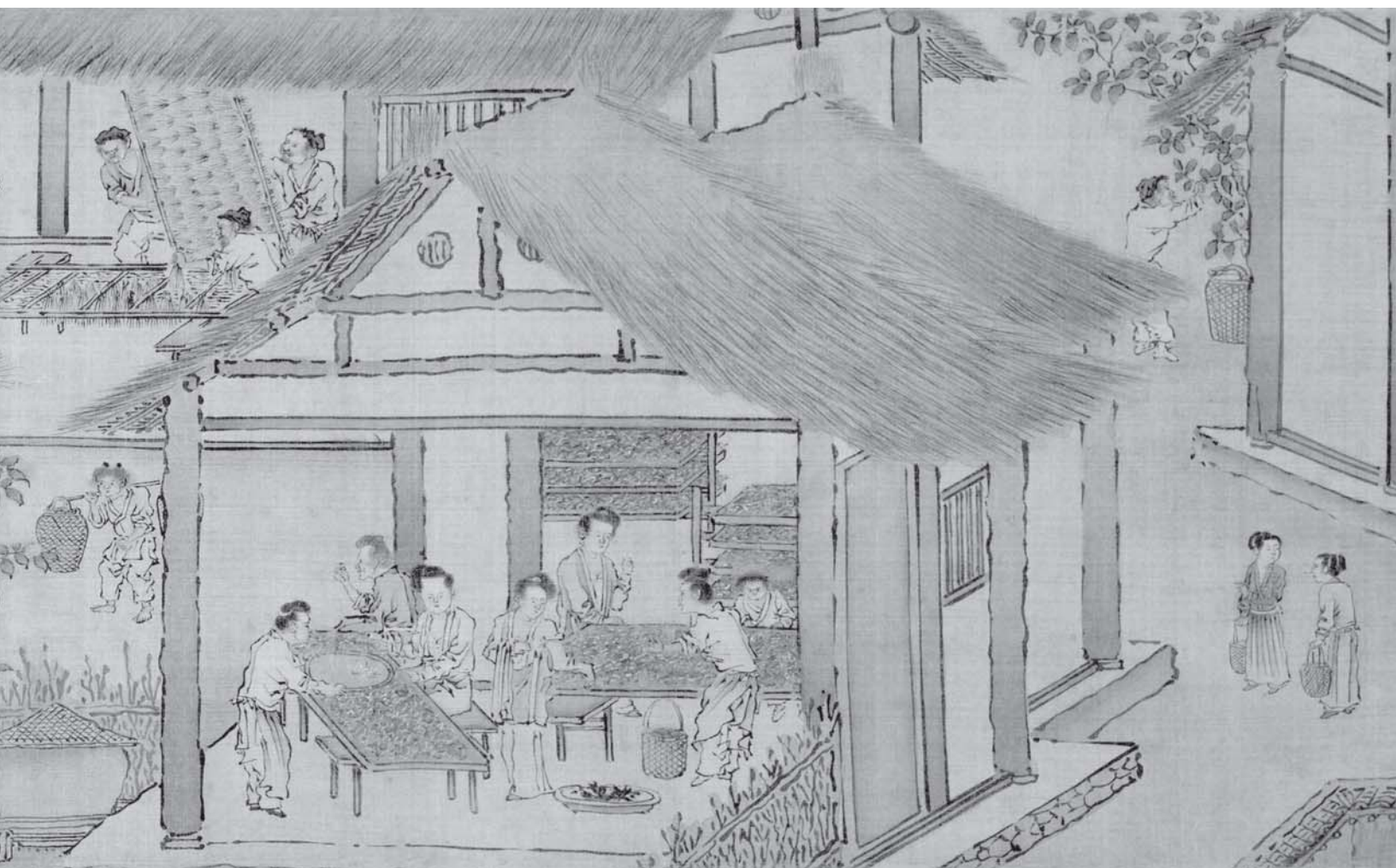


Art  
ToGo

The Cleveland  
Museum of Art

China: Art and  
Technology



Jean Graves and  
Jin Hyun Kim

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Cover: Detail from *Sericulture*, handscroll, ink and color on silk, attributed to Liang Kai, Southern Song Dynasty (1127–1279). John L. Severance Collection CMA 1977.5

Our thanks to Carol Godes for editing this text.

[www.clevelandart.org](http://www.clevelandart.org)

We invite teachers and students alike to visit the Cleveland Museum of Art in person. We also encourage teachers and students to visit the museum’s Web site for information about the museum’s permanent collection and educational programs.

## Introduction

This Teacher Packet will prepare you for a visit from the Art To Go team of the Cleveland Museum of Art. It will help familiarize you with the topic you requested, *China: Art and Technology*. Photographs and descriptions of the presentation objects are included.

We hope that the presentation will not be an isolated event for your students, but rather integrated into their course of study. In keeping with this idea, the *China* program is designed to fulfill some of the latest Ohio Academic Content Standards for Social Studies. It is particularly suited to meet the needs of students grade six and above.

We strongly encourage you to bring your students to the museum to view related objects within our permanent collection. The “Journey to Asia” school tour is available free of charge. To request a registration form, call 216–707–2462.

## The Presentation

### Technology

From transistors to semiconductors, China is a major force in the production of technological goods. Most of these items were invented in other places, and manufactured cheaply in the People’s Republic.

China was not always a follower in the development of technology. As late as the 17th century, China was a leader, influencing its Asian neighbors and even those on other continents. Europe can thank China for wood-pulp paper and paper money, for fireworks and gunpowder, for the umbrella and

for noodles, among other things. This Art To Go lesson showcases traditional Chinese technology with a focus on the manufacture of silk, ceramics, and bronze.

### **Silk**

According to archaeologists, silk has been harvested in China since 3,000 BC or even earlier. The Chinese were the first to intuit that the cocoon of the silkworm (*bombyx mori*) could yield a filament for thread. They also discovered the secret of silkworm cultivation: silkworms will eat only mulberry leaves. Students will learn about the process of **sericulture** from the silkworm egg to the precious fabric.

### **Ceramics**

The Chinese began producing unglazed pottery about 7500 BC. While the Japanese were probably the first to discover the process of firing clay, the Chinese excelled at creating a variety of fine wares. Celadons (stonewares with a greenish or bluish-gray glaze) emerged in the Tang Dynasty (618–907 AD).

**Porcelain** is perhaps the most significant Chinese innovation in ceramics. While the formula may have been known earlier, manufacture began in earnest during the Tang. It was perfected during the Ming Dynasty (1368–1644) when “blue and white” wares became especially popular.

### **Bronze**

The Chinese were not the first to develop this alloy of copper and tin; that distinction probably belongs to the Egyptians, the Mesopotamians, or the residents of the Indus Valley. However, the early

Chinese produced bronze items of very high quality. We will describe the lost-wax casting process practiced in the Tang Dynasty, and consider why bronze was such a valuable material.

## Resources

Why has China held an advantage in manufacture for such a long time? One reason is the availability of a variety of natural resources within its vast territories. Add to this immense numbers of people to harness in production, who were highly organized and regimented from an early date. Top it off with a government that has long seen the wisdom of carefully controlling the flow of imports and exports to maximize the nation's prosperity.

The Ohio State Standards specify that sixth graders should understand how availability of resources affects the production of goods in different world regions. During our presentation, students will learn how Chinese manufacturers were the first to discover the “recipe” for porcelain and how they achieved a monopoly by keeping the formula secret for hundreds of years. When the European vogue for porcelain took off in the 18th century, Chinese manufacturers encouraged consumption by producing specialized dishes for specific foods. This custard cup was made by Chinese craftsmen to hold a distinctly European dessert.

Custard Cup with  
Middleton Arms.  
Porcelain, ca. 1790.  
1961.190





Lion and Grape Mirror.  
Bronze, Tang Dynasty  
(618–907 AD).  
1915.632

## Trade

In seventh grade, students focus on civilizations around the world during the Middle Ages and the Renaissance, and the ways in which these cultures interacted. The State Standards designate trade along the **Silk Road** as a particularly important phenomenon. The *China* presentation is an opportunity to look at examples of silk and to discuss the controlled production and sale of this precious commodity.

We also demonstrate how the Silk Road brought outside influences into Chinese culture. A bronze mirror of the Tang Dynasty (618–907) illustrates the popularity of foreign motifs in this early period. It is decorated with motifs of lions and grapes, both of which were imported to China as exotic luxuries.

China continued as the source of international fashion trends in later dynasties, introducing shadow plays to Indonesia and the English to tea. The Chinese also remained discerning patrons of popular products from beyond their borders. A fine glass container for foreign tobacco, made in the early 20th century, proves that a fascination with other civilizations is a continuing thread in the development of Chinese culture.

## Religion

The *China* presentation concentrates on the production and trade of material goods, but we also want to place these products in their proper cultural context.

One of the State Benchmarks for grade six is the study and comparison of world religions. The lesson



Snuff Bottle. Reverse-painted glass, ivory, quartz, 20th century.  
1941.416





Pu Tai. Turquoise matrix, 20th century. 1940.1054

incorporates a discussion of **Buddhism**, using a **turquoise** figurine as a prompt. Students will be encouraged to consider ways in which the image of the laughing monk conforms to or contradicts their expectations about Buddhism.

The practice of **ancestor worship** dates to China's prehistoric roots, and remains a vital tradition to this day. Objects such as the ceramic pillow in our suitcase were often placed in graves as offerings to the deceased. The headrest is ornamented with auspicious designs of flowers and beasts to keep the soul of the deceased safe and content.



Pillow. Stoneware, Northern Sung Dynasty (960–1127 AD). 1964.431



Pair of Padded Cuffs. Silk satin, cotton, late 19th century. TR 3718/34–35

### Chinese Women

The *China* presentation also provides some perspective on the lives of Chinese women. Historically, women of the privileged classes were almost entirely restricted to their homes—a limitation reinforced by the practice of foot binding. Embroidering in silk was one way for women to pass the time. They embellished their tiny shoes and leggings with delicate patterns. Our yellow silk leggings bear designs of peonies and butterflies, symbols of a happy marriage.

Wealthy women rarely attended plays or other entertainments. If they were lucky, they might be able to watch shadow plays put on for them in their own homes. Shadow plays reproduced dramas and romances in miniature. The puppets' jointed limbs allowed them to convincingly enact the affecting stories. This tradition is represented here by a pair of colorful shadow puppets cut from translucent leather.

Shadow Puppet. Dyed leather, reeds, metal, early 20th century. 1932.250, 1947.243



### **Why were 18th-century Europeans so crazy about porcelain?**

The porcelain craze was actually a byproduct of the China trade. Europeans really wanted spices and tea, but carrying these perishables on a ship was risky business. If the ship sprung a leak, it could ruin the entire cargo. Clever traders packed the vulnerable areas of their holds with porcelain, knowing that it would not rot and would help to protect their prize goods.

While porcelain was not the major focus of the trade, it became very popular in Europe and America. Westerners did not know how to produce such a fine white ceramic, and they were fascinated with the exotic blue designs that graced the dishes. Because porcelain came from so far away, and because so much of it broke in transit, it was considered a rare and desirable possession.

### **Why were the 17th-century Chinese so crazy about snuff?**

**Snuff** (powdered tobacco) is not very popular any more, but it used to be quite chic in China. Tobacco was imported from the New World, making it valuable. Most Chinese people also believed that tobacco could cure colds and stomach upsets.

Snuff was kept in small bottles that could be tucked away in a sleeve. Craftsmen strove to create snuff bottles that were attractive and original. They were sometimes fashioned from precious minerals and carved with elaborate details. Our example is only made of glass, but enriched by charming scenes ingeniously painted on the inside of the bottle.



The Ming emperors often bestowed snuff bottles as precious gifts for loyal service. Important officials could amass large collections of bottles. In the 20th century, many Westerners also began collecting Chinese snuff bottles.



Pu Tai. Turquoise matrix, 20th century. 1940.1054

### **Who is the “Laughing Buddha?”**

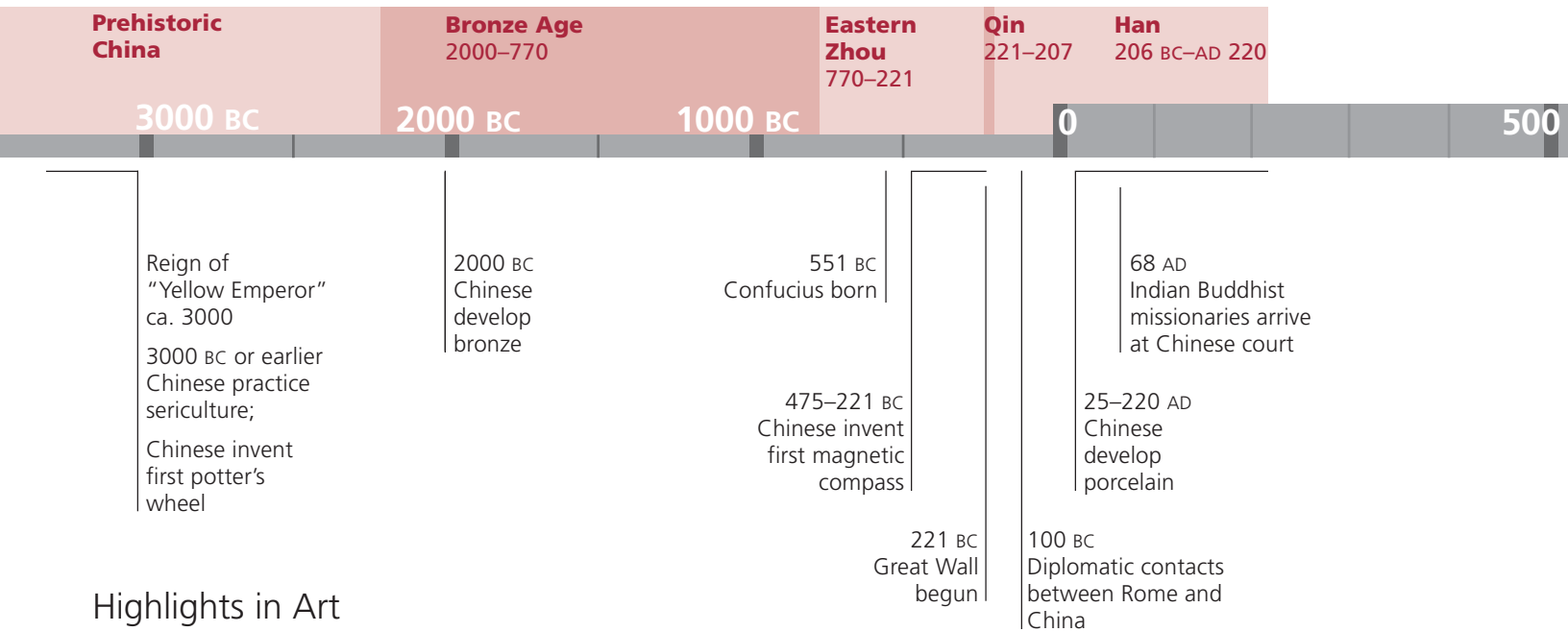
The Laughing Buddha is Pu Tai, a jolly Buddhist monk who lived long ago. Pu Tai carried all of his belongings in a big cloth sack, and was known for his infectious good humor and appeal to children.

Although Buddhism was founded in India (ca. 6th century BC), the philosophy spread throughout Asia over a period of centuries. Each country adapted Buddhism to its local beliefs and needs. One essential doctrine of Buddhism argues that souls can be reborn (or *reincarnated*) in different bodies. Many Chinese Buddhists believe that the Chinese monk Pu Tai was an incarnation of Buddha.

### **What is ancestor worship?**

Ancestor worship is based on the belief that human spirits live on after the death of the body, remain active in the affairs of their descendants, and can be

## Periods and Dynasties



## Highlights in Art and World History



Let's Discover Egypt



Ancient Americas



Classical Art

# Art to Go Suitcase



Lion and Grape Mirror, Tang Dynasty



Pillow, Northern Song Dynasty (960–1127)



Custard Cup with Middleton Arms, ca. 1790



Padded Cuffs, late 19th c.



Shadow Puppets, early 20th c.



Snuff Bottle, 20th c.

**Tang**  
618–907

**Song**  
960–1279

**Yuan**  
1279–1368

**Ming**  
1368–1644

**Qing**  
1644–1911

**Republic of China**  
1912–1949

**People's Republic of China**  
1949–

AD

1000 AD

1500 AD

2000 AD

800s AD  
Chinese develop gunpowder

1041–1048 AD  
Chinese Bi Sheng invents moveable type

1455  
German Johannes Gutenberg invents moveable type

1700s  
European trading ships in Chinese harbors

1709  
German Johann Friedrich Bottger becomes first Westerner to make porcelain

1839–1842  
Britain combats China in Opium Wars—China loses

1949  
Communist Revolution



Cool Knights



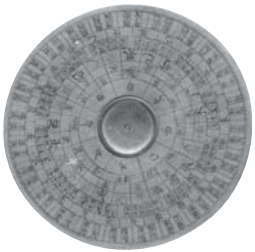
Early America

appeared through offerings. Ancestor worship has been practiced all over the world, notably in the African, Native American, and Chinese traditions.

The Chinese have honored their ancestors with elaborate rituals since prehistoric times. More than three thousand years ago worshippers offered their ancestors food, alcohol, jade, musical instruments, and sacrifices of humans and animals. Tombs were carefully located to maximize the ancestors' positive influence.

According to the Chinese tradition, if you were powerful in this life, you would also be powerful in the afterlife. The head of a household would continue to influence his household; the emperor could affect the fate of the entire nation. One of the reigning emperor's most important jobs was to perform the rituals that kept his powerful ancestors happy.

The Marxist government of the People's Republic of China (1949–present) discourages all forms of religion, but ancestor worship is still important in Taiwan and other areas where Chinese expatriates have settled. Chinese families now make sacrifices by burning imitation money and paper models of valuable items.



Feng Shui Compass.  
Wood, metal, 20th  
century (?). S45-72

### **What is *feng shui*, and how is the compass used?**

***Feng shui*** (“fung shway”) is the ancient Chinese practice of aligning structures and their contents to channel the flow of *chi*, or energy. It is believed that *chi* flows through all environments like a stream.

When positive *chi* is allowed to circulate, it brings good fortune. When it is dammed, it brings bad luck.

The best *chi* is believed to come from the south. When planning a structure such as a house, business, or tomb, a *feng shui* compass is used to ensure an optimal southern exposure. The many rings around the central device provide information about how the structure is aligned in relation to certain constellations and natural forces.



Lotus Slippers. Silk satin, paper or bamboo, 20th century. 1932.520/a

### **Why did Chinese women bind their feet?**

Foot binding was a traditional Chinese practice of shaping the feet by bending or breaking the bones of the arches. The feet were then tightly bound so that the toes grew toward the heel. The object of foot binding was to create the appearance of tiny feet.

Foot binding began when the girl was too young to prevent the procedure. Mothers felt it was critical to bind their daughters' feet because they would need small feet to find husbands. The foot was considered the most important part of a woman's appearance—even more important than the face.

The Chinese practiced foot binding for almost 1,000 years. The tradition did not end until after 1900.

### Lesson Plan

#### ● Focus

Students will be introduced to the traditional arts of China using artifacts from the Art To Go collection. The lesson will be appropriate for grades 4 through 8, but can be adapted for older audiences as well.

#### ● Purpose

We will introduce traditional Chinese culture and technology, and make topical connections to classroom studies.

#### ● Motivation

Students will be motivated through a direct, hands-on experience. Students will be further motivated by classroom discussion during the presentation. Follow-up discussion and projects assigned by the classroom teacher will help students retain information.

#### ● Objectives

Students will learn:

- how the Chinese manufactured materials such as bronze, silk, and ceramics
- about the function of the artifacts, their aesthetic qualities and the symbolism of their designs
- about Chinese society and culture (religion and rituals, trade, women's status) when the objects were made and used
- about China's vast history and some of its major dynasties

#### ● Participation

Students will handle works of art and be asked questions from simple to complex. They will be asked to problem-solve using questions designed to help them identify what they see. Students will use observation and critical thinking skills to make inferences about Chinese culture based on clues drawn from the objects themselves.

#### ● Comprehension Check

The Art To Go presenter will ask the students questions as the lesson is taught to ensure that they understand the material. The classroom teacher can reinforce what the students have learned with curriculum ideas from this packet; teachers may also incorporate ideas from this presentation into an art project.

#### ● Closure

Students are able to reinforce what they have learned in the Art To Go presentation by visiting the Asian galleries in the Cleveland Museum of Art. They will be able to make connections between their classroom studies, the Art To Go presentation, and what is on view in the museum. Please call 216-707-2462 for a registration form in order to plan your museum visit.



## Vocabulary

### **Bronze**

Alloy of copper and tin

### **Buddhism**

Philosophy or religion based on the teachings of Siddhartha Gautama, called Buddha (enlightened one), that began in India in the 6th or 5th century BC

### **ceramic**

Fired clay, having a hard, brittle character; pottery

### **coat of arms**

Shield-shaped visual symbol of a noble European family, decorated with particular colors and images

### **dynasty**

Family or group that maintains power for several generations

### **feng shui** (“fung shway”)

Ancient Chinese practice of aligning structures and their contents to channel the flow of *chi*, or energy

### **glaze**

Glass-like coating applied to ceramics before firing

### **lotus slipper**

Shoe for a bound foot (so-called because the bound foot was said to resemble a lotus bud)

### **porcelain**

Hard, white, translucent ceramic first produced in China

### **sericulture**

Raising silkworms

### **Silk Road**

General name for the land and sea routes connecting the Chinese capital Chang’an to cities in Central and South Asia and the Middle East, active from the Han to the Ming Dynasty

### **snuff**

Powdered tobacco

### **turquoise**

Opaque blue or blue-green gemstone containing aluminum and copper



Shadow Puppets. Dyed leather, reeds, metal, early 20th century. 1932.250, 1947.243

## Webbing

### Mathematics

Our mirror is 3.88 inches in diameter. Calculate the circumference and area.

- A lotus slipper is 3 inches long. Have each student measure the length of his or her shoe, and then determine the average shoe length for the class. What is the ratio between the length of the lotus slipper and the average shoe length of the class? What about with individual shoes?
- Find the current populations of China and the United States on the Internet. ([www.prb.org](http://www.prb.org) is one source.) Compare China's population to that of the United States using subtraction, fractions, percentages, or graphs.
- Compare China's years (or centuries) of recorded history to that of the US using the same methods. See timeline on pg. 10 for information.

### Science

Make your own compass with a magnetized needle, cork, and bowl of water. How is your classroom oriented?

- Identify the major elements composing bronze, turquoise, and clay, and locate them on the periodic table. Discuss how these elements react to heat and oxygen. What methods can be used to help preserve these objects?

### Social Studies

On a large piece of paper, reproduce a map of Asia. (Several maps are available at [www.silk-road.com](http://www.silk-road.com).) Divide students into teams representing the countries along the Silk Road. Each team is responsible for researching the history of its country in the library or on the Internet. Each team then outlines the leg of the Silk Road that passed through its country, and decorates its country with drawings or magazine cutouts of the materials it exported.

### Visual Arts

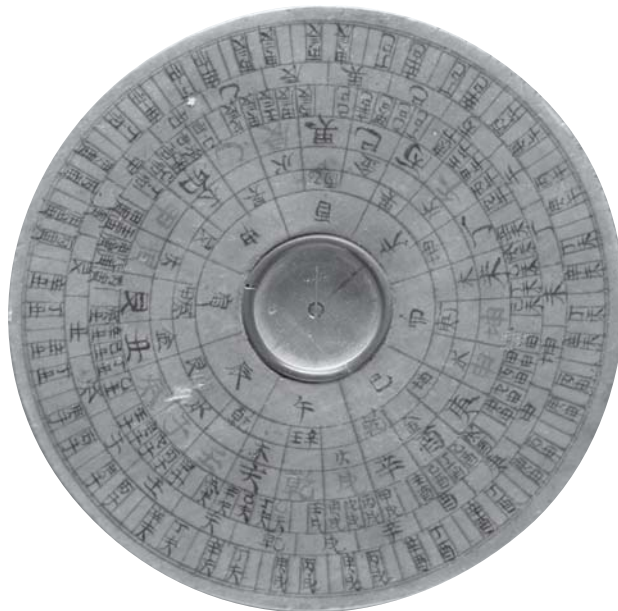
The ancient Chinese stocked their tombs with items they valued, burying either the objects themselves or clay effigies. Have students think about what possession they prize most, and then fashion an image of it in clay.

- Try a simple embroidery project using Chinese motifs such as butterflies, coins, or other good-luck symbols.
- Make shadow puppets from colored paper to use in a play (see below).

### Language Arts

Put on a shadow puppet play. See Connie McKinley's lesson plan at <http://www.indiana.edu/~easc/resources/TEAMS/1998/pdf/puppet.pdf> for ideas and resources.

- Have students imagine they are starting a business as *feng shui* consultants, and write an advertisement.



Feng Shui Compass. Wood, metal, 20th century (?). S45-72



The silk route of the Tang Dynasty (618–907 AD) superimposed on a map of present-day Asia.

### Further Reading

Garrett, Valery M. *Chinese Clothing: An Illustrated Guide*. Hong Kong: Oxford University Press, 1994.

Jackson, Beverly. *Splendid Slippers: A Thousand Years of an Erotic Tradition*. Berkeley: 10 Speed Press, 1997.

Le Corbeiller, Clare, and Frelinghuysen, Alice Cooney. "Chinese Export Porcelain." *The Metropolitan Museum of Art Bulletin*, Winter 2003.

Levitt, Susan. *Taoist Feng Shui: The Ancient Roots of the Chinese Art of Placement*. Rochester, VT: Destiny Books, 2000.

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Vainker, S. J. *Chinese Pottery and Porcelain: from Prehistory to Present*. London: British Museum Press, 1991.

Snuff Bottle. Reverse-painted glass, ivory, quartz, 20th century. 1941.416



### Especially for Students

#### HISTORY

Deedrick, Tami. *China*. Austin, TX: Raintree Steck-Vaughn, 2001.

Martell, Hazel. *The Ancient Chinese*. New York: New Discovery Books, 1993.

Sherman, Josepha. *Your Travel Guide to Ancient China*. Minneapolis, MN: Lerner Publications, 2004.

#### FICTION/FOLKTALES

McCaughrean, Geraldine. *The Kite Rider: A Novel*. New York: Harper Collins, 2002.

Porte, Barbara Ann. *Hearsay: Strange Tales from the Middle Kingdom*. New York: Greenwillow Books, 1998.

Rumford, James. *The Cloudmakers*. Boston: Houghton Mifflin, 1996.

Ts'ai-Ying, P'an. *Monkey Creates Havoc in Heaven*. Adapted from the novel *The Pilgrimage to the West*, by Wu Cheng En. New York: Viking Kestrel, 1987.

Yep, Laurence. *Lady Ch'iao Kuo: Warrior of the South*. New York: Scholastic, 2001.

### Recommended Web Sites

[afe.easia.columbia.edu](http://afe.easia.columbia.edu)

Topical information and lesson plans for K-12 teachers. Covers China, Japan, and Korea. Some areas still under construction.

[www.geocities.com/Tokyo/Island/3268/symbols/160symbols.html](http://www.geocities.com/Tokyo/Island/3268/symbols/160symbols.html)

Hawley's 160 Chinese Art Symbols. A useful reference, but no illustrations.

[www.indiana.edu/~easc/index.htm](http://www.indiana.edu/~easc/index.htm)

Includes a list of Chinese holidays and a bibliography of primary and secondary source materials for middle and high school teachers.

[www.silk-road.com](http://www.silk-road.com)

Excellent resources for studying the Silk Road, including maps and timelines.

[www.insects.org/ced1/seric.html](http://www.insects.org/ced1/seric.html)

Dr. Ron Cherry's very readable history of sericulture from ancient times to the present.

## List of Objects

- **Lion and Grape Mirror**  
Bronze, Tang Dynasty (618–907 AD).  
1915.632
- **Pillow**  
Stoneware, Northern Song Dynasty  
(960–1127 AD). 1964.431
- **Custard Cup with Middleton Arms**  
Porcelain, ca. 1790. 1961.190
- **Pair of Padded Cuffs**  
Silk satin, cotton, late 19th century. TR 3718/  
34–35
- **Shadow Puppets**  
Dyed leather, reeds, metal, early 20th century.  
1932.250, 1947.243
- **Feng Shui Compass**  
Wood, metal, 20th century (?). S45-72
- **Pu Tai**  
Turquoise matrix, 20th century. 1940.1054
- **Lotus Slippers**  
Silk satin, paper or bamboo, 20th century.  
1932.520/a
- **Snuff Bottle**  
Reverse-painted glass, ivory, quartz,  
20th century. 1941.416

## Art To Go Suitcase Presentations

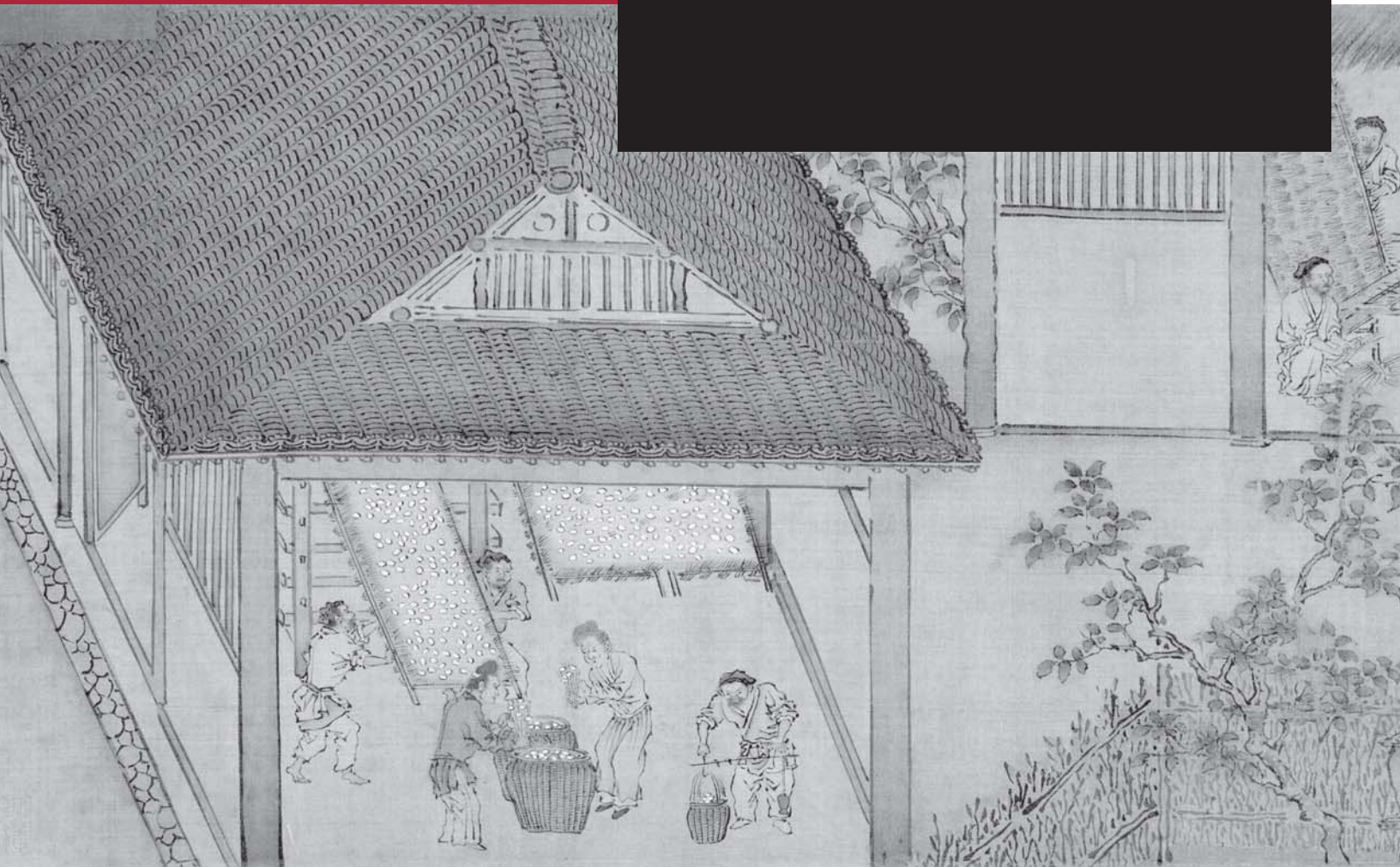
- |   |   |
|---|---|
| Ancient Americas:<br>Art from<br>Mesoamerica                                  | Journey to Africa:<br>Art from Central and<br>West Africa |
| The Art of Writing:<br>The Origin of the<br>Alphabet                          | Journey to Asia   |
| China: Art and<br>Technology  | Journey to Japan:<br>A Passport to<br>Japanese Art        |
| Classical Art:<br>Ancient Greece and<br>Rome                                  | Let's Discover Egypt                                      |
| Cool Knights:<br>Armor from the<br>European Middle<br>Ages and<br>Renaissance | Masks: Let's Face It                                      |
| Diego Rivera:<br>A Mexican Hero and<br>His Culture                            | Materials and<br>Techniques of the<br>Artist              |
| Early America:<br>Artistry of a Young<br>Nation                               | Native American Art:<br>Clues from the Past               |
|   | Problem Solving:<br>What in the World?                    |
|   | Museum Zoo:<br>Animals in Art                             |



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# China: Art and Technology



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