

ISLAM AND SCIENCE



U UNDERSTANDING ISLAM



THINK



PAIR



SHARE

How does science help us?

AIMS

- ❖ To understand the importance of education according to Islamic teachings
- ❖ To learn about Islamic cities and their role in advancement of modern science
- ❖ To learn about Islamic inventions



Bronze: Know Islamic teachings about education



Silver: Explain different scientific inventions and their origins



Gold: Evaluate how Islamic civilisations impacted the advancement of science

KEY VOCABULARY

- ❑ **Civilisation** A human society with its own social organisation and culture
- ❑ **Conquer** When a country takes over the land of another country
- ❑ **Scholar** A person who studies a subject in depth and knows a lot about it
- ❑ **Calligraphy** The art of producing beautiful handwriting using a brush or a special pen.
- ❑ **Astronomy** The scientific study of the stars, planets, and other natural objects in space

ISLAMIC CIVILISATIONS



Islamic civilisations have existed in the world since the early days of Islam.

Damascus
633 Onwards

Cordoba
711 – 1492

Baghdad
765 – 1258

Constantinople
1299 – 1922

TASK

List as many cities as you can from the ancient Islamic world.

Can you name any famous people/discoveries associated with these cities?



WHICH OF THESE WORDS ORIGINATE FROM ARABIC?

Algebra

Chemistry

Average

Algorithm

Cipher

Zero

Alkali

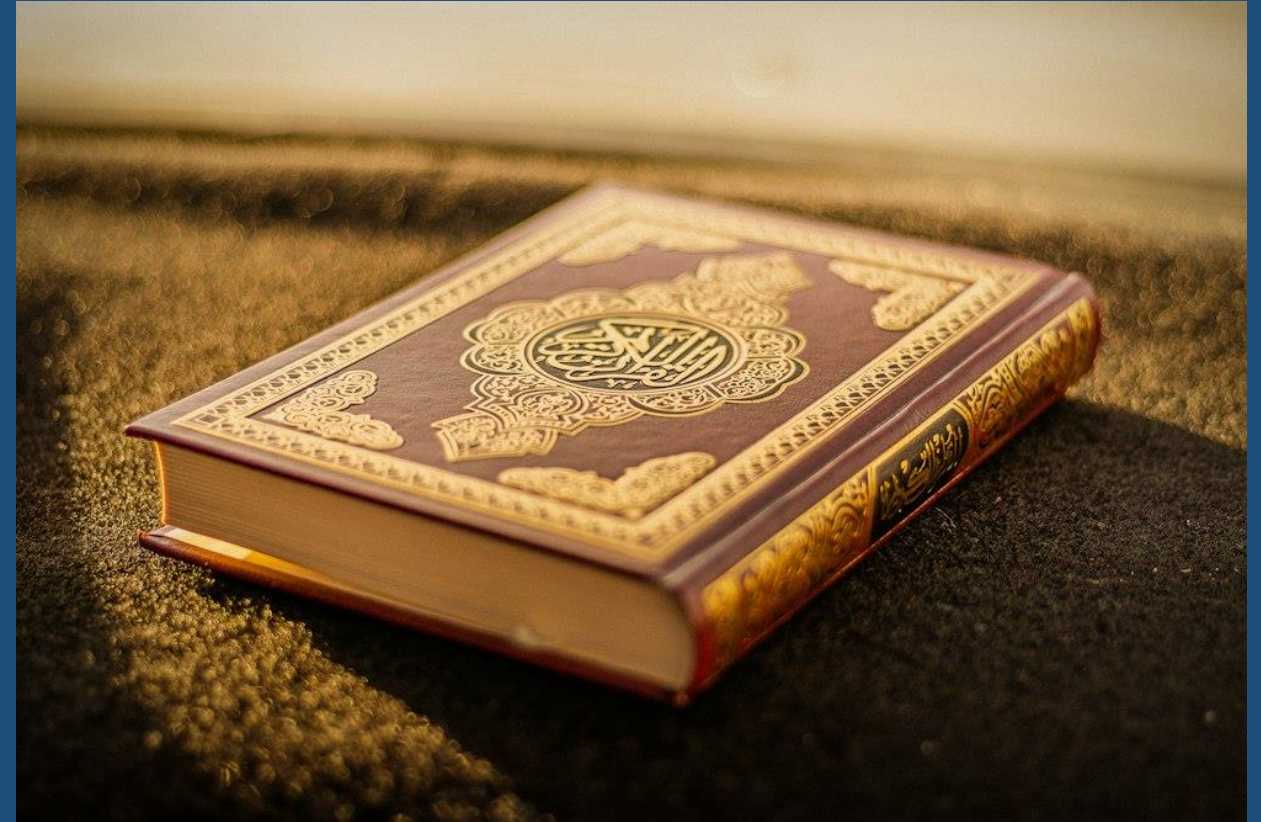
Sodium



ISLAMIC TEACHINGS ABOUT SEEKING KNOWLEDGE

“The word of wisdom is the lost property of a believer, so that wherever he finds it, he should take it, because he is the one most entitled to it.”

-Saying of Prophet Muhammad^{pbuh}
Jami' at – Tirmidhi 2687



“Seeking of knowledge is obligatory upon every Muslim man and woman.”

-Saying of Prophet Muhammad^{pbuh}
Sunan Ibn Majah 224

‘Say, O My Lord, increase me in my knowledge.’

-The Holy Qur’an Chapter 20 Verse 114/115

EARLY ISLAMIC SCHOLARS

Al-Razi



Studied diseases in children and how the brain worked.

Ibn Sina



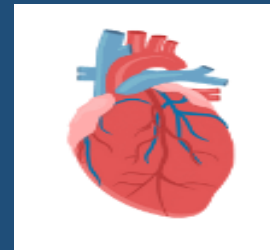
Wrote an encyclopaedia looking at lots of areas of medicine.
It was used in universities.

Al-Zahrawi



Wrote a textbook about surgery and described how to use different medical tools.

Ibn Nafis



Studied how the heart worked and how blood moved round the body.



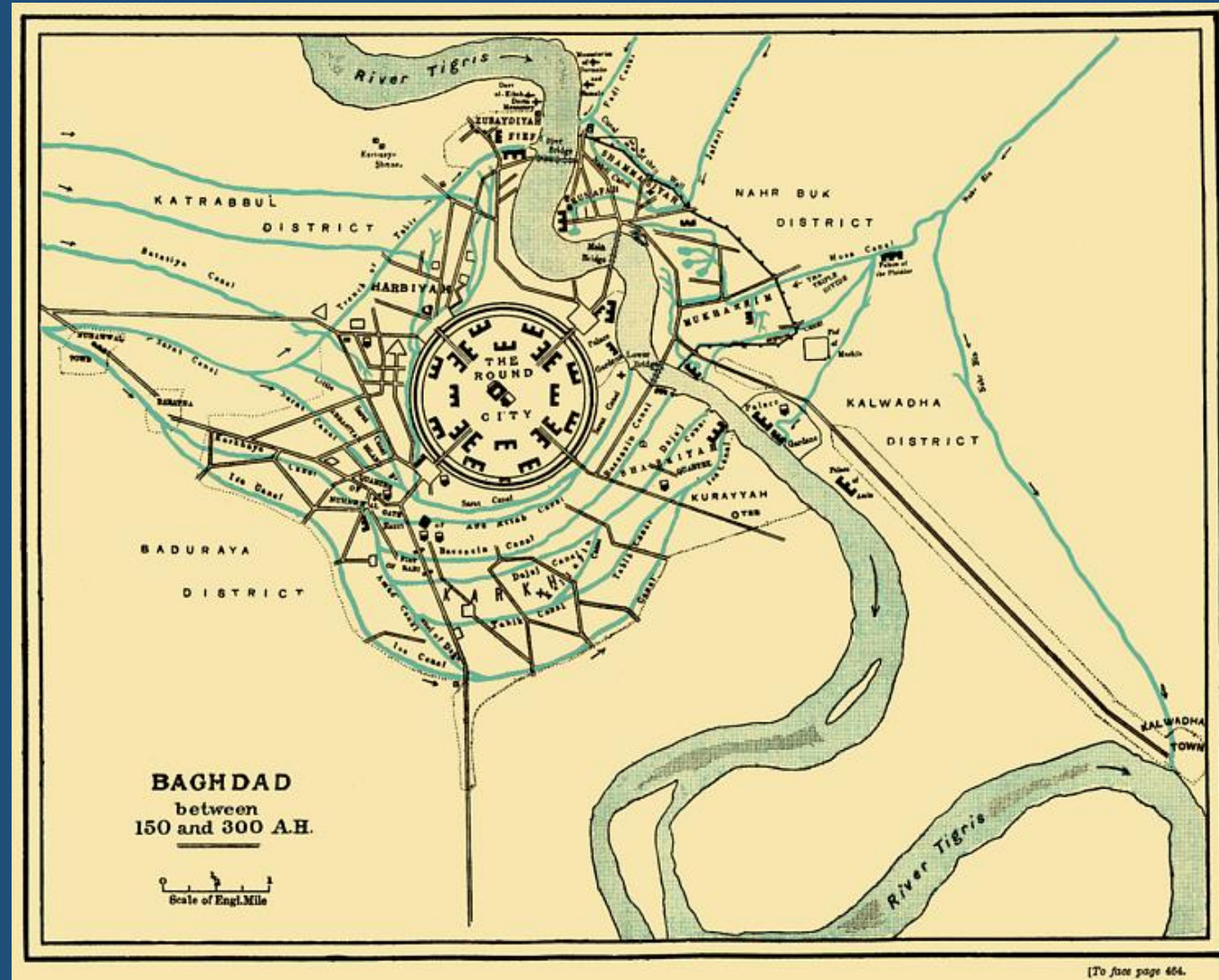
TASK

Using the fact files in Slides 11-18:

- ❖ Fill out the table with the city, key features, name of Scholar, and an interesting fact.

City	Key features	Key Person	Interesting Fact

BAGHDAD



A map of the round city of Baghdad

BAGHDAD

Baghdad was built by Caliph al Mansur (754-775) in 762 on the west bank of the river Tigris. He employed 100,000 architects, craftsmen and labourers. Because of its shape it was referred to as the Round City, although the builder had officially titled it Dar as-Salam (the abode of peace). The new city comprised of the Caliph's palace, mosque and residences for his children and government buildings. There were offices for secretaries, halls for the ambassadors, scholars and other visitors.

The real glory of Baghdad was not in wealth but in her intellectual creativity. Harun al Rashid's court attracted eminent poets, scholars, musicians and dancers. A special bureau of poetry was established which bestowed large sums of money on worthy poets.

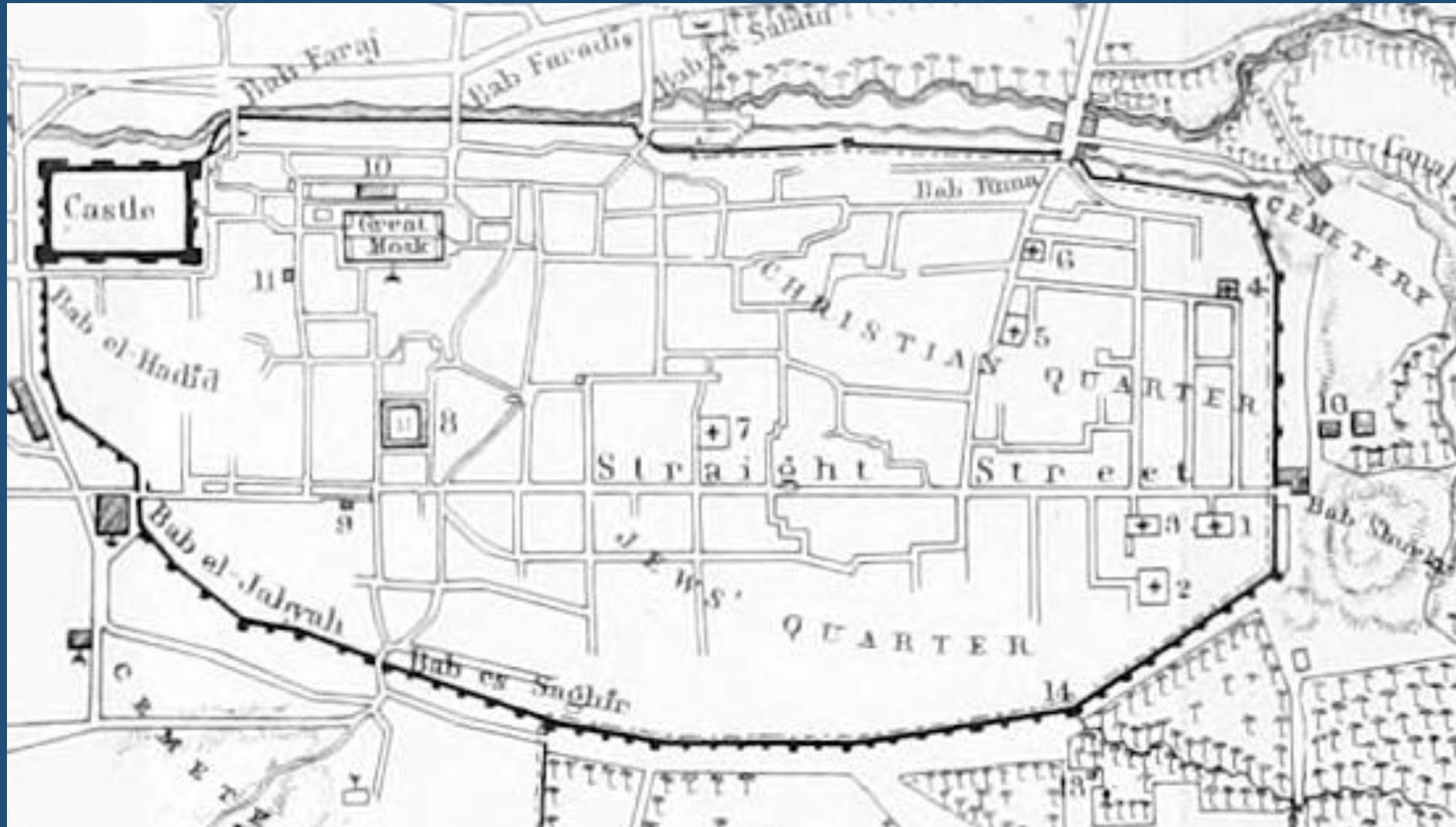


Musa Al-Khawrizmi (d.780) was one of the earliest scientists who did his research at Bayt al Hikma. On request from his patron al-Mamun he wrote a book on algebraic calculations and equations translated into Latin in 1143.

Several of his books were translated into Latin in the early 12th century.

His book on algebra, *Al-Maqala fi Hisab-al Jabr wa-al Muqabilah*, was also translated into Latin in the 12th century and it was this translation which introduced this new science to the West. His astronomical tables were also translated into European languages and later into Chinese. Several of his books were translated into other languages and served as university textbooks till the 16th century.

DAMASCUS



A map of the Old City of Damascus by J L Porter 1855

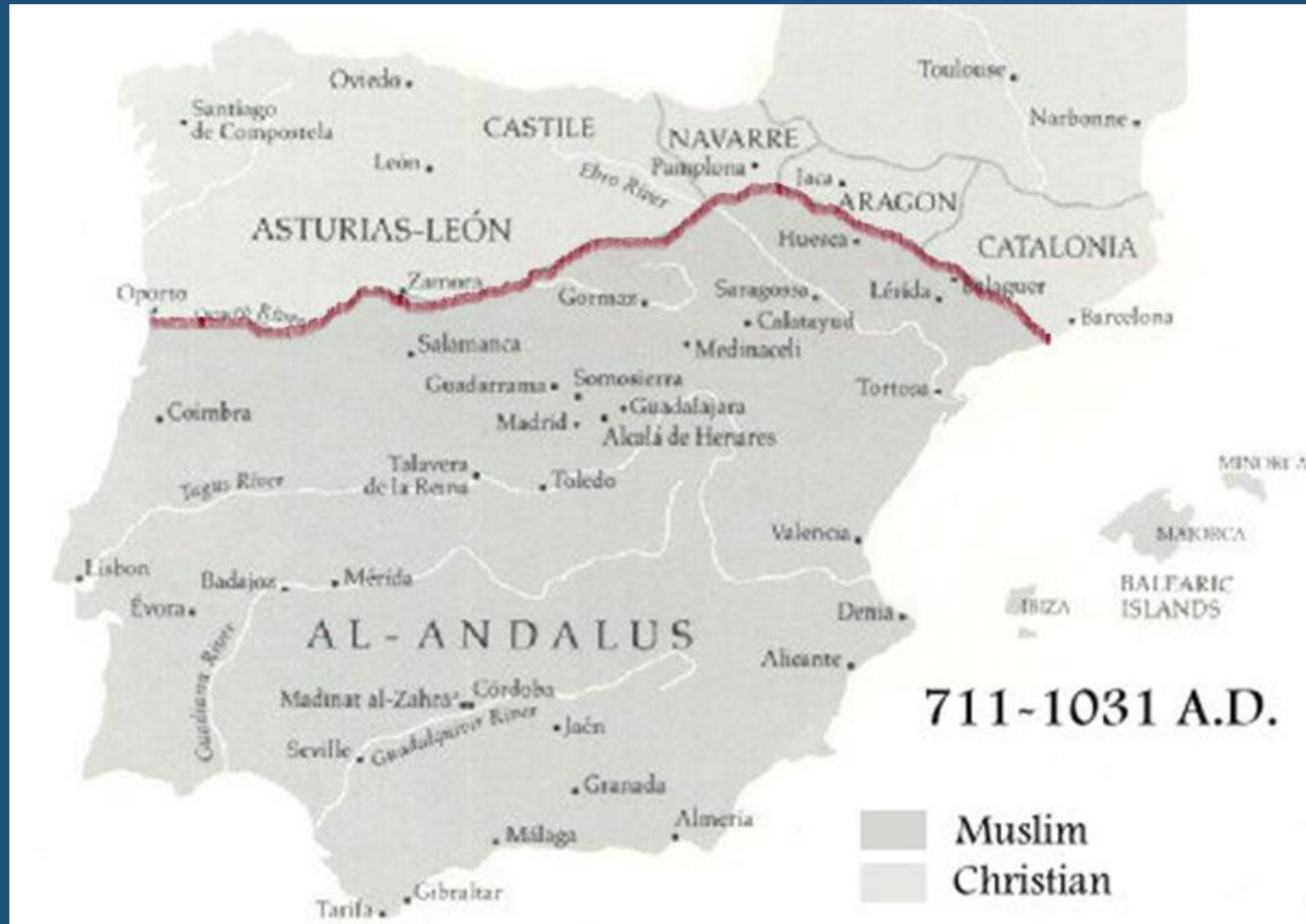
DAMASCUS

Islam emerged in Arabia at the start of the 7th century C.E. As a boy before his ministry, Muhammad went on many trade caravans with his uncle Abu Talib to Syria, visiting towns such as Bosra, Damascus, Homs and Antioch on the way. Islam came to Syria in 634 C.E. through Khalid ibn al-Walid. There had been rivalry between the Banu Hashim tribe and the Banu Umayyah tribe, the former of 4th Calif of Islam Ali and the latter of 3rd Calif of Islam Uthman. After the death of Ali in 661 C.E., Imam Mu'awiyah (the Governor of Syria) was proclaimed the new Calif. He soon moved the administrative centre from Madinah to Damascus. It was only in 750 C.E. when the Abbasid dynasty came to power that the capital of the Islamic Empire moved to Baghdad. By now, Arabic had become the official language, replacing Greek and Aramaic.

Many schools and libraries were opened which attracted scholars from across the Muslim world such as the library of Banu Jaradah in Aleppo. The “house of hadith” in Damascus attracted scholars such as Ibn Kathir, al-Nawawi, Taqiyuddin Subki and Ibn al-Salah. Hospitals were built including the famous Nuri Hospital built by Sultan Malik Nuruddin for the poor and helpless. In the 12th century, a school of illumination, Al-Ishraq, was established by Yahya Suhrawardi in Aleppo, based on Iranian mysticism. He believed that a combination of mysticism and reasoning was needed to define true philosophy, and set up his school to teach both aspects.



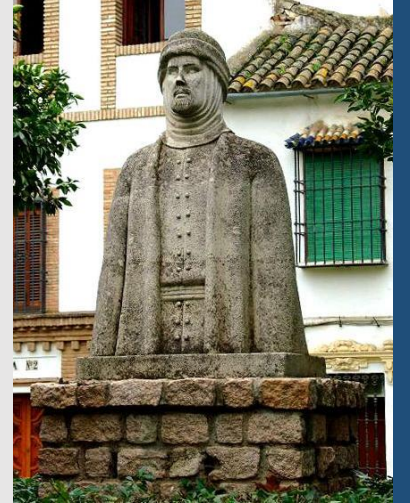
CORDOBA



8th – 11th Century Map of Muslim Spain

CORDOBA

Al-Hakam, the ninth Caliph of Islamic Spain (961-976) was the most scholarly ruler of Islam. A great patron of sciences, he encouraged the study of mathematics, astronomy and medicine. Cordoba was one of the greatest cities of the world at the time. Its university housed in the great mosque, embraced among its departments theology, jurisprudence, astronomy, mathematics, and medicine. Cordoba's workshops were producing some 60,000 bound volumes each year. Students from many European countries flocked to Cordoba, Toledo, Granada and Seville to study sciences and other disciplines.



Some of the prominent European scholars influenced by Islamic learning include Adelard of Bath, St. Thomas Aquinas, Roger Bacon, Dante Alighieri, Pascal, Copernicus and Newton. The effect of these translations on Western Europe was revolutionary. The influx of new books stirred the world of scholarship, compelled new developments in grammar, philology, and above all provided curriculum for schools and universities. Theory and practise of medicine along with other disciplines was advanced by these translations. A whole new range of ideas provided a new stimulus. In a nutshell these translations were a catalyst for the European mind and brought about the dawn of the Renaissance in the 15th century.

CONSTANTINOPLE



Byzantine Constantinople, modern day district of Fatih, Istanbul

CONSTANTINOPLE

Constantinople was the seat of the Ottoman Empire. This empire was spread further and lasted longer than most other known empires. It reached its height under Suleiman the Magnificent (reigned 1520-66), expanding to cover the Balkans and Hungary, and reached the gates of Vienna but it continued up until 1922 when it was disbanded at the end of World War One. Istanbul became not only a political and military capital, but because of its position at the junction of Europe, Africa, and Asia, one of the great trade centres of the world. Another important city was Bursa, which was a centre of the silk trade. They had control of trade routes. Among the goods traded were: silk and other cloth, musk, rhubarb, porcelain from China, spices such as pepper and dyestuffs such as indigo.

The economic strength of the Empire also owed much to Mehmet's policy of increasing the number of traders and artisans in the Empire. He first encouraged merchants to move to Istanbul, and later forcibly resettled merchants from captured territories such as Caffa. He also encouraged Jewish traders from Europe to migrate to Istanbul and set up in business there. Later rulers continued these policies.

- ❖ The Ottoman Empire ran a well organised and structured empire.
- ❖ At its peak it included:

- ❖ Turkey
- ❖ Egypt
- ❖ Greece
- ❖ Bulgaria
- ❖ Romania
- ❖ Macedonia
- ❖ Hungary
- ❖ Palestine
- ❖ Jordan
- ❖ Lebanon
- ❖ Syria
- ❖ Parts of Arabia
- ❖ Much of the coastal strip of North Africa

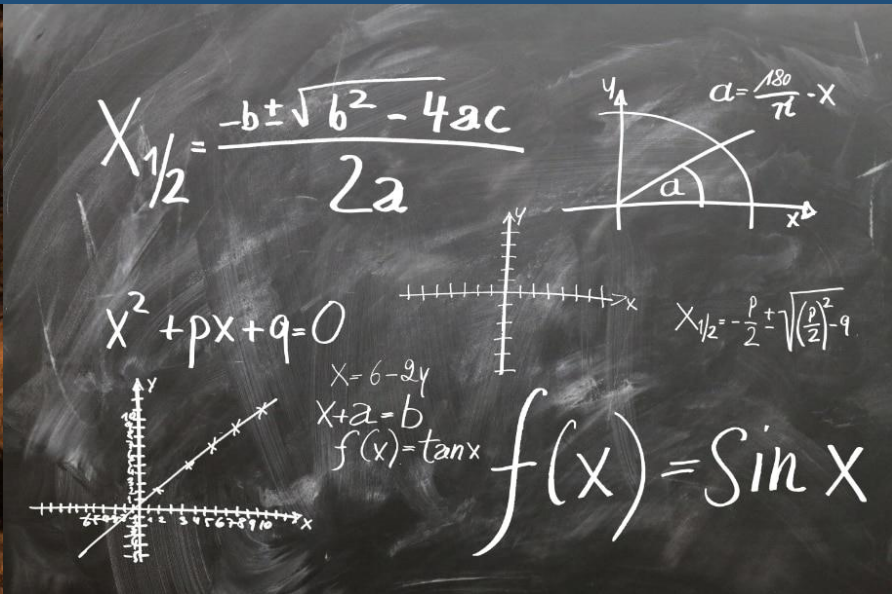


Suleiman the Magnificent

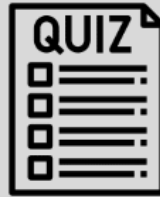
A stylized computer monitor icon is centered in the background. The text is displayed on the screen of the monitor. The background is a dark blue gradient with faint, light blue geometric patterns in the corners.

CAN YOU NAME ANY
INVENTIONS CREATED
IN THE ISLAMIC
WORLD?

ISLAMIC INVENTIONS



TEST YOUR KNOWLEDGE



<https://docs.google.com/forms/d/e/1FAIpQLSdT4TD6e0Uq6mdvxDug-ezphUWFXKtliaXqwNKJr2bAjH-qKQ/viewform>