



TERRA COTTA WARRIORS

GUARDIANS OF CHINA'S FIRST EMPEROR

A Resource for Students and Educators

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TERRA COTTA **WARRIORS**
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ACKNOWLEDGEMENTS

It is with great pleasure that the Bowers Museum presents this Resource Guide for Students and Educators with our goal to provide worldwide virtual access to the themes and artifacts that are found in the museum's eight permanent exhibitions.

There are a number of people deserving of special thanks who contributed to this extraordinary project. First, and most importantly, I would like to thank Victoria Gerard, Bowers' Vice President of Programs and Collections, for her amazing leadership; and, the entire education and collections team, particularly Laura Belani, Mark Bustamante, Sasha Deming, Carmen Hernandez and Diane Navarro, for their important collaboration. Thank you to Pamela M. Pease, Ph.D., the Content Editor and Designer, for her vision in creating this guide. I am also grateful to the Bowers Museum Board of Governors and Staff for their continued hard work and support of our mission to enrich lives through the world's finest arts and cultures.

Please enjoy this interesting and enriching compendium with our compliments.

Peter C. Keller, Ph.D.
President
Bowers Museum

COVER ART

Terra Cotta Warriors (composite)

Photograph © Wang Da Gang

TERRA COTTA WARRIORS

GUARDIANS OF CHINA'S FIRST EMPEROR



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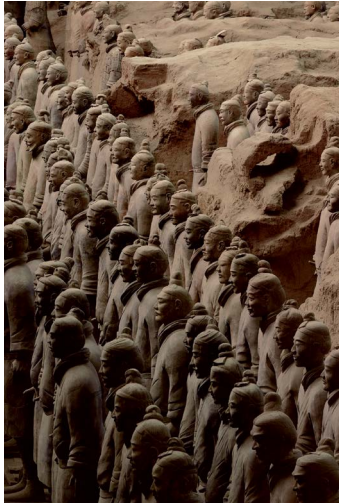
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Aerial View, Museum of the Terra-Cotta Warriors of Qin Shi Huang, Linton, China
Photograph by Wang Da Gang

Imperial China

The history of Imperial China is defined by the rise and fall of many dynasties. Each was distinct in its own way and was responsible for a number of innovations and achievements.

The term **Imperial** refers to an **Empire**, a group of territories whose people are subject to a single ruler. When a country extends its borders and seeks power through the conquest of other lands, it is engaging in **Imperialism**. Lands that comprise an empire can be **contiguous** (sharing a common border with the ruling country) or **colonial** (located at varying distances from the ruling country). The supreme ruler of an empire is called an **Emperor** or **Empress**.

Throughout history, empires have formed in many parts of the world. Some of the largest, most historically significant or longest-lasting empires appear in the chart below:

EMPIRE	YEARS IN EXISTENCE	% OF WORLD CONTROLLED @ PEAK
Chinese Empire	221 BCE - 1912 BCE	10.91% (1790 CE / Qing Dynasty)
Roman Empire	31 BCE - 1453 CE	3.71% (117 CE)
Mongol Empire	1206 CE - 1368 CE	17.81% (1270 CE)
Ottoman Empire	1299 CE - 1923 CE	3.86 % (1683 CE)
Spanish Empire	1492-CE - 1968 CE	10.17% (1810 CE)
British Empire	1497 CE - 1997 CE	26.35% (1920 CE)
Russian Empire	1721-CE - 1917 CE	16.92% (1895 CE)

(Source: Rein Taagepera, Professor Emeritus, UC Irvine, 1978)

The Qin Dynasty

The Qin dynasty (pronounced “Chin”) lasted only one generation, yet it made a lasting impact on China’s history. Our name for the country of China had its origin in the Qin dynasty. What was accomplished during the 15 years of the dynasty’s existence influenced life in China for the next 2000 years.

MODULE ONE: INTRO / FOCUS QUESTIONS

In this guide, you will explore some of the achievements, innovations and technologies of ancient China. Perhaps the most significant achievement, which made many subsequent innovations possible, was Qin Shihuangdi's unification of China under Imperial rule. Perhaps the most surprising contribution was the First Emperor's creation of the Terra Cotta Army.

Terra Cotta Warriors: Guardians of China's First Emperor

The Terra Cotta Warriors is a collection of at least 8,000 life-size clay figures. These soldiers, charioteers, archers and cavalry officers comprised an army that was designed to protect the First Emperor throughout eternity.

Buried more than 2,000 years ago in a large underground tomb, the Terra Cotta Warriors were discovered in 1974 by three local farmers digging a well near the city of Xi'an in Northwest China. We will begin by exploring one of the greatest archaeological finds of the 20th century, whose excavation continues today. By studying the artifacts left behind from that civilization, we gain insight into the challenges, innovations and ways of life from one 15-year period in Ancient China—the Qin dynasty—that made a significant impact on Chinese history and culture.

Keep these questions in mind along with others you may have as you learn about the First Empire of China.

Focus Questions:

- **What were the accomplishments and innovations of the Qin dynasty?**
- **What is the difference between a dynasty, a kingdom and an empire?**
- **Why and how were the terra cotta warriors created?**
- **How and when were the terra cotta warriors discovered and excavated?**
- **What is the status of the terra cotta warriors excavation today?**
- **What are World Heritage Sites?**

“**CHINA** HAS BECOME INCREASINGLY IMPORTANT TO OUR FUTURE. KNOWING MORE ABOUT ITS HISTORY WILL HELP US UNDERSTAND ITS **CULTURE** . . . AN INTRODUCTION TO CHINA’S **FIRST EMPEROR**, AND WHAT HE HOPED TO ACCOMPLISH, CAN LEAD TO A WONDERFUL JOURNEY OF LEARNING.”

—ALBERT E. DIEN, PH.D.

PROFESSOR EMERITUS, STANFORD UNIVERSITY

As you begin your journey to explore Chinese culture, fill out columns 1 and 2 of the [Capstone Project](#) on page 57 of this guide.

MODULE ONE MAP: CHINA BEFORE UNIFICATION



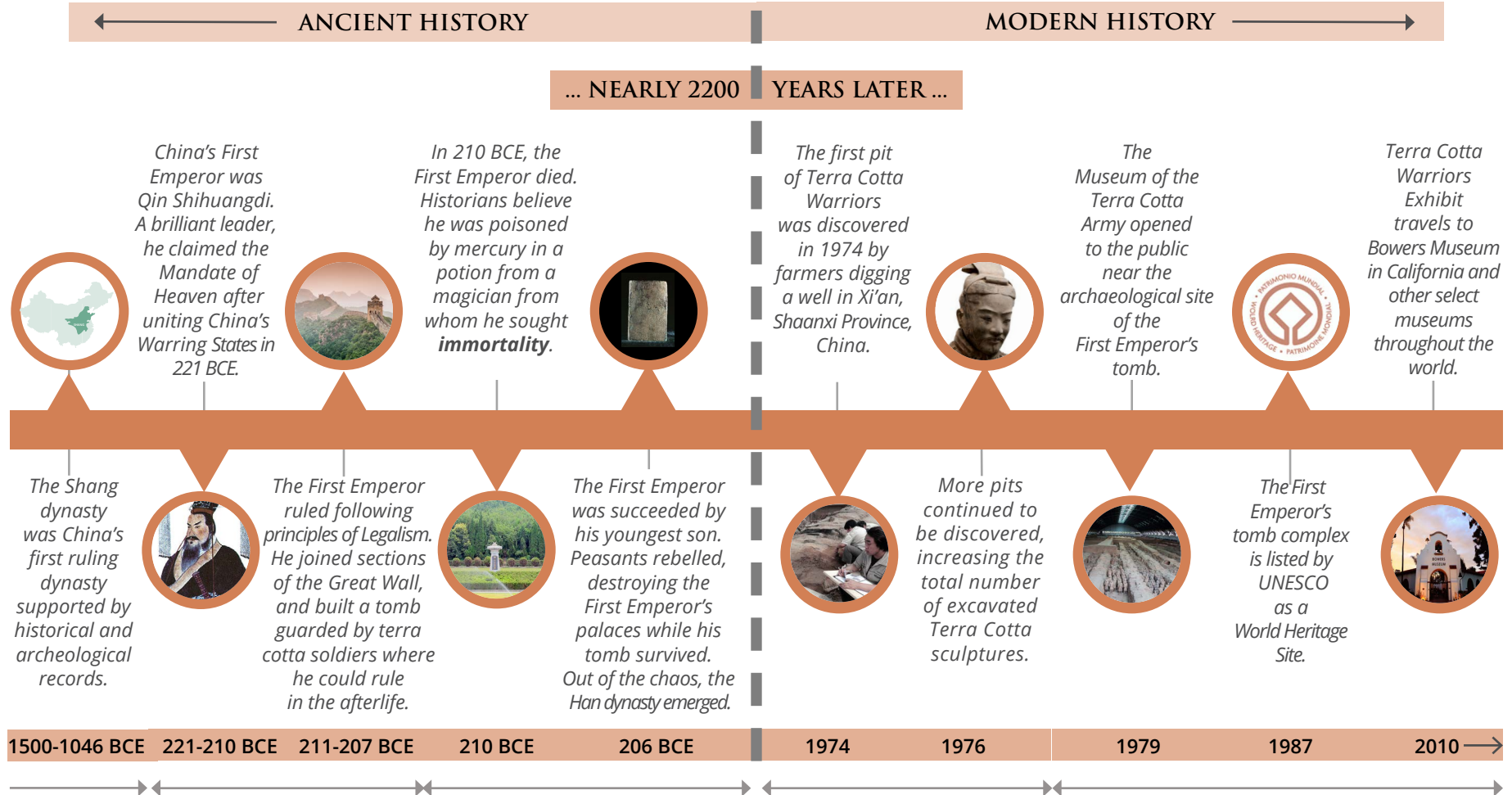
MODULE ONE MAP: CHINA AFTER UNIFICATION



MODULE ONE TIMELINE: HISTORY OF THE TERRA COTTA WARRIORS

The story of the Terra Cotta Warriors can be viewed in two distinct timelines: The sculptures were conceived and built by the First Emperor of China over a span of approximately 40 years in Ancient China.

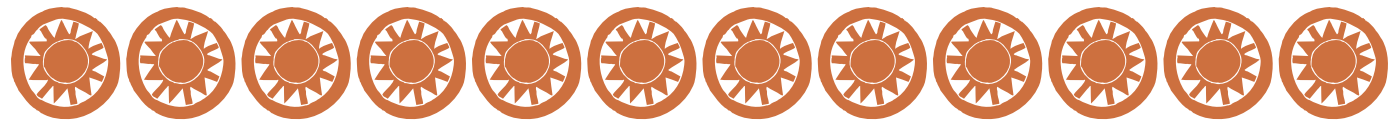
The Warriors remained hidden beneath the ground until their discovery nearly 2200 years later. In the last 50 years or so, the sculptures took on a new life as they became known to the modern world.



MODULE TWO:

CHINA'S FIRST EMPEROR

INNOVATIONS AND ACCOMPLISHMENTS





Qin Shihuangdi (259-210 BCE)
China's First Emperor
Reign: 221-210 BCE

Profile of Qin Shihuangdi

Who was China's First Emperor?

Over thousands of years throughout the world, different forms of government have emerged to organize communities of people. The word *government* had its origin in a Greek word meaning to “steer” or guide. Governments exist to solve problems, institute rules or laws, provide services, regulate economic interests and protect communities of people who live in a specific region or country. Some of the earliest governments were the small city-states of Ancient Greece and the dynasties that ruled Ancient China. We get the name *China* from the name of the Qin dynasty, whose leader influenced ways of life for the next 2000 years.

Governments can take many forms. A democracy, for example, is governed by people living in a certain area or their elected representatives. Other institutions, such as dynasties and kingdoms, are ruled by a monarch (e.g., king or queen) whose power is transferred through a single family line from one generation to the next. Forms of government range from those that support individual freedoms while working to benefit the people they govern to those that exert absolute authority, acting as tyrants concerned only with their own wealth and power. Although various territories within China were considered dynasties, the Qin dynasty is the first to be considered an Empire.

An empire consists of a collection of regions, states, countries or kingdoms who owe allegiance to a supreme authority called the Emperor or Empress. Emperors do not need to come from the same family line. They assume power either when one territory is conquered by another or when their strength or record of accomplishments warrants what has been called a “Mandate of Heaven.” Although the Qin dynasty ruled for only one generation, it greatly impacted China's history. In this module, you will learn about some of the achievements, innovations and technological advances attributed to Qin Shihuangdi (pronounced: *Chin Shir Hwong Dee*), China's First Emperor.

A **dynasty** is a succession of related rulers.

A **kingdom** is a geographically-centralized state ruled by a king or queen.

An **empire** is a collection of states governed by a single ruler.

MODULE TWO: CHINA'S FIRST EMPEROR

Unification

Ying Zheng (First Emperor Qin Shihuangdi's birth name) ascended to the throne upon the death of his father in 246 BCE. He was only 13 years old. The state of Qin, led by the young king, was originally just one of many states under the Zhou dynasty.

The Zhou dynasty's policy of decentralized government contributed to its own downfall. Constant fighting during the Warring States Period allowed Ying Zheng to create military, economic, social and political systems that eventually enabled him to successfully defeat the other states. In 230 BCE, Ying Zheng devised a strategy to unify the Han, Zhao, Wei, Chu, Yan and Qi Warring States and quickly bring them under his control. He consolidated power by appealing to the lower class with construction projects of roads and canals, which provided employment and made trade and travel easier.

At the same time, he worked to dismantle many cultural achievements of the Zhou, which he felt weakened the state, while retaining and improving upon Zhou innovations that were conducive to increasing his personal power.

Han was the first of the Warring states to fall to the Qin state in 230 BCE, followed by Zhao in 228 BCE, Wei in 225 BCE, Chu in 223 BCE, Yan in 222 BCE, and Qi in 221 BCE. Ying Zheng then proclaimed himself Shi Huangdi ("First Emperor") and established the Qin dynasty, the first centralized empire in Chinese history. Historians believe construction of the Terra Cotta Warriors began around that time.

When the Warring States Period was over, the First Emperor still needed to keep his army ready for battle to deter rebellions by his conquered subjects and to protect his newly-created empire. By about 213 BCE, Shihuangdi's need to control every aspect of his subjects' lives, and his fear of rebellion, had turned China into a police state in which freedom was severely limited and the peasant class was reduced to a form of slavery.

Qin Shihuangdi had created the concept of "emperor." All subsequent rulers of China held that title. The belief in rulers having earned a **Mandate of Heaven** had developed in the period before Qin came to power. This meant that a ruler was given divine authority to rule. If one governed well, he would remain in power.

The Qin dynasty established approximate borders and systems of government that all Chinese dynasties followed for the next 2000 years. Although the Qin dynasty lasted only 15 years, it laid much of the groundwork that made China a leading power throughout history.

Innovations and Accomplishments

Qin Shihuangdi's most impressive accomplishments and innovations were made possible by the **unification** of the seven Warring States, ending centuries of war. A list of his other innovations includes:

- ➊ Added to and linked the **Great Wall of China** to protect citizens from attacks and **invasions**
- ➋ Built a 4700-mile **network of roads** throughout the empire,

MODULE TWO: CHINA'S FIRST EMPEROR

while mandating a single width for cart axles so goods could move easily between provinces

- ③ Constructed a **canal system** for irrigation and transportation
- ④ **Standardized Chinese characters** in written form, helping to promote cultural unity
- ⑤ Created a **single currency** which simplified trade
- ⑥ Standardized **weights and measures**, making trade more uniform
- ⑦ Introduced **mass production** techniques to make weapons and tools
- ⑧ **Codified** the legal system, making **laws consistent** throughout the empire
- ⑨ Commissioned the creation of the **Terra Cotta Warriors**

Although the First Emperor is famous for his achievements, he is also known for how **ruthless** he could be. When he conquered the Warring States, he forced their leaders to move to his capital of Xianyang so he could keep them under his watchful eye. He then sent his own assistants to be the governors and judges in their kingdoms. This established a central government in which he had absolute power.

Daily Life during the Qin Dynasty

In Ancient China there were two classes of people: the upper class and the lower class.

The upper class consisted of the emperor and his family, government officials, the **gentry** who owned land they rented to others, and scholars who, although not wealthy, were respected for their knowledge. The upper class lived in wooden houses with tiled roofs. They ate well. They wore clothes and slippers made of silk.

The lower class consisted of soldiers, merchants and peasants. They lived in houses made of mud. They wore baggy pants and cotton shirts, and their shoes were made of straw. Peasants worked the gentry's land. They did not keep most of the crops they grew, which were taken to feed others. A poor person's diet included noodles, rice, steamed bread or bean curd. They remained in poverty due to high taxes. The First Emperor did not believe in education for the common person. Few of the poor could read or write.

Family was important to the Chinese. If a family could afford it, as many as 100 relatives would live in one household. The lower class could not afford to live this way, but most households did include grandparents who watched after the home and the young children.

Everyone within a family had their own role to play, which typically revolved around their gender. Most marriages were arranged when children were born. Often the bride and groom did not meet until their wedding day.

Qin Shihuangdi forced his subjects to work in occupations of his choosing. Workers spent long hours doing manual labor. If they were too slow or did not follow orders, they were put to work building sections of the Great Wall. Carrying out the First Emperor's grand projects required huge numbers of laborers.

Farmers who worked in the fields to grow food were **conscripted** into the army and forced to build roads, canals, palaces, the First Emperor's tomb and the Great Wall. Thousands of people died

MODULE TWO: CHINA'S FIRST EMPEROR

carrying out the First Emperor's commands. Food shortages and high taxes led to rebellions.

People's individual rights were denied. Households were organized into groups that were obligated to inform authorities if they knew of anyone who broke the law or failed to carry out their assigned duties. People who turned in lawbreakers were rewarded. People who failed to turn in lawbreakers were killed.

Several **assassination** attempts prompted the First Emperor to build secret passageways throughout his great palace. When going out, he went in disguise. Each night he slept in a different location inside the palace. Qin Shihuangdi died from mercury poisoning in 210 BCE. After his death, peasants rebelled. They destroyed the First Emperor's palaces, yet the tombs containing the terra cotta warriors survived.

Like many individuals, however, the First Emperor's greatest strengths were also his greatest weaknesses. Shihuangdi's ideas of standardization were admirable when it came to currencies, roads, weights and measures and production techniques. But extreme standardization can be dangerous when it is applied to standardizing ideas.

The First Emperor burned books containing the teachings of the Chinese philosopher Confucius because his philosophy of social harmony, justice and devotion to ancestors conflicted with policy changes Qin Shihuangdi wished to make. Many of the teachings of Confucius were later rewritten from the memory of his followers. Initiatives advanced by the First Emperor were both admired and

feared by other nations and by the people he ruled. Shihuangdi had the ability to execute ambitious plans, and the impact he made lasted for centuries. But many people suffered to execute his successful innovations and accomplishments.



More than any other characteristic, Qin Shihuangdi was a great problem solver. He noticed things that he thought could be improved in many areas of life—from the need to provide water to grow crops, to build a system of roads to move people and things from place to place more efficiently. He standardized the type of currency used to buy or trade items that people needed in their daily lives. He recognized the value of large projects such as the Great Wall that could protect China from foreign invasion.

The First Emperor looked at the big picture. Then he used **systems thinking** and leadership skills to come up with innovative new ideas that could make life better or more efficient in some way.

Are you a good systems thinker? The first step in the problem solving process is identifying a problem worth solving! What in your life would you like to change? Follow the prompts on the next page to use your curiosity as well as your critical and creative thinking skills to make an improvement in one area of your life.

MODULE TWO ACTIVITY: CREATIVE PROBLEM SOLVING

Finding innovative solutions to complex challenges is known as **creative problem solving** or design thinking. There are certain strategies that creative problem solvers use. These can empower you to help make the world a better place. Let's give them a try:

DEFINE

Is there something about your daily life that you'd like to change? Great! Put it into words. Try to express your problem or opportunity in an open-ended way, which allows for many more ideas to flow than if you limit the problem definition.

What is meant by an **open-ended** challenge? It's one that doesn't limit potential solutions by the way you phrase the question. For example, instead of asking "How can we build a faster bicycle?" You might ask, "How can we move more quickly and enjoyably from place to place?" That opens up many more possibilities: your solution might be a bicycle, but it could also be a scooter, a pair of electronic sneakers or a jet-pack!

IDEATE

The next phase of creative problem solving is to get as many ideas out there as you can. Do not prejudge them because they seem silly or impractical. Brainstorm on your own and with friends and try to jot down 50 possible ideas. Using post-it notes helps you group or rearrange them later in the process.

PROTOTYPE & TEST

After letting your mind run free, pick one or two of the most promising ideas and take action. A prototype is a quick sketch or

model that puts your idea in visual form, either two-dimensional or better yet three-dimensional. It helps you show and test how your idea might look and work. Use simple materials: rubber bands, paper, markers, pipe-cleaners or other items you have available.

REVISE

Once you have a prototype, share it to see if you can get some feedback to improve upon it! Then implement it and see what happens.

MY PROBLEM:

MY FIVE BEST IDEAS:

MY SKETCH OR PROTOTYPE:

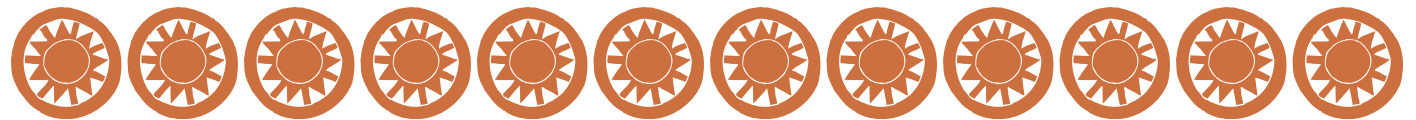
MY REVISIONS:

MY SOLUTION:

MODULE THREE:

DISCOVERY

A HIDDEN TOMB IS UNEARTHED





Acrobat / Strongman, excavated in 1999 from Pit K9001
Qin dynasty (221-206 BCE); Clay
Photograph by Wang Da Gang

Imagine descending down a ramp into a dark, earthen pit. In the silence, you think that you hear the exhale of a horse.

As you reach in that direction, you feel the form of a human face. You turn quickly as you think you hear the scrape of a sword being pulled from its case. Fear grips you in your uncertainty.

As your eyes adjust to the darkness, you slowly perceive the outline of human forms—rows and rows of clay warriors, standing in silence, ready for battle. The army stretches as far as you can see. You are sure you hear the rustle of armor, the click of metal . . .



Panorama, Pit 1
Photograph by Wang Da Gang

One of the most impressive armies of all time

The Terra Cotta Warriors have been standing “battle-ready” for over 2200 years. The First Emperor of China, Qin Shihuangdi, created the army. He believed the warriors could protect him in the **afterlife**.

The tomb containing the Terra Cotta Warriors remained unknown for centuries until it was discovered in 1974 by peasants digging a well for water about 20 miles east of the city of Xi’an, in central China. Since then, three more warrior pits have been found nearby. One of them was empty, telling us that the complex was probably not complete when the emperor died.

Today the Museum of Terra Cotta Warriors and Horses covers three acres containing three modern buildings. People visit to see the warriors and to observe an archeological dig site as scientists excavate the warriors from their burial chambers. Only a small fraction of the warriors have been excavated due to the painstaking

care required to preserve their grandeur. It will probably take much longer to excavate the army than the 40 years it took to create it.

The tomb of Qin Shihuangdi is located a quarter mile away from the warriors’ pits. The First Emperor’s burial mound is about 150 feet high with three levels. A stone wall 23 feet thick with four corner watchtowers was built surrounding the mound area. The inner tomb remains as it was left 2200 years ago with Qin’s coffin in the center.

The pits of the warriors were located east of the First Emperor’s tomb to protect him from enemies. The tomb is protected by mountains to the south (Mount Li) and west (Qilian Mountains); water to the north (Wei River); and by the Great Central Plains to the east. There are believed to be at least 600 pits and tombs in all, covering 22 square miles. The terra cotta warriors are considered one of the most important archaeological discoveries of all time.

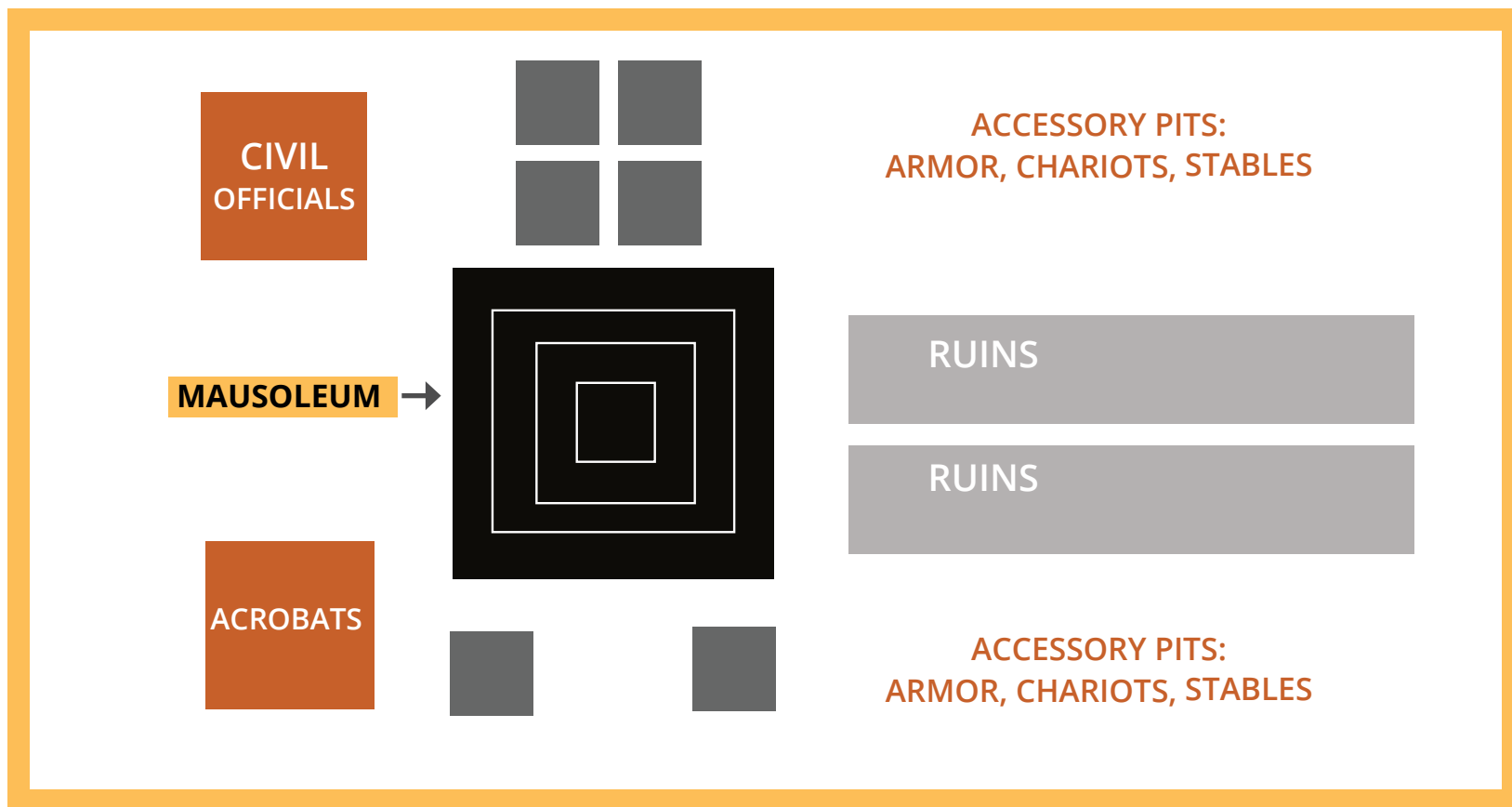


DIAGRAM OF THE TERRA COTTA WARRIORS TOMB COMPLEX MAUSOLEUM

The Terra Cotta Army is part of the world's largest ancient imperial tomb complex. It covers nearly 22 square miles. The Mausoleum is a free-standing structure enclosing the burial chamber and accessory pits. The Museum consists of three pits and an exhibition hall.

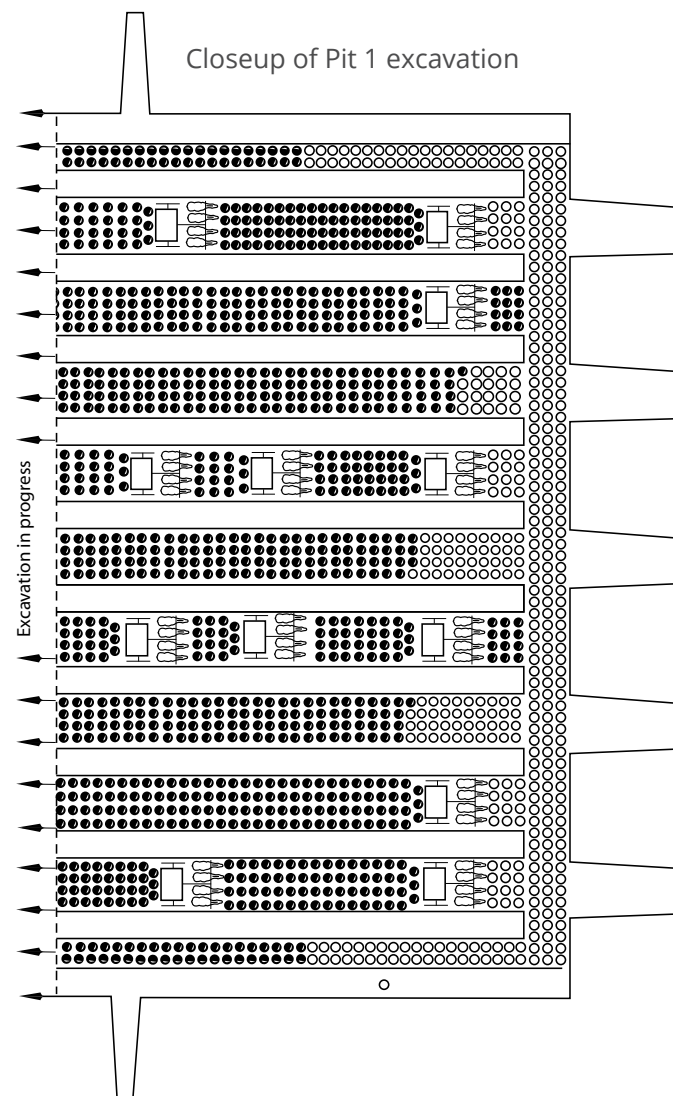
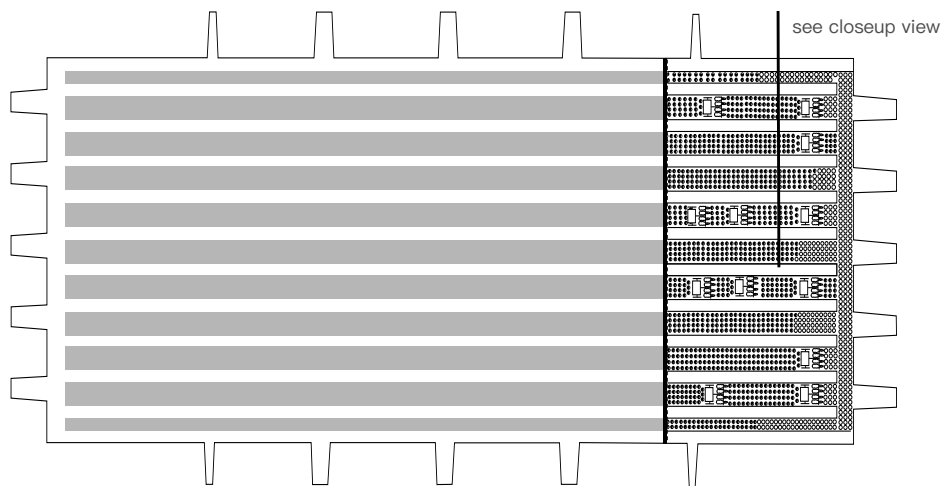
Pits are arrayed according to ancient instructions from *The Art of War*, a book written by Sun Tzu in the fifth century BCE that is still relevant today. Warriors face east towards the enemies of the Qin dynasty. Each pit lies 15 to 20 feet below current ground level.

DIAGRAM OF PIT 1

KEY

-  Ramp
-  Partitioned earth wall
solid line (excavated)
broken line (unexcavated)
-  War chariot drawn by 4 horses
-  Unarmed warrior
-  Armored warrior
(White part indicates facing direction)

Pit 1 is the largest vault, measuring approximately 750 ft. x 200 ft., about the size of two football fields. The pit has nine corridors which are about 11 ft. wide. The military formation of Pit 1 is designed for defending the Mausoleum of Emperor Qin Shihuangdi rather than for battle. There are over 6,000 figures of soldiers and horses and 50 chariots. Of these, about 2,000 figures are on display in the museum.



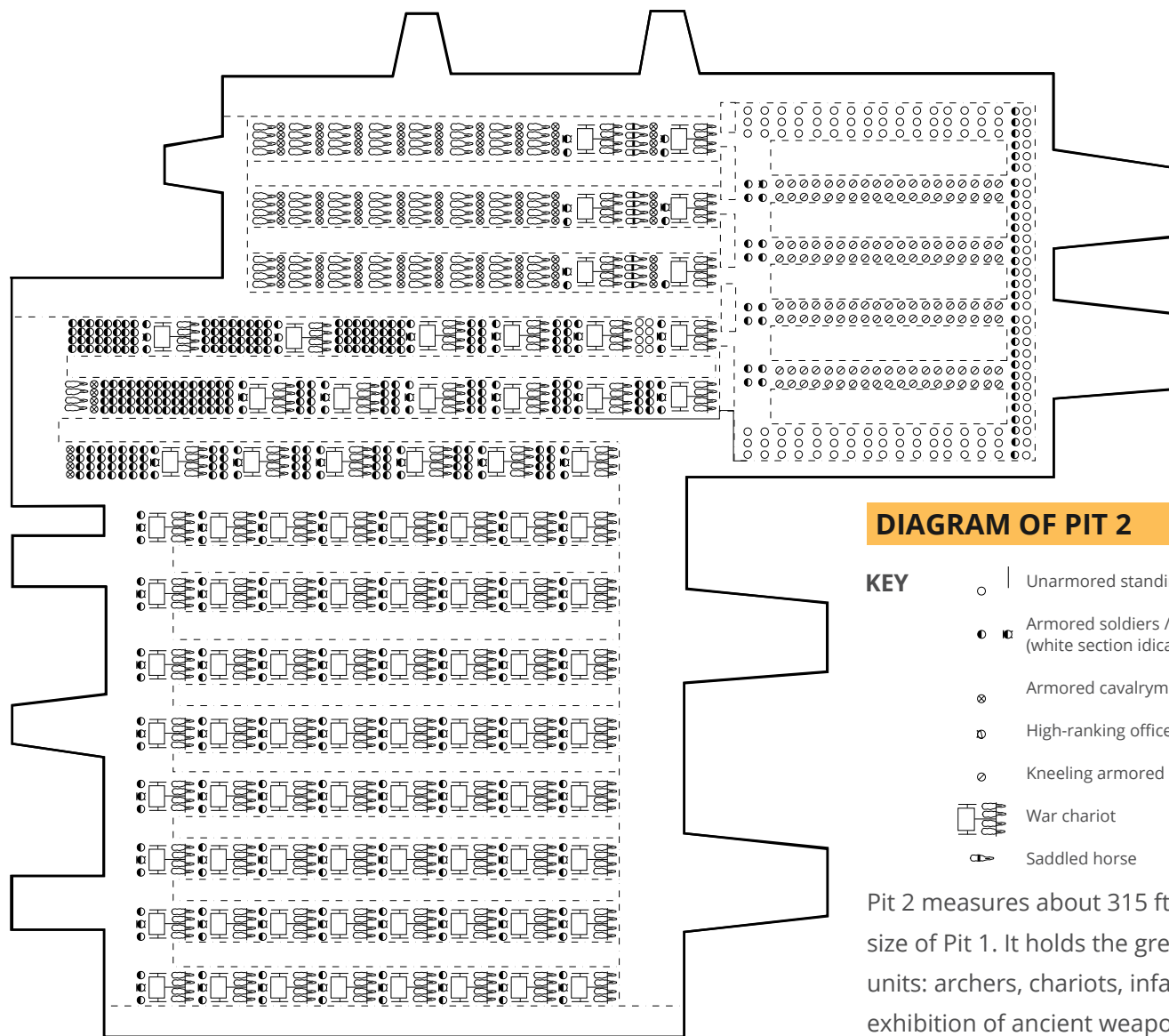


DIAGRAM OF PIT 2

- KEY**
- | Unarmored standing archers
 - ■ Armored soldiers / charioteers (white section indicates facing direction)
 - ⊗ Armored cavalrymen
 - ⦿ High-ranking officer
 - ⊖ Kneeling armored archers
 - ▭ War chariot
 - 🐎 Saddled horse

Pit 2 measures about 315 ft. x 275 ft., about half the size of Pit 1. It holds the greatest variety of army units: archers, chariots, infantry, cavalry and an exhibition of ancient weapons.

About the Terra Cotta Army

Qin started building the tombs as soon as he became king of the state of Qin. Chinese leaders before him built elaborate tombs believing they could continue to rule forever in the afterlife, but none came close to the detail and scale of Qin Shihuangdi's. The way soldiers, **cavalry**, chariots and archers are positioned in the pits represents the actual **military strategy** of the Qin dynasty.

To the front of the formation are three rows of soldiers holding **crossbows**, ready to launch an attack. The main force formed by **infantry** and chariots follows after. On both sides of this formation is the troop of cavalry designed to outflank the enemies. The warrior pits are placed in corridors separated by earthen walls. The ceilings were constructed of large tree trunks which rested on the partitions and outer rims. They were reinforced by planks and wooden pillars. A layer of matting was placed on the planks and then sealed by a layer of plaster over which was stamped earth. All but the earth and plaster has disintegrated. The corridors are paved with pottery bricks on which the warriors and horses stand. There are five ramps on each end leading down to the pit.

The warriors in Pit 1 are arranged in regular army formation. In the front are three rows of standing archers with crossbows so that while one row was firing, the others were reloading. These wore no armor. Armored infantry line the corridors with spears and **halberds**. These are led by officers on chariots carrying the bell and drum used to give orders during battle. Troops are defended at the sides and rear by archers and crossbow men facing outwards.

The tomb of the First Emperor is believed to be a vast underground palace and will most likely prove to be one of the greatest marvels of all time when it is excavated. No documents from the Qin dynasty survive, so we must rely on a description written 100 years later by Sima Qian, the official historian of the Han dynasty. He wrote,

"As soon as the First Emperor became king of Qin, excavations and building had been started at Mount Li, while after he won the empire, more than 700,000 conscripts from all parts of the country worked there. They dug through three underground streams and put down bronze for the outer coffin, and the tomb was filled with models of palaces, pavilions and offices as well as fine vessels, precious stones and rarities. Craftsmen were ordered to fix up crossbows so that any thief breaking in would be shot. All the country's streams, the Yellow River and the Yangtze were reproduced in mercury and by some mechanical means made to flow into a miniature ocean. The heavenly constellations were above and the regions of the earth below . . ."



There are several possible reasons why the First Emperor's tomb has not been excavated. Some say it is disrespectful to the dead to disturb their final resting place. Others believe that archaeologists are waiting until it the tomb can be excavated safely without hurting the precious objects inside.



Terra Cotta Warriors
Photograph by Wang Da Gang

Each warrior in the complex is unique. It is believed that many of the figures resembled either military leaders or perhaps the artist who created them. Each type of warrior had its own role to play. Note the details of facial features, hairstyles, military uniforms, scarves and hats.

MODULE THREE: DISCOVERY



ARMORED GENERAL

Terra Cotta Figure of Armored General
Qin dynasty (221-206 BCE)
Clay; H: 6ft., W: 3 ft.
Excavated from Mausoleum Pit 1
Collection: Museum of Terra Cotta
Warriors and Horses of Qin Shi Huang
Photograph by Wang Da Gang



CIVILIAN OFFICIAL

Terra Cotta Figure of Civilian Official
Qin dynasty (221-206 BCE)
Clay; H: 6 ft.
Excavated 2000 Mausoleum Pit K006
Collection: Shaanxi Archaeology
Institute
Photograph by Wang Da Gang



STANDING ARCHER

Terra Cotta Figure of Standing Archer
Qin dynasty (221-206 BCE)
Clay; H: 6 ft., W: 3 ft., Wgt~400 lbs.
Excavated 1980 from Pit 2
Collection: Museum of the Terra Cotta
Warriors and Horses of Qin Shi Huan
Photograph by Wang Da Gang



CHARIOTEER

Terra Cotta Figure of Charioteer
Qin dynasty (221-206 BCE)
Clay; H: 6ft.
Excavated from Mausoleum Pit 1
Collection: Museum of Terra Cotta
Warriors and Horses of Qin Shi Huang
Photograph by Wang Da Gang

MODULE THREE: DISCOVERY

When Qin Shihuangdi became king, he assembled a group of artisans to create his tomb and underground army. His officials organized factories with teams consisting of managers, overseers and workmen.

Terra cotta warriors are a few inches larger than in real life. One can almost sense movement by the positions of the warriors and tilt of their heads. Their uniforms as well as their scarves, tassels, bows, accessories and hairstyles reveal their rank and position.



Left to right: Charioteer, Standing Archer, Civilian Official, Warrior
Photographs by Wang Da Gang

Facial features were created using fine artist's tools such as sharp bamboo. Eyebrows, beards and moustaches were carefully crafted. Hair and hats were modeled by hand and added separately. Clothes and armor were also hand finished. Each warrior was covered with lacquer and then colored with paint made from minerals.

Warriors wore padded coats fastened with a leather belt with a hooked buckle and knee length trousers. They wore flat shoes tied to their feet. The positions of the bodies and hands of some warriors suggest the use of weapons such as spears halberds.

Horsemen wore short tunics over tight pants. Armor was made in overlapping plates of lacquered leather representing fish scale designs. The **cavalry** wore light armor and a leather cap.

Officers wore more ornate armor and headgear. The infantry wore boots, some with upturned toes. Although the warriors' uniforms have since faded, they were originally quite colorful. There are no female figures because women were not allowed in the Chinese army.



Left to right: Civilian Official, Armored General, Standing Archer, Charioteer
Photographs by Wang Da Gang

Chariots and horses are positioned among the rows of warriors. There are four small **tarpan** horses for each chariot. The horses' features are so true to life that they appear alert to follow commands from their charioteers. Some of the chariot parts are movable.

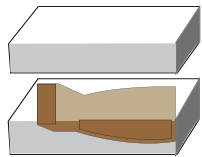
In addition to the army, the First Emperor had pits created which contained many other types of figures—civil officials, musicians and acrobats. The entertainers are sculpted as if in mid-performance. Each statue bears an inscription of the name of the workshop, the master artist, the foreman, and the year it was created.

How Were Terra Cotta Figures Made?

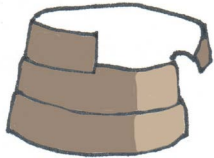
Creating the Terra Cotta Army statues took seven steps:



1. Clay was obtained from the local earth.



2. Molds were made for separate body parts: head, torso, arms, legs and hands.



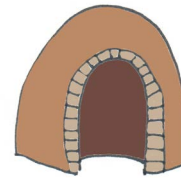
3. Tunic skirts were constructed with clay strips using the coil method.



4. The warrior statues were put together in assembly-line fashion. First the legs and torso were attached, then the head, arms, legs and hands were added. Each figure measures about 6 ft. tall and weighs 300-400 lbs.



5. Craftsmen sculpted facial features. Each figure is unique. Armor details were carved by hand. Weapons were added as appropriate to the rank or position of the warrior.



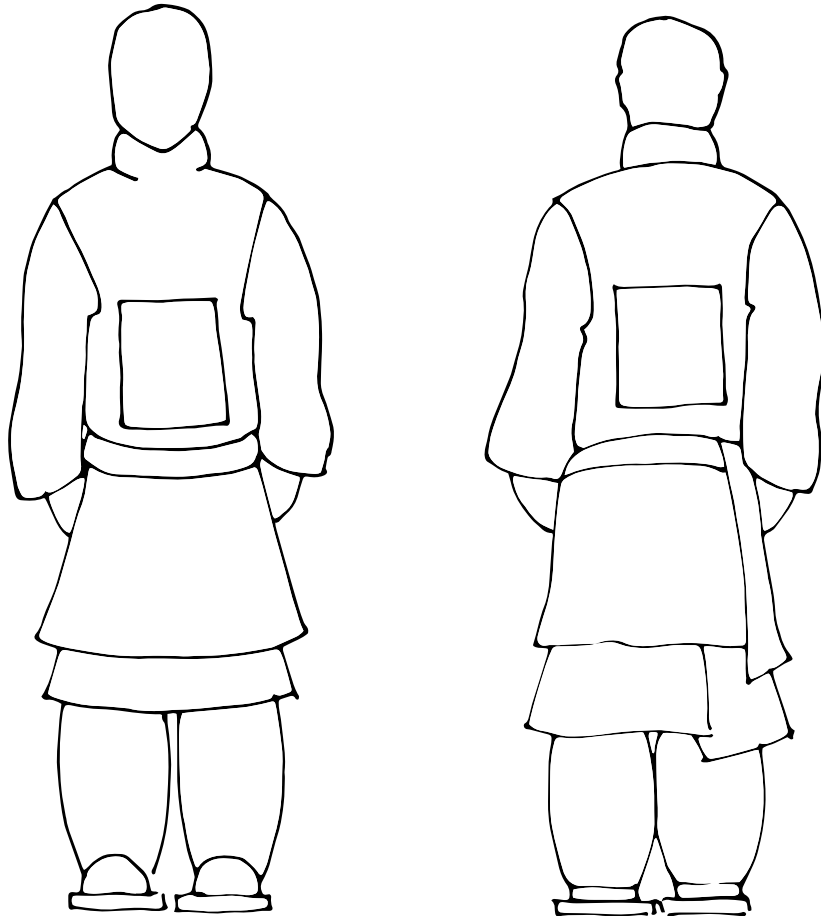
6. After the clay figures air-dried for 24 hours, they were fired in an outdoor kiln at a high temperature. This made it possible for the statues to survive for 2200 years.



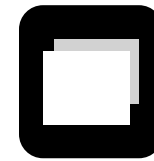
7. Today the Terra Cotta Warriors look grey, but originally they were colorful. After firing, they were first coated with black lacquer, then painted with pigments. Tunics were red or purple. Pants were usually green.

MODULE THREE ACTIVITY: TERRA COTTA WARRIOR PROJECTS

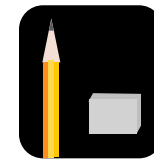
2D Terra Cotta Warrior Design



Design a unique Terra Cotta Warrior



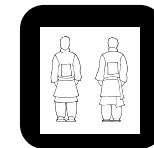
Paper or cardboard



Pencil and eraser



Colored pencils or markers

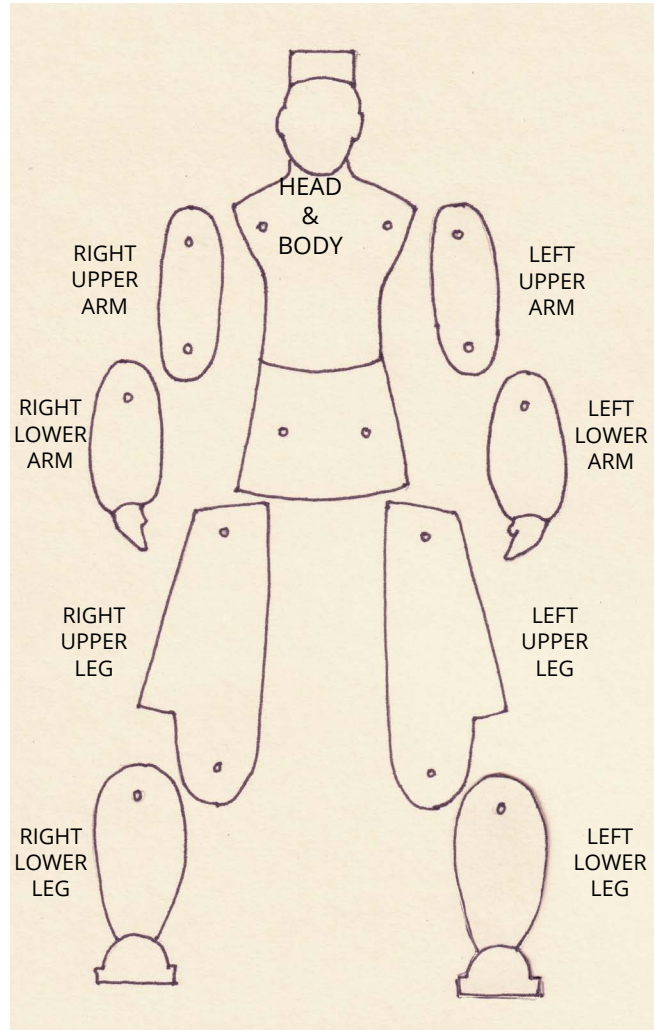


Design / coloring template

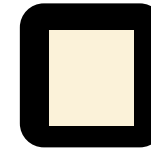
Download or trace the above template for your Terra Cotta Warrior design on paper or cardstock. Look carefully at the uniforms, facial features and hairstyles of the Terra Cotta Warriors pictured in this guide. How did their design help them carry out their role in the army? On the template, draw facial features, hair, headwear and costume details from your own imagination. Color with markers to create your own unique Terra Cotta Warriors.

MODULE THREE ACTIVITY: TERRA COTTA WARRIOR PROJECTS

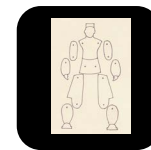
3D Terra Cotta Warrior Movable Figure



Construct a movable Terra Cotta Warrior



MANILA
CARDSTOCK



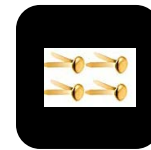
WARRIOR
TEMPLATE



SCISSORS



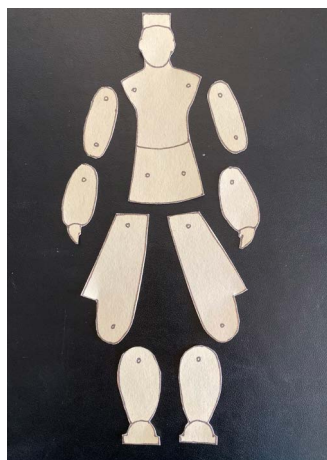
1/16" HOLE PUNCH



10 SMALL BRAD
FASTENERS

Want to make your project movable? Download the Warrior Template above. It contains 9 pieces for a posable terra cotta warrior. Print the page on cardstock, then cut out each of the 9 pieces. Punch 1/16" holes as marked, then follow the steps on the next page to assemble with small metal brads.

MODULE THREE ACTIVITY: TERRA COTTA WARRIOR PROJECTS



1. Print template. Cut out each of 9 pieces.
2. Using a 1/16" hole punch, punch holes as marked.



3. Align BODY with UPPER ARM pieces.
4. Insert BRAD through both layers, then bend back prongs to secure.



This is how the BRAD fasteners look from the back once you have bent the prongs to secure them.



5. Insert BRADS to attach LOWER ARMS to UPPER ARMS.



6. Insert BRADS to attach UPPER LEGS to LOWER LEGS.



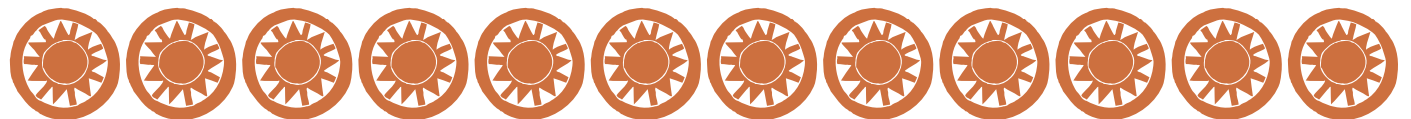
7. Align holes on UPPER LEGS to matching holes on BODY, then fasten with BRADS.



8. Design your own TERRA COTTA WARRIOR. Use colored pencils to add details of clothing, facial features, hair, headwear and armor. Your warrior can assume various poses by moving body parts.

MODULE FOUR:

THE WARRIOR WITH THE
SMILING MOUSTACHE





Terra Cotta Figure of Armored General
Qin dynasty (221-206 BCE)
Unearthed from Pit 1 Qin Shi Huang's Mausoleum
In the collection of The Museum of Terra-cotta
Warriors and Horses
Photograph by Wang Da Gang

Ho Lin sat at the dinner table where the steaming bowl of noodles, juicy pork and vegetables was waiting to be eaten, but he didn't even seem to notice it. Instead, he sat frowning into the distance, absently tapping his forehead with his chopsticks. His wife, Bi Ling, frowned back at him. She was proud of the good meals she made for her family. She expected them to be eaten with smiles, not ignored with frowns. Mei Ling, and her twin brothers Chang Shen and Wan Hai, eyed their father worriedly. What was wrong?

Ho Lin shook his head, hit his chopsticks on the table with a loud clack, and said, "It's wrong. I just know it's wrong. And what if the First Emperor finds out?"

His family looked at each other with wide eyes. Ho Lin was the captain in charge of Pit Two of the First Emperor's tomb, the most astonishing, amazing construction project ever seen in the kingdom of China. Everyone knew that it must be perfect in every way, just as the First Emperor wanted it. Everyone also knew that if it wasn't perfect, the First Emperor's rage would be terrible to behold, and every worker would fear for his life. This was serious business.

"It's the warrior in the second row, right in the front," he explained. "The general with the smiling moustache. You know, he looks pleased, as if even his moustache is smiling. When I got to work this morning, his moustache had been painted already, and I'm just sure it wasn't done yesterday when I left. How could this have happened? I'm supposed to keep track of everything, absolutely everything that happens in the pit."

They all understood what Ho Lin meant. Qin Shihuangdi, the First Emperor, the ruler of the great kingdom of Qin, was having his tomb built. Four huge pits had been dug in the ground by thousands of workers, and into those pits the First Emperor's army was put.

军队 (army)

No, not real human soldiers, of course. Terrible as the First Emperor could be, he would not put live people into his tomb. No, this army was made of clay, more than 7,000 life-size clay soldiers, privates, generals, archers, swordsmen and cavalry, all in rows ready to defend the First Emperor in the afterlife, just as his human army had defended him in his mortal life.

MODULE FOUR: STORY | THE WARRIOR WITH THE SMILING MOUSTACHE

Weapons, chariots, horses, everything an army needed was there. The First Emperor would be safe and protected for all eternity. He would also be entertained, for the Imperial musicians and jugglers were also there, and even trained dancing swans and geese for his pleasure.

“One moustache?” laughed Bi Ling, her eyes twinkling with amusement. “How can you keep track of every moustache in the army?” One of the painters surely painted it yesterday. As long as it looks right, how can it matter?

“It’s not just one moustache,” sighed Ho Lin, rubbing his fingers through his carefully arranged top knot, making stray strands of hair fall down over his eyes. “It’s that everything must be perfect, and if I lose track of one moustache, what else might I overlook? It could be something that is really important. I have to solve this mystery before many more days have passed.” He brushed the hair from his face and sighed again.

“Is the First Emperor really that terrible?” asked Mei Ling. Of course everyone had heard stories about the First Emperor, but how could he expect everyone and everything to be perfect all the time?

“Well, nodded Ho Lin. “It is true that he has



Detail, Production Model of Bronze Carriage
Museum of the Terra Cotta Warriors and Horses of Qin Shi Huang, Lintong, Xi’an
Photograph by Wang da Gang

done many good things for our kingdom. Now we have the same kind of coins everywhere, so merchants can sell their goods and customers can buy what they want easily. You know, here in our city we attracted merchants from the west and east of us, so we used to have to deal with two different types of coins, some that looked like knives and others that looked like spades. It made trade less complicated.”

Chang Shen and Wan Hai grinned as they thought of their treasured round bronze coins with the square hole in the middle which they planned to use to buy sweetmeats at the next market day. They both had what their sister described as a sweet tooth big enough for a tiger.

Bi Ling smiled. “Yes,” she said, “The new coins are easier to use, and it’s nice when the merchants at the market use them. When I

pay for something or get change back, there's never any argument now. Sometimes I used to have to be really unpleasant when I thought the persimmon man wasn't giving me enough "spades" for the number of "knives" I had given him. But just the same, the old coins had shapes and they were fun to have. I kind of miss them."

"And," Ho Lin went on, "since all carriages must have their wheels the same distance apart, they can travel easily in the same ruts in the road all over the kingdom. That makes life much more pleasant.

He has made all merchants use the same weights so that when you buy a *dou* of grain you get the same amount anywhere in the kingdom. It's hard for anyone to be cheated now. And," he continued, waving his chopsticks at Chang Shen and Wan Hai, who complained about having to practice calligraphy, "we now have a simpler form of writing which makes keeping records so much easier."

"True," sighed Bi Ling, "but everyone in the land must do exactly as the First Emperor says, or they may pay with their lives."

After the meal was over, the three children went outside to sit under the big mulberry tree behind the house. Under the

tree were baskets waiting to be filled with the bright green leaves which would be fed to silkworms. These very particular creatures would eat only mulberry leaves before they spun their cocoons of strong, shiny thread which could be made into the lovely shimmering silk cloth that would travel on the backs of patient camels to far off lands to the west, where it was worth its weight in gold. Only in China was the secret of making this wonderful cloth known.

父亲 (father)

"I'm afraid for Father," said Chang Shen. "If something is not right with the soldiers in the tomb and the First Emperor finds out, Father could be punished."

"Punished!" muttered Wan Hai. "Worse than that. He could be beheaded!"

Mei Ling gasped. "We've got to do something," she declared. "Right now we have to do something."

"But what can we do?" chorused her brothers. "We're just kids. We can't even get into the tomb where the clay army is."

"Kids or no kids, who else is there?" Mei Ling demanded. She never admitted that

anything was impossible. Sometimes her brothers, who were, after all, only a year younger, wondered why they so often let her take charge, but they had to admit that she got things done. "Father can't let anyone know that he suspects a problem. He'd be blamed right away. We can't ask any grown-ups to help us. That might get Father into trouble too. We're the only ones who know about this who won't make it worse for Father, and so we're the only ones who can do something."

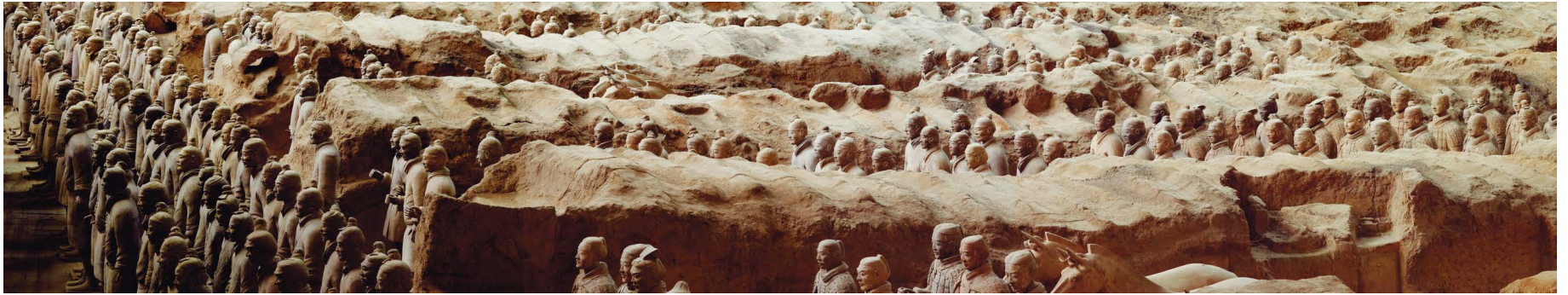
With her hands on her hips, she glared at her brothers. "Can you think of a better way?" They shook their heads. "How do we begin?" wondered Wan Hai.

"We need to find out exactly what goes on in there," said Chang Shen. "When we know just what all the workmen do and how they do it, we can begin to figure out how someone might be able to do something he wasn't supposed to do."

"Right," smiled Mei Ling. "Confucius said that knowledge is the key to life, so we must educate ourselves about what goes on in the tomb."

Three heads bent over the ground as Chang Shen found a small stick and began to write in the dust a list of things they needed to do. First, they agreed, they had to find a way

MODULE FOUR: STORY | THE WARRIOR WITH THE SMILING MOUSTACHE



Panorama, Plt 1
Photograph by Wang Da Gang

to get into the tomb during the working day to see what really went on and who worked on what. They needed to know the entire work routine. Then they had to pay special attention to paint—who paints, where the paint and brushes are kept, who supervises the painters, and what a person needs to know to be a good painter.

“Whew!” breathed Wan Hai, “That’s a tall order. We’re going to have to work fast to find out all that.”

“Exactly,” said Mei Ling. “That’s why we can’t waste a minute.”

The next morning their first problem was solved in the most unbelievable way. As Bi Ling handed everyone a dish of noodles and vegetables, Ho Lin looked at Chang Shen and Wan Hai and said, “A messenger from the supervisor of the tomb workers came

by earlier. He needs boys to run errands for him this morning because he will be busy overseeing a new shipment of clay from Mount Li which will arrive soon. He thought you could do a good job.”

The boys carefully kept themselves from smiling or looking at each other lest they give anything away, and said, “Yes, Father, we’d be happy to do that.”

“Well, work carefully and follow all the instructions you’re given,” said Ho Lin. “It’s an honor to help on this great work.”

As soon as they could, the three children met again under the mulberry tree. “You’ve got to notice everything, absolutely everything and remember it all,” said Mei Ling.

“We will,” they promised. “Mei Ling, why don’t you go over to the shop of Zhu the painter and see if you can find out anything

interesting. Maybe someone has been asking questions about paint.”

She nodded. “In fact, I’m going to look and listen all over the village. No one will suspect that a girl would have anything important to do with the emperor’s tomb. I bet I’ll be able to find some clues to what’s happening.”

When the boys walked into the first pit that morning, their jaws dropped in astonishment. They had heard, of course, of the great clay army that the First Emperor was making to guard him in the afterlife, but seeing it took their breath away. Row after row of clay figures, more than life-size, all standing as if ready for battle. They looked alive, with their hair arranged in braids and buns and every strand carefully carved. Their uniforms were gleaming in blue and red, purple and green, yellow and orange.



Bronze Chariot
Qin dynasty (221-206 BCE)
Unearthed from a place 20 meters to the western side of the Qin Shi Huang's Mausoleum, Lintong, Xi'an, Shaanxi province
In the collection of The Museum of Terra-Cotta Warriors and Horses of Qin Shi Huang
Photograph by Wang Da Gang

MODULE FOUR: STORY | THE WARRIOR WITH THE SMILING MOUSTACHE

Rows of kneeling archers with crossbows alternated with standing archers, so that while one row fired, the other had time to reload, just as they would in a real battle. Others had spears, halberds and battle axes. No soldier wore a helmet or carried a shield. They wanted to show they were too brave to need to wear armor.

The supervisor walked over to them. "You boys should walk around the workshop and let the foremen know that you can do any errands they need," he told them. "Just keep your eyes and ears open and make yourselves useful."

帮助 (help)

Barely able to keep from letting their excitement show, Chang Shen and Wan Hai began to walk around the workshops. "Look at the horses," Wan Hai pointed.

"They're wonderful," agreed Chang Shen. And indeed they were. Clay Mongolian ponies, small but powerful, looking as if they were just straining to gallop across a battlefield. Their fur was being painted a deep brown, and their ears and nostrils were pink. "Look how their tails are braided," he added.



Weapons held by Terra Cotta Warriors
Left: Halberd replica. Courtesy of Dr. Peter Keller
Right: Bronze sword unearthed from Pit 1.
Photograph by Wang Da Gang

"Yes," said his brother. "Father told me that's done so the tails won't get caught in the harness of the chariot they're pulling."

They passed several rows of legs. All the legs were made of solid clay so the statues would stand firmly on the ground. Some of

the legs wore loose pants and boots with upturned toes. Others, meant for the archers who had to be able to move swiftly, wore low flat shoes tied securely on their feet.

Further along they found rows of hollow torsos standing side by side, waiting to be attached to their legs.

"Look how each one is different," said Chang Shen. "You can see every detail on their uniforms. Look at the fish scale design on that man's armor. And this one has bigger plates of armor fastened together."

"Yes," added Wan Hai, "The more important officers have the smallest pieces in their armor,

粘土 (clay)

and the lower ranks have bigger pieces.

Look, this man has no armor at all. I guess he isn't supposed to be fighting in the front lines. Maybe he's the chief commander."

"And this one has his arms set ready to draw his bow. How real he looks!" marveled Chang Shen.

They were interrupted by a workman with a wheelbarrow. "Here, you fellows. Make yourselves useful. We need a new supply of clay. Run to the clay shed and ask them to put

MODULE FOUR: STORY | THE WARRIOR WITH THE SMILING MOUSTACHE

two *dou* into the wheelbarrow and get it back here. Think you two can handle that?"

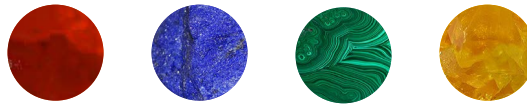
"Oh, yes," chorused Chang Shen and Wan Hai, and off they went. As they trundled the wheelbarrow back, one to each handle, they passed the workshop of the sculptors who were carefully creating the heads. The already completed heads, which would be added to the torsos later, were sitting in the shade to dry, and sculptors were working on others—shaping noses, fashioning eyebrows above the eyes, and molding ears.

"That one must be going to be a general," laughed Wan Hai, pointing to one of the heads. "Look how serious and worried he looks, with those lines in his forehead. Maybe he's afraid his battle plan will fail."

While Chang Shen and Wan Hai were busy in the workshop, Mei Ling was equally busy exploring the town for clues and ideas. As she headed toward Zhu's shop, she walked across an arching bridge over the canal. Beneath her a merchant poled his small boat, with its curved roof of reeds, along the water. The boat was piled with peaches and melons which he would sell at the market in the center of town.

Two important looking government officials rode by in a two-wheeled carriage

pulled by a proud horse with a flowing mane and braided tail. The trim looking carriage was topped by a blue umbrella, its color signifying they were only commoners, not royalty. The oiled mulberry bark paper canopy stretched over the delicate bamboo frame and shaded them comfortably as they made their way toward the palace. Even this early in the morning, there were customers crowding around the street stalls, enjoying steaming bowls of millet porridge or perhaps honey rolls before they continued the day's work.



CINNABAR • LAPIS LAZULI • MALACHITE • SULFUR

As she neared the painter's shop, Mei Ling could see the shelves of paint pots, each one holding a different color—blue, red, green, yellow, orange, white, black, and the brilliant purple which had been invented by **alchemists** who were hoping to make imitation jade.

Besides paint pots, Zhu's shelves had rows of baskets which held brushes of all sizes, dishes of white lead to make creamy white paint, and pans of charcoal for black. Plates held piles of

rusty red cinnabar, sea-blue lapis lazuli from the mountains far to the west, forest green malachite, and poisonous yellow sulfur.

Zhu would pound these stones into a fine powder and mix it with tung seed oil or fish glue to make a smooth, bright paint. It all seemed mysterious and exciting, and Mei Ling thought it would be a wonderful place to work.

As she came to the shop next door to Zhu's, a busy bronze maker's workplace with its red glowing furnace, she saw the young apprentice stirring the molten mix of copper, lead and tin, ready to pour it into a mold to make a bronze vessel, maybe a wine jar or maybe a sword blade.

On the window sill was a cricket cage made of bamboo, where the small brown insect waved its long feelers as if it were greeting her. She smiled at it, because crickets were good luck.

She also admired the cage, which wasn't just the usual plain tan bamboo. This cage had been painted lovingly in brilliant colors. It had a peaked roof of bright red, almost like the tiles on a nobleman's elegant house, and the sides were deep blue. And the door! The door was the gorgeous purple that she heard her father describe when he told about the uniforms of the soldiers in the First Emperor's tomb.

MODULE FOUR: STORY | THE WARRIOR WITH THE SMILING MOUSTACHE

“What a special cricket cage,” thought Mei Ling as she stood admiring it. Inside the shop, the apprentice looked up and noticed her. “Is this your cricket?” she asked him. Smiling, the boy came over to the window, pushing back the unruly shock of black hair that fell over his left eye. In his hand, he was holding a small bronze model of a tiger.

“Yes,” he answered. “My master likes the cricket here. He thinks it brings good luck to his work, and I thought it would be nice to have a very special cage for my cricket.”



蟋蟀 (cricket)

“I had fun painting the cage. I’d really rather be a painter than a bronze maker, but my father apprenticed me to Master Jang, so here I am.” He shrugged his shoulders and smiled at her again. “My name is Yung Fu,” he added.

“I’m Mei Ling,” she told him. “My father is a foreman in the Emperor’s tomb where all the

soldiers are being made.”

“Ah,” said Yung Fu. “We’re just making some *hufu*, or tiger tallies, for the Emperor. Look.” He held it up so she could see it.

Mei Ling took the smooth little model of the tiger in her hand. It was really two identical halves of a tiger, fashioned as if it were lying quietly on the ground with its two front paws neatly in place under his chin. “What does the Emperor do with this?” she asked, looking at both halves curiously.

“It’s when he wants to send orders to one of his generals,” answered Yung Fu. “He has to make sure that his generals know that orders come straight from the emperor, not some enemy or traitor trying to make trouble. So he gives the general one half of the tiger and he keeps the other half. Then when he needs to send a message, he sends his tiger half with the message, and the general knows that if it matches the tiger half he has, the message is truly from the First Emperor.”

As she walked on to Zhu’s shop, she wondered if Yung Fu had heard all the stories about the First Emperor and his harsh laws and was afraid of him. She thought she had seen a worried look in his eyes when she told him about her father’s job.

For the next few hours, she learned more

than she ever thought she could about paint and color from Zhu. “You know,” he told her, “The First Emperor favors the color black. It is like the sky in the morning just before the sun comes up, so it symbolizes heaven.” He pointed to the roof of his workshop, with its black tiles, each with a phoenix molded on the endpiece.

“The First Emperor would like my roof. Not only is it his most auspicious color, but each phoenix on the end pieces means eternal life, and we know that the Emperor wants to live forever. That’s why he’s making this wonderful tomb where your father is working so hard.”

Zhu was a man who loved his job and knew everything there was to know about paints and colors. Unfortunately for Mei Ling, what he didn’t know was who could have painted the soldier’s moustache. Not that she told him about that, of course, since it was strictly a secret, but she asked him enough questions to know that he knew nothing about what went on inside the tomb. He only delivered paint.

Chang Shen and Wan Hai strolled slowly home after their first day working in the First Emperor’s tomb. It had been an exciting day. They had been able to watch everything that went on and as they ran errands for anyone

MODULE FOUR: STORY | THE WARRIOR WITH THE SMILING MOUSTACHE

who needed them, they had kept their eyes very wide open for any clues to the painted moustache problem.

“All kinds of workers come and go all day long,” said Chang Shen. “No one bothers to notice who they are or where they go.”

“Yes,” agreed Wan Hai, “it” wouldn’t be hard for someone to hide in the tomb after all the workers leave for the day.”

“And paint at night?” questioned Chang Shen. “How would he be able to see? Where would he get the paint? Everything the workers use is put away in its proper place at the end of the day. The supervisors are very particular about that.”

“I know,” Wan Hai answered him. “I can’t figure out how it could be done. Tomorrow let’s find a way to check out the paint room.”

“But light,” argued Chang Shen. “He’d need light to do a good job. How would he get that? And wouldn’t someone notice if there was light in the tomb at night?”

“I don’t know,” admitted Wan Hai. “But listen, let’s go over to the tomb after evening noodles tonight and see what it looks like after dark. We may get some ideas.”

When the family gathered for noodles that evening, Ho Lin smiled at his sons. “You did very good work today,” he told them.

“Everyone thinks you’re the best assistants we’ve ever had on the job. We’ll be needing you for quite a few more days. We’re extra busy right now trying to get a lot done before the Emperor comes on his next visit of inspection.”

Of course, this was just what the boys wanted to hear, and they grinned at Mei Ling, who grinned back and raised her eyebrows, signaling that she had some interesting news to share.

They had quite an argument later on when it came time to go over to the tomb in the dark. Mei Ling insisted that she was coming too, while her brothers were sure it would be too dangerous and scary for a girl. They should have known better than to try to stop her.

黑暗 (dark)

“No way,” she said, “Don’t you think for one minute that I’m scared to go over there in the dark. First of all, I’m the oldest, and second, I don’t get scared. Period.” And she planted her feet firmly on the ground and glared at her brothers.

They knew when they were beaten, so all three set out quietly through the town toward



Armored General
Qin dynasty (221-206 BCE)
Unearthed from Pit 1
Collection of Terra Cotta Warriors and Horses
Photograph by Wang Da Gang

MODULE FOUR: STORY | THE WARRIOR WITH THE SMILING MOUSTACHE

the dark tomb site. They walked softly, only whispering a word or two from time to time. The night was silent and only the pale light of the sliver of moon shone down on them. The only sound they could hear was crickets chirping in the grass.

“Look,” Mei Ling suddenly whispered, and just as they turned their heads in the direction she was pointing, a tiny, faintly pale glimmer of light was extinguished, and the blackness of the night surrounded them again.

“It was someone,” breathed Wan Hai. “Do you think it was the moustache painter?”

“Who knows?” said Chang Shen. “But for sure he’s disappeared for good now. We could never find him in this dark.”

Later that night they made more plans for the next day. Wan Hai and Chang Shen would try to find how someone could get in and out of the tomb at night and look for any signs of the moustache painter. Mei Ling would offer to take their father his noon noodles and use the chance to look around the workplace for any other clues. They felt like they had made a lot of progress, even if they hadn’t come near to solving the mystery yet.

The next day as Mei Ling walked into the workplace with her father’s noon meal of noodles and persimmon-duck stew, she



Closeup of Armored General
Qin dynasty (221-206 BCE)
Excavated from Pit 1
Photograph by Wang Da Gang

looked around in amazement. She stopped in front of a handsome general standing in front of his troops.

His elegant shoes curled up at the toes, his cap sported a pheasant feather, painted lovingly in its brilliant colors, and his armor, made of small metal fish scales, had bright tassels hanging from it. As she looked at him, she could understand why someone would love to paint the statues. When they were painted, they seemed to spring to life, so different from the plain gray clay ones

awaiting their turn.

She was strolling around, unnoticed by the busy workers, when suddenly she noticed a familiar face. Where had she seen that face before, she wondered. It was a young boy, a few years older than she was, and he was carrying an armful of sword blades back to one of the storage areas. She cudged her brain into thought, and ... yes, that was it! It was Yung Fu, the bronze maker’s apprentice with the cricket cage in the window sill. He was delivering swords for the “army” from his master’s shop. She waved, but he was concentrating too hard on his awkward load of sharp, pointed sword blades to notice her as he hurried into the next room.

That night, the three detectives gathered once again under the mulberry tree. “Everyone is so busy working over there that it wouldn’t be hard for someone to sneak in,” said Chang Shen.

“Yes,” agreed Mei Ling, “No one paid any attention to me at all, and I wandered all over. I even saw the bronze maker’s apprentice delivering a load of swords.”

“All true,” added Wan Hai, “But what we have to do is figure out how to get in after the workers go home. I think we all suppose that the moustache painter goes in while

MODULE FOUR: STORY | THE WARRIOR WITH THE SMILING MOUSTACHE

everyone's still working and just stays there until everyone is gone. Then he paints. It is easy for him to get out after all. Not so easy for us to get in."

"The first thing is to find out where he comes out. That'll show us where we can get in."

"No," Chang Shen disagreed. "That's doing it the hard way. What we need to do is to do what he does. Just stay in the tomb and hide until he starts painting. Then we'll find out who it is."

"Well," objected Wan Hai, "that's all very well, but what are Father and Mother going to say if we don't come home for evening noodles? They'll be worried, and it will spoil our whole plan besides."

"Hmmm," murmured Mei Ling. "You're right. We have to have a better idea than that." She closed her eyes and put her hands over her ears. After a second or two, her eyes flew open, and she said, "Yes!"

"What is it?" asked Chang Shen.

"Have you got an idea?" asked Wan Hai.

"Absolutely," smiled Mei Ling. "All of us are right about this. We have to find out how the moustache painter leaves."

"But I thought..." muttered Chang Shen.

"No, wait and let me finish," commanded Mei Ling. "Tomorrow we find out where



Kneeling Archer
Qin dynasty (221-206 BCE)
Unearthed from Pit 2
Terra Cotta Warriors and Horses
Photograph by Wang Da Gang

he leaves. Then one of you (nodding at her brothers) manages to get over to that entrance and fix it so that the door doesn't close completely. You'll have to be careful so that no one will notice. Closed just enough so that it looks closed, but open just enough so that we can get it open and get in. Got that?"

"Yeah," grinned Chang Shen. "You know, I think that will really work." Satisfied, they went back in and didn't even complain when their mother told them it was time for bed.

The next day seemed to last forever, even though of course it really didn't. Chang Shen and Wan Hai hurried here and there, taking messages to workmen at the tomb and carrying supplies to groups of workmen. Chang Shen got to see inside one of the hollow horse torsos and the worker even let him scratch his name on it. (The inside, that is, where it would never be seen by anyone.)

Wan Hai helped an archery specialist set up the place for one of the mechanical crossbows that would be placed at the entrance to the tomb, where it would fire arrows automatically if anyone dared to try to enter the tomb. That was fun because the archer showed him just how the crossbow worked and how powerful a weapon it was.

Mei Ling went back to Zhu's paint shop

MODULE FOUR: STORY | THE WARRIOR WITH THE SMILING MOUSTACHE

and learned more about how the paint and brushes were made. She loved the soft furry feel of the fine brushes, and Zhu let her paint on some scraps of clay he had lying around. While she was there, Yung Fu, the bronze maker's apprentice, came into the shop and was greeted happily by Zhu.

"See, Mei Ling," he said, looking at the boy. "Here is a real painter. He works in bronze right now, but his heart is in paint. Some day he'll realize this and become one of our kingdom's finest workers with the brushes and colors."

Yung Fu turned red with embarrassment and smiled shyly at Mei Ling. Silently he took her brush and the piece of clay she was painting on and with a few quick strokes made the plum blossom she had started to paint come alive and seem to jump right off the clay.

"I can almost smell its perfume. It looks so real!" she exclaimed in wonder. "Yung Fu, you are an artist, a real artist."

Redder than ever, Yung Fu hastily slipped out the door and back to his work at the bronze maker's. Mei Ling watched him with a thoughtful expression on her face. She was remembering that she had seen him in the tomb, delivering sword blades, and he loved to paint, and . . .

Finally the day ended, and it was again time for evening noodles for Chang Shen, Wan Hai, Mei Ling and their parents. Ho Lin ate abstractedly, his mind a million miles away. He had already told them that the moustache painter had been at work again. This time he had completed the rest of the warrior's face and the rich purple cuffs on the sleeves of his uniform. Once again the work was beautifully done, as fine as the most experienced painter could do. But that didn't really help. It still meant that someone was alone with the warriors at night, and if that could happen, who knew what else might happen. Ho Lin was a deeply worried man.

Later that night, the three detectives quietly left the house and approached the tomb area. Before they set out, they had discussed what they were going to do.

"We can't just yell at him," said Mei Ling. "It would scare him and if he had the brush in his hand he might make a terrible mess on the warrior that couldn't be repaired. Wouldn't that be awful!"

"Or he might jump and accidentally knock the warrior over and break it," suggested Chang Shen. "That would be even worse."

They thought about it and decided that they would make some small noises as they

got closer to the painter, to sort of warn him a little bit, and then they would tell him right away that they didn't mean him any harm. It wasn't a perfect plan, but it was the best they could think of. They just hoped it would work.

Wan Hai led his brother and sister to the spot where there was a small side door for delivery men to get into the work area, out of the way of the busy workers. Just as he had left it, the door was open a tiny crack, and as silently as three mice they crept inside. At first



Closeup, Armored Charioteer
Qin dynasty (221-206 BCE)
Terra Cotta Warriors and Horses Pit 1
Photograph by Wang Da Gang

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the work area seemed as dark as a starless night, but as their eyes got used to it, they could see a faint glow far on the other side. Mouse-like, they tip-toed toward the glow. As they got nearer, the glow brightened, and in



Production model of bronze carriage horse
Museum of the Terra Cotta Warriors and Horses
Photograph by Wang Da Gang

the distance, past a few more rows of warriors, they could see a shadowy figure, the light from the small lamp on the floor casting an eerie light upwards onto his face. With brush in hand, he was meticulously applying paint to the armor of the warrior, emerald green and scarlet fish scales, each one looking

as if it were part of the general's real armor.

Fascinated at what they were seeing, they forgot to be as mouse-like as they planned, but the moustache painter was so absorbed in his work that he wouldn't have noticed them if they had brought the real army and all of its horses with them.

"Uh...," began Mei Ling, not knowing how to begin now that they were really there seeing it all happening.

The moustache painter turned around, a dreamy look in his eyes. He blinked a couple of times, brushed back the hair off his forehead with an absent gesture, and then opened his eyes wide. "Oh," he blurted out. "How did you get in here? Who are you? What are you doing here?"

Suddenly he seemed to realize the position he was in, and he looked around, apprehensively, as if he were expecting to see the First Emperor's guards suddenly appear with swords drawn.

"It is you, Yung Fu," exclaimed Mei Ling. "I should have known. In fact, I did sort of guess."

"Don't worry," Wan Hai hastily reassured him. "We don't mean any harm to you. We just had to find out who the moustache painter was. It was because of Father, you see."

"Yung Fu looked more confused than ever as he looked from Wan Hai to Mei Ling and then over to Chang Shen. "Moustache painter? Father?" he frowned. "What do you mean?"

"Put your brush down," said Mei Ling, "before you drip paint on the floor. Sit down, and we'll explain."

Still puzzled, Yung Fu carefully placed his brush in its dish, and all four of them sat on the hard earthen floor. The three detectives began to explain, taking turns but interrupting each other all the time, and coming back again and again to the fearsome wrath of the First Emperor if anything went wrong with the building of his tomb.

"You see," began Wan Hai. "Father noticed that the moustache had been painted by

皇帝 (emperor)

someone who shouldn't have been in the tomb, and Father is supposed to keep track of everything that happens. That's his job, and if the Emperor found out that he hadn't done his job correctly, well . . ."

"Yes," Mei Ling rushed on, her words tumbling over one another, "He couldn't go to his chief or tell any of the other workers. That

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would get him in trouble too, because it is his job to see that nothing like this happens. The First Emperor never listens to excuses, you know.”

“So,” said Chang Shen, “It had to be us. We had to solve the mystery and help Father. You understand, don’t you? We had to save Father.”

Slowly Yung Fu nodded. “I didn’t think about that,” he said. “I would never have wanted to cause anyone trouble with the First Emperor. I never thought about what would happen. It’s just that... well I mean... I want... well... I just have to paint.” Blushing furiously, he looked at the three detectives.

“You do paint wonderfully,” said Mei Ling. “Remember that plum blossom you painted for me at Zhu’s shop? And your cricket cage? It looks like a cricket palace, it’s so beautiful. You ought to be one of the First Emperor’s painters. You’d be the best.”

Yung Fu smiled and began to look a little bit happy for the first time. But then he signed, “I don’t know how I could ever be allowed to do that.”

“There’s only one thing to do,” said Chang Shen decidedly. “We’ll tell Father all about it. He’ll know what the best thing to do is.”

Yung Fu looked alarmed. “But I’ve caused your father a lot of worry and trouble,” he stammered, “He’ll be very angry with me.

And if he tells Master Jang I will surely lose my job. I need my job. My family depends on me.”

“Don’t worry,” Wan Hai assured him. “When we explain it all to Father, he’ll understand. After all, no harm has been done, and now that we know everything, no one will get in trouble. You will see.”

There was a great deal of conversation at morning noodles in Ho Lin’s house the next day. The three detectives were up early, very early, unable to wait to tell their father all that had happened the night before.

李子 (plum)

“You mean that this boy, this Yung Fu, hid in the workplace and no one noticed?” Ho Lin asked in astonishment. “What do we have guards for anyway, I wonder.”

“I bet they all went to sleep,” guessed Chang Shen. “After all, you can’t blame them. It’s dark and quiet in there and who could imagine that someone would hide in there just to paint a warrior.

“Well, you’re right,” agreed his father. “I guess I wouldn’t have thought of such a thing myself.”

“It’s a good thing, though,” said Mei Ling.

“Otherwise Yung Fu would never have gotten a chance to paint.”

“Hmmm,” grumbled Ho Lin. “Maybe so, but I wish he had chosen a different way of applying for a job! Why if this sort of thing keeps up, we could have the workplace crawling with people all night every night! Then what am I supposed to do?”

“Well, Father, I guess you’ll just have to get some better light in there and set up a 24 hour a day work schedule,” laughed Wan Hai.

“I need to see this young man,” said Ho Lin, “and have a good talk with him. I have to admit that he did a wonderful job. We could use him on our work crew, but how can I hire someone who disobeyed the rules? You know how important it is to obey the First Emperor’s rules.”

The three detectives nodded, their faces serious as they thought of the First Emperor, whom everyone obeyed without question.

Nevertheless, it was a cheerful procession that wound its way to the shop of the bronze maker. Master Jang, who had no idea what this was all about, stared at his visitors with a puzzled face, bowing in greeting to Ho Lin.

“Master Jang,” began Ho Lin. “I understand you have a young apprentice here who is named Yung Fu.”

“Why, yes,” replied the curious bronze

MODULE FOUR: STORY | THE WARRIOR WITH THE SMILING MOUSTACHE

maker. "Why do you ask? He is an excellent apprentice and always does his work carefully. Sometimes, though, I have thought that his thoughts often fly far away from our fiery furnace and molten metal here."

"Exactly," said Ho Lin, while Chang Shen, Wan Hai, and Mei Ling watched anxiously. "I think you'll find that even while he's filling molds with your red-hot mixture of tin and copper, his mind's eye is seeing a world of wonderful colors. He longs for red, blue, yellow, green, and deep purple. He needs to paint."

As Ho Lin spoke, Yung Fu had slip quietly into the room and was watching and listening, his mouth open and his eyes wide as he saw his three friends from the night before and the serious looking foreman of the tomb workshop.

"Color," mused Master Jang. "You have something there. Yes he does talk about color. He notices the green fields. He says there are a hundred different kinds of green. Imagine that! How can green be anything but green? And I do know that he often spends his free time with Zhu in his paint shop next door. I never stopped to think about what he does there."

At that moment, Zhu himself, attracted by all the unusual visitors to his neighbor's shop,

appeared in the doorway and heard Master Jang's words.

"Oh, I can tell you that," he exclaimed eagerly. "Yung Fu paints! He is drawn to paint like a bee to a flower. I have given him a few lessons and in no time at all, he was painting as if he had been born to do that one thing and only that thing. I tell you this young man should have a different job. You make exquisite bronzes, Jang, but bronze has only one color, and Yung Fu needs a rainbow to make his life complete."

"Well," said Ho Lin, "I think we'll have to see what can be done about this. Come, Yung Fu," and putting his hand on Yung Fu's shoulder, he headed for the workshop of the emperor's tomb.

Wan Hai, Chang Shen, and Mei Ling looked at each other and followed after them. No one had told them they couldn't, had they? And they knew they just had to know what was going to happen.

As they neared the tomb, five workers hurried by, followed by the chief of the sculptors. The chief was carrying a long, brightly colored silk scarf over his arm. Ho Lin hurried his steps, pulling Yung Fu along with him.

"What can be happening?" he muttered, a slightly worried expression on his face.



Closeup of Armored General
Eneared from Qin Shihuangdi's Mausoleum, Pit 1
In the collection of The Museum of Terra-cotta
Warriors and Horses
Photograph by Wang Da Gang

When the group reached the door of the workshop, one of the workers met them.

"It's General Zhong Yi," he told them breathlessly. "He's just arrived for a tour of inspection of the army. He especially wants to see himself."

"Himself?" said Wan Hai, puzzled.

"Yes," explained Ho Lin. "You know that many of the terra cotta warriors are modeled after real people. The general is one of them. And... uh-oh, my goodness, the general! He's the one that Yung Fu painted! Oh, oh," and he sped off into the tomb workshop.

The three detectives and Yung Fu hurried after him. When they reached the row of

MODULE FOUR: STORY | THE WARRIOR WITH THE SMILING MOUSTACHE

warriors where the general stood, they gathered quietly in the shadow of another warrior to see what was happening.

Ho Lin was watching as the chief of the sculptors bowed low before General Zhong and ceremoniously handed him the silk scarf. "Long life and many days may you have, General," he said, bowing again.

The general nodded as one of his aides put the scarf around his shoulders. Then he turned to "himself" and regarded the clay statue with interest. He turned his head to get a better view and then leaned closer to examine the tassels on his clay "armor." Ho Lin and the chief of sculptors weren't the only ones holding their breath. Four silent shadows behind a nearby warrior also held theirs.

"Well," said General Zhong, "Well, well." He leaned back to get a better view.

"I do believe that it is really me," he smiled.

Six breaths were carefully and quietly expelled.

"This is remarkable, truly remarkable," continued the general, touching "his" clay moustache with the tips of his fingers. "These warriors look like they are alive. The First Emperor may well be confident that they will

protect him in the afterlife. I never imagined that anything could look like this. My uniform is perfect. My moustache is more handsome than the real one!" and he smoothed his real moustache with his hand as he smiled contentedly.

幸福 (happiness)

He looked around at the workshop filled with busy workers. "Which of the workers made me?" he inquired smiling. "Who made my moustache so handsome?"

Wan Hai, Chang Shen, and Mei Ling gently pushed Yung Fu out into the aisle near the general's statue. Ho Lin, hearing a small shuffle behind him, turned around.

"Ah, General Zhong," he said, bowing again and taking Yung Fu by the arm at the same time. "Here is one of our youngest workers. He is the one who painted such a fine moustache for you that the Emperor himself would think it was real."

The general turned to Yung Fu, who bowed so low his head nearly touched his knees, and smiled again.

"How fortunate we are that the kingdom of Qin has such talent, such power to create

beauty," he said. "This young painter must be given high honors and he must paint many more soldiers of our Emperor's army." Taking off the bright silk scarf, he placed it around Yung Fu's shoulders and strode away, followed by his aides and the chief of sculptors.

The three detectives grabbed Yung Fu, who was still open mouthed with shock, and began to dance and skip around the warriors.

"Careful, careful," admonished Ho Lin. "Now is no time to knock over a warrior and break a head. Come, we have much to do."

There was indeed much to do. First, Yung Fu must be introduced to the chief of painters. There would be time for the full story to be told later, but for now it was enough that the chief of the painters agreed that Yung Fu had shown himself to be an outstanding painter and deserved the praise of the general.

"You can start tomorrow. We begin work just after sunrise, so be on time," instructed the chief painter. "You are expected to have your hair combed and be neat and clean."

Next was a visit to Master Jang, who heard the astonishing story with amazement.

"I am happy for you," he told Yung Fu. "I'll miss you, though. You have been a good apprentice, and I thought you had the talent

MODULE FOUR: STORY | THE WARRIOR WITH THE SMILING MOUSTACHE

to make beautiful bronze vessels. But I always knew that somehow metal wasn't where your heart was. This is a great day for you."

He turned to his shelves and picked out six small bronze three-legged *dings*, beautifully formed with small *taotie* designs on them. "These are for you to keep your paints in," he told Yung Fu, "and to remember me by too."

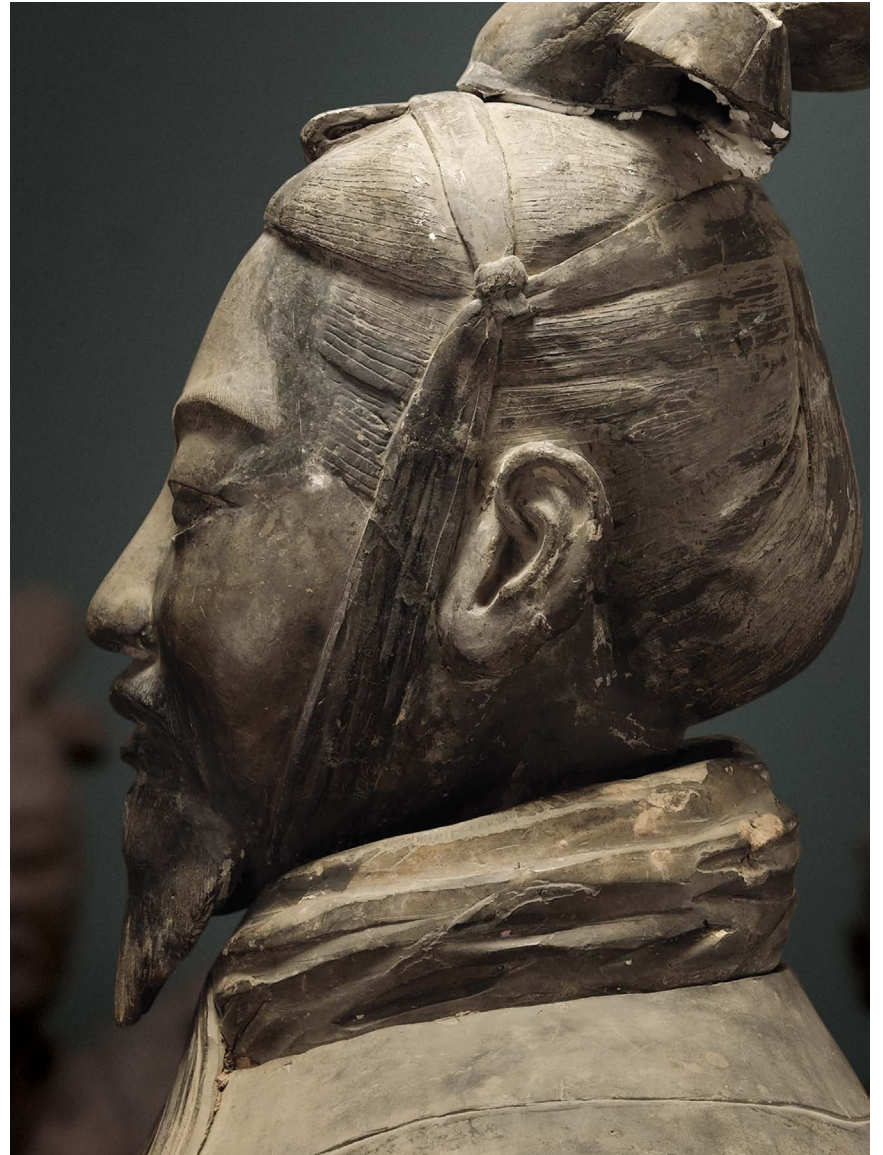
"Master Jang, I could never forget you," Yung Fu assured him. "You have always been so kind and have taught me much."

Next, of course, must be a visit next door to the shop of Zhu the painter. He had already heard the great news from some of the village children, and he too had something for Yung Fu.

"To work on the Emperor's army, you must have the finest brushes. Nothing else is good enough," he said, handing Yung Fu a pot filled with brushes of all sizes. "There! You have brushes for the smallest eyelash and the largest boots and everything in between. You are all ready to work for the Emperor."

There was a great feast at the house of Ho Lin that night. The mystery of the moustache painter had been solved, and Ho Lin no longer worried about his job (or his head). He hugged the three detectives and told them that no father had ever had such good children. Yung Fu just smiled and smiled. His dearest dream had come true, and he could still scarcely believe it. He was a painter now. His life would be filled with color and beauty, and he didn't think there could be a luckier boy in the entire kingdom.

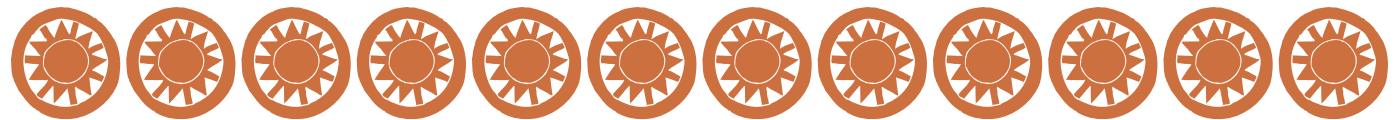
Mei Ling had just one last request. "Yung Fu," she asked, "Will you paint me a cricket cage like yours?"



High-ranking Military Officer
Unearthed from Qin Shihuangdi's Mausoleum, Pit 1
In the collection of The Museum of Terra-cotta Warriors and Horses
Photograph by Wang Da Gang

MODULE FIVE:

THE SCIENCE OF ARCHAEOLOGY





Ongoing excavation of terra cotta warriors. Photograph by Dr. Peter Keller

Excavation

When archaeologists excavate a site, they are interested in learning how people lived in the past and in different cultures. After they identify a site to study, scientists begin to search for artifacts and organic remains, paying close attention to clues that will help them answer questions such as:

What have I discovered?

Where did I find it?

What is it made of?

How old is it?

What was its purpose? How was it used?

Modern archaeology brings together teams of experts. Analysis of a site might involve archaeologists, art historians with knowledge of artifacts from certain cultures, geologists to study earth and rock formations, botanists and zoologists to offer insights regarding plant and animal remains.

Archaeologists use scientific methods to collect and analyze data. They conduct experiments, form hypotheses and draw conclusions. These are updated as new data becomes available and new discoveries are made.

Archaeologists use a number of techniques to study artifacts and organic remains. They use the scientific

MODULE FIVE: THE SCIENCE OF ARCHAEOLOGY

method of dating tree rings—**dendrochronology**—to investigate the history of climate conditions in an area over time. Counting the rings of a tree that lived for hundreds of years tells the story of its life—wide, light-colored rings show early spring growth, and thin darker rings show fall growth. Rings reveal when rainy or dry seasons occurred and even show scars if the tree experienced a fire. Scientists do not need to cut down or find a fallen tree to gather data. With a simple tool, it is possible to obtain a pencil-sized core sample from the tree. Core sampling can also be used in underground or undersea exploration.

A second method of dating artifacts and organic remains is based on the idea that layers of soil reveal layers of time. Because the history of China extends back thousands of years, layers or ‘strata’ of history have built on top of each other in the ground. Objects found at a higher level, for example, would typically be newer than objects found below that level. The study of rock layers is called **stratigraphy**.

A third method is **radiometric** or carbon-14 dating. Carbon is a chemical element found in all living things. After an organism dies, the amount of carbon-14 decreases at a steady rate. Archaeologists measure this decrease to find out how long ago the organism died.

Thermoluminescence dating measures the amount of accumulated radiation, or the time elapsed since material containing crystalline minerals was either heated (lava, ceramics) or exposed to sunlight. In the case of the Terra Cotta Warriors, using this method allows scientists to measure the number of years since the clay was

fired in a kiln during the process of making the terra cotta warrior, separate from determining the age of the clay material itself which may have existed years before it was used to make the artifact

Preservation

Since the terra cotta warriors were created 2200 years ago, most of the materials used at that time have disintegrated. Only very strong artifacts made of such materials as stone, clay and metal have survived. We do not have clothing or items made of wood or plants, because they break down chemically and disappear.

Strong artifacts would include the hundreds of bronze swords, halberds, daggers, battle axes and thousands of arrowheads that have been found mixed with the scattered pieces of the clay warriors. The swords and the tips of the arrowheads are still razor sharp.

Many natural resources do still remain. From those we can infer what other materials were used at that time that may no longer be intact. For example, in the terra cotta warrior pits, we think that wood beams were placed above the rows of warriors because of the indentations in the clay walls left by the wood.

Human families want to preserve their heritage. Museums want to preserve artifacts for the “world family.” These artifacts can tell give us clues about our collective past.

MODULE FIVE SCIENCE ACTIVITY: HOW DO SCIENTISTS DATE ARTIFACTS?

Techniques museums use to preserve their artifacts include:

- Handle objects very carefully.
- Keep artifacts clean by removing dust, dirt or mold.
- Do not use harmful chemicals on or near the artifacts.
- Keep the temperature cool.
- Keep the light low since some forms of light cause damage.
- Do not allow pictures to be taken with flash cameras.
- Check the artifact regularly for signs of deterioration such as fading colors, missing or loose parts or insect infestation.

The field of archaeology is dedicated to preserving not just artifacts, but also sites, structures and landscapes that have historic value. Archaeologists' work is guided by ethics. They understand that these materials are primary resources for understanding and interpreting the past. While excavation allows us to learn a lot about the past by studying archaeological remains and their context, exposing artifacts that have been buried can cause rapid and irreversible deterioration.

We can help in the effort to preserve archaeological sites and artifacts by following these practices:

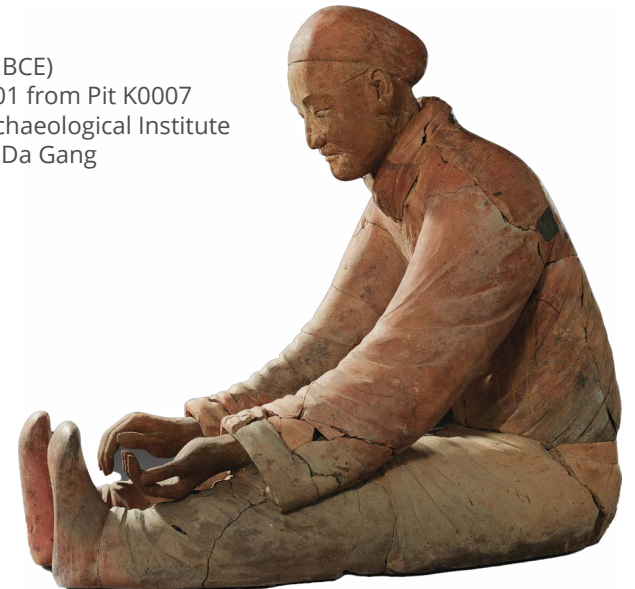
- Leave any artifacts you find at the site. They are not souvenirs! Scientists can learn a lot about the past when artifacts remain where they are.
- Do not touch rock imagery and or add your own. This could destroy the stories of ancient people.
- Do not disturb archeological fossils, bones or tracks.
- Do not camp near archaeological sites. Camping fires and food can damage archaeological remains.

Treating artifacts and archaeological remains like scientists do is being a good steward of the things that people have left behind that teach us about their culture and ways of life. It ensures that this knowledge will be there for us to learn from and for the next generation to see.

Activity: Choose an item in your home or neighborhood and investigate how you might determine its age. It could be a public building, a tree stump, an old shoe or something that's been in your refrigerator for a very long time!

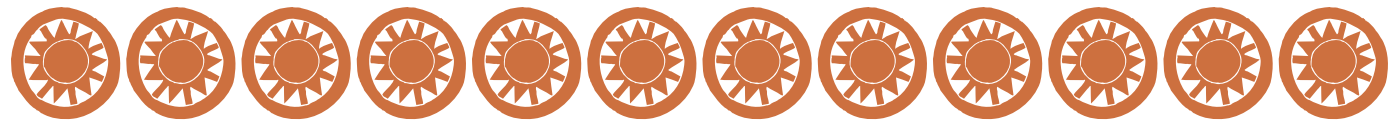
Ask people what they know about its history and how long it has been around. Research on the internet to see if you can find clues. Map its location and photograph it from various angles. And, most importantly, use your observation skills and document what you find.

Boatman
Qin dynasty (221-206 BCE)
Clay; Excavated in 2001 from Pit K0007
Shaanxi Provincial Archaeological Institute
Photograph by Wang Da Gang



MODULE SIX:

REFLECTION





Kneeling Archer
Qin dynasty (221-206 BCE)
Clay with pigment; Height 47.25 in.
Excavated in 1999 from Pit 2
Museum of the Terra Cotta Warriors and Horses of Qin Shi Huang
Photograph by Wang Da Gang

MODULE SIX: REFLECTION

Bronze Crane
Qin dynasty (221-206 BCE)
Photograph by
Wang Da Gang



The First Emperor was obsessed with **immortality**. He wanted to be sure he was protected in the afterlife which is why he created the terra cotta warriors. He also wanted to be entertained.

Based on archaeological discoveries of acrobats and strongmen in the pits, scholars believe that the emperor was entertained by a circus, by musicians and by dancing water birds. Archaeologists who discovered the 11 acrobats and strongmen claimed that these performers appear to look like those in the modern Shanghai Circus.

When the First Emperor was not being entertained by his circus performers, he enjoyed the music of a string orchestra. When these musicians played, water birds would dance. The emperor had 15 terra cotta musicians and 46 bronze water birds placed in his tomb, including geese, ducks, pelicans, swans and cranes that symbolized long life.

What types of entertainment do you enjoy?

Detail, Illustration of
Emperor Qin Shihuangdi
Qin dynasty (221-206 BCE)



If you could time travel back to ancient China during the Qin dynasty, what one question would you want to ask the First Emperor?

Knowing what you know now about the modern world, what piece of advice would you give him?

What does it mean to be a World Heritage Site?

Qin Shihuangdi's tomb was named a World Heritage Site by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1987. World Heritage Sites are designated as protected zones because of their historical, scientific or cultural value to humanity. They include ancient ruins, buildings, cities, forests, islands, lakes, monuments, mountains, and wilderness areas. Sites may have outstanding natural beauty or they may provide evidence of humans' intellectual or artistic history on the planet.

To be selected, a site must meet one or more criteria, such as:

- representing a masterpiece of human creative genius (such as in architecture, arts, technology, or landscape design)
- being directly associated with events, traditions or human values of universal significance
- bearing testimony to a cultural tradition or civilization that may either be living or no longer in existence
- containing areas of exceptional natural beauty or serving as a habitat that is essential to biological diversity

Besides the Terra Cotta Warriors of Xi'an China, other historic sites include: Machu Picchu, the Taj Mahal, the Great Barrier Reef and Yellowstone National Park as well as ancient ruins, historical structures, and naturally-occurring wilderness areas deemed important to conserve for future generations. More than 1,000 sites across more than 160 countries are part of this program.

WORLD HERITAGE SITES

Africa: Democratic Republic of Congo
Okapi Wildlife Preserve for endangered giraffe species

Africa: Giza, Egypt
Pyramids and the Sphinx

Asia: First Emperor's Tomb Complex
Terra Cotta Warriors

Asia: Great Wall of China
6,000 mile fortress against foreign invasion

Australia: Great Barrier Reef
World's most extensive coral reef ecosystem

Europe: Lascaux, France
Early cave paintings

Europe: Athens, Greece
Acropolis architecture

North America: Yellowstone National Park
Home to 300 of the 450 geysers on the planet

North America: Mesa Verde, Colorado
Indigenous Pueblo Cliff Dwellings

South America: Machu Picchu
Ancient city of Inca civilization

South Pacific: Easter Island
Giant statues of Rapa Nui people



MODULE SIX CAPSTONE PROJECT: I KNOW, I WANT TO KNOW, I LEARNED

At the beginning of this guide, a Stanford professor expressed his ideas on the importance of learning about Chinese culture. As you begin this journey of learning, create a **KWL Chart** listing what you already know about ancient China in **Column 1**, and what you are curious about in **Column 2**. Later, come back to reflect on what you have learned by entering that in **Column 3**.

Topics you might consider exploring include archaeology, arts, cultural differences, language, forms of leadership, technology, weapons, or world heritage sites.

I KNOW	I WANT TO KNOW	I LEARNED

GLOSSARY

Afterlife: An existence after death.

Alchemist: A person who practiced elements of astrology, mysticism, and experimentation with metals and chemicals with the goal of developing magical solutions to cure disease and prolong life.

Assassination: An attempt to murder a public figure.

Calligraphy: From the Greek words *kallos* and *graphos*, meaning “beautiful writing.” Calligraphy used special pens and brushes to create to letter shapes. It also refers to the way they are arranged.

Carbon dating: A method scientists use to determine the age of an artifact or organic remains by the amount of carbon still present.

Cavalry: Soldiers who fought on horseback.

Chariots: Two-wheeled, horse-drawn vehicles used in ancient warfare.

Codify: To document laws or rules into a systematic code.

Colonial: Relating to the practice of extending control over weaker peoples or territories.

Conscripted: The process of drafting people for required military service, as contrasted with a service composed of volunteers.

Contiguous: Sharing a common border.

Corruption: Dishonest or unlawful behavior.

Creative problem-solving: Defining and searching for an original solution to an open-ended problem using inventive means such as imagination thinking and prototyping.

Crossbow: A weapon consisting of a mechanism capable of triggering the release an arrow.

Currency: A system of money in general use in a particular country's economy.

Dating: The process of determining the age of an artifact or organic substance.

Dendrochronology: A scientific method involving the study of tree rings to determine age and climate conditions in a specific area over time.

Dynasty: A series of rulers from the same family.

Economic: The system of how money is made and used within a particular country or region.

Emperor / Empress: The ruler of an empire.

Empire: A group of territories whose people are subject to a single ruler.

Excavate: To expose by digging.

Fragmented: Broken apart.

Gentry: The “upper” or ruling class.

Great Wall: A series of fortified barriers built to discourage foreign invasion along the northern border of China.

Halberd: A two-handed weapon that has an axe blade on one side and a spear on the other side.

Hierarchy: A way of ranking and organizing things or people.

Immortality: The ability to live forever.

Imperial / Imperialism: The practice of a country extending its borders and political power through the conquest of other lands. Such a country and the lands it controls are called an empire.

GLOSSARY

Infantry: Soldiers who fought on foot.

Inheritance: Property or characteristics passed on to you from your parents.

Innovation: A new idea, method, or device.

Invasion: The intrusion of an enemy into a territory that is occupied by other people.

Invention: New things that are made or created.

Kingdom: A geographically centralized state ruled by a king or queen.

Mandate of Heaven: Chinese people believed the gods gave rulers the right to be king or emperor. When a ruler or dynasty lost power it meant they had lost the Mandate of Heaven.

Mass production: Making large quantities of something using an automated or mechanical assembly-line process.

Military: Related to an army of warriors or soldiers.

Political: The activities, actions, and policies used to gain and hold power in a government.

Progressive: Advocating for change or reform rather than maintaining things the way they are.

Radiometric: Relating to the measurement of radioactivity.

Rebellion: Organized opposition to authority.

Ruthless: Cruel; having no empathy for other people.

Social: Interacting with other people.

Standardized: Conforming to a consistent model.

Strategy: A plan of action or policy designed to achieve a goal.

Stratigraphy: A branch of geology concerned dating artifacts or organic remains by studying the relative position of layers of earth or "strata" and their relationship to the passage of time.

Symbol: A visible sign that stands for the meaning of an idea.

Systems Thinking: The study of interdependent systems that enable one to see relationships between ideas.

Tarpan: An extinct species of wild horse.

Terra Cotta: A reddish-brown clay that is fired but not glazed.

Thermoluminescence: A method of determining the age of ancient ceramics and other artifacts that measures the release of light energy when the object is heated.

Unification: The process of being united; combining several parts into an integrated whole.

Warriors: People engaged in warfare; fighters.

REFERENCES AND RESOURCES

LINK TO CONTENT STANDARDS ON BOWERS MUSEUM WEBSITE

CONTENT STANDARDS

The projects and activities in this teacher and student resource guide address California Content Standards for the Arts, English Language Arts, History/Social Studies, Science and Technology.

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5TW_Charioteer_Photo-graph by Wang Da Gang_Photo-graph by Wang Da Gang_s25-04

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5TW_Calligraphy_Clay_Bowers Museum
5TW_Weapons held by terra cotta warriors.
Left: Halberd replica, Courtesy of Dr. Peter Keller, Bowers Museum
Right: Bronze sword unearthed from Pit 1. Photograph by Wang da Gang_s16-03

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RESOURCES

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