wa Al-Mi'raj	26 Memorial Day (U.S.)	27	28	29	30	31
26	27	28	29	30	1 Sha'ban	2



Muslims' Contributions to Civilization

(Mechanics)

The crank-shaft is a device which translates rotary into linear motion and is central to much of the machinery in the modern world, not least the internal combustion engine. One of the most important mechanical inventions in the history of humankind was created by an ingenious Muslim engineer called al-Jazari to raise water for irrigation. His 1206 Book of Knowledge of Ingenious

Mechanical Devices shows he also invented or refined the use of valves and pistons, devised some of the first mechanical clocks driven by water and weights, and was the father of robotics. Among his 50 other inventions was the combination lock.

Abu Al-Iz Al-Jazari (1136 - 1206 AD): Born in Al-Jaziraóthe, northern

Mesopotamia. In his book, he described fifty mechanical devices along with instructions on how to construct them.

**Book:** Book of Knowledge of Ingenious Mechanical Devices.

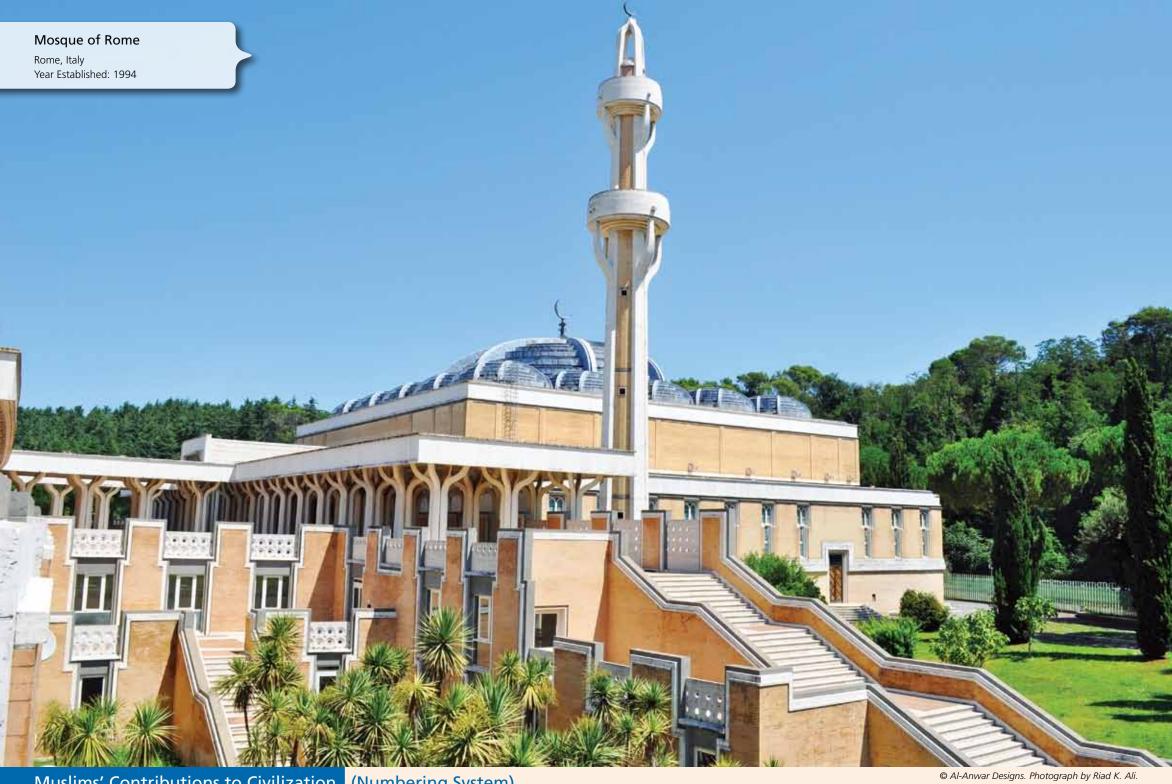
2014 June يونيــو - حزيــران

3

2

Sha'ban - Ramadan 1435 شعیان - رمضان

الأحد Sunday	Monday الإثنين	الثلاثاء Tuesday	الأربعاء Wednesday	Thursday الخميس	الجمعة Friday	السبت Saturday
1	2	3	4	5	6	7
3 Sha'ban	4	5	6	7	8	9
8	9	10	11	12	13	14
10	11	12	13	14	15	16
15	16	17	18	19	20	21
17	18	19	20	21	22	23
22	23	24	25	26	27	28
24	25	26	27	28	29	1 Ramadan
24 29	30	20	21	20	<b>•</b>	Ramadan
23	30				MAY Su Mo Tu We Th Fr Sa	JULY Su Mo Tu We Th Fr Sa
					1 2 3 4 5 6 7 8 9 10	1 2 3 4 5 6 7 8 9 10 11 12
2	3				11     12     13     14     15     16     17       18     19     20     21     22     23     24       25     26     27     28     29     30     31	13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31



Muslims' Contributions to Civilization

(Numbering System)

The system of numbering in use all around the world is probably Indian in origin but the style of the numerals is Arabic and first appears in print in the work of the Muslim mathematicians al-Khwarizmi and al-Kindi around 825. Algebra was named after al-Khwarizmi's book, Al-Jabr wa-al-Muqabilah, much of whose contents are still in use. The work of Muslim maths scholars was

imported into Europe 300 years later by the Italian mathematician Fibonacci. Algorithms and much of the theory of trigonometry came from the Muslim world. And Al-Kindi's discovery of frequency analysis rendered all the codes of the ancient world soluble and created the basis of modern cryptology.

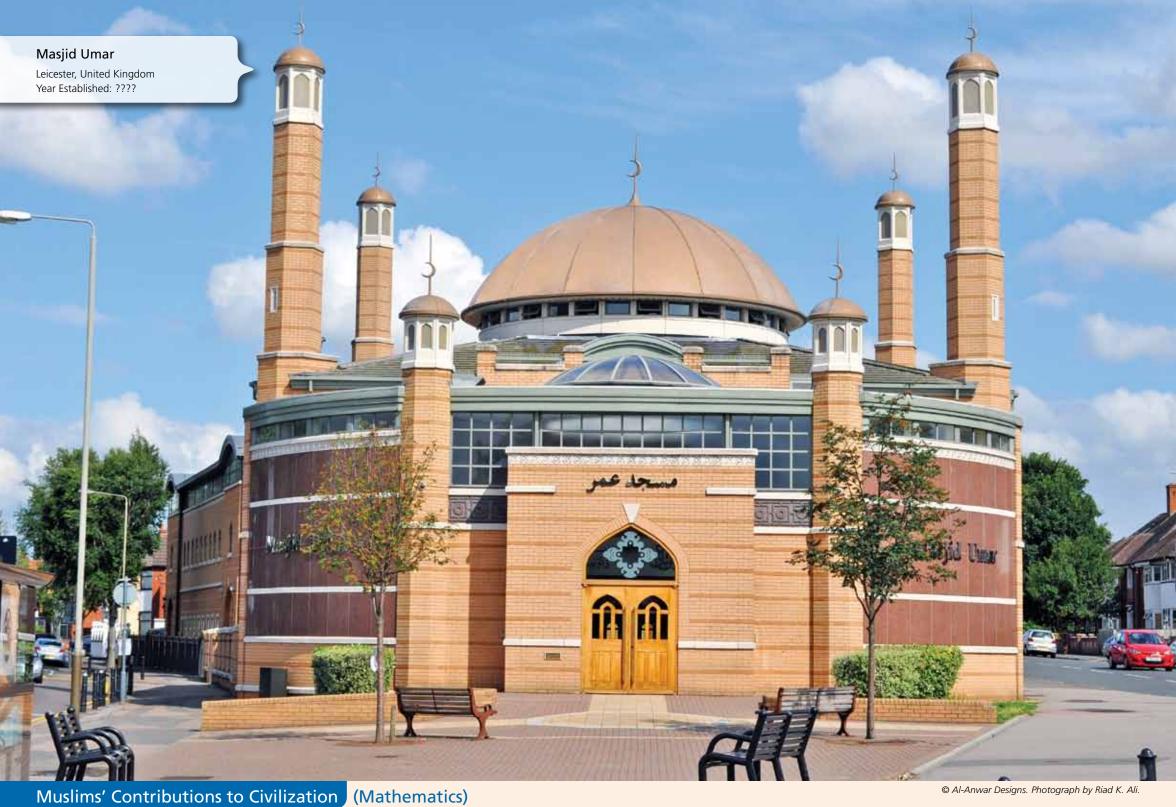
Yaqub Ibn Ishaq al-Kindi (801 - 873 AD): Was born in Kufa. He was a

philosopher, mathematician, physicist, astronomer, physician, geographer and even an expert in music. It is surprising that he made original contributions to all of these fields.

Book(s): Risalah dar Tanjim, Ikhtiyarat al-Ayyam, Ilahyat-e-Aristu, al-Mosiqa, Mad-o-Jazr, and Aduiyah Murakkaba.

Ramadan - Shawwal 1435

الأحد Sunday	Monday الإثنين	الثلاثاء Tuesday	الأربعاء Wednesday	الخميس Thursday	الجمعة Friday	السبت Saturday
		1	2	3	4	5
		Canada Day (Canada)			Independence Day (U.S.)	
		4 Ramadan	5	6	7	8
6	7	8	9	10	11	12
9	10	11	12	13	14	15
13	14	15	16	17	18	19
	معركة بدر Battle of Badr (2 A.H.)			فتح مكة Conquest of Makkah (8 A.H.)		
16	17	18	19	20	21	22
20	21	22	23	24	25	26
23	24	25	26	27	28	29
27	28 عيد الفطر Eid Al-Fitr	29	30	31	JUNE       Su     Mo     Tu     We     Th     Fr     Sa       1     2     3     4     5     6     7       8     9     10     11     12     13     14       15     16     17     18     19     20     21       22     23     24     25     26     27     28	AUGUST  Su Mo Tu We Th Fr Sa
30	1 Shawwal	2	3	4	29 30	24 25 26 27 28 29 30 31



Among the achievements of Muslim mathematicians include the development of algebra and algorithms by Muhammad ibn Musa al-Khwarizmi, the invention of spherical trigonometry, the addition of the decimal point notation to the Arabic

numerals, the invention of all the trigonometric functions besides sine, al-Kindi's

introduction of cryptanalysis and frequency analysis, al-Karaji's introduction of

algebraic calculus and proof by mathematical induction, the development of analytic geometry and the earliest general formula for infinitesimal and integral calculus by Ibn al-Haytham, the beginning of algebraic geometry by Omar Khayyam, the first refutations of Euclidean geometry and the parallel postulate by Nasir al-Din al-Tusi, the first attempt at a non-Euclidean geometry by Sadr al-Din, the development

of symbolic algebra by Abu al-Hasan ibn Ali al-Qalasadi, and numerous other advances in algebra, arithmetic, calculus, cryptography, geometry, number theory and trigonometry.

Al-Khwarizmi: (780 - 850 AD) - Book: Al-Jabr wa-al-Muqabilah. Abu al-Hasan ibn Ali al-Qalasadi - Book: al-Tabsira fi'lm al-hisab.

2014 August

Shawwal - Thul Qi'dah مسوال - خو القعدة

الأحد Sunday	Monday الإثنين	الثلاثاء Tuesday	الأربعاء Wednesday	الخميس Thursday	الجمعة Friday	السبت Saturday
JULY           Su         Mo         Tu         We         Th         Fr         Sa           1         2         3         4         5           6         7         8         9         10         11         12           13         14         15         16         17         18         19           20         21         22         23         24         25         26           27         28         29         30         31	Su Mo Tu We Th Fr Sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30				1	2
27 20 29 30 31	20 29 30				5 Shawwal	6
3	4	5	6	7	8	9
7	8	9	10	11	12	13
10	<b>11</b> 15	<b>12</b> 16	<b>13</b>	<b>14</b> 18	<b>15</b> 19	<b>16</b> 20
<b>17</b> 21	<b>18</b>	19 23	<b>20</b> 24	<b>21</b> 25	<b>22</b> 26	23
24 31	25	26	27	28	29	30
28	29	30	T. Qi'dah	2	3	4



of tuberculosis, distribution of diseases by water and soil, skin troubles, sexually transmitted

Muslims' Contributions to Civilization

(Medicine)

Sina (Avicenna) helped lay the foundations for modern medicine, with The Canon of Medicine, diseases, perversions, nervous ailments, use of ice to treat fevers, and separation of medicine from which was responsible for the discovery of contagious disease, introduction of quarantine to pharmacology. Ibn al-Nafis laid the foundations for circulatory physiology, as he was the first to limit their spread, introduction of experimental medicine, evidence-based medicine, clinical describe the pulmonary and coronary circulation. Ibn Sina (Avicenna) (980 - 1037 AD): Born in Afshana, near Bukhara. For a thousand years he trials, randomized controlled trials, efficacy tests, and clinical pharmacology, the first descriptions on bacteria and viral organisms, distinction of mediastinitis from pleurisy, contagious nature has retained his original renown as one of the greatest thinkers and medical scholars in history.

Abu al-Qasim (Abulcasis) helped lay the foudations for modern surgery, with his Kitab al-Tasrif, in which he invented numerous surgical instruments, including the first instruments unique to women, as well as the surgical uses of catgut and forceps, the ligature, surgical needle, scalpel, curette, retractor, surgical spoon, sound, surgical hook, surgical rod, and specula, and bone saw. Ibn al-Haytham (Alhacen) made important advances in eye surgery, as he correctly explained the process of sight and visual perception for the first time in his Book of Optics. Ibn

Thul Qi'dah - Thul Hijjah 1435 خوالعجــة

**Book(s):** The Canon of Medicine, The Book of Healing.

**2014** September سبتمبر - أيلـول

الأحد Sunday	Monday الإثنين	الثلاثاء Tuesday	الأربعاء Wednesday	Thursday الخميس	الجمعة Friday	السبت Saturday
	1	2	3	4	5	6
	Labor Day (U.S. & Canada)					
	6 T. Qi'dah	7	8	9	10	11
7	8	9	10	11	12	13
12	13	14	15	16	17	18
14	15	16	17	18	19	20
19	20	21	22	23	24	25
21	22	23	24	25	26	27
26	27	28	29	<b>1</b> T. Hijjah	2	3
28	29	30			AUGUST       Su     Mo     Tu     We     Th     Fr     Sa       1     2       3     4     5     6     7     8     9       10     11     12     13     14     15     16       17     18     19     20     21     22     23       24     25     26     27     28     29     30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
4	5	6			31	



Muslims' Contributions to Civilization (Timekeeping Devices)

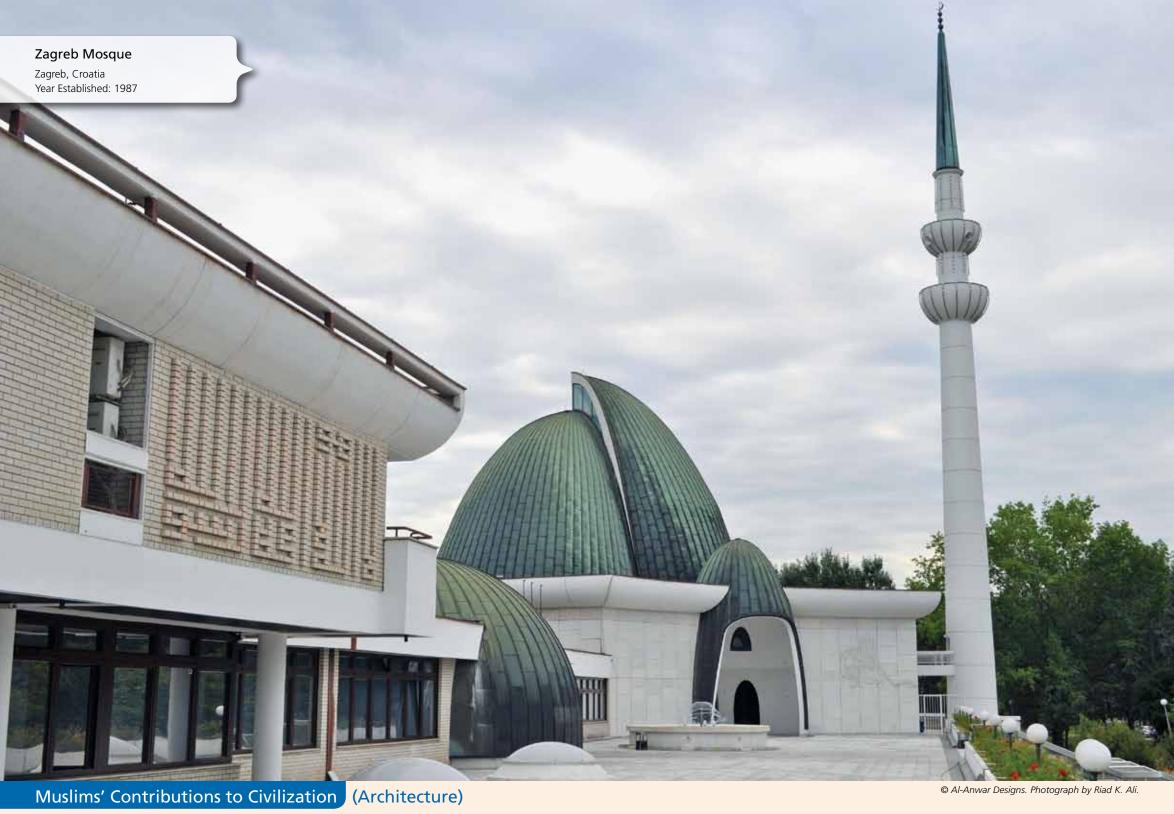
In the 10th century, al-Sufi described over 1,000 different uses of an astrolabe, including timekeeping, particularly for the times of Salah prayers and Ramadan. Geared mechanical astrolabe featured a calendar computer and gear-wheels, and was invented by Abi Bakr of Isfahan in 1235. Al-Jazari invented monumental water powered astronomical clocks which displayed moving models of the sun, moon, and stars. His largest astronomical clock displayed the zodiac and the solar and lunar orbits. Another innovative feature of the clock was a pointer which travelled across the top of a gateway and caused automatic doors to open every hour. The first geared clock was invented by the 11th century Arab engineer Ibn Khalaf al-Muradi in Islamic Iberia; it **Book:** Book of Fixed Stars.

was a water clock that employed both segmental and epicyclic gearing. Other monumental water clocks constructed by Muslim engineers also employed complex gear trains and arrays of automata.

**Al-Sufi:** (908 - 986 AD).

**2014** October الكور - تشرين الأول

الأحد Sunday	Monday الإثنين	الثلاثاء Tuesday	الأربعاء Wednesday	الخميس Thursday	الجمعة Friday	السبت Saturday
SEPTEMBER Su Mo Tu We Th Fr Sa 1 2 3 4 5 6	NOVEMBER Su Mo Tu We Th Fr Sa		1	2	3	4
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30		7 T. Hijjah	8	يوم عرفة Arafat Day 9	عيد الأضحى Eid Al-Adha 10
5	6	7	8	9	10	11
أيام التشريق Tashreeq Days 1 1	أيام المتشريق Tashreeq Days 12	أيام المتشريق Tashreeq Days 13	14	15	16	17
12	Columbus Day (U,S.) Thanksgiving Day	14	15	16	17	18
18	(Canada)	20	21	22	23	24
19	20	21	22	23	24	25
25	26	27	28	29	30	1 Muharram 1436
26	27	28	29	30	31	
2	3	4	5	6	7	



The Great Mosque of Xi'an in China was completed circa 740, and the Great Mosque of Samarra in Iraq was completed in 847. The Great Mosque of Samarra combined the hypostyle architecture of rows of columns supporting a flat base above which a huge spiraling minaret was constructed. The Spanish

the beginning of Islamic architecture in Spain and Northern Africa. The mosque is noted for its striking interior arches. Moorish architecture reached its peak with the construction of the Alhambra, the magnificent palace/fortress of Granada, with its open and breezy interior spaces adorned in red, blue, and Muslims began construction of the Great Mosque at Cordoba in 785 marking gold. The walls are decorated with stylized foliage motifs, Arabic inscriptions,

and arabesque design work, with walls covered in glazed tiles. Many buildings and portions of buildings worldwide have been inspired by the Alhambra: there is a Moorish Revival house in Stillwater, MN which was created and named after the Alhambra. Also, the main portion of the Irvine Spectrum Center in Irvine, CA, is a postmodern version of the Court of the Lions.

2014 November الموادي الثاني الثاني

Muharram - Safar 1436

الأحد Sunday	Monday الإثنين	الثلاثاء Tuesday	الأربعاء Wednesday	الخميس Thursday	الجمعة Friday	السبت Saturday
OCTOBER Su Mo Tu We Th Fr Sa	DECEMBER Su Mo Tu We Th Fr Sa					1
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20					
19 20 21 22 23 24 25 26 27 28 29 30 31	21 22 23 24 25 26 27 28 29 30 31					8 Muharram
2	3	4	5	6	7	8
تاسوعاء	عاشوراء					
Tasoʻa 9	A'shora  10	11	12	13	14	15
9	10	11	12	13	14	15
		Veterans Day (U.S.) Remembrance Day				
16	17	(Canada)	19	20	21	22
16	17	18	19	20	21	22
23	24	25	26	27	28	29
23	24	25	26	27	28	29
30				Thanksgiving Day (U.S.)		
1 Safar	2	3	4	5	6	7



Muslims' Contributions to Civilization (Institutions)

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A number of important educational and scientific institutions previously unknown in the ancient world have their origins in the early Islamic world, with the most notable examples being: the public hospital (which replaced healing temples and sleep temples) and psychiatric hospital, the public library and lending library, the academic degree-granting university, and the astronomical observatory as a research institute (as opposed to a private observation post as was the case in ancient times).

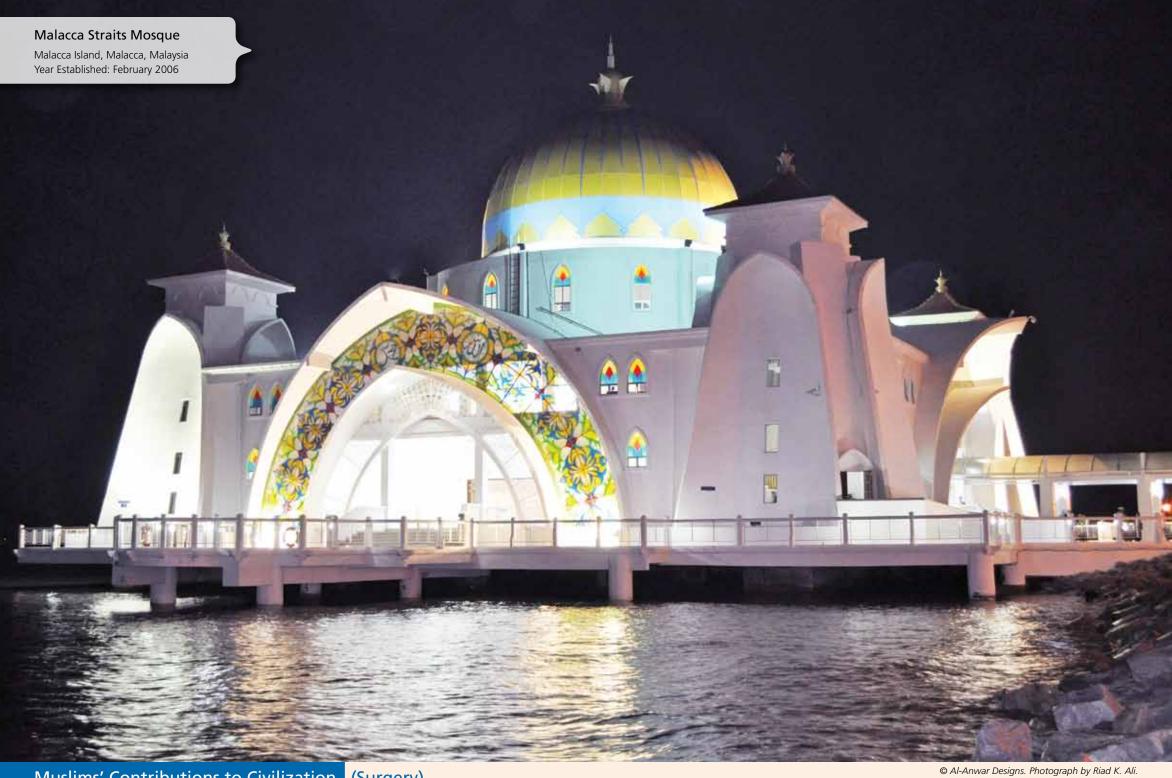
The Guinness Book of World Records recognizes the University of Al Karaouine in Fez, Morocco as the oldest degree-granting university in the world with its founding in 859 CE by Fatima al-Fihri. Al-Azhar University, founded in

Cairo, Egypt in the 975 CE, offered a variety of academic degrees, including postgraduate degrees, and is often considered the first full-fledged university. The origins of the doctorate also dates back to the ijazat attadris wa 'l-ifttd ("license to teach and issue legal opinions") in the medieval Madrasahs which taught Islamic law.

2014 December حيسمبر - كانون الأول

Safar - Rabi' I 1436 صفير - ربيع الأول

الأحد Sunday	Monday الإثنين	الثلاثاء Tuesday	Wednesday الأربعاء	Thursday الخميس	الجمعة Friday	السبت Saturday
	1	2	3	4	5	6
	9 Safar	10	11	12	13	14
7	8	9	10	11	12	13
15	16	17	18	19	20	21
14	15	16	17	18	19	20
22	23	24	25	26	27	28
21	22	23	24	25	26	27
				Christmas Day (U.S. & Canada)	Boxing Day (Canada)	
29	30	1 Rabi' I	2	3	4	5
28	29	30	31		NOVEMBER	JANUARY 2015
					Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa 1 2 3
					2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
6	7	8	9		23 24 25 26 27 28 29 30	25 26 27 28 29 30 31



Muslims' Contributions to Civilization (Surgery)

Many modern surgical instruments are of exactly the same design as those devised in the 10th century by a Muslim surgeon called al-Zahrawi. His scalpels, bone saws, forceps, fine scissors for eye surgery and many of the 200 instruments he devised are recognizable to a modern surgeon. It was he who discovered that catgut used for internal stitches dissolves away naturally

(a discovery he made when his monkey ate his lute strings) and that it can be also used to make medicine capsules. In the 13th century, another Muslim medic named Ibn Nafis described the circulation of the blood, 300 years before William Harvey discovered it. Muslim doctors also invented anesthetics of opium and alcohol mixes and developed hollow needles to suck cataracts from

eyes in a technique still used today.

Abu al-Qasim Al-Zahrawi (Abulcasis) (936 - 1013 AD): An Andalusian who is considered Islam's greatest medieval surgeon and one of the fathers of modern surgery.

**Book:** Medical Encyclopedia called Kitab Al-Tasrif.

2015 January يناير - كانون الثاني

Rabi' I - Rabi' II **1436** ربيـع الثاني

الأحد Sunday	الإثنين Monday	الثلاثاء Tuesday	الأربعاء Wednesday	الخميس Thursday	الجمعة Friday	السبت Saturday
DECEMBER 2014           Su         Mo         Tu         We         Th         Fr         Sa           1         2         3         4         5         6           7         8         9         10         11         12         13           14         15         16         17         18         19         20           21         22         23         24         25         26         27           28         29         30         31	FEBRUARY 2015  Su Mo Tu We Th Fr Sa 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28			New Year's Day (U.S. & Canada)	2	3
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#### **OCTOBER**

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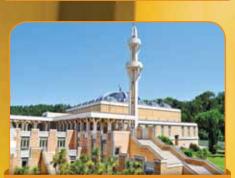




















**DECEMBER** 9 10 11 12 13 14 15 16 17 18 19 20









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