

TERRACOTTA ARMY

STATION ROTATION
ART, MATHEMATICS, AND LITERACY

GRADES: K-3

BASED ON



Middle-Ranking Officer (detail)

Qin Dynasty (221-206 BC)

Earthenware

Evacuated from Pit 1, Qin Shihuang's Mausoleum, 1976, Emperor Qin Shihuang's Mausoleum Site Museum

OBJECTIVES

- Students will demonstrate an understanding of the discovery and significance of the Terracotta Army.
- Students will create clay warriors to protect their teacher, The Empress.
- Students will estimate how many small warrior figures (8" in height) it takes to create an average size actual warrior (5'8" in height).
- Students will play the Chinese game, Pong Hau K'i, and understand the strategy for winning moves.

CONCEPT

This lesson focuses on cultural aspects of ancient China and the Terracotta Army in Xian. It integrates mathematics, art, and literacy/history. The teacher in the second grade classroom where this lesson was implemented used a Station Rotation model. Students were assigned to one of three groups and they spent approximately 20 minutes at each station before rotating to

the next station. The teacher and two helpers each took charge of one station. For this lesson, one of the helpers “Launched” it with an introduction to the Cincinnati Art Museum exhibition, *Terracotta Army: Legacy of the First Emperor of China*. She read part of the book, *The Emperor’s Silent Army* (O’Connor, 2002), and posed questions about the meaning of words such as emperor, terracotta, and warrior, to name a few. She also showed a short video of the Terracotta Army. After that, students moved to their assigned stations (6 students per group at each station). At one station they made clay warriors to protect their teacher, The Empress. At another station they played the Chinese board game, Pong Hau K’i and discussed strategies for winning moves. At another station they participated in a measurement activity where they were asked to estimate how many 8” small figurine warriors it would take to create an actual-sized warrior about 5’8” in height. At the end of the lesson students were asked their thoughts about the different stations, what they liked and did not like. They also completed Exit Tickets that asked them to describe what they learned and how they created their clay warriors so that they would protect their teacher, The Empress.

MATERIALS

Clay

2 small warrior figures purchased in the CAM store

Rulers

Pong Hau K’i game boards (one per pair of students) and color chips (two colors per pair of students)

The Emperor’s Silent Army (O’Connor, 2002) purchased in the CAM store

VOCABULARY

Emperor/Empress – one ruling an empire

Terracotta – unglazed, typically brownish-red or ochre-colored earthenware

Warrior – soldier or fighter

Archaeology/archaeologist – the study of human history through excavation and analysis of artifacts found through excavation/one who studies archaeology

Pong Hau K’I – a traditional Chinese board game similar to Tic-Tac-Toe

PROCEDURE

Launch

- Read all or part of the book, *The Emperor’s Silent Army* (O’Connor, 2002) and pose questions which might include: What do you think the farmers unearthed? What is an emperor/empress? Why would the emperor want a silent army? What is terracotta? What does an archaeologist do?
- Show a video. Here are two good options: “The Story of the Terra Cotta Warriors” [Indianapolis Children’s Museum] 2:11 <https://www.youtube.com/watch?v=8HK-mhT4jsA>; “China’s Terra Cotta Warriors” [Nat Geo Kids] 1:23 <https://www.youtube.com/watch?v=YG9V7fN5VtQ>
- Put students in three groups for the Station Rotation Explore.

Explore

- Students rotate to stations every 20 minutes: Terracotta Clay Warriors (see Appendix A for directions); Terracotta Army Measurement Activity (see Appendix B for directions); and Pon Hau K’I (see Appendix C).

Summarize

- Gather the entire class together.
- Pose the following questions: What station did you like the most? What station would you change and how would you change it? What did you learn about the discovery of the Terracotta Army in China?
- Distribute the Exit Ticket (see Assessment below) and allow time for students to complete it before the end of the period.

ASSESSMENT**EXIT TICKET:**

1. What did you learn about the discovery of the Terracotta Army in China?
2. Describe the clay warrior you made. How did you make it so that it will protect your teacher, The Empress?

NATIONAL ART STANDARDS

VA:Cr3.1.2a Discuss and reflect with peers about choices made in creating artwork.

VA:Cr2.1.2a Experiment with various materials and tools to explore personal interests in a work of art or design.

COMMON CORE STATE STANDARDS - MATHEMATICS

Grade 2: Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measurements involves an iteration of units. They recognize that the smaller the unit, the more iterations they need to cover a given length.

CURRICULUM CONNECTIONS

Literacy/History – Teacher will read part of the book, *The Emperor's Silent Army* (O'Connor, 2002), in order to launch the lesson and provide students with historical background about the discovery of the Terracotta Army.

Mathematics – Students will use small figurines (8" in height) to estimate how many it would take to create an actual size warrior (5' 8" in height).

RESOURCES

"The Story of the Terra Cotta Warriors" [Indianapolis Children's Museum] 2:11

<https://www.youtube.com/watch?v=8HK-mhT4jsA>

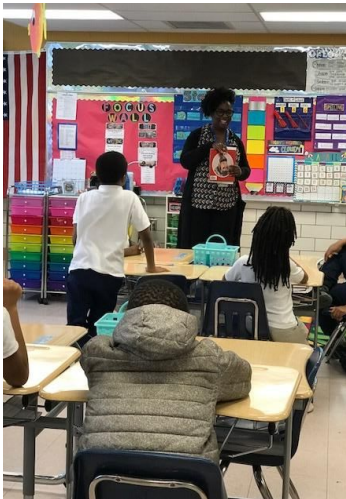
"China's Terra Cotta Warriors" [Nat Geo Kids] 1:23

<https://www.youtube.com/watch?v=YG9V7fN5VtQ>

O'Connor, J. (2002). *The Emperor's Silent Army*. New York: Penguin Putnam Books for Young Readers.

Pong Hau K'I video: <https://www.youtube.com/watch?v=LWMCAk4NyTQ>

READING THE BOOK



EXAMPLES OF BAKED CLAY WARRIORS



Appendix A

Terracotta Clay Warriors

Your teacher, [], is a Chinese Empress. She needs an army of clay to protect her. Your mission is to make a terracotta warrior that will protect your teacher.

Use clay to sculpt a figure to protect your teacher. Your figure must have a head, a body, two arms, and two legs. Add other features that you think will help protect your teacher.

This is the clay we used:



4 of DIY Colored Clay, 24 Color DIY Creative Street Model Clay, Soft Molded Oven Baking Clay and Tutorial. Best gift for Children.

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Appendix B

Terracotta Warrior Measurement Activity

The average height of a terracotta warrior is 5'8".

- Use rulers to show a height of 5'8".
- Estimate how many of the warrior figures (if they were stacked end-to-end) it would take to be the same height as the average height of a terracotta warrior, 5'8".
- What do you need to know in order to make an estimate?



- If the warrior figures were 5" tall would you need more or less of them to make 5'8"? About how many would you need? Why did you chose this number as an estimate?

Appendix C

Pong Hau K'i



According to sources, Pong Hau K'i is a traditional Chinese game (similar to Tic-Tac-Toe). The appearance of the Pong Hau K'i (褲襠棋) game board resembles a spring or river in the center with water running out in all directions. The board is drawn (as seen above) with 5 vertices and 7 edges. Each player has two game pieces of the same color. Players take turns moving pieces. For each turn a player moves one of his or her pieces to an *adjacent vacant* vertex. When a player cannot move because he or she is blocked – there is *no adjacent vacant* vertex – then the player loses. (<http://mathworld.wolfram.com/PongHauKi.html>)

This is a good video for how to play Pong Hau K'i because it is short (53 seconds) and easy to understand: <https://www.youtube.com/watch?v=LWMCak4NyTQ>