

# Terms, People, and Places

Social Mobility:

Caravans:

Averroes:

Ibn Sina:

Ibn Khaldun:

Calligraphy:

# Lesson Objectives

- Describe the role of trade in Muslim civilization.
- Identify the traditions that influenced Muslim art, architecture, and literature.
- Explain the advances Muslims made in centers of learning.

# Summary

## “Muslim’s Civilization’s Golden Age”

Learning, literature, science, medicine, and trade flourished during the golden age of Muslim civilization. During the Abbasid golden age, Muslims made advances in economics, art, literature, and science.

The Abbasid Caliphate (750–1258) is considered the Golden Age of Islam because it was a long period of stability in which centers of trade became wealthy centers of learning and innovation. As a result of its location at a crossroads of trade between Europe, Asia, and North Africa, the Middle East and especially major trading and religious centers like Baghdad, Cairo, and Mecca, became prosperous cities that attracted merchants and scholars.

Muslim scholars collected the writings of scholars from Ancient Greece, Classical Greece and Rome, India, and China, translated them into Arabic, then improved on the discoveries of the past.

CHAPTER <b>10</b> SECTION 3	<b>Note Taking Study Guide</b> MUSLIM CIVILIZATION'S GOLDEN AGE
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**Focus Question:** What achievements did Muslims make in economics, art, literature, and science?

*As you read this section in your textbook, complete the following chart to categorize the advances made during the golden age of Muslim civilization.*

Muslim Achievements	
Economics	<ul style="list-style-type: none"> <li>• _____</li> <li>• _____</li> <li>• _____</li> <li>• _____</li> <li>• _____</li> <li>• _____</li> </ul>
Arts	<ul style="list-style-type: none"> <li>• _____</li> <li>• _____</li> <li>• _____</li> </ul>
Literature	<ul style="list-style-type: none"> <li>• _____</li> <li>• _____</li> <li>• _____</li> </ul>
Philosophy	<ul style="list-style-type: none"> <li>• _____</li> <li>• _____</li> </ul>
Sciences	<ul style="list-style-type: none"> <li>• _____</li> <li>• _____</li> <li>• _____</li> <li>• _____</li> <li>• _____</li> </ul>

CHAPTER  
**10**  
SECTION 3**Section Summary****MUSLIM CIVILIZATION'S GOLDEN AGE**

Muslim civilization enjoyed a golden age under the Abbasids. Their empire stretched into Asia, the Middle East, Africa, and Europe. Merchants crossed the Sahara, traveled the Silk Road to China, and sailed to India and Asia. New products and ideas were exchanged, and the religion of Islam was introduced to many regions. All this fueled the Muslim economy, leading to the development of partnerships, the use of credit, and a banking system. Artisans created manufactured goods for trade, and the government helped improve farming through large irrigation systems.

Muslim society allowed some **social mobility**, the ability to move up in social class through religious, scholarly, or military achievements. Most slaves were household servants and some were able to purchase their freedom. The children of some slaves could become free under another system.

The diverse cultures in the empire, as well as Islam, influenced art and literature. Early oral poetry told tales of nomadic life, while later poets developed elaborate rules for poems. Great Muslim poets include Firdawsi, who told the history of Persia, and Omar Khayyám, who wrote about fate and life in *The Rubáiyát*. Storytellers often used short anecdotes to entertain people. In architecture, buildings reflected Byzantine influences, and mosques included domes and minarets. Muslim artists also used **calligraphy**, the art of beautiful handwriting, for decoration on buildings and in books.

Muslims made great strides in education. Both boys and girls were educated so they could study the Quran. Several cities supported learning centers with vast libraries. There, scholars translated Greek, Hindu, and Buddhist texts. Known in Europe as Averroës, the philosopher **Ibn Rushd** believed that knowledge should meet the standards of reason. Another Muslim thinker, **Ibn Khaldun**, studied history scientifically and advised others in avoiding errors.

In mathematics, **al-Khwarizmi** pioneered the study of algebra. **Muhammad al-Razi**, chief physician in the hospital at Baghdad, wrote books on diseases and medical practices. **Ibn Sina**, a famous Persian physician, compiled an encyclopedia of medical knowledge. Both doctors' works guided medical study in Europe for 500 years. Other physicians improved ways to save eyesight and mix medicines.

**Review Questions**

1. How did trade affect the Abbasid empire?

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2. How did Muslim poetry change during this time?

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**READING CHECK**

Why were children educated?

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**VOCABULARY STRATEGY**

What does the word *anecdotes* mean in the underlined sentence? The word *anecdotes* comes from a Greek word that means "unpublished items." Use this word-origins clue to help you figure out the meaning of *anecdotes*.

**READING SKILL**

**Categorize** Categorize the following Muslim advances:

- Mixing medicines
- Elaborate rules for written poems
- Partnerships
- Calligraphy
- A system of credit
- Improvements in treating eye problems

“One night, Caliph al-Mamun had a vivid dream. There in his chambers he came upon a balding, blue-eyed stranger sitting on the low couch.

Who are you? the caliph demanded.

Aristotle, the man replied.

The caliph was delighted. He plied the great Greek philosopher with questions about ethics, reason, and religion. After al-Mamun awoke, his dream inspired him into action. He had scholars collect the great works of the classical world and translate them into Arabic. By 830, the caliph had set up the “House of Wisdom,” a library and a university in Baghdad. During the Abbasid period, scholars made advances in a variety of fields.

*-Inspiration from Aristotle*

What can you tell about caliph al-Mamun from his dream?

Why was it important at this time to have a “House of Wisdom”?

# Aim #10: How did Muslims achieve a golden age?

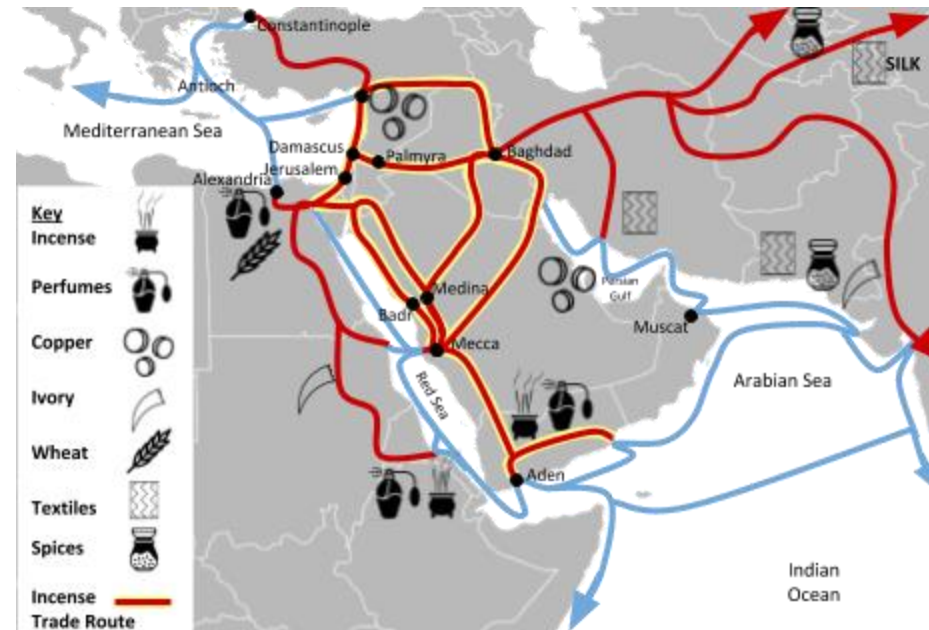
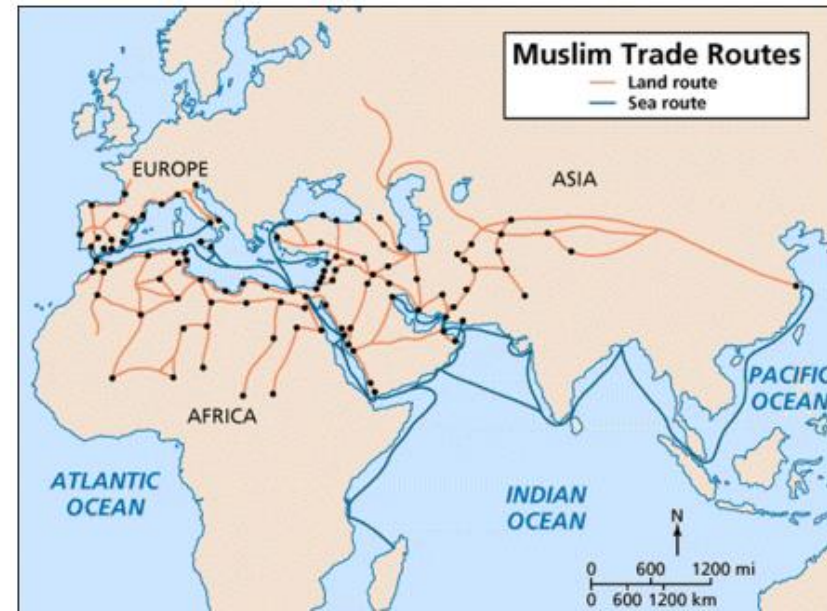
[PBS Documentary Islam: Empire of Faith \(Part 2\) Multiple Views and Reads](#)





# Economy

- international trade network
- Camel **caravans** crossed Sahara → China
- Merchants honored
- 1 language & 1 currency
- Spread culture
  - Arabic numerals



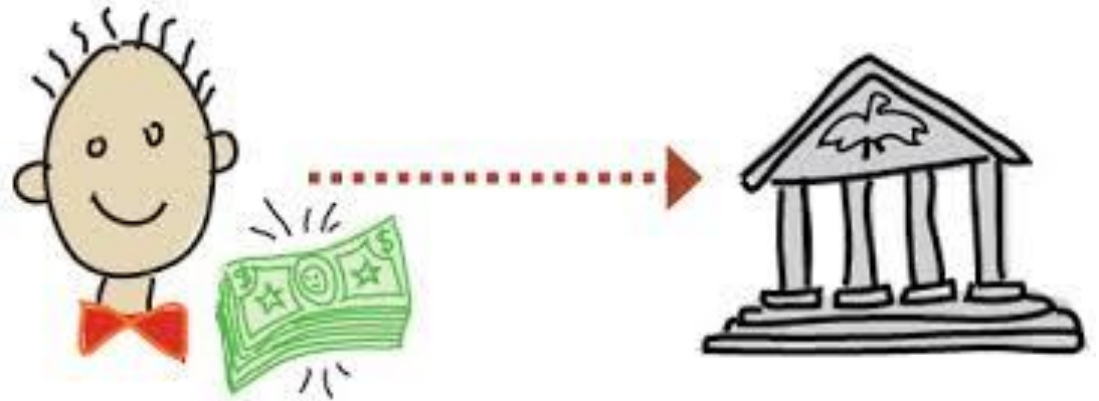


# Origins of Arabic Numerals

Brahmi	↓		—	=	≡	+	୯	୧୦	୧୧	୧୨	୧୩
Hindu	↓	୦	୧	୨	୩	୪	୫	୬	୭	୮	୯
Arabic	↓	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
Medieval	↓	0	1	2	3	୪	୫	6	୭	8	9
Modern		0	1	2	3	4	5	6	7	8	9

# New Business Practices

- Money Economy
- partnerships
- credit
- banks
- checks
- accounting





## **Checkpoint**

What economic advances did Muslims pioneer?

# Force of Unity

- Muslims united many diverse cultures

- Egyptians
- Europeans
- Arabs
- Persians
- Turks
- Africans
- Mongols
- Indians
- Southeast Asians



- Muslim arts reflected blending of cultures

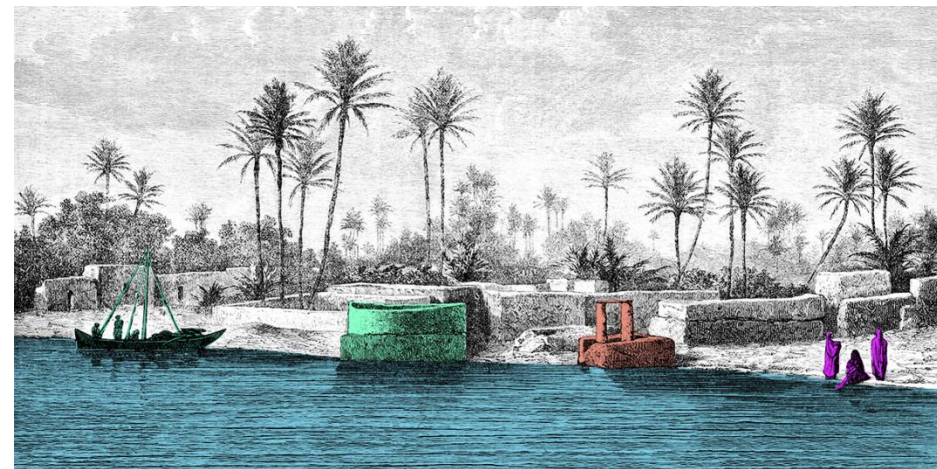
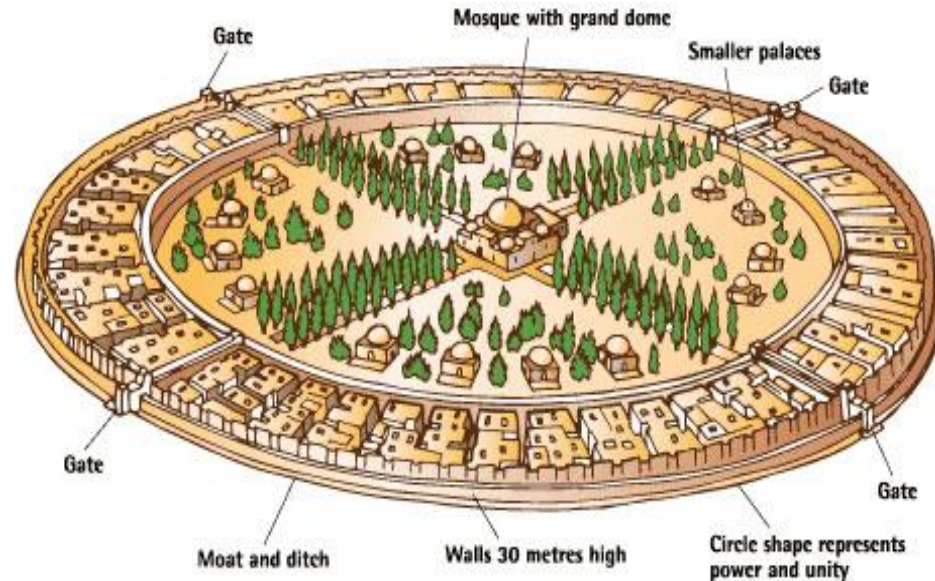




# The Splendors of Baghdad

<http://www.youtube.com/watch?v=X1PxJomypQE> “Islam: Empire of Faith” Part II (PBS)

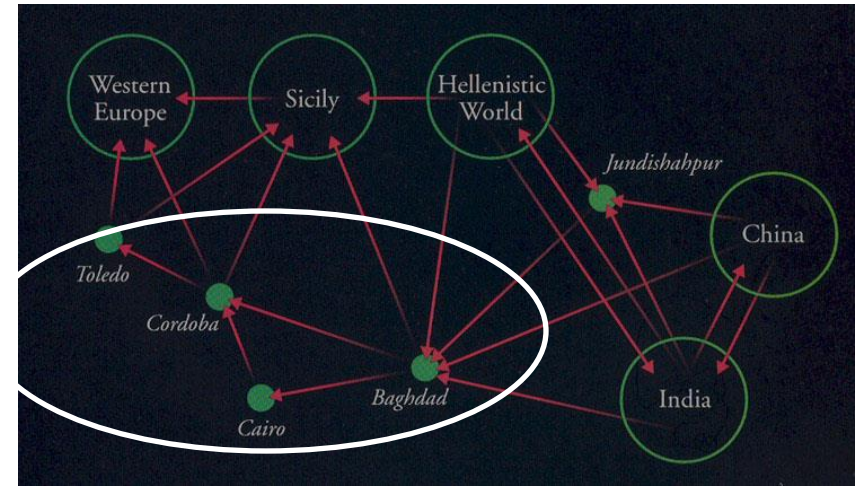
- culture, learning, & business
  - Poets, scholars, philosophers, & merchants flocked to city (**House of Wisdom**)
- Major crossroads of trade
- “Paradise on Earth”
  - walled w/palace in center
  - Beautiful gardens, palaces, & Mosques decorated city
- exceeded Constantinople's size & wealth





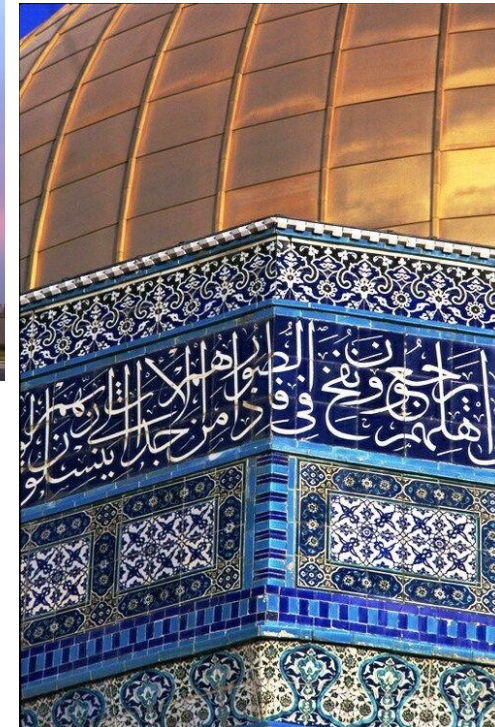
# Education, Art & Architecture

- Education- very important
  - preserved Greco-Roman learning
  - learning centers



- Art & Architecture:

- Byzantine domes & arches
- minarets
- Calligraphy
  - ❖ w/ Quran verses

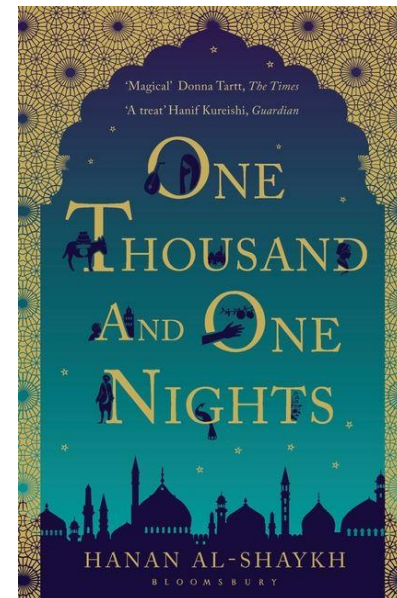


# Literature & Philosophy

- Literature:
  - poems based on Quran
  - collected & adapted foreign tales
- Philosophy:
  - Translated foreign works
  - Averroes-scholasticism

Ignorance leads to fear, fear leads to hate, and hate leads to violence. This is the equation.

~ Averroes



**Inspiring Minds**

"God would never give us reason, then give us divine laws that contradict such reason," - Averroes

الله لا يمكن أن يعطينا متولاً ويعطينا شرائع مخالفة لها - ابن رشد



# History

- set standards for scientific study of history
- Only trust sources after investigation
- Warned against bias & exaggeration

[Blindly] following ancient customs and traditions does not mean that the dead are alive, but that the living are dead.

Ibn Khaldun



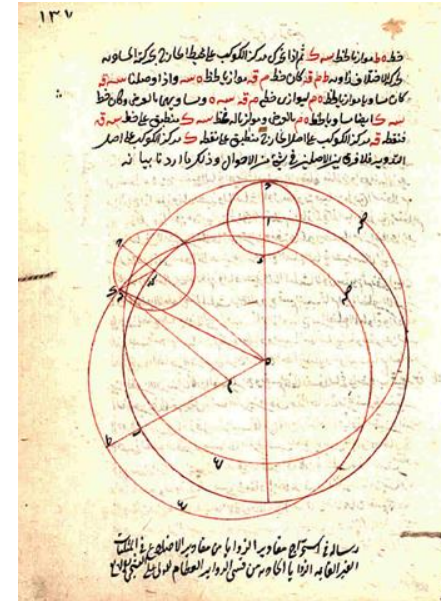
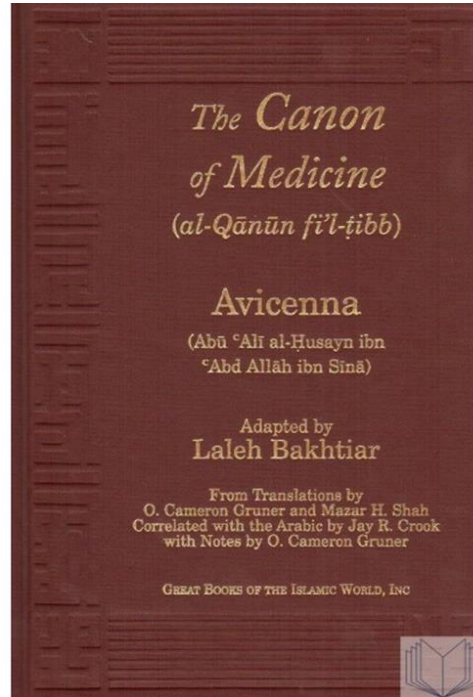


## **Checkpoint**

How did the teachings of Islam influence the arts, architecture, & literature?

# Mathematics & Science

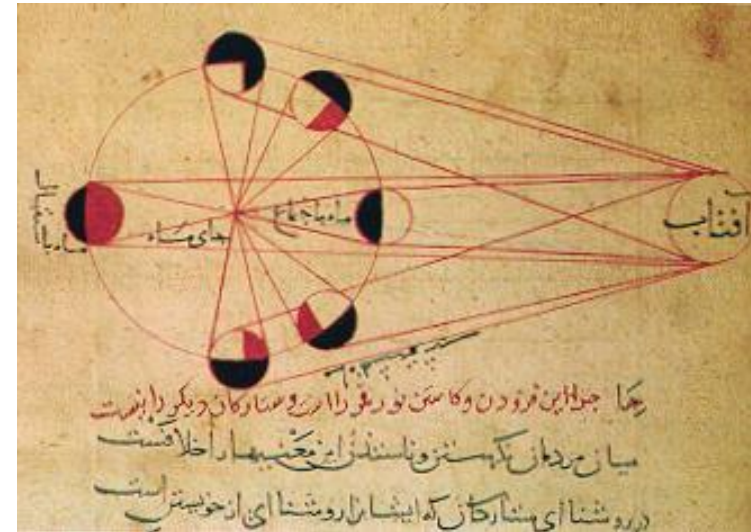
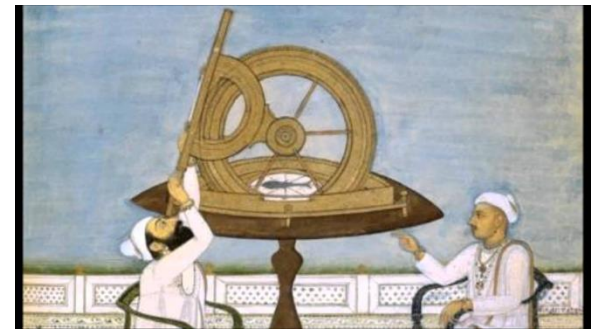
- Developed Arabic numerals & algebra
- Medicine:
  - pass hard tests
  - 1<sup>st</sup> emergency rooms
  - wrote medical books
    - ❖ standard texts in Europe
  - Muhammad al-Razi treated mental illness





# Astronomy

- astronomical tables
- Observed eclipses
- Measured earth's circumference
- perfected **astrolabe**
- Tools & discoveries will help Europeans





## **Checkpoint**

What advances did Muslims make in the centers of learning?

From every corner of the Muslim world, the faithful embarked on the traditional journey to Mecca, the sacred pilgrimage known as the Hajj.

Historian: “The pilgrimage became a central devotional and ritual feature in Islamic life, in fact, since the life of Muhammad himself, the pilgrimage has symbolized unity among all people and equality.”

The Hajj set humanity in motion. For the first time since the reign of Alexander the Great, cultures and caravans now flowed freely. Borders closed for a thousand years, opened.

Historian: “Both ideas and goods went back and forth over incredible distances. Since every Muslim, once his life journeys to Mecca, it means that there were caravans carrying goods, and pilgrims, and ideas, and people. They all met together in Mecca once a year and then things would radiate back home, so if there was an invention that was discovered in Samarkand [a city on the eastern end of the empire], it could be within the year that it would be known in Cordova [a city on the western end of the empire].”

**Where pilgrims trod, traders soon followed.** Muhammad himself had been a man of commerce and now the spread of his message brought with it the spread of trade and the Islamic way of life.

Historian: “Trade was incredibly important in the Islamic world simply because of its geographic position, it was and still is between what people sometimes called the west and what everyone has always called the east, so it was a natural land bridge connecting China to Europe.”

**In only two hundred year, Islam had extended its reach from Spain all the way to India. It took nearly a year to travel from one end of the Arab empire to the other. At it’s heart was a fabled city of wealth. It was called Baghdad.**

The palaces of ancient Baghdad have been lost over the centuries, but in its glory it rivaled Ancient Athens or Rome. It was a magnificent **architectural** achievement, the pride of Islam in a new age. One visitor left this account, “All the exquisite neighborhoods covered with parks, gardens, villas, and beautiful promenades are filled with bazaars and finely built mosques and baths that stretch for miles on both sides of the glittering river.” But what made this the greatest city of its time was more than just what met the eye it was the company it kept. **Scholars made to Baghdad the jewel of the world.**

Historian: “Certainly from the eighth century on, **Baghdad was the center of learning in the Islamic world and all major innovations either came from Baghdad or quickly came to Baghdad because the best people came to Baghdad: the best thinkers, the best philosophers, the best artists.**”

The Empire's meteoric growth had left its new leaders overwhelmed. They had staggering engineering and logistical problems to contend with. Solving them would take the greatest minds of the day. Historian: “As a new empire now, you are responsible for hygiene, you are responsible for the marketplace, you are responsible for goods being sold in the marketplace. All of those require some basic and elementary science.” This new civilization having a need for science, really stems from the need to run that empire.

The best minds rose to the call. The finest were welcomed at the center of scholarship: **Baghdad's renowned House of Wisdom.** Historian: “It was a magnet for scholars and intellectuals who came and work in the academies. They were public libraries associated with the palace and **scholars came from all over the empire. There were scholars from Iran, scholars from Byzantium who came, some were Christians, some were Muslims, and some were Jews.** All of these different threads of human knowledge came together in the city of Baghdad.” Historian: “So, the net effect of this is that you've got human individuals from radically different cultural traditions being thrown into the same crucible.”

**Scholars were dispatched across the empire to locate as many ancient texts as possible, the first international scientific adventure in history.** Unlike their Christian counterparts [in Western Europe], Muslim thinkers saw no insurmountable contradiction [problem] between their faith and the laws governing the natural world. **So they embraced Aristotle and Plato,** writers the Christian Church considered blasphemous. Historian: “So this is the time when we begin to see scientists, bureaucrats, what have you, going and seeking from whatever civilization that had any sciences before, be it the Greeks, be it the Indians, be it the Persians and so on...” From the Hindus came mathematical concepts that guide us today. It was the scholars of the House of Wisdom **who developed the system of Arabic numerals still in use.** It is **they a who translated and transformed the writings of the Greeks and made a gift of them to the modern Western world.**...Historian: “They managed to assimilate quite a lot of the rich legacy of the Hellenistic world, translated into Arabic initially, which was then made available to all other participants in the new Islamic civilization. Arabic emerges as the language of learning throughout the region. This is a very significant development in human intellectual history.”

Having amassed the knowledge the Muslims now began to challenge it. This was perhaps their most important contribution, the scientific process was born. Historian: “They wanted to know why a very intelligent Greek scientist whose text they were just admiring and they were verifying it, ‘why would he make a mistake in the first place?’ So, they began to dig. Was it because he didn't have the right instruments, or is it because he didn't have the right methodology to use the instruments for their verifications of observation? It is this spirit, you see, **this spirit of questioning,** the spirit of saying that we have to build science constantly on a systematic consistent basis where we make a physical proposition of how the universe ought to be run and the mathematical representation of that physical universe, ought to match. Now you begin to have what I call ‘the birth of the new Islamic science.’”



**Algebra and trigonometry, engineering and astronomy, countless disciplines integral to our lives today trace their roots to Islamic scientists.** More surprising perhaps were **their innovations in medicine.** At a time when Europeans were praying to the bones of their saints to cure their illness, **Muslim physicians developed an innovative theory that disease was transmitted through tiny airborne organisms, the precursor to the study of germs.** They determined that sick patients should be quarantined and then treated. This is the basis of the institution most fundamental to medicine today, **the hospital.**

Funded mainly through religious endowments, Muslim hospitals had separate wards for patients suffering from different kinds of disease. **Even mental illness was treated.** Their studies of anatomy was so sophisticated that they remained in use by Muslim and European physicians for six hundred years. Muslim scientists were especially intrigued by light, lenses, and the physiology of the human eye. The father of optics was a Muslim named Ibn Al-Haytham. His work with lenses eventually led to the invention of the modern camera. He produced the first treatise that ventured to explain how the eye actually sees. A thousand years before the West dared to take up the practice, Muslim doctors were removing cataracts surgically, clearing them from the eye with a hollow needle.

But for all this knowledge to transform and illuminate an empire, **it had to be copied and shared across a hundred different cities in** the Islamic world. For this, there was a new invention, one that is still fundamental to learning and knowledge today: **paper.** Historian: “Around the year 700, 750, when Muslim armies reach Central Asia they encountered paper for the first time and very quickly the Muslim bureaucracy started using paper. You find that within fifty years it’s in Syria and then few years after that it’s in Egypt, and then it’s in North Africa, and then it’s in Sicily, and then it’s in Spain, and that’s where Europe learned to make paper from. They learned to make it from the Arabs.” Historian: “We begin to have people with family names like ‘Papermaker.’ So, in other words, not only did paper become available, but it must have become a very wide-spread industry, and hence, **the acquisition of books must have also become very easy.**”

With the wide use of books and paper, hundreds of scribes, some of whom were women, were kept busy transcribing the translations and new writings of the Baghdad scholars. Historian: “All of this knowledge that’s being acquired from the Greeks, and from the Indians, and from Central Asians, is all being written down in books, on paper, and these books are being copied in re-copied and sent around.

We know, for example, that there was a street of booksellers with more than 100 shops, each one with paper and books for sale. This is a time when in Europe a monastery would be lucky if it had five or ten books.” While the monks of the West were hoarding their wisdom on scraps of expensive parchment, **paper enabled Islamic civilization to spread its newfound knowledge far and wide, creating a single community linking three continents.**



I don't get it...



I get it!

EXIT CARD  
Please jot down what you  
have gotten from today's  
lesson and what you still  
have questions on.