

Curricular Lessons

Lesson One: Murals: Bonampak and Prairie Elementary

Lesson Specific Objectives:

Students will be able to compare and contrast the mural at Bonampak to murals that we have in our school.

Students will be able to describe a portion of the mural at Bonampak.

Lesson Specific Essential Questions:

What can we find out about the Maya people from the mural at Bonampak?

What would people be able to tell about us from the murals in our school?

Lesson Activities with Detailed Instructions (Lessons should include at least one visual and one primary source):

Lesson 1: Murals: Bonampak and Prairie Elementary

Activity 1: Introduction to Object Based Learning Strategies with murals within the school

1. Show photos of murals from around the United States and Mexico. Introduce the word “mural” and write it on the board.
2. Ask “Where have you seen murals in your community?” Write down responses in a word splash on the board.
3. “Today we are going to look at a mural in our school. I will ask you to look at it in different ways and think about it in different ways.”
4. Take students to the mural in the cafeteria of the school and seat them so everyone can see the mural and not be distracted by one another.
5. Show students the illustrated visual card “What do you see?” and ask the question aloud. Students share their ideas of what they see in the mural. Model thinking aloud about what you see.
6. Show students the illustrated visual card “What do you notice?” Model noticing something in the mural. “What is it made of?” Students share their ideas of what they notice in the mural.
7. Show students the illustrated visual card “What do you think about what you see?” Model thinking aloud about your opinions. Students share their opinions.
8. Show students the illustrated visual card “What do you see that makes you think that?” Model making connections and thinking aloud about your reasoning for your opinions. Students share their reasoning.
9. What do we know about the people who created this mural? What did they do in their community? What is important to them? How do you know?
10. Finally, ask students when they think the mural was created, and who they think created the mural. On the wall timeline, add the creation of the school mural as an event at the correct year.

Lesson 1: Murals Bonampak and Prairie Elementary

Activity 2: Object Based Learning Strategies with mural at Bonampak

1. Locate Bonampak on a map of Mexico.
2. Show students the Bonampak Mural
(Hixson photo: <http://www.mesoweb.com/mpa/bonampak/rm1d.html> or Heather Hurst poster of Bonampak)
3. Show students the illustrated visual card “What do you see?” and ask the question aloud. Students share their ideas of what they see in the mural. Model thinking aloud about what you see.
4. Show students the illustrated visual card “What do you notice?” Model noticing something in the mural. “What is it made of?” Students share their ideas of what they notice in the mural.
5. Show students the illustrated visual card “What do you think about what you see?” Model thinking aloud about your opinions. Students share their opinions.
6. Show students the illustrated visual card “What do you see that makes you think that?” Model making connections and thinking aloud about your reasoning for your opinions. Students share their reasoning.
7. Ask students when they think the mural was created, and who they think created the mural.
8. What do we know about the people who created this mural? What did they do in their community? What is important to them? How do you know?

Lesson 1: Murals: Bonampak and Prairie Elementary **Activity 3:** Timeline

1. Have students practice counting in Spanish and ask them to count to 100 together. Time them.
2. While students are counting, point to the timeline on the wall, starting with the current year and going back for each number they count.
3. When students are done counting tell them how long it took them.
4. Ask students to think about how long ago 800 AD was and how long it would take to count all the way back to the date when Bonampak was created. Review hundreds up to 800 all the while motioning back to emphasize how long ago the murals were created.
5. Show students a new timeline that goes that far back and add both the school mural creation date and the event of Bonampak’s creation at 800 AD.

Lesson 1: Murals: Bonampak and Prairie Elementary **Activity 4:** Venn diagram

1. Ask: What do we know about the Maya people who created the Bonampak mural? What do we know about the people in our community who created the Prairie Elementary mural? How do we know?
2. Show a Venn diagram to students with Bonampak Mural on one side and Prairie Elementary Mural on the other
3. Ask students to turn to a partner and remind them how a Venn diagram works.

4. As a class have students complete the Venn diagram, comparing and contrasting the murals. Make sure to guide students to describe what they see going on in the murals, dates of creation of the murals, the people who created the mural, the colors used in the mural, the materials used to create the murals, and the location of the murals.

Methods of Assessment (formative and summative):

Formative assessment: Observation of Object Based Learning participation

Summative assessment: Venn diagram

Handouts:

None

Lesson Two: Maya numerology

Lesson Specific Objectives:

Students will be able to communicate their age in Spanish using the structure “Tengo _____ años.” and visually represent their age with Maya numerals.

Students will be able to compare and contrast our numerology system to the numerology system used by Maya communities.

Lesson Specific Essential Question:

How do different cultures interact with numbers?

Lesson 2: Maya Numerology

Activity 1: Counting en Español

1. Write the numbers 0 to 9 on the board. Point to the numbers as students count aloud together in Spanish.
2. Combine the numerals to create larger number. “What happens when we combine a 1 and a 9? Yes! 19 or 91!” “What happens when we combine 4 and 7? Yes! 47 or 74!” Give several examples.
3. Review the numbers 0-9 one more time. “We use these numerals to create all of our numbers.”

Lesson 2: Maya Numerology

Activity 2: Maya Numbers

1. Ask students to find Bonampak on the map to review.
2. Show various photos of the ruins at Bonampak. “Did the Maya people use the same numbers that we do in English and Spanish to count?... No, the Maya used different numerals to count and keep records.”
3. In the same way that we reviewed 0-9 in Spanish, write the Maya numerals on the board. Write the values that they hold in Spanish next to the numerals.
4. Pass out mini white boards, dry erase markers, and erasers to students. Ask students to practice drawing the numeral for 1 (a dot) with you. Then ask students to practice drawing the numeral equal to 5 (a bar) with you on the white boards.

- Finally model drawing the numeral for 0 (a shell) and have students practice drawing it.
5. Once students have practiced drawing and they have the visual of each numeral on the board, challenge students to write numbers that you say aloud in Maya numerals.
 - a. Model: On the board write the number 4. Say “cuatro.” Sit with them on the carpet and draw four of the 1 numerals to create the number four in Maya. Silently hold up the white board.
 - b. On the board write the number 3 and say “tres.” Watch for students to silently hold up their white boards with the correct numbers.
 - c. As students build confidence, try larger numbers, such as 8, 9, and 12.
 6. Pass out pages 9-13 of Mark Pitts “Maya Numbers and Maya Calendar” packet, translated into Spanish. Review the numbers in these pages together.
 7. Show students picture from Yaxchilan of number glyphs.
 8. Show drawing of glyphs at Yaxchilan and point out which ones are number glyphs (8 and 9 are represented on the lintel).
<http://research.famsi.org/uploads/montgomery/hires/jm01537yaxlin37.jpg>

Lesson 2: Maya Numerology

Activity 3: Communicating age

1. Review Spanish numbers one through 9 again. Show Maya numerals and glyphs for 1-9 on the smartboard while students practice aloud.
2. Review how to say your age. Model: “Tengo 27 años.” “¿Cuántos años tienes?”
3. Students ask the question “¿Cuántos años tienes?” to their classmates in groups of four and practice answering the question.
4. Pass out the graphic organizer with the Maya numerals written at the bottom and the sentence prompt of “Tengo _____ años.” written above a framed blank space (that looks like a stela!). Students write their age into the sentence prompt and draw the Maya numerals that represent their ages on the stela. Students share with the whole group. Collect graphic organizers for assessment.
5. Exit slip: Each group decides on one similarity and one difference between the Spanish number system and Maya number system before they may leave. Small groups share with the whole class.

Methods of Assessment

Formative Assessment: White board practice with Maya numerals

Summative Assessment: “Tengo _____ años.” Graphic Organizer

Handouts

Mark Pitts’ Maya Numbers and the Maya Calendar packet

Lesson Three: Maya Glyphs

Lesson specific goals:

Students will be able to create a glyph representing their name using the Maya syllabary.

Students will be able to introduce themselves in the target language (Spanish) using the sentence structure “Me llamo _____.”

Lesson specific essential questions:

How do different cultures record information?

Lesson 3: Maya Glyphs

Activity 1: Review: Comparing 2 cultures

1. On one side of the board write Maya. On the other side of the board write Waunakee, WI. Draw a line down the middle. Ask students to think about what they've learned about their own culture and Maya culture from comparing murals and comparing number systems.
2. Write students ideas on the board under the appropriate section.
3. Once there are various ideas on the board, in a different color marker draw a line from the ideas on the Maya side that have something in common with the ideas from the Waunakee side. Be sure to think aloud about what the cultures have in common. For example, you can draw a line from “Use dots, bars, and shells to count” to “uses numbers 0-9 to count” and reiterate that they are similar because both cultures have number systems.

Lesson 3: Maya Glyphs

Activity 2: Recording information

1. Show students a collage of photos of words and signage from around their community using Prezi. “How do we record information information in Waunakee? What do we use?”
2. Practice the Spanish alphabet song with the class. Point at each letter on the alphabet poster as students sing. “In Spanish we use an alphabet with letters that we combine to make each word.”
3. Just as students saw a collage of print from their community, show a collage of glyphs from Maya sites using Prezi. “Do the Maya use an alphabet like ours?” “What do they use to communicate information?”
4. Review the Spanish vowels: A, E, I, O U. Recite the vowel poem together. “AEIOU, Arbolito de Perú, Me llamo _____, ¿Cómo te llamas tú?”
5. Show the Maya syllabary and point out that they don't use an alphabet with individual letters, but they use syllables and each syllable is represented with a glyph (or multiple glyphs).
6. Go through the syllabary and point at the glyphs as students repeat the syllables after you.
7. Pass out the Maya Glyphs packet and point out page 28 to discuss how we combine symbols to make meaning. Model with the teacher's name.
 - a. Break the name into syllables on the board.
 - b. Then point out the glyphs and draw them separately on the board.
 - c. Combine the glyphs to create a name glyph on the board.

Lesson 3: Maya Glyphs

Activity 3: Glyph puzzle

1. Break students into groups of four.
2. Give each group a photo of an animal and the name of that animal in Spanish.
3. Ask students to break the name of the animal into syllables. On a piece of paper they write down the syllables.
4. With the syllabary in front of them, give students various glyph puzzle pieces of the individual syllables. Ask students to combine the glyphs (in the same way that we combined the glyphs to create their teacher's name) to write the name of the animal as a Maya glyph. Check group work.
5. When all groups have create glyphs, rotate the animal photos and ask them to repeat the activity until students have made all 6 animal name glyphs.

Lesson 3: Maya Glyphs

Activity 4: Compare/Contrast Review

1. Go back to the comparison chart that the class created at the beginning of class.
2. Ask students to share anything new that they know about Maya culture and the culture of Waunakee.
3. Again, link with a different colored marker the similarities between the two cultures. Be sure to point out that even though we use an alphabet and in Maya communities a syllabary is used, both cultures use forms of written records to tell stories, record important information, and to communicate.

Methods of Assessment

Formative Assessment: Observe group work when students are creating glyphs with the puzzle pieces

Handouts

Mark Pitts' Maya Days Coloring Book