

*Painted Metaphors:
Pottery and Politics of the Ancient Maya*

**Educator Resource Guide
& Activity Ideas**

The activities in this resource guide are designed to supplement student/class visits to Penn Museum's exhibit *Painted Metaphors: Pottery and Politics of the Ancient Maya*. Please use them in whatever way best supports your education program, and let us know when you find innovative ways to expand any of the projects described here.

Exhibit: www.paintedmetaphors.org

Penn Museum: www.museum.upenn.edu

Education Department: education@museum.upenn.edu

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Unit #1: Introduction

Pre-visit Discussion: Maya Brainstorm

Outcome: As a class, students will generate three lists: prior knowledge about the Maya, desired information about the Maya, and questions to be answered.

Divide the blackboard into three sections with these three headings: *What do we know about the Maya? What information would we like to learn? What questions would we like to have answered during our museum visit?* Have students respond to each category.

Extension: In small groups or individually, students can complete an online quiz about the Maya before the discussion. Produced by National Geographic:

<http://ngm.nationalgeographic.com/2007/08/maya-rise-fall/maya-quiz-interactive>

(Note: this website occasionally includes Aztec words and material without identifying them as such.)

Unit #2: The Site of Chama and the Chixoy River Region

A Pre-visit Geography Activity

Lesson Outcome: Students will be able to identify physical and human geographic characteristics of the Maya Late Classic Period civilization in relation to the area's current human characteristics.

Standards: Describe and locate places and regions; describe human characteristics of places and regions; describe the impact of physical systems on people; describe the impact of people on physical systems.

Materials (some are available on exhibit website: www.paintedmetaphors.org):

- Map of Maya Region
- Map of Guatemala/Alta Verapaz/Chixoy (*Chee Shoy*) River Valley
- Topographical map of Guatemala

Directions:

1. Identify physical characteristics: Chixoy River, lowlands and highlands of Chixoy River area.
2. Identify human characteristics: Alta Verapaz and Chama. Also identify the modern-day sites of Coban and Guatemala City.
3. Identify additional Maya sites of importance: Tikal, Teotihuacan, Chichen Itza, and Palenque. What is the significance of the locations of these cities?
4. Break off into groups to explore a topic associated with Guatemala such as: climate, modern-day people vs. ancient Maya culture, sources of production/exports, economy, spatial or other relationships between the ancient cities identified in # 3 (above), etc.
5. Students research topics on own, then collaborate in their small group to combine the information in a written report or presentation.
6. Students present their topic to the class.

Unit #3: Symbols of Power
Classroom Discussion: Who Holds the Power?

Outcome: As a class, students will discuss the associations they have about powerful figures in their communities.

Standards: Identifying and evaluating political and cultural contributions of groups and individuals.

Discussion Questions:

1. Who are the powerful people in our communities? In the US? In the World?
2. How did these people become powerful? What are some of the things they have done that have made them powerful? Do they necessarily have to do good things in order to be powerful?
3. What are the symbols, styles of clothing, and other clues that let us know that they are powerful?

In-gallery extension: On their museum visit, students will see artifacts associated with powerful Maya figures, such as rulers, shamans, and other elite people. Have students observe the artifacts and jot down objects and symbols associated with the Late Classic period Maya elite. Additional option: use the attached worksheet *Who Holds the Power?: Elites and Rulers of the Ancient Maya*.

Unit #4: Chama Polychromes: The Politics of Pottery
A Post-visit Classroom Activity

Lesson Title: *Cylindrical Stories: Headlines of the Times*

Lesson Outcome: Students will review the design, function, and creation process of Chama polychrome pots. Students will identify ways information and experiences may be interpreted by people from diverse cultural perspectives and frames of reference. Students will illustrate a current event in the style of a Chama polychrome pot.

Standards: Historical and cultural contexts of visual art; aesthetic response; art production; comprehension and interpretation; research.

Vocabulary:

Polychrome – decorated in several colors. The polychromatic color scheme of Chama pots are white, red, yellow, black, and orange

Incising – the act of scratching or carving into a hard surface to make a design or mark.

Motif – a recurring image, design, or color scheme that may be associated with a particular culture, time period, geographic region, etc. For example, monkeys and jaguars are motifs of the Maya.

Materials:

- Heavy-weight manila or white paper, cut into 8" x 16" rectangles, one per student
- 6" circles, cut from mid- or light-weight paper, one per student (plastic lid from a 3 lb. coffee can makes a good template for this)
- Several 4 3/4" plastic lids from deli containers for another template
- Oil pastels or crayons, natural tones (white, red, yellow, black, orange)
- Images of Chama polychrome pots (see website www.paintedmetaphors.org)
- Current newspapers
- Pencils
- Scissors
- Stapler
- Clear tape

Directions:

1. Have students discuss what they learned about Chama polychrome pots. As a class, review the design, function, and creation process of Chama polychrome pots.
2. Look over several newspapers and select a headline to illustrate. Sketch a story in pencil onto the rectangular sheet of paper. (Use "landscape" orientation for paper.)
3. Add designs and color to the sketches.
4. Form the sheet of paper into a cylinder shape, overlapping and stapling the shorter edge (overlap by approx. 3/4").
5. For the base: center one of the 4 3/4" deli lids on the cut-out 6" circle. Use a pencil to trace the lid, then make cuts, every inch or so around the circle, from the edge of the paper to the pencil-line. Fold and crease the cut edges up to the pencil-line, fit it inside the cylinder as a base, and tape in place.
6. In pairs, students decipher each other's headline illustrated on the "pot." Once each has had a guess, students reveal their headlines to the group.
7. Extension: Students research the current event headline they have chosen and write a brief summary.
8. Alternate Extension/Variation: (Objective: greater understanding of the archaeological process of piecing together uncovered sherds and reconstructing the original object. Note: slight variation in materials.)
 - Instead of forming their illustrated headline into a cylinder, have students tear or cut the paper into roughly 24 pieces of varying sizes.
 - In groups of three students, mix the torn pieces of paper together. (For an additional challenge, before mixing the three sets of paper "sherds," remove 4 pieces of each and set aside.)
 - Each group of three students then exchange their pile of sherds with another group.
 - As a group, students examine the selection of mixed sherds, then separate and "reassemble" the sherds onto additional 8 x 16" sheets.
 - Consider various interpretations of the images on each pot and what evidence supports that interpretation. Similar to discussion in # 5

(above), give students an opportunity to explain their original design/drawing.

- Discuss the challenges in deciding how to separate and reassemble the sherds. (Keep in mind that in most archaeological settings, you rarely find all pieces of an object.)

Unit #5: Science and Archaeology
A Multi-Day (Multi-Session) Classroom Activity

Lesson Title: Conservation Lab

Lesson Outcome: Students will learn an introductory, simplified lesson to the conservation process of Penn Museum's Maya polychrome vessels. Students will practice simplified techniques of mending, gap-filling, inpainting, and documentation used by conservationists through a multi-day art/lab activity.

Standards: Science, technology and human endeavors; art production.

Vocabulary:

Conservation – the profession devoted to preservation of cultural property for the future.

Conservator – a professional whose primary occupation is the practice of conservation and who, through specialized education, knowledge, training, and experience, formulates and implements all the activities of conservation in accordance with an ethical code such as the American Institute for Conservation Code of Ethics and Guides for Practice.

Residue analysis – techniques for analyzing the contents of archaeological artifacts by identifying traces of matter that have absorbed into porous objects.

Multispectral imaging – the process of detecting minute but significant details of an object by exposing it to different wavelengths of light, including ultraviolet and infrared.

Rollout – an artist rendering of a piece of pottery as a flattened, horizontal view of the complete scene.

Gap-filling – the process of filling in missing areas of an artifact. The two basic kinds of fills are cosmetic fills (for aesthetic reasons) and structural fills (to ensure the stability of the artifact).

Inpainting – the process of coloring the gap-fills to match, or at least complement, the surrounding areas of an artifact.

Materials:

- *The Chama Conservation Project* video presentation on Penn Museum's YouTube channel (<http://www.youtube.com/user/pennmuseum>)
- Small terracotta pots
- Acrylic paint
- Paintbrushes
- Paper clips
- Index cards
- Elmer's glue
- Plaster of Paris
- Plastic knives
- Colored and regular pencils
- Drawing paper
- Regular notebook paper
- Ruler
- Tape measure

Directions:

- First Day/Session
 1. View *The Chama Conservation Project* video (found at the following link: <http://www.youtube.com/user/pennmuseum>) for an introductory conservation lesson
 2. Students can work in small teams or individually on this project, depending on work space, grade-level, etc.
 3. Decorate the pots: scratch designs and images with the paperclips (partially unfolded) then add color with the acrylic paints. Allow to dry. (Put index card with student's name(s) inside the pot.)
- Second Day/Session
 1. Prep. Activity: When completely dried, smash the pots in a controlled setting. (For example, place in strong paper bag then hit with hammer.)
 2. Gather sherds from each pot in one pile, along with identifying index card.
 4. Each student or team gets to work on the sherds of a fellow classmate.
 5. First record (write down) the number of sherds and the approximate size of each piece (length by width).
 6. Lay out and reassemble the sherds on the surface of a table/desk, much like working on puzzle pieces.
 7. Make a sketch of the shard assembly once all pieces are "in place." This can be used to create a rollout image of the final pot.
 8. Glue sherds together (with Elmer's glue), two pieces at a time. Allow each section time to "set" before attaching another section. (One glued section can be setting up while another two pieces gets glued, etc.)
 9. Allow finished pot to dry thoroughly.
- Third Day/Session
 1. Assess amount of gaps remaining between glued pieces on each pot.
 2. Mix an appropriate quantity of Plaster of Paris to fill the gaps.

3. Using the plastic knives, gap-fill with Plaster of Paris. Wipe away excess plaster with a moist paper towel, if necessary.
 4. Allow to dry.
- Fourth Day/Session
1. Record the physical dimensions of the reconstructed pot.
 2. Using appropriate colors to complement original painting, inpaint areas that were gap-filled. Allow to dry.

Great resource for older students: additional conservation details are available in *The Maya Vase Conservation Project*, by Lynn A. Grant (University of Pennsylvania Museum of Archaeology and Anthropology, 2006). The book explains the conservation process used on Penn Museum's singular collection of 8th century (CE) Maya polychrome vessels from Chama, Guatemala. Extensive photographs plus additional CD-Rom illustrate all the steps involved in the conservation process.

Unit #6: Pilgrimage and Trade **A Post-visit Classroom Activity**

Lesson Title: A Celebration with Cacao

Lesson Outcome: Students will review the economic and spiritual importance of cacao for Maya culture.

Standards: Identify the physical, biological, and chemical changes that take place in food preparation; demonstrate food production.

Overview: Cacao, the evergreen tree whose seeds produce cacao and chocolate, was currency, a symbol of wealth, and an important ingredient in rituals for the Maya. According to the *Popul Vuh*, the Maya creation myth, when the God of Lightning struck and opened Sustenance Mountain, both maize and cacao were brought forth, along with other plants, to feed the Maya. The cacao tree's scientific name, *Theobroma*, even means "food of the gods."

The Maya's cocoa recipe was a mixture of ground cacao beans and water. Recent residue analysis has identified additional ingredients, such as chili peppers, anise seeds, vanilla, allspice, ground corn, and honey in the bottom of cocoa preparation pots. The drink was sacred and used to honor the gods. Celebrate your visit to *Painted Metaphors: Pottery and Politics of the Ancient Maya* by creating this version of hot cocoa.

Directions:

1. Research and identify the physical, biological, and chemical changes that occur during the process of preparing cacao. The process includes the following stages: 1) Fermentation, 2) Drying, 3) Roasting, and 4) Grinding.
2. Work in groups to prepare and serve the hot cocoa recipe.

Ingredients

4 Tbsp. unsweetened cocoa powder
1/3 c. sugar
1/2 tsp. ground cinnamon
1/8 tsp. ground nutmeg
1/2 c. hot water
3 1/2 c. milk
1 tsp. vanilla
dash salt

Directions

In a medium saucepan, combine cocoa, sugar, cinnamon, nutmeg, and salt. Stir in the water. Bring mixture to a boil over medium heat. Boil, stirring constantly, for 2 minutes. Gradually stir in milk and continue to heat until heated through, stirring frequently. Do not boil. Remove from heat and add vanilla. Makes 4 servings.

Alternative Recipe

(This is the way the Maya would drink chocolate but students may want to add some sugar and milk to suit modern tastes.)

Ingredients

Unsweetened baking chocolate – 1 oz. for each cupful
Boiling water
Ground allspice (or chili powder, to be authentic)

Directions

Grate 1 oz. unsweetened baking chocolate into a cup or mug
Add a little boiling water and stir until melted
Then add a little allspice, and, to be authentic, some chili powder
Fill the cup with boiling water
Using a "molinillo," or whisk, stand it upright in the cup and rub the whisk briskly between your hands to make the chocolate foam

Unit #7: Life Along the Chixoy

Lesson Title: Backstrap Loom Weaving

(Activity adapted from: <http://www.bobscrafts.com/bobstuff/crafttwo.htm>)

Lesson Outcome: Students will define weaving vocabulary words and identify weaving instruments by constructing and weaving upon a classroom backstrap loom. Students will identify and describe ancient Maya aesthetics.

Standards: Applying traditional technologies for the production of art; analyze and interpret works of art.

Vocabulary:

Backstrap loom – a simple loom that is tied to a weaver’s hips and a stationary object.

Warp – the lengthwise thread of a piece of cloth

Weft – the horizontal threads of a piece of cloth. A shuttle is used to hold the weft threads.

Heddle – the device in the middle of the loom that separates the warp threads.

Shuttle – a flat board on which the weft thread is wound into a bundle.

Shed – the opening created by the heddles through which the shuttle passes.

Beater – a stick or other device used to pack the weft threads tighter to produce a consistent weave.

Materials:

- Craft sticks (10 per loom)
- Thick thread or thin yarn, plus a smaller amount of heavy string or yarn
- Thin nail and Hammer, or power drill (7/64 drill bit recommended)
- 2 dowel rods or chop sticks
- Plastic fork or additional chop stick
- Sturdy belt
- Optional: clear or masking tape
- Mid-weight cardboard cut into a 3 x 6” rectangle
- Hot-glue gun

Directions:

1. Make a hole in the center of eight of the craft sticks. Either use a power drill or lightly hammer the nail into each craft stick, then pull the nail out. (See attached diagram.)
2. Hot-glue the craft sticks as shown on the enclosed diagram.
3. Cut 15 threads (thin yarn or thick thread) in the desired length of your classroom weaving. These will be your warp threads.
4. Tie one end of each thread around a dowel rod or chop stick.
5. Thread yarn/thread through the heddle. The first piece of thread on the left of the dowel goes through the first hole on the left side of the heddle. The next thread goes in between the craft sticks. Continue to thread through the heddle.
6. Pull the threads taught and tie them onto the other dowel rod/chop stick.
7. Fasten the belt to the dowel rod/chop stick: Cut two pieces of the thick string/yarn, roughly 20” long. Make a loop of one string, with ends even. Place the loop over the belt, bring the ends up and through the loop, so that the string is snug on the belt. (Repeat with second string.) Wrap and tie the loose ends to either side of the yarn of one of the dowels/chopsticks, allowing some space between the belt and the

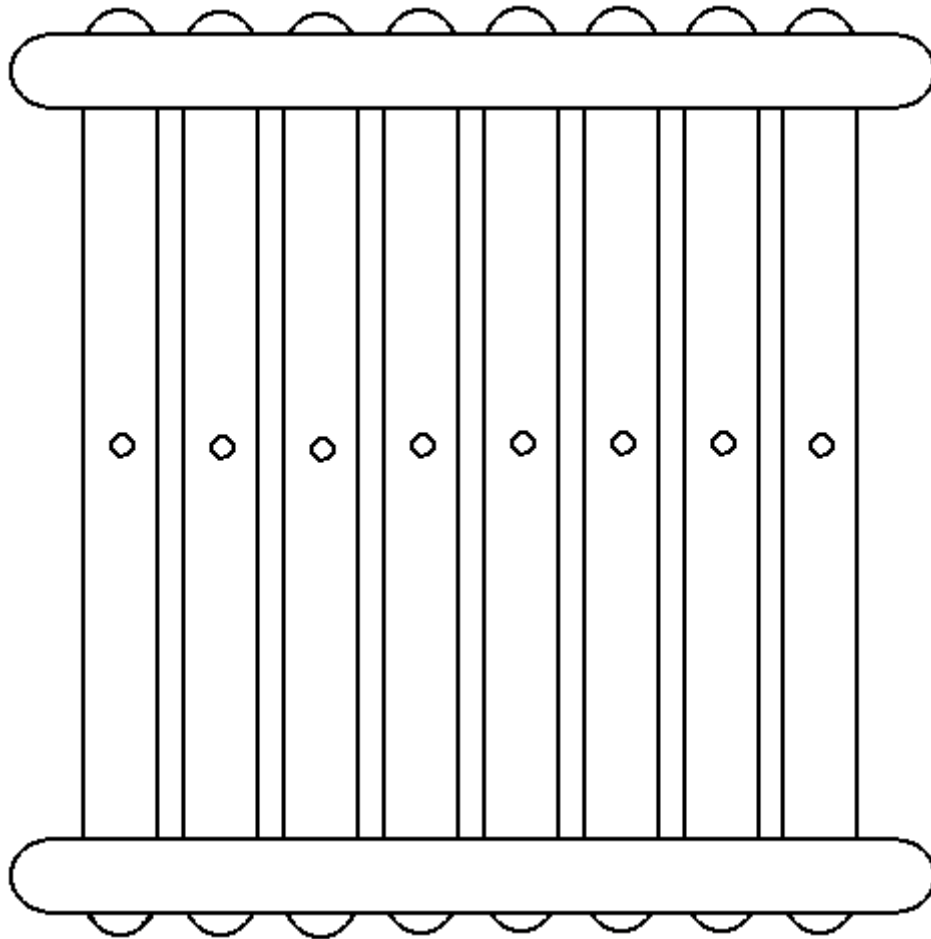
- dowel/chopstick. If needed, use tape to keep the yarn attached to the stick. The belt gets put on “backwards” (buckle in the back) around the waist of the weaver.
8. Cut two 48” pieces of the thick yarn to hold the loom at the other end. This time, loop each yarn (folded in half, cut ends pulled through the loop) around opposite ends of the other dowel/chopstick. (Tape if needed.) Bring the cut ends of both sets of yarn together and tie in an overhand knot. Tie another overhand knot approximately 5” from the first to make a loop for hanging.
 9. Find a coat-hook, doorknob, or other solid object to hold the hanging loop. (Keep in mind that the weaver’s waist/belt needs to be lower than whatever holds the loop-end. (Instead of the loop, tying the ends to some sturdy stationary object works, too.)
 10. Cut a piece of cardboard into a rectangle roughly 3 x 6 inches for the shuttle, then notch the narrow ends so it will hold the yarn when you wind it around the length of the shuttle.
 11. Wrap several yards of contrasting thread/yarn around the shuttle. Now you are ready to weave.

How to Weave:

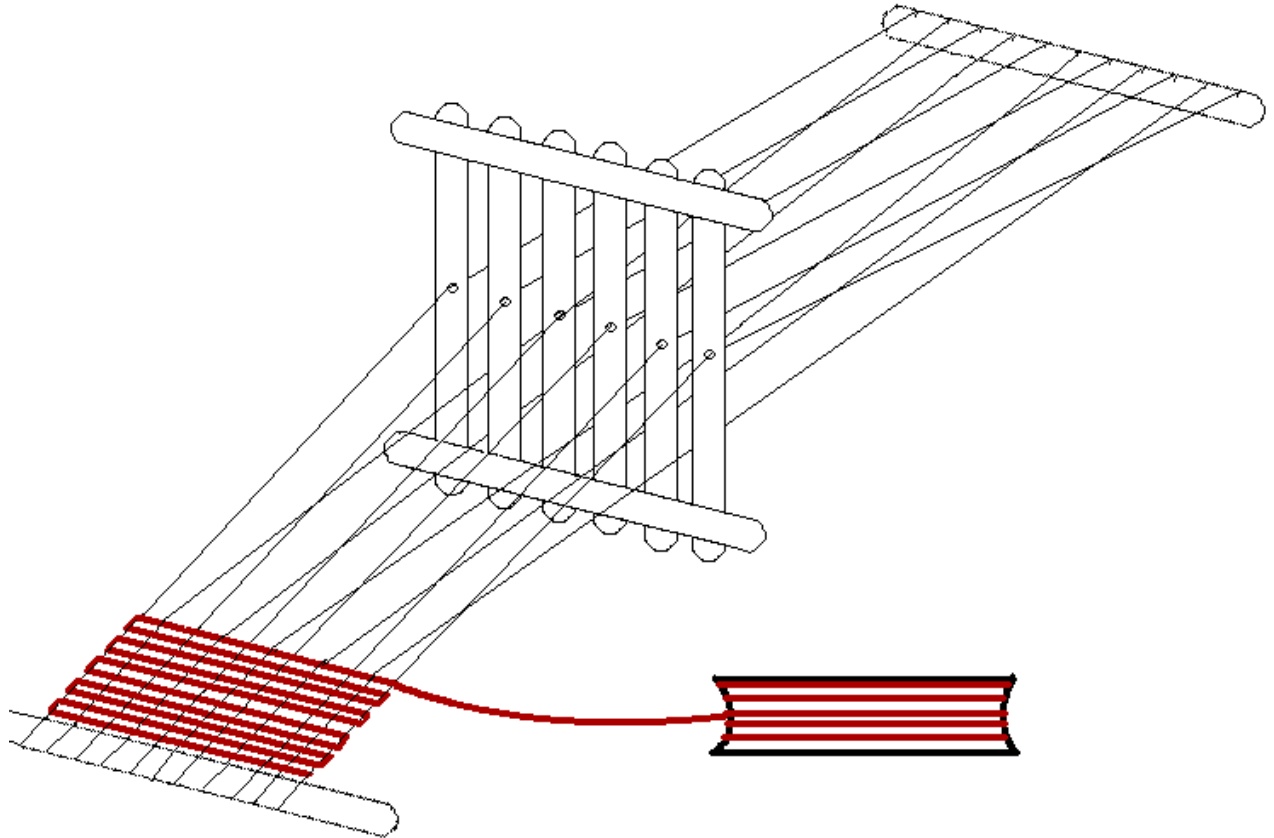
1. Put the belt on “backwards,” with the loom pulled taut between the weaver and hanging hook.
2. Unwind some thread from the shuttle.
3. Open the shed by pulling up on the heddle.
4. Drag the shuttle from left to right through the shed.
5. Open the alternate shed by pushing down on the heddle and pack down the previous weft thread with the fork or extra chopstick (this is the beater).
6. Then pass the shuttle from the right to the left through the shed.
7. Again pull up on the heddle and pack down the thread with the beater.
8. Repeat these steps to continue weaving.

Extension:

Have students research images of Mayan backstrap loom textiles, making note of the colors, designs, etc. of the textiles they discover. Report the findings in a classroom discussion.



Backstrap Loom Heddle
(showing the position of craft sticks for gluing and holes for yarn)



Backstrap Loom

(showing a raised heddle and yarn in the shed)

Unit # 8: Visual Thinking Exercise

Lesson Title: Ritual on the Ratinlixul Vase

(Adapted from resources created by Mike Wallace of the Spencertown Academy Arts Center in New York.)

Lesson Outcome: Students will engage in a cyclical process of observation, inference, and citing of specific details to support inferences, reappraising their initial assumptions based on the observations of others. Critically examine a work of art through visual thinking strategies; analyze and interpret a work of art through its historical and cultural perspective.

Standards: Explain how information and experiences may be interpreted by people from diverse cultural perspectives and frames of reference. Compare and analyze societal patterns for preserving and transmitting culture while adapting to environmental or social change,

Materials:

- Image of Ratinlixul Vase (pronounced *rah-teen-lee-shool*, emphasis on last syllable)
 - Go to:
http://www.museum.upenn.edu/new/exhibits/chama/media/chama_media.shtml - download image of watercolor rollout of Penn Museum object number NA11701 to project on screen or print color copies for viewing

Directions:

- Have students view a projection or printed copy of the watercolor rollout of the Ratinlixul Vase. A class should spend at least thirty minutes investigating and discussing this single image.
- Ask students to respond in depth to two simple questions:
 - What is happening here?
 - What do you see that makes you say that?
- The group leader should provide little or no context or background, but facilitate a cyclical process of observation, inference, and citing specific details in support of their inferences
- As background for this activity, the leader may want to read “The Ritual on the Ratinlixul Vase: Pots and Politics in Highland Guatemala” in Penn Museum’s journal *Expedition* (Volume 39, No. 3, 1997 – pages 37-48), which can be downloaded from: <http://130.91.80.97:591/PDFs/39-3/The%20Ritual.pdf> .
- During the process of observation and discussion, encourage students to describe *any* aspect of the image and try to understand what is happening and why they think that is so. (In addition to focusing on the artwork, indirectly help students to notice and discuss the obvious worn state of the pottery and what that may indicate.)
- Additional points students should consider: identity of figures, citing attributes of posture, clothing, ornament and psychological expression. Also, consider the

- gender, ages, and spatial relationships of the figures. What was the purpose of the original object – students may come to a conclusion that this watercolor represents sherds of a pottery vessel. Who made it and for whom? What purpose did it serve?
- Extension: Choose several specific elements identified in the image and have students research the symbolic meaning of the object or design for the ancient Maya.

Unit # 9: Using Dilemmas to Promote Moral Reasoning

Lesson Title: Clay Pot Moral Dilemma
(a multi-session activity)

(Adapted from resources created by Mike Wallace of the Spencertown Academy Arts Center in New York.)

Lesson Outcomes: Students will use a range of intellectual skills to demonstrate their understanding of major ideas, questions, and issues relating to cultural heritage, by examining the broad sweep of history from a variety of perspectives.

Standards: Students will read, write, listen, and speak for both critical analysis and social interaction. Students will build systems to support their assertions, using critical thinking skills.

Materials:

- Copy of “Looting a Lost Civilization” (attached or available at <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2001/06/07/MN221710.DTL>)
- Statue of Liberty pre-writing activity (attached)
- Images of Chama pottery (exhibit website: www.paintedmetaphors.org.)
- Story of the Clay Pot (attached)
- Pencils and regular notebook paper
- Clay Pot Conclusion worksheet (attached)
- Name tags (ready-made, or construct your own) plus markers

Vocabulary

Antiquities – objects or buildings from the distant past

Mortgage – a legal agreement in which a an organization such as a bank lends money in exchange for holding title to the borrower’s property, with the condition that the title goes back to the borrower after the debt is repaid, with interest.

Maya – Native American peoples of Yucatán and other parts of Central America.

Archaeological Commission – a government organization that regulates ownership and acquisition of antiquities

Provenience or provenance – legal documentation or record of ownership of a work of art or antique

Directions

- First Session
 1. Read “Looting a Lost Civilization” aloud to, or with, students (depending on grade-level).
 2. Hand out copies of the Statue of Liberty Dilemma worksheet
 3. Students read and complete the worksheet. Share responses as a class.
 4. Hand out copies of the Clay Pot Dilemma
 5. Read aloud the Clay Pot Dilemma
 6. Look at several images of pots from the *Painted Metaphors* exhibit website. (www.paintedmetaphors.org – look at Image Gallery)
 7. Discuss issue of provenience of objects recovered scientifically versus looted (information gained or lost) – explain that Penn Museum’s Chama pottery is the *only* museum collection with complete documentation in the United States.
 8. Option: read the letter from the Ambassador from the Republic of Guatemala (*Painted Metaphors* exhibit website - www.paintedmetaphors.org - under “Behind the Exhibit” tab.)
 9. Discuss the choices offered in the Clay Pot Dilemma
 10. Students write a short response to questions posed by Clay Pot Dilemma
 11. In small groups, students discuss their responses. (One student takes the role of recorder, another can report to the whole class, and one student should try to argue the opposite view of the majority.)
 12. Spokesperson reports discussion to the class.
- Second Session
 1. Assign students to roles from the Clay Pot Dilemma sheet (2-3 per role, or whatever method gives each student a role)
 - Mother – Eva
 - Father – Juan
 - Son – Carlos
 - Daughter – Maria
 - Neighbor
 - Antiquities Dealer
 - Director of the Archaeological Commission
 2. Students make name tags for specific role
 3. Students with like roles discuss their character’s point of view
 4. Students gather in a large circle, assume their roles, and discuss/debate the dilemma from their characters’ points of view.
 5. Teacher guides discussion and asks probing questions such as:
 - What if one of the children is ill and needs money for medicine?
 - What if the neighbor is a relative?
 - What if the antiquities dealer seems suspicious?
 6. Students write their conclusions from the discussion and role-play on the Clay Pot Conclusion sheet (attached).
 7. Extension: On the back of the Clay Pot Conclusion sheet or another sheet of paper, draw two or more characters from the dilemma and write their conversation. Share with the class.

Name _____

**Who Holds the Power?:
 Elites and Rulers of the Ancient Maya**

Browse through the *Symbols of Power* section of the gallery. Observe artifacts and imagery associated with the Maya elite. Write down the name of each object that you find, describe its function, what the symbol might mean, and draw a sketch of the object. Look for recurring images, or *motifs*, such as animals associated with the Maya elite.

Name of Object/Symbol	Object Function/Symbol Meaning	Sketch of Object

Name _____

Statue of Liberty Dilemma

The Statue of Liberty is one of our national treasures. Someone has stolen the torch from the top of the Statue of Liberty. The statue has been changed forever. How may the following people react and why?

A fifth grader

A mom or dad

A grandma or grandpa

A recent immigrant

Looting a lost civilization: Maya scholars in race with thieves

Jeremy McDermott, Chronicle Foreign Service, Thursday, June 7, 2001

<http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2001/06/07/MN221710.DTL>

(06-07) 04:00 PDT Las Milpas, Belize -- It looked like an odd-shaped hill in the jungle, until the looters' tunnels came into view. At the end of the biggest tunnel there was a hollow chamber, the ceiling burnt black by the thieves' fiery torches, in what was once a Maya pyramid. This is Las Milpas, a ninth century Maya ceremonial center of 11 plazas and about 50 structures that was long ago reclaimed by the jungle. The archaeologists were beaten to the site by fortune hunters, who probably found the skeleton of a Maya king or priest decked out in jade jewelry, with pots and bowls laid out beside him. The bowls would have been painted with hieroglyphics intended to remind the spirit of the dead what he had done in his life and provide him with directions to the afterlife.

These days, more and more tourists from the United States and Europe are visiting Maya cities that have been excavated and restored: Chichen Itza and Palenque in Mexico, Tikal in Guatemala and Copan in Honduras. But as the international appetite for Maya culture grows, so has the hunger for illegal artifacts. In fact, researchers are involved in a race against time with increasingly tenacious looters. In the past two decades, scholars have cracked the complex hieroglyphic code of the Maya, shedding light on an advanced civilization whose astrologers and mathematicians used the zero before their European counterparts.

The Maya disappeared in the 11th century and scholars are uncertain why, offering a range of theories, including drought, war and disease. But with so much looting going on, the cause of the Maya civilization's demise may never be revealed. In Belize and Guatemala, scientists are hoping to reach huge ruins that have been largely unexplored. Satellite images show that the region could have 4,000 undiscovered sites. On both sides of the border, looting has become a lucrative illegal trade, second only to drugs. In 1997, Richard D. Hansen, a University of California at Los Angeles archaeologist who has been documenting looting in Guatemala estimated the annual trade at \$120 million. The problem is compounded by the extreme poverty of the majority of the population of Guatemala, especially in the Peten region, where Maya sites are concentrated.

Treasure hunters typically covet jade jewelry, inscribed pottery, sacrificial altars and stelae -- man-sized stone slabs, carved with images of kings and their achievements. "Just to give you an idea of what Maya artifacts are worth, there was a Sotheby's (London auction house) sale in 1990, where a common polychrome vase went for \$5,000, a jade necklace for \$13,000 and a pair of zoomorphs (limestone carvings of deities in animal form) for \$230,000," said George Thompson, the commissioner of the Belize government's Department of Archaeology. "Now, the prices are much higher."

Thompson says a large portion of stolen artifacts make their way to the United States and Europe via Cancun, a Mexican resort city. The smuggling occurs even though importation of looted treasures into the United States is prohibited under a 1983 federal law that

obligates the U.S. government to observe a UNESCO convention. A little-known State Department agency -- the Cultural Property Advisory Committee -- is supposed to keep Americans from buying antiquities. Since Guatemala is a major transshipment point for Colombian cocaine and heroin, the same criminal drug organizations have moved into the business of looting Maya treasure, observers say. "There is a relationship between smuggling (artifacts) and narcotics trafficking," said former Guatemalan Defense Minister Brig. Gen. Juan de Dios Estrada.

The entry of organized crime has increased the violence associated with smuggling. Last year, 14 artifacts were stolen from a museum at the Maya city of Cahal Pech in Belize. Arrests were made and half of the stolen pieces were recovered due to information given by a museum employee. The day before the man was scheduled to testify in court, he was assassinated. In Belize, a tiny nation with few resources, the police rely on archaeologists to investigate such theft. Guatemala, on the other hand, has a special police investigation unit. Inspector Victor Manuel Salazar, who heads the Police Patrimonial and Environmental Department, concedes that his 17 agents have made little headway -- they arrested only one suspect last year. Salazar says smugglers are not only well-organized and well-armed, but enjoy protection from powerful politicians and ex-military officers. "There have been cases that we have been told to drop," said Salazar from his tiny downtown office in Guatemala City. "So our arrest record is not good."

Four years ago, former Gen. Cesar Augusto Garcia was fired as Guatemala's vice minister of defense after being accused of being part of a smuggling ring allegedly headed by Alfredo Moreno, an ex-military intelligence officer. Sixteen other officials, including three colonels, police officers and customs officials were also dismissed. Some former leftist guerrillas are also looters, according to archaeologists and Belizean military sources. Although Guatemala's bloody 36-year civil war ended in 1996, some armed rebels have found few ways of earning a living, they say. Valentino Castillo has tended to the ruins at Caracol, a Maya site in Belize, for more than 30 years. Two years ago, he saw seven looters armed with AK-47 assault rifles and wearing guerrilla uniforms. "I climbed a tree, because there was no way I was going to challenge those men," said the elderly worker as he wrung his gnarled hands.

Castillo also complained about those he calls "legal looters" -- foreign archaeologists. He says they are supposed to turn over everything they find to the nation's Archaeological Commission, but when a tomb is found they sometimes send workers away. "But I used to sneak back at night, and the stuff I saw was never handed over or cataloged," said Castillo. At the very least, foreign scientists have helped create future looters by hiring laborers to help them with the excavations, said Thompson. "These guys (laborers) know where to look. They know the astrological alignments the Maya used when laying out their buildings, so they know where to dig the trenches," said Thompson. "These teams can loot a building in a couple of days with just picks, shovels and candles."

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The Clay Pot

Juan and Eva Corbon work hard to keep a good home for their children. However, recently the price of everything has risen so quickly and so high that they are having a very hard time paying for food and for their mortgage.

One day Juan was digging on his property and he found a small clay pot that looked very old. After carefully cleaning the pot he saw that it looked like an ancient Maya pot he once saw in a museum. A neighbor told Juan that it was very valuable. The neighbor knows an antiquities dealer who would pay Juan enough money to feed his family and pay his mortgage for a year.

Juan and Eva talked about selling the Maya pot. They had heard of many cases of ancient artifacts being sold illegally. The president announced that all ancient artifacts are national treasures which belong to the nation of Guatemala and must be turned in to the government's Archaeological Commission. The legal penalty for disobeying the government is time in jail. The commission would pay Juan nothing for the valuable clay pot he found.

Another concern of the Archaeological Commission is that once an artifact like this clay pot is removed from the ground it loses its scientific value. When an archaeologist excavates a site he or she is studying the whole archaeological record, not just "pretty objects" – looking at things such as the context, relationships between artifacts, and any structural features, all in order to better understand and "reconstruct" past human behavior. That information is lost once an object is removed unscientifically.

Should Juan and Eva sell the ancient Maya pot to the antiquities dealer? Why or why not?

Some of the roles involved in this dilemma:

Mother – Eva

Father – Juan

Neighbor

Director of the Archaeological Commission

Son – Carlos

Daughter – Maria

Antiquities Dealer

Archaeologist

Name _____

Clay Pot Conclusion

Role-play character _____

Explain what you now think the family should do with the clay pot.

What did you hear in the discussion that changed your opinion or what confirmed your original opinion?

How did you feel about working through the dilemma with the whole group this way?

Maya Resources for Information and Classroom Activities:

Books

Chronicle of the Maya Kings and Queens: Deciphering the Dynasties of the Ancient Maya. Simon Martin and Nikolai Grube. Thames and Hudson, 2000.

Courtly Art of the Ancient Maya. By Mary Miller and Simon Martin. Thames and Hudson, 2004.

The Maya, By Michael Coe. 7th Edition, Thames and Hudson, 2005.

Maya Folktales from the Alta Verapaz. By Elin Danien, ed. University of Pennsylvania Museum of Archaeology and Anthropology, 2005.

The Maya Vase Conservation Project. By Lynn A. Grant, with contributions by Elin C. Danien. University of Pennsylvania Museum of Archaeology and Anthropology, 2006.

Explanation of the conservation process used on Penn Museum's singular collection of 8th century (CE) Maya polychrome vessels from Chama, Guatemala. Extensive photographs plus additional CD-Rom illustrate all the steps involved in the conservation process.

The New Archaeology and the Ancient Maya. By Jeremy A. Sabloff. Scientific American Library, 1994.

Popol Vuh: Sacred Book of the Maya. By Allen Christenson. University of Oklahoma Press, 2007.

The Snake's Toothache: A Q'eqchi Maya Myth. Written by Melinda Lilly. Published by Rourke Publishers, 1999.

A picture book intended for 7-10 year-olds. Recounts a myth by the Q'eqchi people.

Understanding Maya Inscriptions: A Hieroglyphic Handbook. By John F. Harris and Stephen K. Stearns. 2nd Revised Edition, University of Pennsylvania Museum of Archaeology and Anthropology, 1997.

Internet Sites

Ancient Maya: Knowledge Through Art. By Kathleen Heady. Published on PBS's NewsHour Extra.

http://www.pbs.org/newshour/extra/teachers/lessonplans/art/maya_6-07.html

A lesson plan on Maya art. Includes hand-outs and other web links to guide students' learning.

Be That As It Maya: Investigating Life in Mayan Cities. By Jackie Glasthal, The New York Times Learning Network.

http://www.nytimes.com/learning/teachers/lessons/20001219tuesday.html?searchpv=learning_lessons

A lesson plan for grades 6-12 on Mayan cities.

A Classical Maya News Report. Produced by Discovery Education.

<http://school.discoveryeducation.com/lessonplans/programs/mayanewsreport/>

A lesson plan on Maya city states. For grades 9-12.

Cracking the Maya Code: The Story Behind the Centuries-Long Decipherment of Ancient Maya Hieroglyphs. Produced by PBS Online. <http://www.pbs.org/wgbh/nova/mayacode/>

Trace the history of deciphering the Maya language, decode Maya glyphs, hear the Ancient Maya language, explore contemporary and ancient sites of Central America, and discover Maya art symbolism through several educational interactives.

Cracking the Maya Code: Calendar Count Worksheet. Produced by NOVA.

http://www.pbs.org/wgbh/nova/teachers/activities/pdf/3506_mayacode_01.pdf

A printable worksheet with instructions on how to convert our Gregorian calendar into the Maya Long Count system.

Magic of the Maya: Pre- and Post-Visit Activities. Produced by the San Diego Museum of Man. http://www.museumofman.org/html/previsit_maya.pdf

Provides activity suggestions for the classroom, such as a Maya ball game activity. Includes a Maya Bar-and-Dot counting system worksheet. For grades 6 and up.

A Maya Masterpiece. By Jennifer Rittner, The New York Times Learning Network, and Bridget Anderson, The Bank Street College of Education in New York City.

http://www.nytimes.com/learning/teachers/lessons/20051215thursday.html?searchpv=learning_lessons

A lesson plan for grades 9-12 on Mayan art and contemporary life connections.

Mayan Culture. By Jeannette Tanson on Teacher CyberGuide.

<http://www.sdcoe.k12.ca.us/score/maya/mayatg.html>

Lesson plan units for grades 5-7.

Mayan Kids.

<http://www.mayankids.com/>

Provides a brief overview of a variety of topics.

Mayan Numbers.

<http://www.niti.org/mayan/lesson.htm>

An interactive website on the bar and dot counting system.

Maya Quiz. Produced by National Geographic.

<http://ngm.nationalgeographic.com/2007/08/maya-rise-fall/maya-quiz-interactive>

This interactive quiz asks questions based on the following topics: Maya beauty ideals; food; religious and ritualistic practices; language; and counting systems. Great as a pre-visit introduction or as a post-visit reinforcement/evaluation activity.

Mesoweb: An Exploration of Mesoamerican Cultures.

<http://www.mesoweb.com/>

Posts current events in Mesoamerican archaeology and research along with essays.

The Mysterious Mayas for Kids.

<http://mayas.mrdonn.org/empire.html>

A compilation of Maya-related links divided by topics, such as Myths and Folklore, Interactive Games and Activities, and Daily Life.

Mystery of the Maya. From the Canadian Museum of Civilizations.

<http://www.civilization.ca/cmc/exhibitions/civil/maya/mminteng.shtml#menu>

A click-by-click overview of various Mayan topics. Includes slide show of images and a teacher's guide with classroom activity ideas.

The Sport of Life and Death: The Mesoamerican Ball Game. Produced by the Mint Museum of Art. <http://www.ballgame.org/main.asp?section=5>

This online interactive site was produced by the Mint Museum of Art as a component for the traveling exhibition of the same name (no longer on view). Learn the rules, regalia, and other elements of the sport.

Welcome to Maya Adventure! From the Science Museum of Minnesota.

<http://www.smm.org/sln/ma/>

A click-by-click interactive site about major Mayan cities. Includes some activity ideas and features photographs of Mayan collections from the Museum.