

Traveling the

SILK ROAD

Ancient Pathway to the Modern World



EDUCATOR'S GUIDE

amnh.org/education/silkroad



INSIDE:

- Suggestions to Help You **Come Prepared**
- **Essential Questions** for Student Inquiry
- Strategies for **Teaching in the Exhibition**
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Essential QUESTIONS

This exhibition takes you along the world's oldest international highway, on a voyage that spans six centuries (AD 600 to 1200). It showcases four representative cities: Xi'an, China's Tang Dynasty capital; Turfan, a bustling oasis; Samarkand, home of prosperous merchants; and Baghdad, a meeting place for scholars, scientists, and philosophers.

Use the Essential Questions below to connect the exhibition's themes to your curriculum.

What was the Silk Road?

Not a single path, the Silk Road was a network of trading routes that extended more than 4,600 miles from eastern China west to the Mediterranean, eventually including sea routes. The Silk Road is also a metaphor for the exchange of knowledge and ideas among extraordinarily diverse groups of people. Silk—a luxury good in the west, traded as currency, and a secret technology—was China's most important product, and crucial to the origin of the network. Routes also extended to the north and south. Caravans crossed immense deserts and icy mountain passes, enduring scorching summers and subzero winters. Overland trade diminished as maritime commerce increased, Islamic society spread eastward, and the desert encroached.

What traveled along the Silk Road?

The Silk Road was a conduit not only for tangible goods but also for technology and culture—both objects and ideas. Missionaries and merchants carried their religions (including Buddhism, Islam, Christianity, Judaism, and Zoroastrianism) to distant lands. Both raw materials and finished products made the journey, including paper, furs, tea, and ceramics traveling west from China while ivory, glass, spices, metalwork, and aromatics were sent eastward. Before objects reached their next destinations, local artists might be inspired to borrow from or improve upon them. As goods traversed the Road, so did the ways they were made. Key among these technologies was silk making, or sericulture, which had already been practiced in China for thousands of years. Others included glassmaking, paper making, and metalworking. Scientific knowledge of subjects such as astronomy and mathematics also moved along the Silk Road, as did visual styles and motifs.



The use of a square of red silk to decorate this beloved Tibetan fable reflects the value of the cloth and the significance of the text.

Who were the people of the Silk Road?

Merchants, pilgrims of many faiths, soldiers, and guides might travel in a single caravan, which could contain thousands of camels. Different ethnic groups predominated in each region, such as the Han Chinese people in Xi'an, the Uyghur people in Turfan, the Sogdians in Samarkand, and Arabs in Baghdad.

How did people and goods travel along the Silk Road?

Goods moved in a relay fashion from city to city. While some objects made the whole journey, almost no people did. They traveled between a few marketplaces, typically walking alongside camels piled high with goods. Well adapted to Central Asia's harsh conditions, the hardy camel was essential to this long-distance trade.

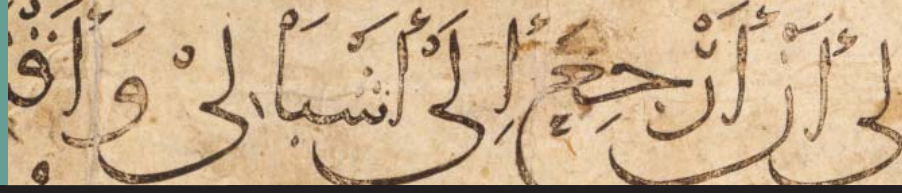
The risk of bandits and perils of traversing vast deserts and mountain ranges made experienced guides essential. At inns called caravanserais, these travelers ate, bathed, traded, and mingled. Artifacts show that as they did business, they exchanged music, recipes, and ideas. Trade gradually shifted to ships, which moved faster than caravans and could transport heavy, fragile goods like ceramics.



Music was a way for people from different traditions to communicate, interact, and spread their religious beliefs.

Why is the Silk Road important?

Long before airplanes or the internet, the Silk Road brought globalization to the ancient world. In the course of borrowing and adapting each other's images and ideas, cultures sometimes change. This complex network gave many people—including Greeks, Indians, Persians, Arabs, and Han Chinese—their first contact with distant civilizations. Exchanges between them took many forms, from the spread of religions, musical styles, and cuisines to the dissemination of scientific knowledge. Many contemporary inventions, like grape winemaking and paper money, are still in use today. This movement of objects and ideas helped lay the foundations for the modern world.



Glossary

aromatic: a fragrant substance or plant that was believed to heal the body

astrolabe: an instrument used by early astronomers to observe the position of celestial bodies, tell time, and make other calculations

caravan: a procession, typically of traders or pilgrims accompanied by pack animals, over long distances

caravanserai: a fortified inn for desert travelers, with a central courtyard

ceramics: pots and other objects made of baked clay

globalization: increasing connection between world cultures and economies

irrigation: the channeling of water to dry land, usually to grow crops

karez: a gravity-driven irrigation system of underground tunnels that taps into water trapped in porous rock

maritime: involving the sea, as in ships and shipping

motif: a single or repeated form, shape, or figure in a design

oasis: a fertile spot in a desert where water rises to ground level

sericulture: the practice of raising silkworms and producing silk

Sogdians: the people of an ancient trading empire that was based in present-day Uzbekistan and Tajikistan

technology: the application of scientific knowledge for a variety of purposes, which has given rise to innovations ranging from stone tools to silk making to semiconductors

COME PREPARED

Plan your visit. For information about reservations, parking, and lunchrooms, visit amnh.org/education/plan.

Read the Essential Questions in this guide to see how themes in *Traveling the Silk Road* connect to your curriculum. Identify the key points that you'd like your students to learn from the exhibition.

Review the Teaching in the Exhibition section of this guide for an advance look at the artifacts, models, and interactives that you and your class will be encountering.

Review the activities and student worksheets in this guide. Designed for use before, during, and after your visit, these activities focus on themes that correlate to the NYS Social Studies Standards:

- Fables (grades 3–5)
- Geography & Trade (grades 6–8)
- Technology (grades 9–12)

Decide how your students will explore *Traveling the Silk Road*.

- You and your chaperones can facilitate the visit using the **Teaching in the Exhibition** section of this guide.
- Your students can use the **student worksheets** to explore the exhibition on their own or in small groups.
- Students, individually or in groups, can use copies of the **map** to choose their own paths.

CORRELATIONS TO NATIONAL STANDARDS

Your visit to the *Traveling the Silk Road* exhibition can be correlated to the national standards listed below. See the end of this guide for a full listing of New York State standards .

Social Studies Standards

Thematic Strands • I. Culture • II. Time, Continuity, and Change • III. People, Places, and Environments • V. Individuals, Groups, and Institutions • VII. Production, Distribution, and Consumption • VIII. Science, Technology, and Society • IX. Global Connections

Science Education Standards

K–4 • C1: Characteristics of organisms • C3: Organisms and environments • E2: Understanding about science and technology • E3: Abilities to distinguish between natural objects and objects made by humans • F2: Characteristics and changes in populations • F3: Types of resources • F4: changes in environments • F5: Science and technology in local challenges • G1: Science as a human endeavor

5–8 • C3: Regulation and behavior • E1: Abilities of technological design • E2: Understanding about science and technology • F5: Science and technology in society • G1: Science as a human endeavor • G3: History of science

9–12 • E1: Abilities of technological design • E2: Understanding about science and technology • F3: Natural resources • F6: Science and technology in local, national, and global challenges • G1: Science as a human endeavor • G3: Historical perspectives

Teaching IN THE EXHIBITION

Traveling the Silk Road uses artifacts, models, maps, interactives, videos, and more to help students explore commerce, communication, and cultural exchange. This guide divides the exhibition into six numbered areas, which correspond to the map and to the text below.

1. Introduction

OVERVIEW: A network of rough trails, the Silk Road connected China to the cities and empires of Central Asia and the Mediterranean for thousands of years. Along with goods and materials, travelers exchanged technologies, religions, music and literature, and ways of thinking.

GUIDED EXPLORATIONS:

- *Map of the Silk Road:* Explain that camel caravans slowly made their way from one settlement to the next and back again. On the map, have students identify challenges such as deserts and mountain ranges that shaped travelers' routes.
- *Camel models:* Invite students to imagine how it might have felt to trek alongside these animals. Ask them to imagine different items the camels might be carrying, and why camels were so important to Silk Road trade.

(Answers may include: Camels might carry goods for trading, such as textiles and spices, and goods for survival, such as food and water. Camels were valued for their ability to carry heavy loads long distances across rough terrain in both hot and cold weather.)

2. Xi'an

OVERVIEW: The biggest city in the world during the Tang Dynasty, this highly diverse and cosmopolitan trading center was the capital of China.

GUIDED EXPLORATIONS:

- *Silk and sericulture:* Students can explore the stages of silk making, from cocoon to cloth. Ask them how silk is different from other textiles. How was the material used by the Chinese? What did it represent to foreigners? Why was silk making such a closely-held secret?

(Answers may include: Very soft to the touch, silk was also strong enough to be used for musical instrument strings, fishing lines, and bowstrings. Silk clothing is cool in the summer and warm in the winter. Foreigners prized Chinese silks for their utility, rarity, and great beauty. The fact that China was the only source of silk made the cloth enormously valuable.)



Left: The tiny caterpillars must be protected from drafts, loud noises, and even strong smells. **Right:** A single cocoon can unwind into a silk filament about 3,000 feet (914 meters) long!

- *Wine peddler and foreign dancer statues, and rhyton:* Point out to students that these objects made in China depict people who are not Han Chinese. Ask them what this suggests about life in ancient Xi'an.

(Answers may include: Unlike anywhere else at the time, Xi'an was home to thousands of foreigners, who brought their diverse cultures, cuisines, and styles along with them.)



This moon lute is similar to the instruments first played in China over 2,000 years ago. During the Tang dynasty, lute strings were often made of twisted silk.

- *"Play Music" interactive:* Students can investigate the sounds made by different musical instruments, individually and played together. Have them describe which instruments look familiar. How might music have connected travelers from different places and traditions?

(Answers may include: Xi'an was home to many musicians from across Asia, and its music reflected both native and foreign influences.)

- *Buddhist artifacts:* Tell students that Buddhism originated in India around 450 BC. Have them describe the artifacts and where they are from. Ask students why it's significant that the artifacts were found in those places across many centuries.

(Answers may include: These objects—a reliquary, a statue of Buddha, a manuscript, and a painting—come from China, Tibet, and Pakistan. They show that Buddhism spread along the Silk Road.)

3. Turfan

OVERVIEW: A sophisticated underground irrigation system transformed this and other Central Asian oases into agricultural centers.

GUIDED EXPLORATIONS:

- *Nighttime market:* Students can survey the astonishing array of exotic goods and delicacies found in Turfan's market. Have them examine a few raw materials and finished products. Ask why they think the market happened at night. Suggest that students sniff the scented oils. Ask which smells in the marketplace might have been the strongest, or sounds the loudest. What does the variety of goods suggest about life in Turfan?

(Answers may include: The market happened at night to escape the stifling heat. The varied goods on sale reflected both the array of fruits and vegetables grown in the oasis, and Turfan's role as a trading center for exotic products from faraway places.)



In the ancient world, many plant, mineral, and animal products were traded. Top: indigo-tinctoria pigment, yellow ochre pigment, cloves. Bottom: Turkish pistachios, saffron, whole yellow mustard seeds.

- *Karez water system:* Tell students that this technology remains in use in Turfan today. Ask them where the water originated, and how the karez system affected life in this desert city.

(Answers may include: These underground canals carried rain and snowmelt trapped in the ground below distant mountains. By watering orchards and camels alike, irrigation systems transformed Turfan into an important Silk Road waypoint.)

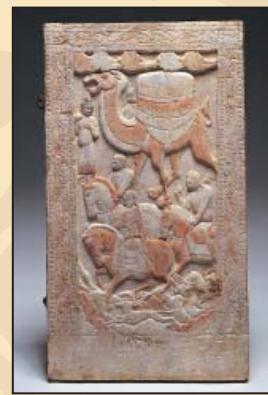
4. Samarkand

OVERVIEW: In present-day Uzbekistan, this city was the center of Sogdian civilization, whose traders were go-betweens in commerce that extended to India, China, and Persia.

GUIDED EXPLORATIONS:

- *Paper making:* Point out that this technology was invented in China and spread west. Ask students to consider how paper differed from other materials on which people wrote. How do they think this invention contributed to the spread of ideas in the ancient world?

(Answers may include: Paper was light, flexible, and inexpensive to make—an ideal surface for recording and dispersing ideas, stories, and images.)



This Sogdian carving depicts a heavily laden camel, along with powerful horses for which the Chinese traded silk.

- *Camel model and caravan artifacts:* Have students look carefully at the camel's physical features and describe its adaptations to harsh conditions. Ask them to list some ways in which travelers benefited from joining a caravan rather than traveling alone.

(Answers may include: Wide, padded feet help camels walk across sand; eyebrows, eyelashes, and narrow nostrils protect against blowing sand; shaggy coats keep them warm in freezing temperatures; and camels can eat scrubby desert vegetation and go long periods without water. Traveling in a caravan provided protection, companionship, and expert guidance.)

- *"Explore the Silk Road" interactive map:* Invite students to gather around this table to investigate different routes across deserts and mountains, as well as the religions, languages, technology, and artwork found along the way.
- *Metalworking:* Point out that metal was an important commodity traded along the Silk Road. Have students examine these intricately worked objects, and ask them why they were so highly prized.

(Answers may include: These silver and gold artifacts took a great deal of skill to make and were traded for precious commodities such as silk, furs, honey, and amber.)

5. Baghdad

OVERVIEW: The capital of the Islamic world and present-day Iraq, Baghdad was an intellectual center where scholarship flourished in architecture, literature, mathematics, astronomy, medicine, chemistry, zoology, and geography.

GUIDED EXPLORATIONS:

- **Glassmaking:** Tell students that glass made in Islamic cities was highly prized in China. Ask them to describe the challenges of making, shaping, and transporting glass.
(Answers may include: Glass can be shaped and decorated in many ways, but they require great skill. The first steps involve intense heat and much fuel. Glass objects are easily broken.)
- **Water clock and astrolabe:** Have students observe the water clock and explore the astrolabe interactive. Ask them how the water clock works and how these devices were used.
(Answers may include: As water flows through the water clock, a system of pulleys turns the pointer that shows the time of day. A form of calculator, an astrolabe could tell the time, estimate altitude, and predict the hour of sunrise or sunset.)



Astrolabes like this bronze one from Persia helped astronomers navigate and predict sunrise and sunset.

- **Samples of Islamic calligraphy:** Have students examine these artifacts and describe what they see. Ask them what these objects show about the uses of calligraphy.
(Answers may include: The Arabic language was a visual art that moved beyond the page and onto household goods, clothing, and buildings.)

6. Trading by Sea

OVERVIEW: Baghdad and other cities became major centers for maritime trade, which was made possible by advances in technology and eventually overshadowed the caravan trade. Sea travel was faster, and carried artistic styles and new kinds of goods throughout Asia.

GUIDED EXPLORATIONS:

- **Model of ship's hold:** As students walk through this replica of a heavily-laden vessel that traveled between east Asia and China some 1,200 years ago, they can observe the way it was constructed, the different kinds of cargo it held, and how skillfully it was packed. Ask them how walking across Asia in a camel caravan might compare to the experience of traveling by sea.
(Answers may include: This ship was made of durable teak or coconut planks stitched together with coconut fiber. Cargo might include Chinese ceramics stored in stoneware jars, glassware, and clay pots. The voyage between Baghdad and China took about six months, while a caravan could take as long as a year. Seafarers were at risk from storms and pirates.)



This Islamic drawing of a trading ship shows merchants in their cabins, sailors bailing out water, and a look-out boy.

- **Ceramics:** Point out that the overseas trade inspired potters to develop new styles and techniques, with white Chinese porcelain and colorful glazes especially prized in the Middle East. Have students compare and contrast design motifs and describe their favorite object.

Online RESOURCES

- **Traveling the Silk Road Exhibition Website:** amnh.org/silkroad
This “travel journal” for the exhibition traces the route from Xi’an to Baghdad, highlights featured content, and links to visitor information and resources.
- **AnthropOLOGY:** amnh.org/ology/anthropology
Students can find out big ideas about anthropology, do paper-making and musical activities, and watch three ancient fables.
- **Traveling the Silk Road for Educators:** amnh.org/education/silkroad
All exhibition-related resources are listed here, including tips on planning your visit, and links to resources including the complete Educator’s Guide in PDF form.
- **AMNH Division of Anthropology:** anthro.amnh.org
The Museum’s Anthropology site contains a searchable database of collections, including the Asian Ethnographic Collection (44,000 objects and textiles).
- **From Silk to Oil: Cross-Cultural Connections Along the Silk Road:** chinainstitute.org/educators/silkguide.html
Designed for high-school teachers, the twenty-three comprehensive and innovative curriculum units can be downloaded in PDF form.
- **SPICE: Along the Silk Road Interactive:** virtuallabs.stanford.edu/silkroad/SilkRoad.html
This site offers an illustrated timeline and richly annotated maps that include cultural and geographic features, musical instruments, and artifacts.
- **Asia Society:** asiasociety.org
Search this site for a Trade in the Silk Road Cities student worksheet, a Treasures Along the Silk Roads lesson plan, and the Visible Traces Curriculum Studio.

The Silk Road Project: silkroadproject.org

In addition to organizing a series of live performances for the exhibition, this nonprofit group draws on the historic trading route as a metaphor for modern-day artistic, cultural, and educational exchange. Resources include lesson plans for grades 6 through 12, reading lists, maps, and Silk Road Ensemble albums.

Silk Road Surprises

- There was no single “Silk Road.” It was a complex network of trade routes.
- People often traveled at night to avoid scorching desert heat.
- It takes about 2,500 silkworms to produce one pound of silk, enough for one robe.
- Merchants sometimes packed melons and other fruit in lead containers filled with snow and ice from the mountains before sending them along the Silk Road.
- Used in military insignias, hats, fans, and brushes, bird feathers were important trade items on the Silk Road.
- Both one-humped and two-humped camels hauled goods along the Silk Road. Camel humps don’t store water. They store fat, which provides energy.
- When glass first reached China, it was treated as the rarest of jewels.
- The “Arabic” numerals we use today were based on an Indian system and popularized by an Islamic mathematician in the early 800s.

CREDITS

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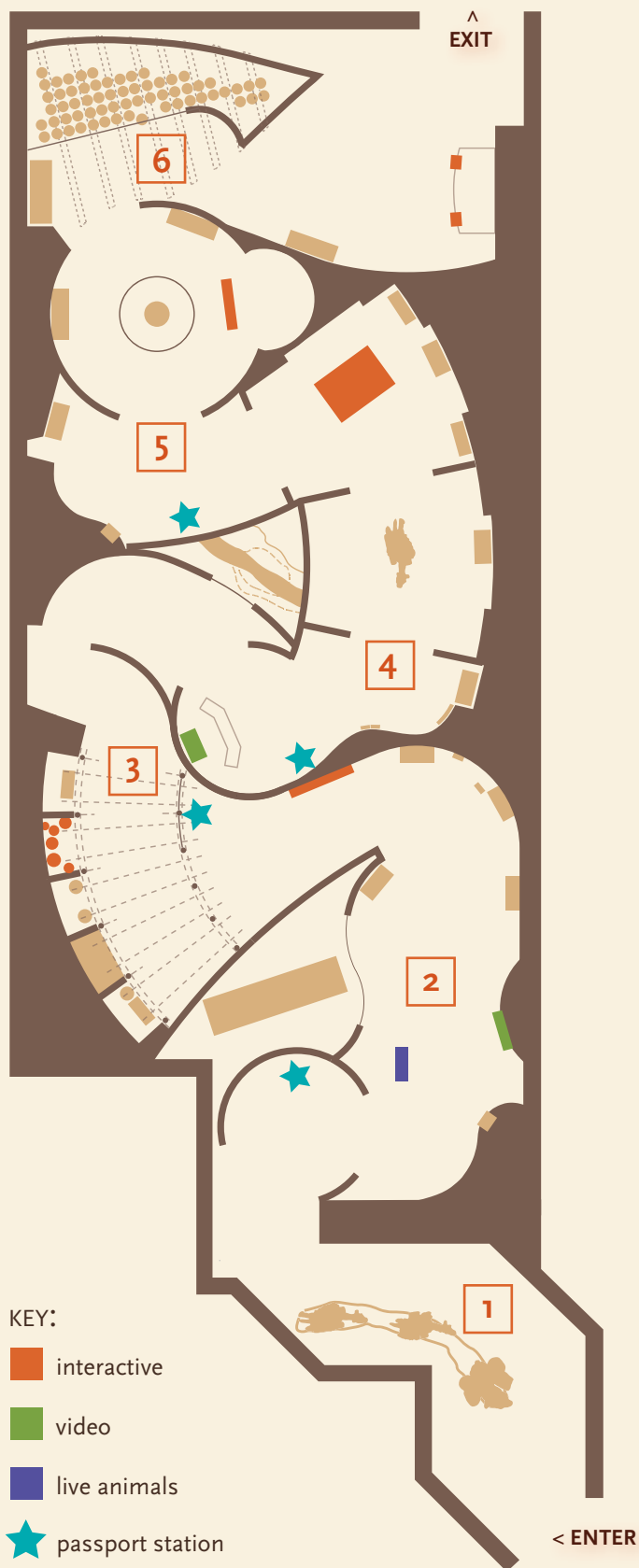
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Come Prepared: calligraphy, © Bibliothèque Nationale De France.

Teaching in the Exhibition: silkworms, courtesy of flickr.com/photos/kahunna/2504211876; silkworm cocoons, courtesy of flickr.com/photos/kathrynaaker/86005148; moon lute, © Courtesy of the AMNH Division of Anthropology; indigo-tinctoria pigment, yellow ochre pigment, cloves, Turkish pistachios, saffron, whole yellow mustard seeds, © AMNH/R.Mickens; Sogdian carving, © Miho Museum; astrolabe, © AMNH/D.Finnin; drawing of a trading ship, © Bibliothèque Nationale De France. **Map:** map of the Silk Road, © Atlogis.





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— overland trade routes
••••• maritime trade routes

