



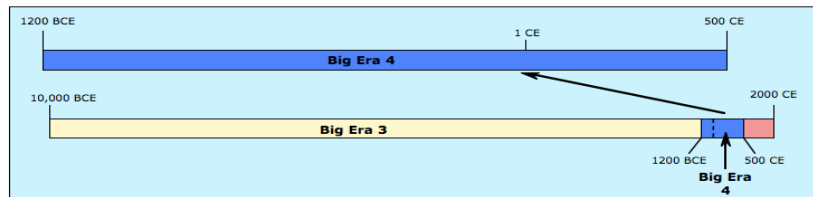
Big Era Four

Expanding Networks
of Exchange and Encounter
1200 BCE – 500 CE




1

Welcome to
Big Era Four!




2


Let's focus on two key developments of this era.



Population Growth




Expanding Networks of Exchange

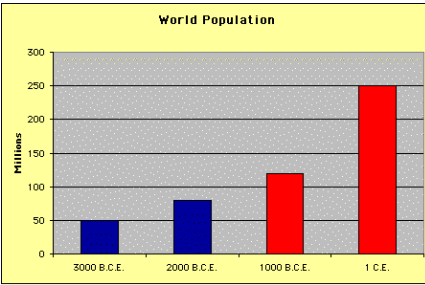


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3



Population Growth



Year	Population (Millions)
3000 B.C.E.	50
2000 B.C.E.	80
1000 B.C.E.	120
1 C.E.	250

- Between 1000 BCE and 1 CE world population rose from about 120 to about 250 million.
- This rise was fueled by an acceleration in the *rate* of growth during this time.
- Between 3,000 and 1,000 BCE, it took about 1,600 years for world population to double.
- Between 1,000 BCE and 1 CE the doubling time was less than 1,000 years.

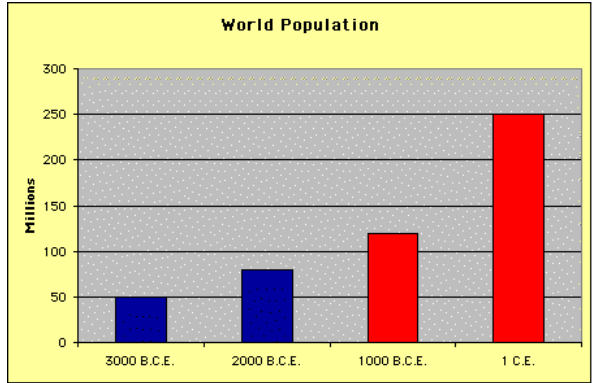
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4



Population Growth

What caused this surge in population?



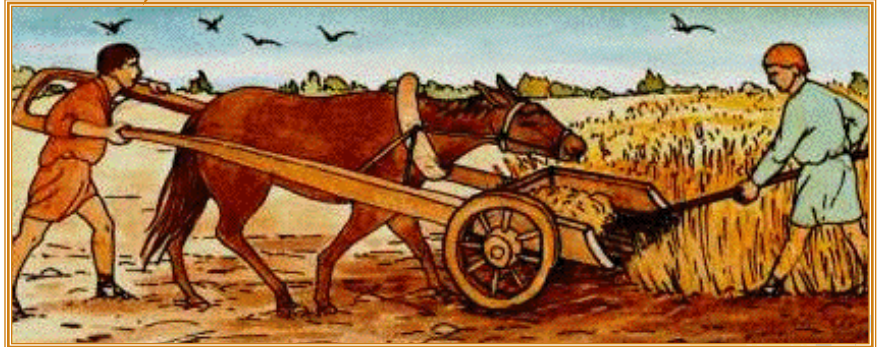
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Population Growth

#1
The invention of iron!

In Afroeurasia, iron axes, hoes, spades, and plows enabled farmers to clear and cultivate millions of acres never before used for farming.



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Population Growth

Farming and pastoral nomadism replaced hunting and gathering in some regions.

People moved into previously uninhabited areas.


#2
Farming and pastoral nomadism!



Population Growth


#3
Improved species of crops produced more food per acre!






Population Growth


#4
Horses and camels were used for work!



#4
Work animals made farms more productive.




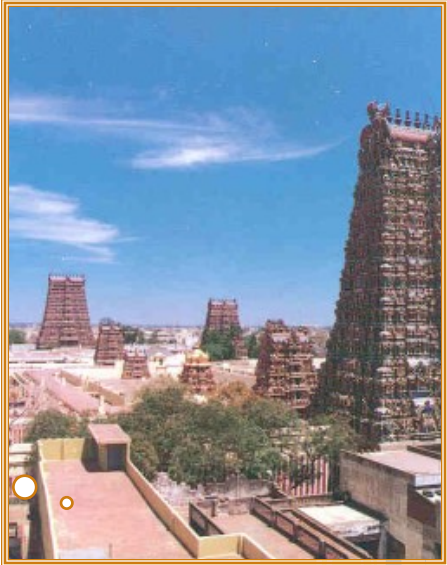
9



Population Growth


It was connected to the build-up of natural immunities to local infectious diseases.

#5
People now lived in denser populations!




10

Population Growth



In Summary:


- In Afroeurasia, the invention of iron enabled farmers to clear and cultivate millions of acres never before used for farming.
- Farming and pastoral nomadism replaced hunting and gathering in some regions. People moved into previously uninhabited areas.
- Improved kinds of crops produced more food per acre.
- Horses and camels began to be used more as work animals, making farms more productive.
- People began to live closer in denser populations. This led to the build-up of natural immunities to local infectious diseases but left people vulnerable to epidemics caused by diseases new to the region.




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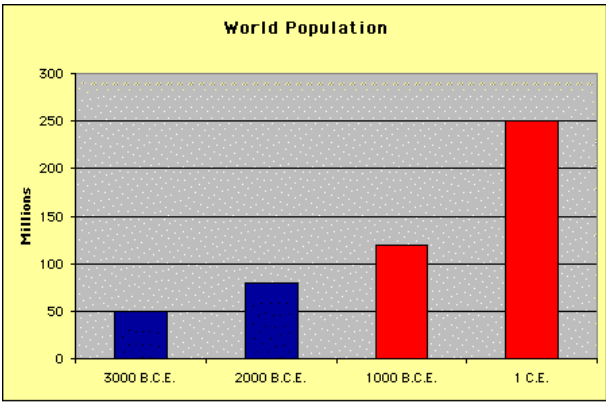
11

Population Growth Consequences




What were the consequences of population growth?





Year	Population (Millions)
3000 B.C.E.	~50
2000 B.C.E.	~80
1000 B.C.E.	~120
1 C.E.	~250



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12



Population Growth Consequences

Over time, the clearing of forests led to soil erosion, shortages of wood for fuel, and the extinction of some local animal and plant species.



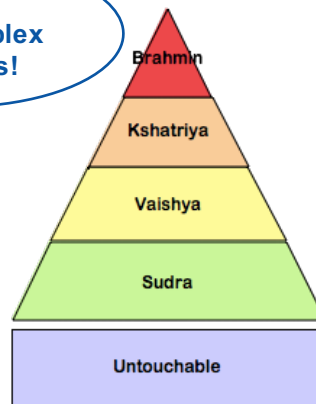
**#1
Deforestation!**



Population Growth Consequences

As populations grew and communities grew larger, more complex, and closer together, organization became more important. New political, social, and economic systems emerged.

**#2
More complex societies!**



The Indian Caste System





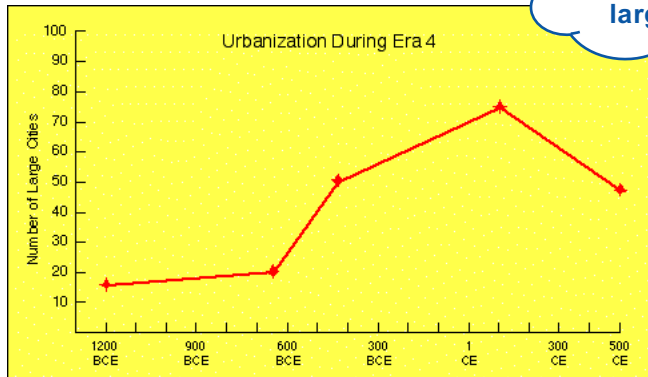
Population Growth Consequences

#3
Collective learning increased!



Population Growth Cities

#4
More people began living in large cities!





The Pharos Lighthouse in Alexandria

Alexandria

- Founded by Alexander the Great in 331 BCE
- Important trade center
- Its library home to many famous scholars

There were not only Greeks and Italians, but also Syrians, Libyans, Cilicians and yet others from farther countries—Ethiopians, Arabs, as well as Bactrians, Scythians, Persians, and a few Indians.

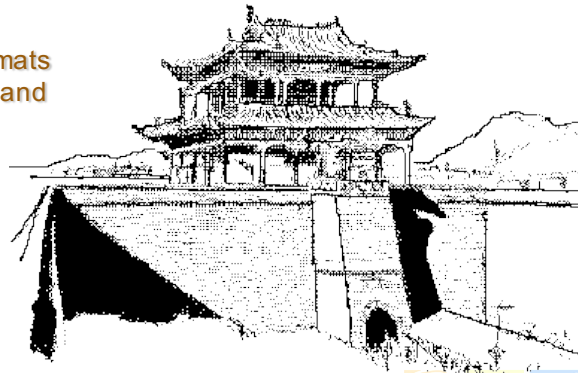
A Greek orator
writing about
Alexandria




17

Changan (Xian)

- Capital of China during the Han dynasty
- Located at the eastern end of the silk road
- Merchants and diplomats brought trade goods and new ideas



18



Persepolis

- Founded in the 6th century BCE by Darius I
- Capital of the Achaemenid Empire of Persia
- Destroyed by Alexander the Great in 330 BCE

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19

Rome

- Political and economic hub of the Roman Empire
- World's largest city in Big Era Four, with nearly one million residents
- Elaborate water and sewer systems made Rome livable despite its size

Not without good reason did gods and men choose this spot as the site of a city.

Livy, a Roman historian



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20

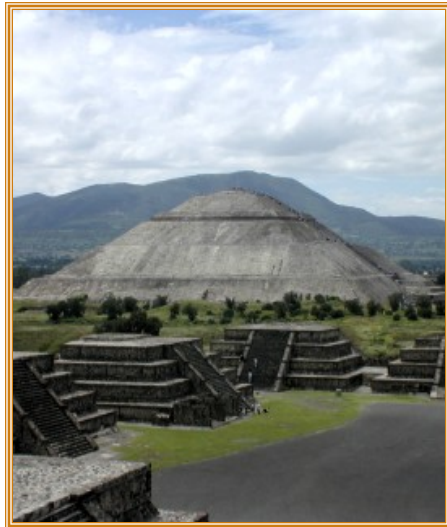


Photo: University of Arizona

The Pyramid of the Sun, Teotihuacan

Teotihuacan

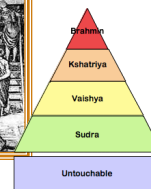
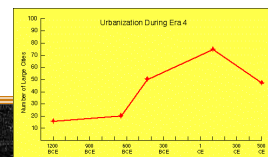
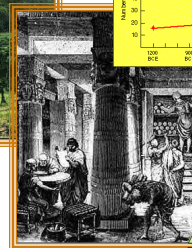
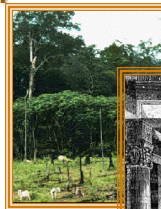
- Major city of the Americas located in the valley of Mexico
- From 400 to 600 CE, a thriving commercial and agricultural center with 200,000 residents
- The Pyramid of the Sun covered as much ground as the pyramid of Khufu in Egypt




Population Growth

In Summary:


- Over time, deforestation led to soil erosion, shortages of wood for fuel, and the extinction of some local animal and plant species.
- When communities grew larger, more complex, and closer together, new political, social, and economic systems became necessary.
- Collective learning increased, further fueling advances in technology.
- Although the vast majority of people still inhabited rural farming villages, more people than ever before began living in large cities.






Expanding Networks

Hmmm...
What is a
network of
exchange?



That's easy! A network of exchange is a web of connections through which people, goods, and ideas circulate. Telephones, the Internet, and highways are all networks of exchange.



23



Expanding Networks

Routes Around 300 BCE to 300 CE, merchants, shippers, sea captains, and empire-builders extended and strengthened trade routes across Afroeurasia and the Americas.




Empires Empires required networks of military and political communication. These networks encouraged interaction of many kinds over long distances.



Writing With the appearance of alphabetic writing systems in Afroeurasia, people could communicate faster and easier than ever before.

The Phoenician Alphabet									
𐤀	𐤁	𐤂	𐤃	𐤄	𐤅	𐤆	𐤇	𐤈	𐤉
𐤊	𐤋	𐤌	𐤍	𐤎	𐤏	𐤐	𐤑	𐤒	𐤓
𐤔	𐤕	𐤖	𐤗	𐤘	𐤙	𐤚	𐤛	𐤜	𐤝

Religions The appearance of world religions—Hinduism, Judaism, Buddhism, and Christianity—stimulated cultural interchange across political and cultural boundaries.





24



Expanding Networks: Routes

In the Americas...

The Olmec of Mexico developed extensive trade networks that extended hundreds of miles from Olmec territory. They imported jade and other raw materials for their crafts. Their exports included pottery and sculpture.



The Tiwanakans in what is today Bolivia also began to build trade routes during Big Era Four. Llama caravans brought produce, wood, metals, and fish from outlying villages to the city of Tiwanaku.



Expanding Networks: Routes

The silk road, Persian royal road, Roman roads, and shipping routes combined to form extensive interregional networks of exchange in Afroeurasia.



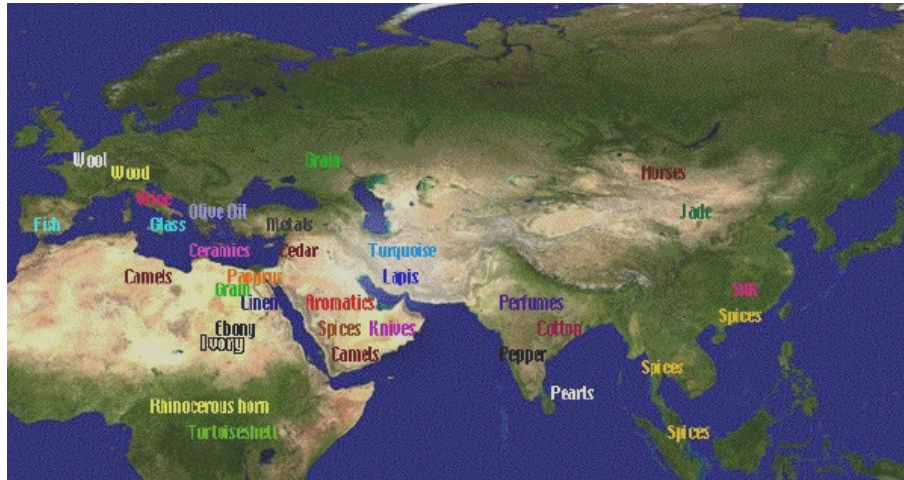
A wide variety of goods flowed along these networks...





Expanding Networks: Routes

On the map are some of the goods traded along the Afroeurasian networks.



27



Expanding Networks: Routes

- A number of large states, or empires, appeared in Big Era Four.
- Empire-builders had to move troops and supplies, dispatch messages, gather intelligence, and collect taxes.
- These tasks required good systems of communication and transport by land and sea.
- These systems were created mainly to serve the empire's government and army.
- But they also served as highways of commerce, cultural exchange, and migration.

An empire is a state that unites many territories and diverse peoples under one ruler or government.



FALL

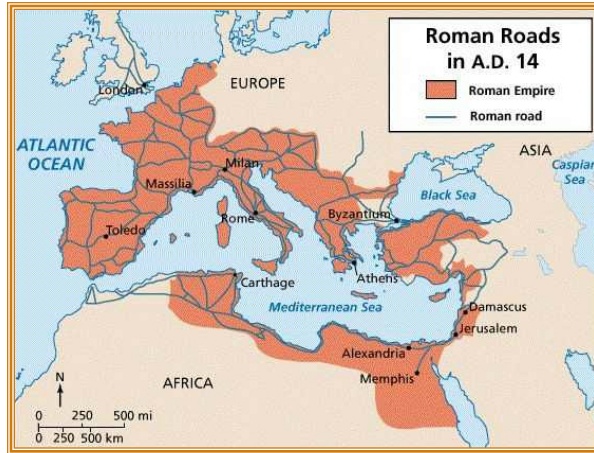
28



**Expanding Networks:
Routes**

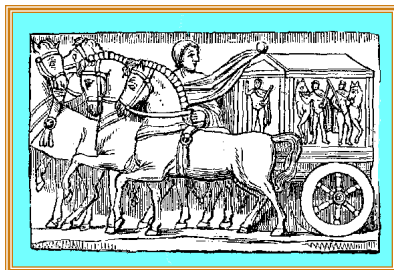
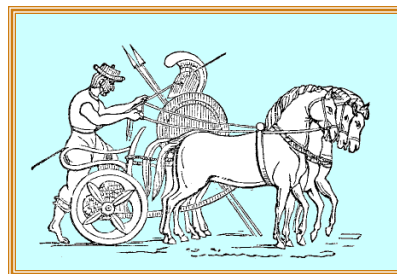
Roman Roads

The Romans built an extensive network of roads. Over 50,000 miles of paved roads, tracks, and trails radiated from the Forum in the center of Rome to all parts of the empire.



**Expanding Networks:
Routes**

Though built primarily to speed troops and supplies, Roman roads were used for commercial purposes, too. Goods were shipped to distant provinces and beyond.

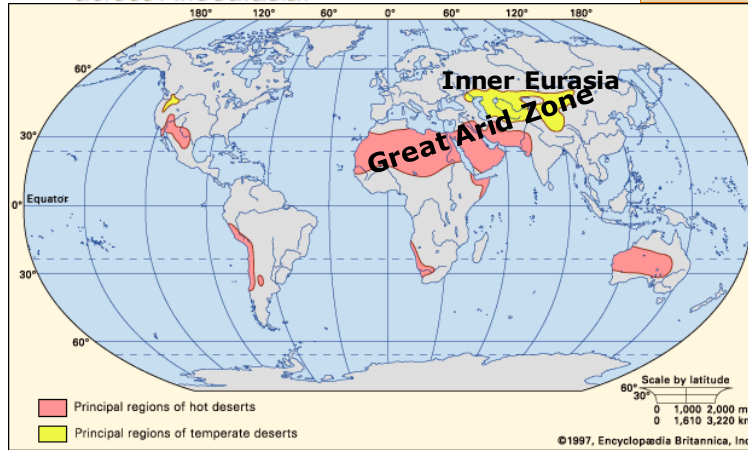


Constructed by skilled engineers, the roads were strong enough to support half-ton wagons and wide enough to allow two-way traffic.



Expanding Networks: Routes

The Silk Roads was a network of roads, tracks, and trails ran across Inner Eurasia. Most of this region is part of the Great Arid Zone, the belt of dry country that extends across Afroeurasia.

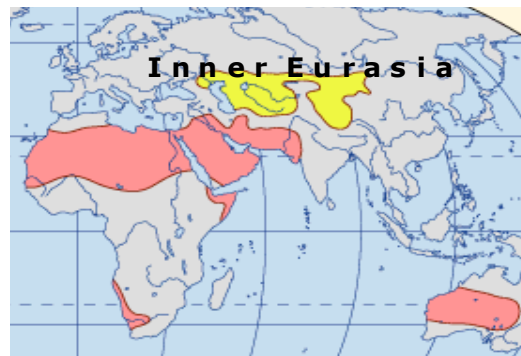


31



Expanding Networks: Routes

Inner Eurasia is a region of grassy steppes, rugged mountains, and forbidding deserts. This terrain is hard to cross. Despite these harsh conditions, humans have been carrying goods, ideas, and technologies along the Silk Roads of Inner Eurasia for millennia.



1997, Encyclopædia Britannica, Inc.



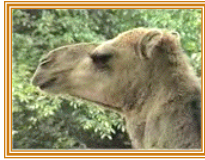
32



Expanding Networks: Routes

Domestication of the horse, ox, and camel made humans more mobile.

About 3000 BCE, people in the steppes of Inner Eurasia began to take up pastoralism. Because they moved with their herds, they typically did not grow crops.



Instead, they traded with farmers and city-dwellers for food and other goods.

By 1000 BCE, pastoralists controlled networks of exchange throughout Inner Eurasia .



33

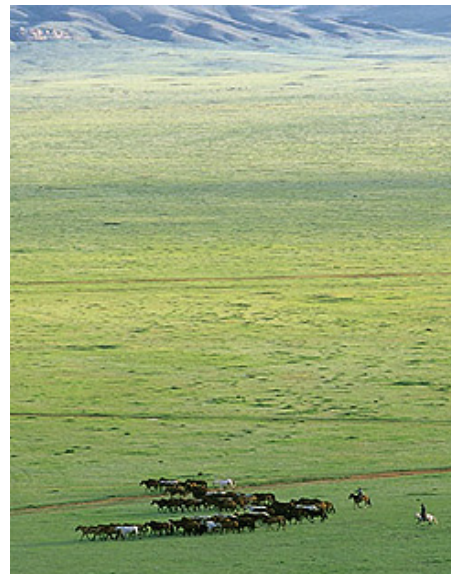


Expanding Networks: Routes

Between 300 BCE and 300 CE, long periods of stability and prosperity in states throughout Afroeurasia stimulated interest in long distance trade.

Intercontinental communication and the exchange of goods, became regular, organized, and protected by large empires.

The Silk Roads carried shipments of Chinese silk but also many other goods.



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34

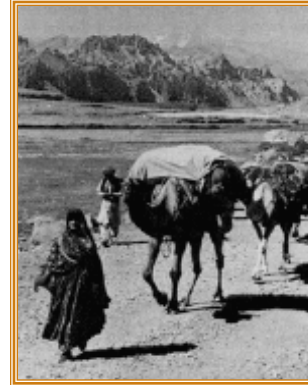


Expanding Networks: Routes

On the Silk Roads, goods changed hands many times. Parthians, Indians, Kushans, Uigurs, and others acted as middlemen, selling and bartering goods, and taking profits.

Caravans passing west carried silk, porcelain, jade, bronze, and spices.

Those traveling east shipped gold and silver coins, ivory, gemstones, glassware, and carpets.



Expanding Networks: Routes

Sea routes ran down the Red Sea and Persian Gulf, across the Arabian Sea and Bay of Bengal, and through the Straits of Malacca to the South China Sea.

These sea lanes often linked up with overland routes, facilitating travel, trade, and the exchange of ideas across Afroeurasia.

Roman
Ship



Indian
Ship



Chinese
Ship





Expanding Networks: Empires

Empires had formed in Afroeurasia as early as Big Era Three. Although many claimed vast territories, most did not survive for long.

In the 4th century BCE, Alexander the Great amassed an empire that stretched from Greece to India. Upon his death, however, the empire fragmented.

The later centuries of Big Era Four saw the rise of new empires that both dominated huge expanses of land and remained unified for a long time. The Largest of these were the Han and Roman empires.



Large Empires of Afroeurasia 500 BCE - 500 CE





**Expanding Networks:
Writing**

Cool! ...



- Alphabetic writing systems appeared in the later second millennium BCE. These systems used a small number of symbols, or letters, to represent sounds.
- Letters could be arranged in countless ways to form words.
- The Phoenicians were among the first to devise an alphabet.
- Because they were sailors and merchants, the idea of alphabetic writing spread wherever the Phoenicians traveled.
- During the first millennium BCE alphabetic writing spread from the Mediterranean region to India.

The Phoenician Alphabet

𐤀 𐤁 𐤂 𐤃 𐤄 𐤅 𐤆

𐤇 𐤈 𐤉 𐤊 𐤋 𐤌 𐤍 𐤎

𐤏 𐤐 𐤑 𐤒 𐤓 𐤔 𐤕 𐤖



**Expanding Networks:
Religions**

What is a world religion?
It's a belief system that embraces people of differing languages and cultural traditions.
Religions that spread during Big Era Four were:



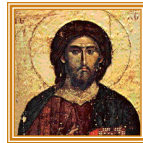
Hinduism



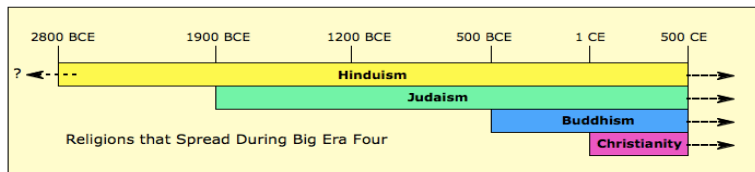
Judaism



Buddhism



Christianity



Growth of World Religions In Big Era Four

Hinduism →
From 1st millennium BCE

Buddhism →
From 5th century BCE

Christianity →
From 1st century CE

Judaism
Communities scattered widely in Southwest Asia, Northern Africa, and Europe, especially from the first century CE.

Outline Map: Microsoft Encarta Reference Library 2002

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41

Expanding Networks: Religions

When people carried a new religion from place to place, they also often took along

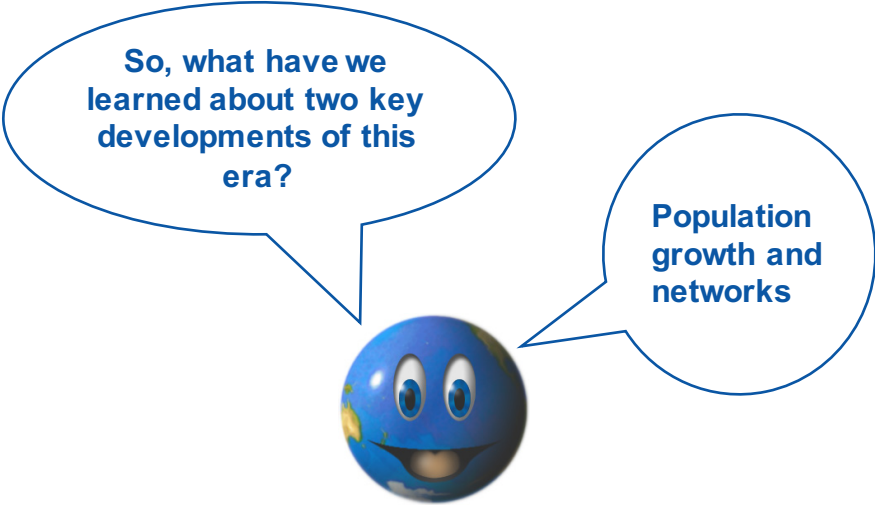

- A writing system (This was useful in teaching holy scripture.)
- Trade goods (Religion was a basis of trust among merchants.)
- Art styles (Religious ideas were often expressed in painting, sculpture, and architecture.)

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42

So, what have we learned about two key developments of this era?

Population growth and networks

43



Population Growth

Population growth in Big Era Four was linked to the expansion of agriculture. Increases in population density and job specialization in farming communities led to the creation of more and larger cities.

Expanded networks of exchange allowed people, goods, and ideas to move thousands of miles. The development of alphabetic writing systems speeded up the transfer of information. Also, people who met, shared ideas, and conducted business with one another helped spread new world religions across Afroeurasia.



Expanding Networks of Exchange



44

**So many
developments in
Big Era Four!
Hmmm... I wonder
what will happen
next. Stay tuned for
Big Era Five!**



45