

# Central Islamic Lands (Islamic Civilization)

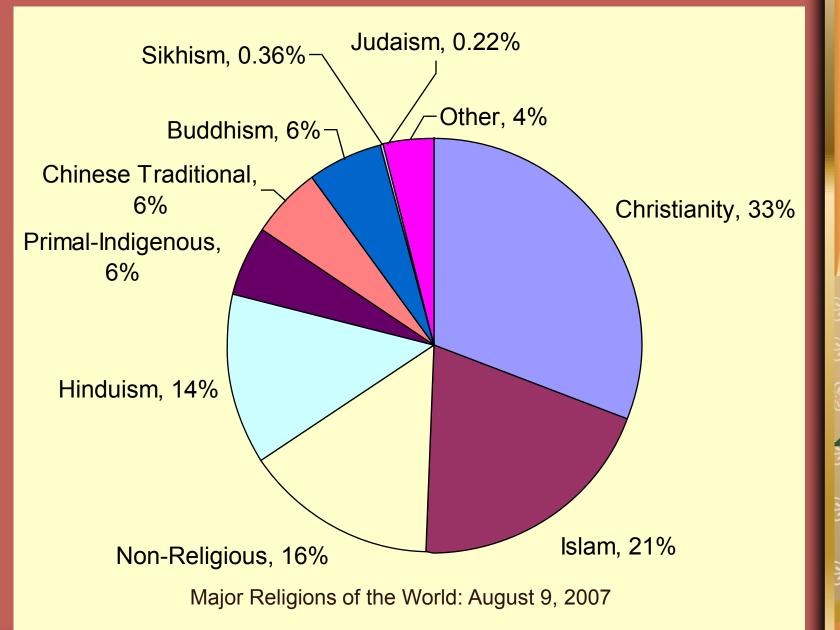
Ambrish Kumar Gupta Principal Kendriya Vidyalaya Rajkot

### **Basic Facts of Islam**



- Islam is the third in succession of the three great monotheistic faiths born in the Middle East (Judaism, Christianity, Islam)
- Islam is the <u>second</u> largest religion in world (1.2 billion adherents)
- Islam is the <u>fastest</u> growing religion in the world

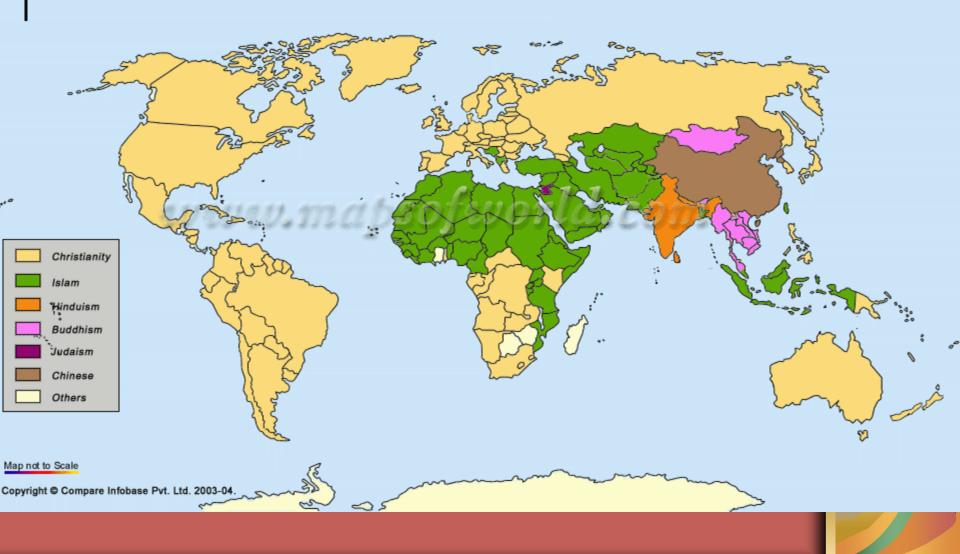
# Islam Today



### <u>Islam Today</u>

- 1.3 Billion worldwide, three continents
  - 0.3 Billion Arabs
  - Indonesia (200 M) > India (180 M) > Pakistan (160 M) > Bangladesh (120 M) > China (80 M) > Egypt (70 M)
- There are about 20 M Christian Arabs
  - Egypt > Syria > Lebanon > Palestine > Iraq
- About 7 M Muslims in the USA, 3-4 M are Arabs
  - Roughly half of the Arab Americans are Christians





## **Arabia Before Muhammad**







THE ARABS: During ancient times, the Arabs inhabited much of the area from the Arabian peninsula to the Euphrates River.





POLITICAL AND RELIGIOUS FEATURES: The Arab world in the early 7th century had no stable, large-scale political entities. People belonged to close-knit clans, or extended families, that formed tribes. Most Arabs were pagans, but small minorities were Jewish and Christian.

### ECONOMIC COMPONENTS:

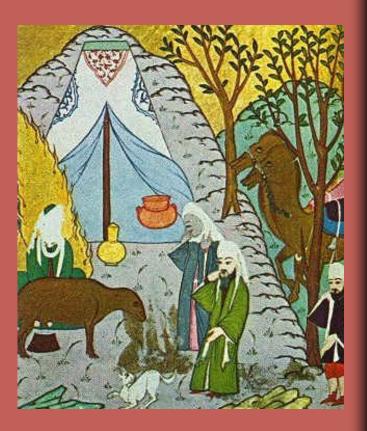
BedouinsFarmers

**Traders** 



BEDOUINS (nomadic pastoralists) provided for their own needs with:

- Herds of sheep & goats
- Small-scale trading in towns
- Regular raids on one another and on caravans.



FARMERS: Some farmers worked the land, but in many areas soils were too poor and rain was too infrequent to support agriculture.

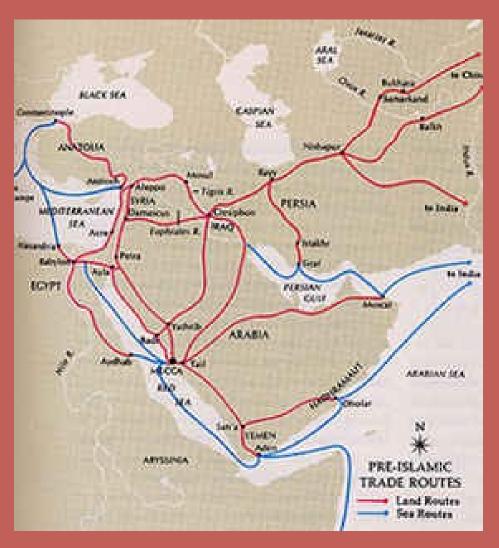






TRADERS: Cities supported traders who carried luxury goods (spices, incense, perfumes) from the Indian Ocean region and southern Arabia along caravan routes to the cities of the eastern Mediterranean. These traders formed the economic and political elite of Arabia, and they led the tribes.





#### **Pre-Islamic Trade Routes**

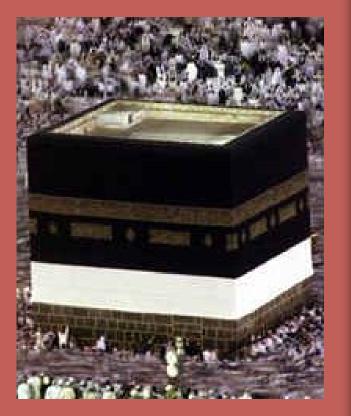


MECCA was the most important trade center in Arabia. It was dominated by the powerful tribe of the Quraysh (KOOR-aysh).





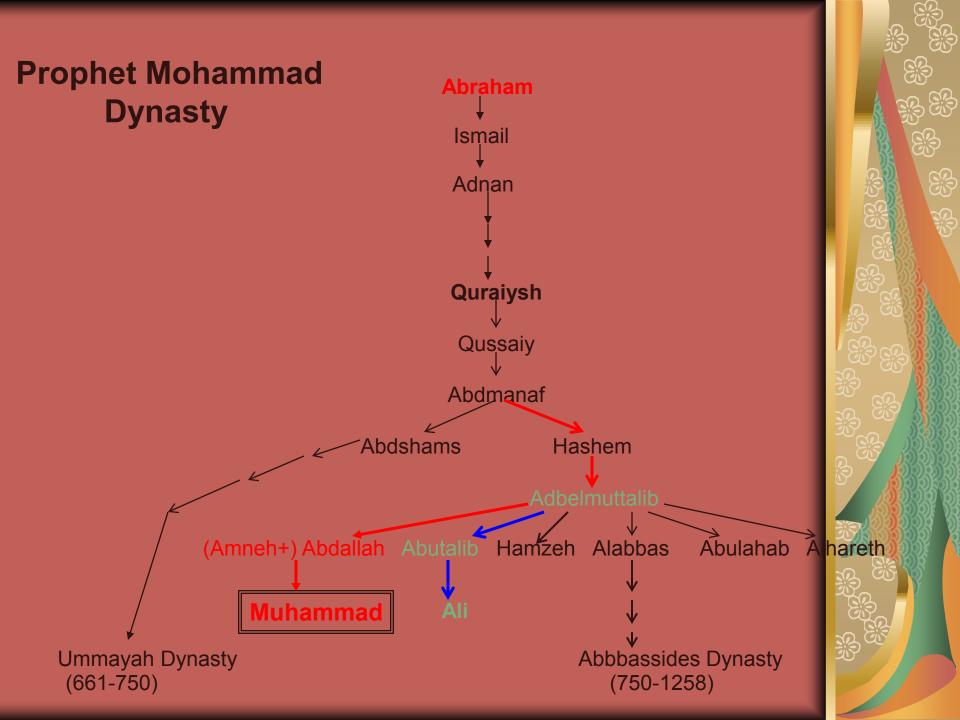
**M THE KAABA:** Mecca was also the location of the shrine known as the Kaaba, founded according to Arab tradition by Abraham. For centuries people from all over Arabia had made pilgrimages to Mecca to visit the Kaaba, site of a huge black meteorite.





# **Prophet Mohammad**

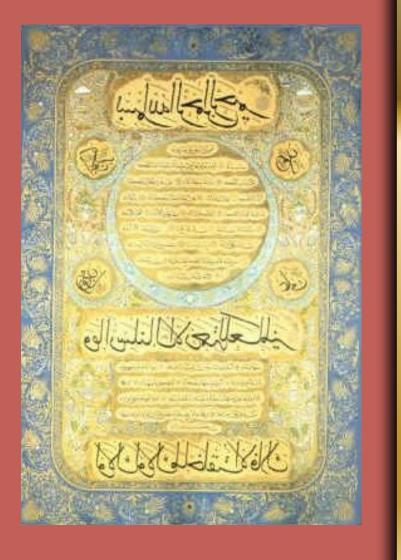
- Founder: Muhammad Ibn (son of) Adballah
- Born: 570 AD in Mecca, Arabia
- Descendant of Abraham
- Nicknames: Almustapha (the chosen), Alamin (the faithful)
- Titles: The prophet, the messenger (Alrasul)
- Tribe: Quraiysh
- Holy Book: The Quran, derived from 'read'

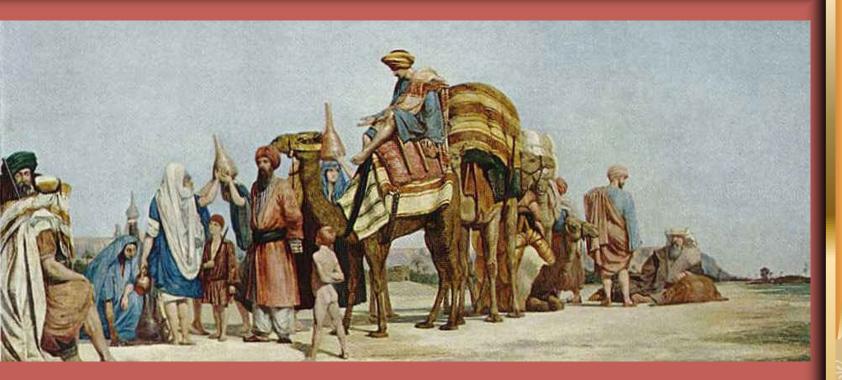


## Muhammad (570-632)

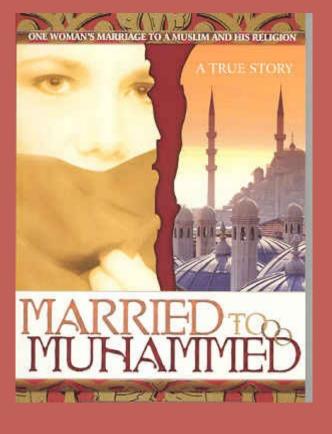
### **EARLY LIFE:**

Muhammad was born in 570 to a respectable though not wealthy or powerful clan of the Quraysh tribe. His father died before he was born, his mother shortly afterward, leaving Muhammad under the care of his grandparents and uncle.





CARAVAN TRADE: Like many young Meccans, he entered the caravan trade. By the time he was 30, he had a reputation for competence and honesty, and so became financial adviser to a wealthy Quraysh widow, Kahdija (KAH-dee-ah). MARRIAGE: Although older than Muhammad, Khadija became his wife in 596, and they had a loving marriage until her death. She bore him three sons (all died in childhood) and four girls (all survived). Only one daughter, Fatima, lived after him.

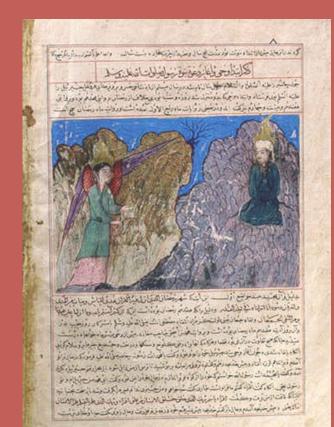




**THE REVELATIONS:** 

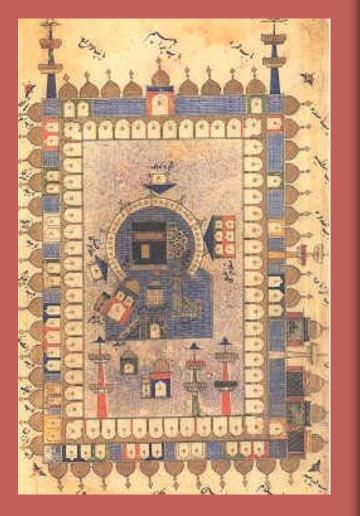
A man of spiritual insight, Muhammad received in 610 the first of many revelations that commanded him to teach all people a new faith that called for:

- An unquestioned
   belief in one God,
   Allah
- A deep commitment to social justice



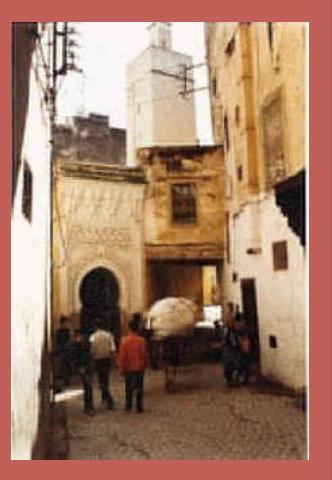
TEACHING IN MECCA: Muhammad began teaching in Mecca, but he converted few people outside his own circle.

Meccans feared that his new faith might call into question the legitimacy of the shrines in Mecca and jeopardize the traditional pilgrimages to the Kaaba with their accompanying trade.



#### **FLIGHT TO MEDINA:**

At this point, citizens from Medina, a smaller trading community troubled by dissension, asked Muhammad to become their leader. The journey from Mecca to Medina is called the Hijra (HEEZH-rah) and the event was seen as so important that 622 is the year in which the Islamic calendar begins.

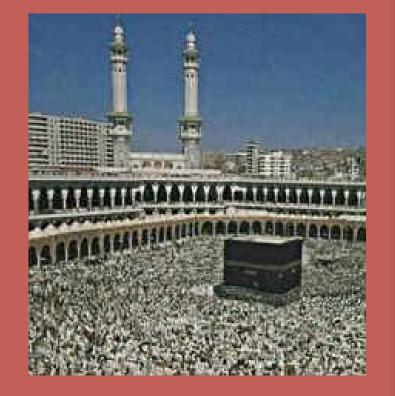


**W** UNITY: In Medina, Muhammad gathered around him a large community of believers. This group was to become the foundation of the Islamic state. The substitution of faith for blood ties was able to unite rival Arab tribes and bring about political unity.



#### **RETURN TO MECCA:**

Although Muhammad was fully in control in Medina, Mecca remained the focus of his attention. Its political and economic importance were critical to his desire to convert all of Arabia.



**MATTACKS ON MECCAN CARAVANS:** Therefore, his followers began attacking Meccan caravans and battled with the Meccans several times in the 620s. In 630, Muhammad and many of his followers returned to Mecca in triumph.





**W UNITED ARAB WORLD:** After making local arrangements, he returned to Medina and set about winning over the Bedouins of the Arabian desert. When Muhammad died in 632, he had converted most of the Arab world.





#### SPREAD OF ISLAM:

Among the reasons for the rapid and peaceful spread of Islam was the simplicity of its doctrine. Islam calls for faith in only one God worthy of worship.



### **Timeline Prophet Mohammad, 610-632**

- 571 Muhammad born in Mecca.
- 610 First revelation in the Harraa cave (27 Ramadan).
- 622 "Hijra" or Escape. Muhammad and followers escape prosecution and go to Almadinah (Yathrib).
  - Year 1 in the Islamic calendar
  - 'Missionaries' sent all over Arabia
    - building peaceful coalition
- 629 Muhammad conquers Mecca peacefully (NO REVENGE)
  - destroys idols in Alqaaba.
  - single-handedly, brings peace to war-torn Arabia
- 632 Muhammad dies in Almadinah. Unmarked grave (his will)

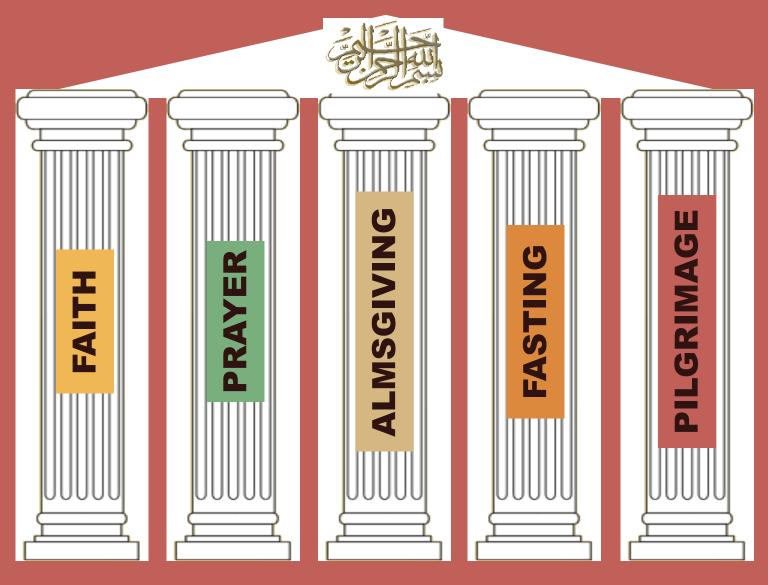
#### MUHAMMAD'S TEACHING People were asked to

Surrender completely to Allah, the one true God. The surrender is known as *al-Islam*.)

Those who surrendered became Muslims and joined the umma muslima – a new kind of community.

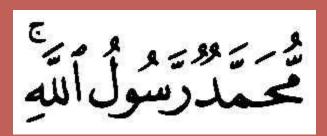


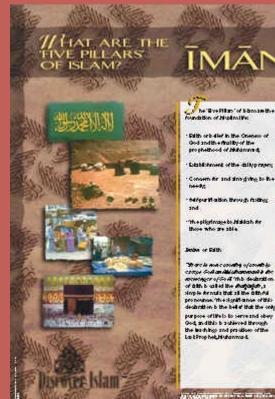
### The Five Pillars of Islam



#### **1. PROFESSION OF** FAITH (SHAHADAH):

Muslims bear witness to the oneness of God by reciting the creed "There is no God but God and Muhammad is the Messenger of God." This statement expresses a Muslim's complete acceptance of and total commitment to Islam.





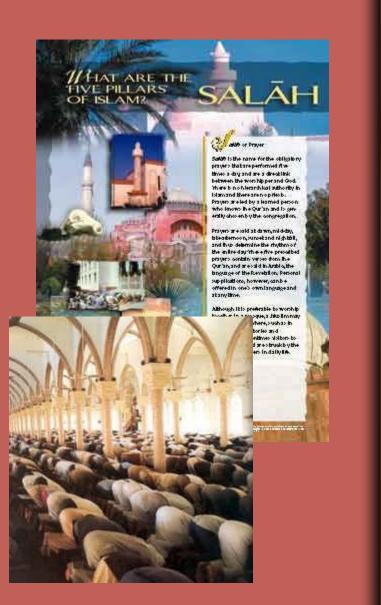
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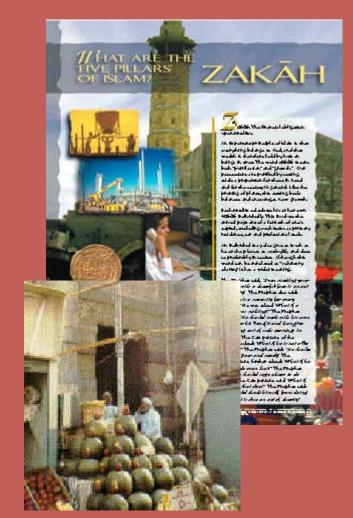
#### **2. PRAYER (SALAH):**

The world's Muslims turn individually and collectively to Mecca to offer five daily prayers at dawn, noon, mid-afternoon, sunset and evening. In addition, Friday congregational service is also required.





**3. ALMSGIVING** (ZAKAH): Social responsibility is considered part of one's service to God; so almsgiving is obligatory. 2.5 percent of an individual's net worth, excluding obligations and family expenses, is reserved for the welfare of the entire community, especially its neediest members.



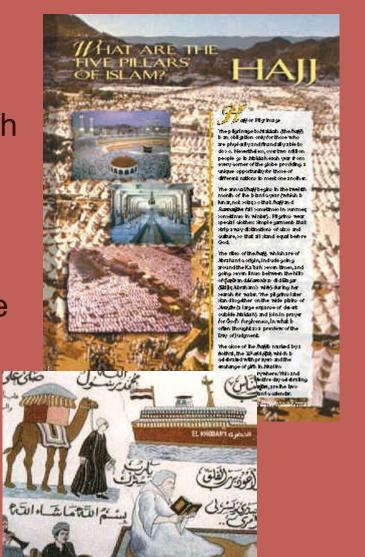
4. FASTING DURING
RAMADAN (SAWM) : The fast is an act of personal worship in which Muslims seek a richer perception of God. It is also an exercise in self control.

- During Ramadan, abstention from eating, drinking and other sensual pleasures is obligatory from dawn to sunset.
- The end of Ramadan is observed by three days of celebration – a time for family reunion and gift-giving.



#### 5. PILGRIMAGE TO MECCA (HAJJ): The pilgrimage is an expression of Islamic faith and unity.

For those Muslims who are physically and financially able to make the journey to Mecca, the pilgrimage is a once in a lifetime duty that is the peak of their religious life.



#### **THE EARLY DECADES:**

In the early decades, the pillars sustained a faith that stressed strict monotheism and practices that affirmed Islam and built up a sense of community.

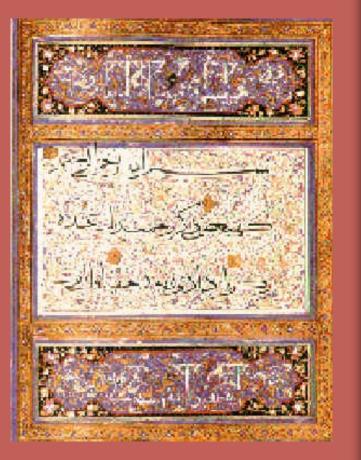
- Originally, there was no elaborate theology, intricate doctrinal mysteries, creed, or clergy.
- Men called *imams* led the Friday prayers in the mosque and usually offered sermons that applied Muslim teaching to the issues of the day, but Islam involved no ordained priesthood or hierarchy.

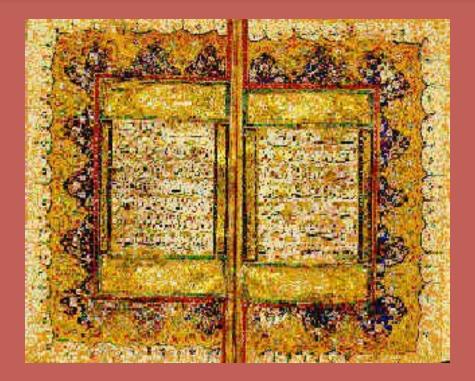




**THE QURAN:** When

**Muhammad** communicated God's teaching to his followers, he always insisted that he was transmitting a direct, verbal revelation and not offering his own interpretation. That revelation came in the form of "recitations" that make up the Quran, the scriptures of Islam. They are arranged into 114 Suras, or chapters.





- CONTENTS OF THE QURAN: The Quran contains legal principles and wise statements like the Hebrew Scriptures and moral teaching like the Christian New Testament.
- It also prescribes regulations for diet and for personal conduct (e.g., the Quran forbids alcohol and gambling, censures luxury and ostentation, and imposes strict sexual restraints on both men and women).

THE SUNNA: After the prophet's death, his followers compiled collections called the *sunna*, the "good practice" (i.e., the words and customs of Muhammad himself.)

- Included are the sayings of the prophet and the comments he made about how God's revelation was to be understood and applied.
- Dating from the 8<sup>th</sup> century, scholars are not sure what portion of the <u>sunna</u> derives authentically from the age of the prophet.



# Sources of knowing Islam -

#### **Sources of Islamic Beliefs**

#### Qur'an

Sunnah

Holy book that includes all the messages Muhammad received from God

#### Muhammad's example for the duties and way of life expected of Muslims

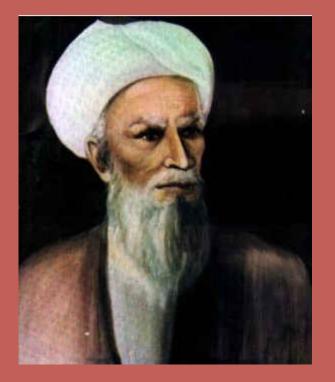
#### Shariah

Islamic law, based on interpretations of the Qur'an and Sunnah

- Chronicles or tawarikh.
- Bio-graphies or sira
- Hadith-records of the sayingss & doings of prophet Muhammad.
- Tafsir- commentries on Quran.
- Akhbar- collection of eyewitness reports.
- Archaeological findings.

#### DEFENDER OF THE FAITH: After Muhammad's death in 632, his friend and fatherin-law, Abu Bakr, became his successor, or caliph.

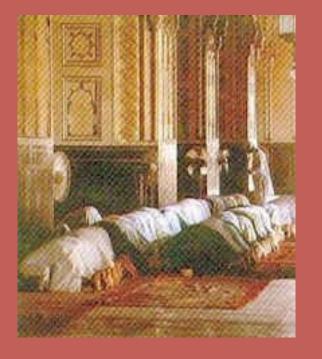
Regarded as the defender of the faith, whose power derived from Allah, the caliph governed in accordance with Muslim law as defined by the Quran.





THE ISLAMIC STATE was a theocracy, in which government and religion were inseparable and there was no distinction between secular and spiritual authority.

Thus, Islam was more than a religion. It was also a system of government, society, law, and thought that bound believers into an all-encompassing community.



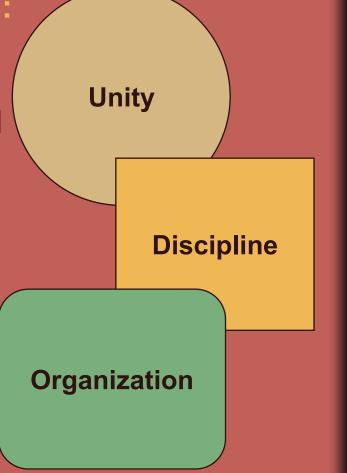
CHRISTIANS AND JEWS who lived in Islamic lands had fewer rights than Muslims. They could not bear arms, were assessed a special tax called jijya, and sometimes were barred from testifying in court against a Muslim.

Nevertheless, despite instances of loss of property or life, the two groups generally went about their business and practiced their religions free of persecution.

**Muslim** Christian Jew

FORMULA FOR SUCCESS: Islam gave the many Arab tribes the unity, discipline, and organization to succeed in their wars of conquest.

Under the first four caliphs, who ruled from 632 to 661, the Arabs overran the Persian Empire, seized some of Byzantium's provinces, and invaded Europe



## Causes of victory of Arabs-

Religious Zeal of Arabs.
Lust for wealth & Popularity.
Military strategy of Arabs.
Weaknesses of opposition- revolts by the aristocracy.

Arabs were considered a martial race.

# Early Islamic Empires After Muhammad

#### 632-661: the Four Elected Successors (Caliphs)

#### Abu-Bakr - 632-634

• The first elected official. Wise leader, crisis manager

#### Omar Ibn Elkhattab - 634-644

- A first-rate statesman. Honest, modest and just.
- Conquered the Levant, Egypt, Iraq, Persia
  - Damascus (9 / 635) and Jerusalem (5 / 638) surrender peacefully
    - Omar's pledge to the Jerusalemites
- A modern state: Treasury, communication, defense. Engraved currency.

#### Othman bin Affan - 644-656

- Collected and compiled the Quran
- Emergence of power struggle

#### Ali Bin Abitalib - 656-661

- Power struggle escalated to armed conflict
- Emergence of political parties
- End of democracy. Ummayah Dynasty in Damascus, Muawyia (661-680)

#### New Leader- Abu Bakr

- After Muhammad's death, many Muslims chose Abu Bakr, one of Muhammad's first converts, to be the next leader of Islam.
- He was the first <u>caliph</u> ("successor")- a title the Muslims use for the highest leader of Islam.
- Abu Bakr was a political and military leader, not a religious leader.
- He directed a series of battles against the Arab tribes and made Arabia a unified Muslim state.

# **Growing Empire**

- Many different factors contributed to the growth of the Islamic empire:
- 1. The Muslims defeated many empires around the Arabian peninsula
- 2. They made treaties with conquered people
  - Included rules for Jews and Christians
  - They could not build churches in Muslim cities or dress like Muslims

# Growing Empire cont.

- 3. Defeated Persia in A.D. 637 (Iraq/Iran)
- 4. Captured Jerusalem in A.D. 638
- 5. Early caliphs came from the Umayyad family.
  - They moved their capital from Medina to Damascus
  - They conquered Central Asia, northern India, and northern Africa

# Growing Empire cont.

- 6. Berbers- native people of North Africa
  - They were originally enemies
  - After many years of fighting, many Berbers converted to Islam
  - They helped the Muslims invade Spain in A.D. 711
  - The army moved on to present day France
     but were stopped by a Christian army
  - Muslims called Moors continued to rule parts of Spain for the next 700 years

#### Trade Helps Islam Spread

Due to Arabia's crossroads location, Muslim merchants had easy access to South Asia, Europe, and Africa

Merchants spread Islamic beliefs to India, Africa, Malaysia, and Indonesia.

### **New Products**

- Trade brought new products to Muslim lands
  - Paper and gunpowder- came from China
  - Cotton, rice, and oranges- came from India, China, and Southeast Asia
  - Ivory, cloves, and slaves- came from Africa

## The Growth of Cities

- In addition to bringing people, products, and ideas together, trade also created wealth, which supported great cultural developments in two major cities:
  - 1) Baghdad (Iraq)
  - 2) Cordoba (Spain)

# The Ummayads

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- Empire center and capital move to Damascus
- Expansion: All N. Africa (Atlantic), W. Europe, much of C. Asia, the wall of China
  - > 711: Conquer of Spain and Portugal. Tariq Bin Ziyad
- Expansion into W. Europe blocked in France by Charles Martial, 732
- Power Struggle continues, but the Caliphs brutally liquidate all rivals
  - ➢ Karbalaa in S. Iraq (10 Nov, 680) and the emerge of the Shiha
- Addelmalek builds Al-Aqsa Mosque and the Dome of the Rock in Jerusalem (691)
- Massive translation of Greek and Indian writings
- Arabization of the empire
- Bloom of architecture, arts, agriculture, and science

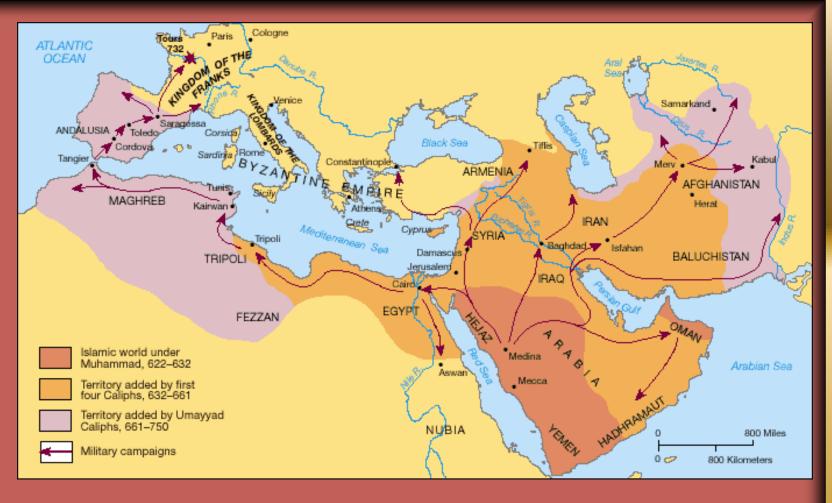


## Islam in 750 AD.



The Abbassides Dynasty, 750-1258

- The center of the Empire moves to Iraq and Iran
- Baghdad, built 762 AD by Almansur (2nd Caliph).
- With over 2 M, Baghdad becomes the glamorous center of the world
  - Science, art, architecture, learning, and wealth
  - Lighted streets, public baths, public libraries and hospitals everywhere
- Other dynasties in Egypt, Spain, and parts of the Levant.
- A 2nd Ummayah dynasty in Spain, 9th century
  - Qurtoba (Cordova) competes with Baghdad
- Cairo, built 968 AD



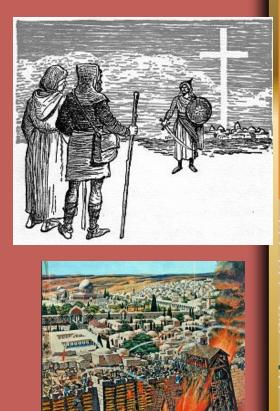
**CONQUESTS BY 733:** In the east, Islam's territory eventually extended into India and to the borders of China. In the west, it encompassed North Africa and most of Spain. But the Muslims' northward push lost momentum and was halted in 717 by the Byzantines at Constantinople and in 732 by the Franks at the Battle of Tours in Central France.

# Break-Up of Caliphate & The Rise of Sultanates.

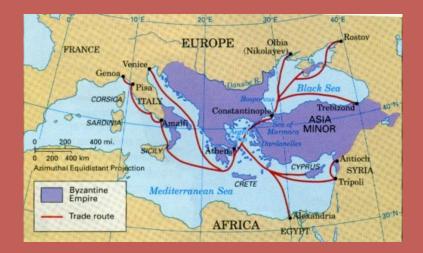
- Wide islamic territory & lack of means of transportation and Communication.
- War of succession among descendants of Caliph.
- Rivalary started b/w Arabs & Iranians in Army & Beureocracy.
- Emergence of new small dynasties.
- Rise of Buyids & Fatimids.
- Factionalism in Abbasid court.
- Rise of Turkey Sultanate.
- Beginning of Crusade B/w Muslims & Christians.
- Invasion of Nomadic Mongols.

## The Crusades

- A series of four campaigns between 1095 and 1291 urged by the Pope for recapturing Jerusalem.
- The Crusaders controlled a long strip of land along the Mediterranean (50 miles wide and 500 long)
- The fourth Crusade led to the sacking of Constantinople, and the weakening of the Byzantine Empire.



#### The Crusades





#### The Holy Land During the Crusades SELJUK EMPIRE LESSER ARMENIA EDESSA BYZANTIN ANTIOC Byzantine territory Crusader territory in July 1187 TRIP Crusader territory lost to Muslims by 1187 Tripoli, Mediterranean Sea Beirut, Muslim territory Muslim victory Hatt Tib JERUSA 75 150 km cator Projec STO MAND



### Causes responsible for Crusade

- To conquer holy land of Jerusalem by Arabs in 638 AD.
- The feelings of religious propagation among Muslims & Christians.
- Change in socio-economic organisation in Arab & Europe.
- Beginning of peace of God Movement in Christianity.
- Active efforts of Pope Urban-II & Byzantine king to liberate Jerusalem.
- To keep control over Indian trade by Arabs & Europeans.

# Impact of Crusade over Asia Africa & Europe -

- Tremendous loss of life & wealth.
- Cultural Influence over Arabs & Christians.
- European came to know Islamic & Indian traditional knowledge and learning which resulted in Renaissance & discovery of sea-voyages.
- Crusade left a lasting impact over christian-muslim relation.
- Greater influence of Italian merchantile communities in the trade b/w The East & The West.



# Islamic Economy : Agriculture, Urbanisation & Commerce

- Solution Agriculture was the principal occupation of the settled populations in newly conquered areas.
- Land ownership- Peasants + Kings (Iqtas).
- Land revenue- Ushr, kharaj, jajiya, zakat.
- Political stability helped agriculture & state supported irrigation systems.
- Many new crops such as cotton, oranges, bananas, watermelons, spinach & brinjals were grown and even exported to Europe.

## Conttd....

- Economic development encouraged Urbanisation. Many new cities(Misr) were founded to settle Arab Soulders(Jund) & developed existing.
- Two building complexes developed in all cities-Mosque, central market-place. Cities were homes to administrators, scholars & merchants.
- Ordinary citizen &soldiers had their living quarters in outer circle.
- At the outskirts were the houses of urban poor, a market for green vegetables & fruits broughtfrom countryside, carvan stations and unclean shops dealing in tanning & butchering.
- Beyond the city walls were inns for people to rest when the city gates were shut and cemeneries.

### Conttd....

- Geography helped Arabs in maritime trade through various land & waterways.
- Role of Arabs, jewish & Iranian merchants + use of slaves helped in economy.
- The fiscal system & market exchange increased the importance of money.
- Gold, silver & copper coins were minted and circulated. Gold from Sudan(Africa) and silver from Central Asia were obtained.
- Letters of credit & bill of exchange were used by merchants & bankers to transfer money, which freed trader to carry cash & make journey safer.

#### Conttd....

- Employ slaves in family businesses were customary.
- Murjaba (share holding) trading was also common.
- Making profit by trade was not restricted in Islam but interest bearing transactions were unlawful. Instead of it they took it in different manners.

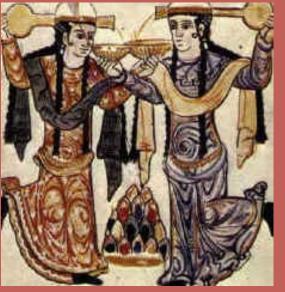


#### Islamic Learning & Culture

#### **© CULTURAL INTEGRATION:**

In the 8<sup>th</sup> and 9<sup>th</sup> centuries, under the Abbasid caliphs, Muslim civilization entered its golden age.

- Islamic civilization creatively integrated Arabic, Byzantine, Persian, and Indian cultural traditions.
- During the Early Middle Ages, when learning was at a low point in western Europe, the Muslims preserved the philosophical and scientific heritage of the ancient world.



**ADVANCES IN LEARNING:** The synthesis of Eastern and Western ideas and of new thought with old, brought about great advances in medicine, mathematics, physics, astronomy, geography, architecture, art, literature, and history.





**TRANSMISSION OF KNOWLEDGE:** Many crucial systems such as algebra, the Arabic numerals, and the concept of the zero, were transmitted to medieval Europe from Islam. Sophisticated instruments which were to make possible the European voyages of discovery were developed, including the astrolabe, the quadrant and good navigational maps.



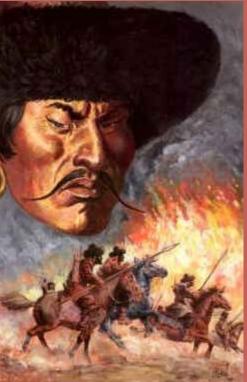
**M** THE ARAB EMPIRE,

stretching from Spain to India, was unified by a common language (Arabic), a common faith, and a common culture.



#### DECLINE: By the 11<sup>th</sup> century, however, the Arabs began losing their dominance in the Islamic world.

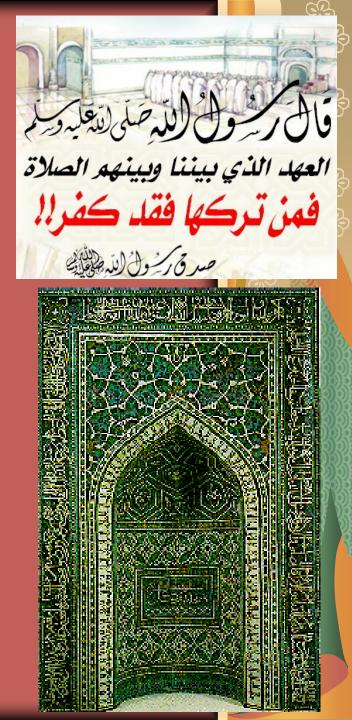
- The Seljuk Turks conquered
   Syria, Palestine, and much of
   Persia.
- In the 11<sup>th</sup> and 12<sup>th</sup> centuries, the Muslims lost Sicily and most of Spain to Christian knights.
- In the 13<sup>th</sup> and 14<sup>th</sup> centuries, Mongols devastated Muslim lands.
- In the 15<sup>th</sup> century, the collapse of the Mongol empire left the way open for the Ottoman Turks, who reached their height in the 16<sup>th</sup> century.

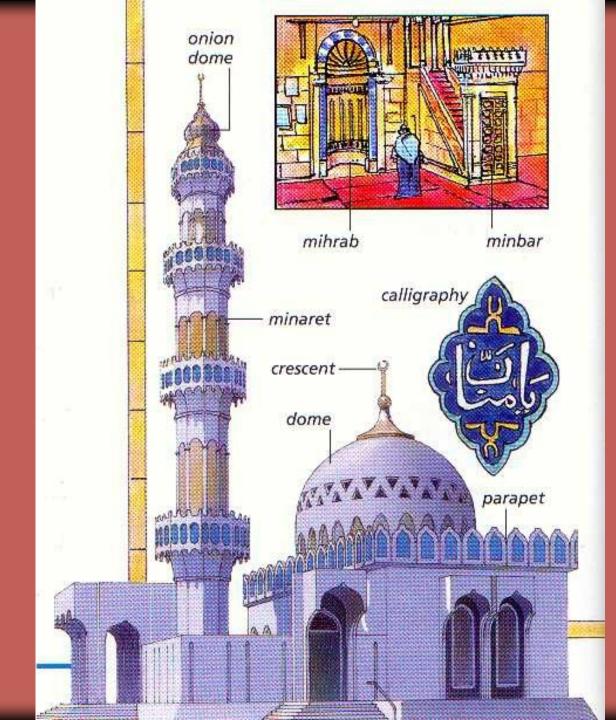




## Architecture:Mosque

- Muslim place of worship Muslims come together in a mosque for prayers at midday on Friday (Muslim Holy Day)
- MIHRAB = small arch or hole in wall indicates the direction of the Ka'bah in Mecca
- MINARET = high tower or dome from which a muezzin calls the faithful to prayer
- WUDU = cleansing process before prayer (water)
- IMAM = chief officer in the mosque who leads prayers







# **Science and Civilization**

- A dedicated quest for knowledge and a burst of scientific innovation in a multi-ethnic and multi-faith society
- Lasted for over 8 centuries, and produced a plethora of knowled ge and discoveries in all disciplines
- Induced the later European renaissance
- The Arabic tong, invigorated by the Quran, was the vehicle, and tolerant, inclusive, and knowledge-advocate Islamic faith was the culture
- Repeated requests in both the Quran and the Hadith for seeking knowledge, and application of rational thinking
  - Seek knowledge even in China
  - Seek knowledge from crib to grave
  - On judgement day, the ink of scientists is valued by God higher than the blood of martyrs
  - The two important disciplines of science are theology and Biology
- Initially, massive translation of Greek and Indian writings
   ➢ preserved all literary and scientific works and transmitted them to Europe

### **Medicine and Pharmacy**

- Institutionalized and regulated the practice of Medicine and Pharmacy
  - The modern concept of clinics
  - Board exams and license to practice. Regulatory boards (FDA's!!!)
  - Classification of plants and Algae for their medical use, and outlined possible side effects (PDR's!!)

Hospitals:

- Tens, including specialized, in each of Baghdad, Qurtoba, and Dan ascus.
- Mobile hospitals for emergency.
- Departments and University Hospitals.
- Patients records and vital signs, urine tests, family history.

Surgery:

- Threads from animals intestine.
- Opium and Hashish for Anesthesia.
- Alcohol as disinfectant.
- Treatment of cataract, and removal of kidney and gallbladder stones Autopsy !!!
  - Students training (Anatomy)
  - Cause of death

#### **Known Physicians**

- Abu-bakr Elrazzy; 9th Century
  - Father of Physicians, great clinician and experimentalist
  - Many books including "Smallpox and Measles"
- <u>Ibn-Elhaytham</u>: 10th Century
  - Multidisciplinary scientist. Ophthalmologist
  - Mechanism of sight. Function of the eye
  - Over 100 books in Med. and Math.
- Ibn-Seena (Avisai): 10th Century
  - The "Qannun", the medical text book in Europe till 19th Cen.
  - Described the medical use of over 2700 plants
  - Light has a finite speed, which is much faster than the speed of sound
- Ibn-Rushd (Aviros): 13th Century
  - Philosopher and Physician. Many books
- Ibn-Elnafees:
  - Blood circulation and the role of lungs
- Abulkassim Alzahrawi (Abulcasis or Albucasis): 11th Century
  - One of the greatest surgeons. A good dentist and GP.
  - Removal of breast cancer.
  - Hemophilia and its hereditary transmission (female to male)

- Arabic terms and methods of preparation for Alkali, Alcohol, Tartarate
- Discovered and prepared in pure form 28 elements (Ibn Elhaytham)
- The processes of crystallization, fermentation, distillation, sublimation,
- Preparation of acids (H<sub>2</sub>SO<sub>4</sub>, HCI, HNO<sub>3</sub>) and bases (NaOH)
- Light travels in straight lines. Laws of refraction, reflection and illusion of light.
- Eluded to the Magnetic properties of some objects

- Arabic numeral and the decimal system of numbers.
  - > Right  $\Leftrightarrow$  Left. English. But 1000
- Arithmetic. Roots and powers
- Algorithm = <u>Alkhawarismi</u>
- The mathematical ZERO
- Algebra (combining fractions).
- The Use of (x, y, z) to solve complex arithmetic/geometric problems
- Trigonometry (Albairuni and Albuzjani), differential and Integral.
- *π* = 3.141596535898732.

#### Some known Mathematicians:

- Abu-bakr Alkhawarismi
- Thabit Ibn Qarra (9th Century). Calculus.
- Ibn-elhaytham
- Albairuni (10th Century)
- Albuzjani
- Omar Elkhayam (2° & 3° equations)

#### Astronomy

- Astrology (myth)  $\Rightarrow$  Astronomy (science)
- Movement, path, and location of planets and stars
- The Asturlab
- Earth is spherical and rotates along its axis and around the sun.
  - Calculated earth circumference (Albairuni)
  - Calculated the time needed for one rotation around the sun (solar year), with an error of 2' 22" only (Albattani)
  - Calculated the equinoxes
- Current names of most constellations, and many stars are from Arabic

#### Some known astronomists:

- Alkindy (9th Century)
- Albattani (9th Century)
- Ibn-elhaytham (11th Century)
- Thabit Ibn Qarra
- Almajreeti

## Islamic literature

- Islam established Arabic as the dominant language of religion, trade, and learning throughout the empire
- 9th c-center of translation in Baghdad
- Greek science and philosophy, Indian mathematics, Chinese medicine, and Persian literature were all translated into Arabic
- Arabic had become the lingua franca of all the communities of Islam
- Islam had become a cosmopolitan, international culture



## Prose vs. poetry

- Prose, which had next to no role in pre-Islamic literature of Arabia, came to enjoy exceptional currency because it was a better vehicle than poetry both for religious learning and for the new secular, humanistic learning that was flooding Islam from all sides
- Though poetry enjoyed precedence over prose in the classical period, as it continued to do until the present day, prose was the accepted vehicle for narrative

# What are the characteristics of Islamic literature?

- Koranic intolerance of fiction, which it categorized as 'lying'
- Prose narratives were strongly didactic or informative –moralistic beast fables
- The Thousand and One Nights –popular entertainment –not welcomed into the canon
- Imaginative literature was excluded from religion
- 10<sup>th</sup> c. with the rise of mysticism poetry became a vehicle for spirituality in Islam

## The languages of Islam

- Islamic literature began in Arabic
- 9<sup>th</sup> c. Islamic poetry and prose began to be written in **Persian** as well
- Persian poets drew on the pre-Islamic Iranian stories from its national epic tradition to create an extremely rich literature – sufi mysticism
- The origins of Islamic literature in **Turkish** can be traced to the 11<sup>th</sup> c.
- 14<sup>th</sup> c Islamic poetry in the regional languages of India – Kashmiri, Punjabi etc.



- The Birth of Islam <u>http://www.metmuseum.org/toah/hd/isla/hd\_isla.htm</u>
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