

# Come On Over To Maya Place

**Grade Level:** 5th

**Presented by:** Holly Dunsmore, Phalen Lake Elementary School, St. Paul, Minnesota

**Length of Unit:** 7 days

## I. ABSTRACT

Learning about the Mayan people and their culture is achieved in this unit through visuals, writing Mayan style and recognizing how our modern hierarchies are similar to their own social structure. Students will realize the great contributions in astronomy and math by identifying calendar symbols and developing computation in Mayan. This unit will help the students become aware how this culture carried over to later cultures as well as our current one. The study of Mayan history is located at the 5th grade level of the World History area of the *Core Knowledge Sequence*.

## II. OVERVIEW

### A. Concept Objectives

1. Students will develop an awareness of the complex nature of a given culture: its history, geography, art, religion, architecture, communication and social structure.
2. Understand the concept of region in relation to race, religion and culture.
3. Understand how belief systems affect a society's actions.

### B. Content from the *Core Knowledge Sequence*

1. Ancient Mayans lived in what is now southern Mexico and parts of Central America; their descendants still live there today.
2. Accomplishments as architects and artisans: pyramids and temples.
3. Development of a system of hieroglyphic writing.
4. Knowledge of astronomy and mathematics; development of a 365-day calendar; early use of the concept of zero.

### C. Skill Objectives

1. Summarizing
2. Transferring information
3. Descriptive writing
4. Note taking
5. Map skills
6. Cooperative group behavior

## III. BACKGROUND KNOWLEDGE

### A. For Teachers

1. Banquedano, Elizabeth. *Aztec, Inca, & Maya - Eyewitness Books*. New York: Alfred A. Knopf, Inc. 1993, ISBN 0-679-83883
2. Kramme, Michael. *Mayan, Incan, & Aztec Civilizations*. Mark Twain Media Carson-Dellosa Publishing Company, Inc., 1996. (CD-1886)
3. Sherrow, Victoria. *The Mayan Indians*. New York, New York: Chelsea House Publishers, 1994, ISBN 0-7910-1666-8

### B. For Students

1. Core Knowledge sequence, 1st grade: Maya, Inca, and Aztec civilizations

## IV. RESOURCES

- A. Hirsch, *What Your 5th Grader Needs To Know*
- B. Kingfisher, *Pyramids*
- C. Larson, *Thematic Unit - Maya, Aztec, and Incas*
- D. Matthies, *Egyptians, Maya, Minoans*

- E. "The Maya" - Kids Discover magazine, Kids Discover
- F. Nicholson, *The Maya*
- G. Nystrom World Atlas, Nystrom
- H. Appendices A- K
- I. Souvenir Aztec calendar (metal)
- J. Questar Video. "The Maya". 1966

## V. LESSONS

### Lesson One: Where in the World are the Maya?

- A. *Daily Objectives*
  - 1. Concept Objective
    - a. Develop an awareness of place
  - 2. Lesson Content
    - a. Central America, Atlantic Ocean, Pacific Ocean, Caribbean Sea, Palenque, Tikal, Copan, Chichen Itza, Yucatan Peninsula, Tenochtitlan, Gulf of Mexico
  - 3. Skill Objective
    - a. Label key areas on a map
    - b. Design a map key
- B. *Materials*
  - 1. Blank map of Mexico and Central America
  - 2. overhead of blank map
  - 3. pull-down map of Central America and Mexico
  - 4. colored pencils
  - 5. vis-à-vis
  - 6. Appendix A
  - 7. *Atlas of World History*, Scholastic
- C. *Key Vocabulary*
  - 1. Land bridge: located between Russia and Alaska
  - 2. Peninsula: land jutting out from mainland into a body of water
- D. *Procedures/Activities*
  - 1. Introduce unit on Mayan history and culture
  - 2. Read "The Mayans" (Appendix A), Explorers and Discoverers (Appendix B)
  - 3. Hand out blank map of Mexico and Central America area
  - 4. Students will shade the land green and the water blue.
  - 5. Students will label the bodies of water (Atlantic and Pacific Ocean, the Caribbean Sea, the Gulf of Mexico), the United States, Mexico, Central America, Belize, Guatemala, the Yucatan Peninsula, and key cities (Tikal, Palenque, Bonapak, Chichen Itza and Tenochtitlan). Teacher will model on overhead.
  - 6. Students will make a key for the map: blue - water, green - land, black dot - city.
- E. *Evaluation/Assessment*
  - 1. Completion of key points to be labeled.
  - 2. The map key is completed.
  - 3. It should be neat and accurate.

### Lesson Two: Discovering Mayan Art and Architecture

- A. *Daily Objectives*
  - 1. Concept Objective
    - a. Students will develop and awareness of the culture of the Mayan people.
  - 2. Lesson Content
    - a. Accomplishments in architecture and art: pyramids and temples.

3. Skill Objectives
  - a. Pulling information from a written source and a videotape.
  - b. Working cooperatively with a partner.
- B. *Materials*
  1. Handouts (Appendices D and E)
  2. *Kids Discover* magazine
  3. handout (Appendix F)
  4. pencil
  5. video (“The Maya”)
  6. *What Every 5th Grader Needs To Know, Pyramids*
- C. *Key Vocabulary*
  1. Architecture: style of a man-made structure
  2. Civilization: a community of people that follow a set of rules and laws
- D. *Procedures/Activities*
  1. Read p.107 from *What Every 5th Grader Needs To Know*
  2. Show the video on the Maya
  3. Read “Mayan Cities” and give out worksheet (Appendices D and E).
  4. Students pull information from source to answer questions on worksheet.
  5. Hand out magazines, briefly go over areas they are divided into.
  6. Hand out worksheet (Appendix F). Read questions.
  7. Have students work with partner to fill in worksheet
  8. Show pictures from *Pyramids*.
- E. *Evaluation/Assessment*
  1. Complete and accurate worksheet for the Mayan Cities handout.
  2. Cooperative behavior with partner.
  3. Complete and accurate worksheet for the magazine handout.

### **Lesson Three: Who’s In Charge Here?**

- A. *Daily Objectives*
  1. Concept Objective
    - a. Understand how belief systems affect a society
  2. Lesson Content
    - a. Mayan political and religious system
  3. Skill Objectives
    - a. Transfer information: Mayan social structure and modern day social structures
    - b. Note taking
- B. *Materials*
  1. Construction paper, markers
  2. colored pencils
  3. writing paper
  4. handout on social roles (Appendix G)
  5. assorted library books
  6. flipbook example.
- C. *Key Vocabulary*
  1. Social structure: in a community of people, what roles they each play and how power is divided.
- D. *Procedures/Activities*
  1. Hand out or draw 4 blank pyramids that are divided into four sections (the base will be the largest area, the tip the smallest)
  2. Hand out “Mayan Social Structure” (Appendix G).
  3. Read information together, students label and write their summary on first pyramid.

4. Make comparisons to modern social systems on the three other blank pyramids: the students' elementary school, local government, national government.
  5. Show flipbook example. Have students make their own, transfer information and decorate using authentic Mayan graphics. Students may use library resources.
- E. *Evaluation/Assessment*
1. Accurate note taking, neatly transcribed.
  2. Correctly labeled pyramids.
  3. Authentic depictions.

#### **Lesson Four: I Can't Read Your Writing**

- A. *Daily Objectives*
1. Concept Objective
    - a. Understand communication system in ancient civilizations
  2. Lesson Content
    - a. Hieroglyphic writing of Mayans
  3. Skill Objectives
    - a. Writing a story referencing accurate information about Mayan life.
    - b. Paragraphs, punctuation and grammar correct
    - c. Converting words into glyphs
- B. *Materials*
1. Writing paper
  2. pencil
  3. codex paper (tan or light brown)
  4. markers or colored pencils
  5. sample codex
  6. Mayan books that will have symbols
  7. handouts(Appendix H and I ).
- C. *Key Vocabulary*
1. Hieroglyphs: a picture that depicts a word
  2. Codex: folded book using glyphs to tell a story
- D. *Procedures/Activities*
1. Discuss what glyphs are. Discuss symbols, meanings and purposes for written communication.
  2. Have students write a short story using the theme of a day in the life of a Mayan Indian.
  3. Read handout, Appendix H. Look at Appendix I. Talk about what the symbols represent.
  4. Fold codex. Show example.
  5. Students transfer their story using pictures only, no words.
  6. Students share their story with a classmate. Have partners try to read each other's stories.
  7. Assorted library books may also be used to look for more authentic Mayan life characteristics.
- E. *Evaluation/Assessment*
1. Complete, accurate story of Mayan life, 2-3 paragraphs
  2. Proper paragraphing, grammar and punctuation
  3. Complete picture story, usage of Mayan symbols
  4. Neat, colorful

## **Lesson Five: Mayan Technology**

### **A. Daily Objectives**

1. Concept Objective
  - a. Understand the contributions of a given culture
2. Lesson Content
  - a. Astronomy, math, calendars, zero
3. Skill Objectives
  - a. Labeling
  - b. Listening and reading for information

### **B. Materials**

1. Mayan Math handout and worksheet (Appendix J),
2. picture of a Mayan calendar,
3. Mayan Calendars and Astronomy handout (Appendix K)
4. overhead of a Mayan calendar
5. pencil
6. *What Every 5th Grader Needs To Know*

### **C. Key Vocabulary**

1. Astronomy: the study of stars, moons and planets

### **D. Procedures/Activities**

1. Read from *What Every 5th Grader Needs To Know*, p.109
2. Discuss math symbols, patterns and the concept of zero. Have students deal with math problems as if no zero existed :
  - a.  $7-7=?$  b. 1, 2, 3, ... 8, 9, ?
3. Hand out "Mayan Math". Read together. Have students design three math problems using the Mayan counting system. Have a classmate try to solve.
4. Discuss calendars. Hand out Appendix K, "Mayan Calendars and Astronomy."
5. Identify or guess what many of the symbols on an overhead of the calendar could be. Text resources often contain correct interpretations.

### **E. Evaluation/Assessment**

1. Completion of math problems.

## **VI CULMINATING ACTIVITY**

- A. The final activity would be a visit from a member of the Mayan Society of Minnesota. Children will hear an informational talk and have an opportunity to ask questions.

## **V. HANDOUTS/WORKSHEETS**

- A. Appendices A-K [Note: Appendix C is distributed at session only]

## **V. BIBLIOGRAPHY**

- A. Baquedano, Elizabeth. *Aztec, Inca, & Maya - Eyewitness Books*. New York: Alfred A. Knopf, Inc., 1993, ISBN 0-679-83883
- B. Hirsch, Jr., E.D. *What Your 5th Grader Needs To Know*. New York, New York: Dell Publishing, 1993, ISBN 0-385-31464-7
- C. Kramme, Michael. *Mayan, Incan, & Aztec Civilizations*. Mark Twain Media Carson-Dellosa Publishing Company, Inc., 1996, (CD-1886)
- D. Larson, Linda. *Thematic Unit - Mayans, Aztecs, and Incas*. Huntington Beach, California: Teacher Created Materials, Inc., 1996, ISBN 1-55734-595-3
- E. Matthies, Susanna. *Egyptians, Maya, and Minoans*. Santa Barbara, CA: The Learning Works, Inc., 1986, ISBN 0-88160-122-5
- F. *The Maya - Kids Discover Magazine*. New York: Kids Discover, 1994, ISBN 1054-2868

- G. Millard, Anne. *Pyramids*. New York, New York: Kingfisher, 1996, ISBN 1-85697-674-2
- H. Nystrom. *Nystrom World Atlas*. 1995, ISBN 0-88463-4809
- I. Nicholson, Robert. *The Maya*. New York: Chelsea House Publishers, 1994, ISBN 0-7910-2729-5
- J. Sherrow, Victoria. *The Mayan Indians*. New York, New York: Chelsea House Publishers, 1994, ISBN 0-7910-1666-8
- K. Strohl, Mary and Susan Schneck. *Mayas, Aztecs, Incas: Cooperative Learning Activities*. New York: Scholastic Professional Books, 1994, ISBN 0-590-49504-6
- L. Questar Video. "The Maya". 1996

## Appendix A: The Mayans

The Mayan culture influenced a large territory. It ranged from what is now known as central and southern Mexico to the northern region of Central America. This included the Yucatan Peninsula as well as mountainous highlands and swamps. The area is bordered by the Gulf of Mexico and the Caribbean Sea.

The people typically ranged in height from four feet eight inches to five feet tall. They had straight black hair and thought that flattened foreheads were a thing of beauty. The latter was the result of securing boards to the heads of young children. Crossed eyes were also a sought-after feature. Mayan women tied objects from their baby's heads to encourage the eyes to cross. Other forms of decoration were tattooing and piercing the skin with sticks for ornamentation. How many of these practices do we do today?

The Mayan Indians spanned three eras. The first began in 2,500 A.D. and included the Olmecs. These people had become less nomadic and began planting crops, especially corn. The next era, approximately 250 A.D. to 900 A.D., was distinguished by the building of pyramids and temples. During this time, the Mayan people explored mathematics and astronomy and developed a system of communication called hieroglyphics. The last era ended around the 1500s and was known for the decline of this civilization. Today, many people in Mexico consider themselves descendants of the Mayan Indians and continue farming and trading as their ancestors did.

Their arts and crafts included clay dishes and carved statues as well as colorful woven cloth for clothing and blankets. Medicines taken from the rainforest and desert plants were discovered by the Mayans and many are still used today. Despite their great knowledge and advancements in many fields, the disappearance of the Mayans continues to baffle historians.

## Mayan History

Archeologists have determined, through their studies of artifacts, that the Mayan people originated from Asia approximately thirty thousand years ago. This was accomplished by crossing a land bridge. These nomadic hunters and their families trekked across a bridge that spanned from Russia to Alaska. The Mayans were searching for food, water and a better climate. While some of the clan stayed in Canada, the rest migrated down to the Pacific coastal area, the Southwestern area (of the U.S.) and into Mesoamerican land (Mexico and Central America).

Some of the artifacts found were stelae, tall stone columns with carvings, and ceremonial pyramids and temples where humans were often sacrificed to the gods. Some of the pictures were of a ritual ball game in which the players' movements were symbolic of the motions of the planets and stars.

## Appendix B: Explorers and Discoverers

In 1502, Christopher Columbus was sailing to Honduras to explore and trade. He noticed a Mayan Indian in a canoe nearby. Fifteen years later, Francisco Cordoba, who is credited with finding the Yucatan Peninsula for Spain, came across traces of the ancient Maya civilization in the same area. In 1522, Hernan Cortez encountered the Mayans as his party marched from Mexico to Honduras. None of the European explorers realized that they were seeing a dying civilization and that the many beautiful cities would someday be swallowed up by the rainforest.

What the sixteenth-century explorers crossed paths with was re-discovered in 1839, three hundred years later. John Lloyd Stephens, an author, and Fredrick Catherwood, an artist, traveled to Central America after hearing rumors of a lost ancient civilization. In Guatemala, they climbed walls, fought the thick rainforest plants and endured numerous hardships. Their efforts were richly rewarded when they discovered Copan, a major city of the Mayan. Monuments to the Mayan gods, called stelae, were covered with hieroglyphs. Imagine their excitement when pyramids were uncovered, their steps also covered with hieroglyphs. Pottery, numerous figurines and various other artifacts were abundant, each speaking about a civilization that had survived for hundreds of centuries.

Stephens recorded their finds that they had unearthed, while Catherwood made detailed duplications of hieroglyphs. Both men wrote about their discoveries. This led a British historian, Alfred Maudsly, to journey over areas of Mexico and Central America, mapping and photographing even more ruins of the Mayan Indians. Many of these artifacts or duplications of them were to be housed eventually in a British museum, available for scientists to study and for archeologists to unravel the code of the hieroglyphs.

## Appendix D: Mayan Cities

Archeologists have been working hard to uncover the lost cities of the Mayan people that have been hidden from them for hundreds and thousands of years. The most popular for tourists and historians have been Tikal, Copan and Chichen Itza.

Many structures have been unearthed in these cities, including public buildings, palaces, ball courts and pyramids with temples on the top. The pyramids were located in the center of the city and rulers and priests lived there. The government workers and wealthy citizens lived closest to the center of the city. Peasants lived further out to be near the land they farmed.

The structures were built by hand by slaves in these ancient cities. Only metal tools were used and no wheeled vehicles or animals helped. A special cement made from limestone was taken from the ground and used for their structures. This remarkable mixture enabled them to survive for hundreds of years and gave the walls a smooth surface. Many public buildings were painted bright colors.

Causeways, the roads Mayans walked on, were often built up to four feet above ground level and measured up to fifteen feet wide. These, too, were man-made by slaves and government workers. Some of the best ruins were found in Chichen Itza. Here were several plazas, pyramids, ball courts and a large observatory tower used by ancient astronomers. The Well of Sacrifice was a well that men were thrown into to appease the gods.

In the beginning, scientists thought that Mayan temples were used just for ceremonial rituals. In Tikal, the largest of the cities, the temple of the Giant Jaguar was found to be a tomb for a ruler named Double Comb. This city was thought to have a population of over 100,000 people. Copan, the second largest Mayan city, had a great staircase, thirty feet wide with sixty-three steps. Each step is covered with hieroglyphs.

# Appendix E: Mayan Cities

## Worksheet questions

1. What are scientists called that unearth old ruins of a civilization?
2. In what cities can visitors still explore the ruins of ancient Mayan civilization?
3. What did the Mayans use to haul building materials and construct buildings?
4. What did the Mayans use to give buildings a smooth surface?
5. What were the roads called that the Mayans built?
6. What was the Well of Sacrifice used for?
7. Which city was the largest and oldest of the Mayan cities?
8. What do archeologists estimate was the population of the Mayan civilization?

# Appendix F: Scavenger Hunt for the Mayans

## Kids Discover Magazine: The Maya

Work with a partner to find the answers to these questions. Look carefully, the answers may be in the text, the illustrations or the picture blurbs. See what you can discover about the Mayans!

1. What animals were considered sacred (“holy”) by the Mayans?

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2. During what time period did the Mayans reach the greatest heights?

Time period \_\_\_\_\_ Dates \_\_\_\_\_

3. What did the Mayan people want to look like? Draw a face below and label what was important to them:

4. What could you see if you went to the pyramid of Bonampak?

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5. What is a cenote? Why was it so important to the Mayans?

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6. Find a glyph in the magazine. Draw it and tell what it stands for.

7. Tell three things about Mayan farming.

1.

2.

3.

8. Tell three things about the Mayan people today.

1.

2.

3.

9. What important concept in math did the Mayans use and understand?

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10. Having looked at this magazine, what else would you like to know about the Mayan people or their culture?

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Adapted from L. Eberle and S. Milton unit on Aztec, Inca, Maya

## Appendix G: Mayan Social Structure

The Mayan people had a social structure that contained many levels and positions. It can be broken down to four main levels:

### Priest:

Religion was the center of their governing structure. The high priest had supreme authority over all the lesser priests as well as all the citizens of the area. They made decisions concerning government, war, trade and religious ceremonies. Peasants paid a tax to support the priests, called a mita, using their crops as well as their labor. Priests lived in the temples or nearby. This class had the fewest members.

### Nobility:

Nobles were the rich with material goods and owned much land. This group included military officers, government workers, architects, merchants, traders and skilled craftsmen. The nobles paid no taxes, although they worked at important jobs that required intelligence and training. They lived in housing near the plazas that surrounded the pyramids and buildings. The nobility had more members than the priests, but fewer than the peasants.

### Peasants:

In the outlying agricultural areas lived the peasants. They were hard workers who gave away many of their crops and labored long and hard for others. Peasants were not allowed to own anything of value, have an education or be trained for a skill or craft. If slaves were not sufficient, peasants were chosen to be sacrificed in a religious ceremony. The largest group in the population was the peasants.

### Slaves:

The lowest level of the Mayan social structure would be the slave population. This group varied in size depending on circumstances. Slaves included captured enemies, criminals, orphans and the slave's children. While slaves were not mistreated, they did have to do all the manual work needed in building and hauling. These people had no rights, no belongings and only one set of clothes at a time. Priests used slaves for ceremonial sacrifice.

## Appendix H: Mayan Codices

Mayan Indians did not have a written language for communicating with one another. Instead they used a prescribed set of pictures called glyphs to tell a story. They could often be found in groupings. Some glyphs symbolized different animals, plants, structures or people. There were many for nature, such as the sun, moon and the rain. Approximately 800 have been identified. There are hundreds more that have yet to be labeled.

Manuscripts called codices (codex is singular) recorded the Mayans stories. Some told of religious ceremonies, some of great hunts in the rain forests and others detailed the duties of each person in the social structure. Archeologists believe there were hundreds more of these codices, but Spanish explorers had decided that the worship of gods in nature was evil and therefore should be destroyed. These codices were found in the Mayan ruins. To decipher some of these glyphs, missionaries used natives to help them as well as clues such as the location of a glyph on a building that matched one in a codex.

A codex was made from the bark of a tree from the rain forest. First, the bark was removed from a fig tree, then it was softened in limewater to form a pulp. The Mayans pounded this pulp into flat sheets and dried them. Ink was usually made from dyes found in plants or in the ground. This way, the stories would be colorful and depict happenings accurately. When the information was completed on the codex, the paper was folded accordion style and a cover was often added. Some Mayan book covers were made from deer hides.

While there are many fragments of these Mayan books, only three complete codices have been located. These can be found in a museum in Europe.

### Instructions:

1. Using manila or tan construction paper or paper bags, cut out a long strip of paper.
2. Fold paper like an accordion.
3. Create a story about a Mayan Indian. Use authentic characters and believable situations.
4. Transfer your story to the codex using pictures and symbols.
5. Have a partner try to 'read' your story to you. Then read it as you had intended. See how close the two stories are.





















# Appendix I: Mayan Hieroglyphs

					
ahaw (lord)	bih (road)	hok' (to take office)	k'al (twenty)	na (house)	tok' (flint)
					
akot (to dance)	chan (sky)	hoy (to bless, make proper)	k'awil (spirit)	nal (place)	tun (stone)
					
	chan (snake)	hun (headband)	k'in (sun)	nik (flower)	tz'am (throne)
					
bak (bone, captive)	chum (to be seated)	hun (one)	k'u, k'ul (sacred, god)	pakal (shield)	wak (six)
					
		awal (“and then”)			way (companion spirit)
					
bak (heron)	ha' (water)	kah (town, area)	k'uk' (quetzal)	sabak (ink)	wink (man, person)
					
balam (jaguar)	hal (to manifest)	k'ak' (fire)	kun (seat, center)	soz' (bat)	witz (mountain)















# Appendix J: Mayan Math

The Mayans invented a mathematical system that was the basis for many future civilizations. One of the important aspects was the concept of zero. This invention allowed the Mayans to count past the digits of their fingers and toes. The zero was represented by a shell. A dot was the number one and a bar represented five. The Mayans were able to count to very large numbers when they used their base twenty system. Another interesting fact of the Mayan math was that they counted going up and down instead of left to right like we do today.

This advanced method of math enabled the Mayan people to develop calendars based on astrological observations and a complex understanding of concepts and counting.

0		5		10		15	
1		6		11		16	
2		7		12		17	
3		8		13		18	
4		9		14		19	

Solve. Write your answer in Mayan.

1.  +  =
2.  +  =
3.  +  =
4.  +  =
5.  -  =
6.  -  =
7.  -  =

Design your own Mayan math problems.

- 8.
- 9.
- 10.

## Appendix K: Mayan Calendars and Astronomy

The Mayan Indians discovered an advanced system of astronomy that enabled them to develop intricate calendars. One calendar was for religious ceremonies; the other calendar was based on the moon phases. The Mayans were so advanced in their knowledge of astronomy that they built observatories hundreds of years ago. Many are still standing today, including one that is well preserved in Chichen Itza.

The Mayans believed that the heavenly bodies were gods and if they understood what the gods were doing they could predict what would happen on earth. The religious calendar was used to plan sacrifices, holy days and wars. It was also used to name children. Each symbol represented something in their environment and the children were supposed to have the characteristics of that symbol (an example would be the strength of a jaguar).

The regular calendar was based on the moon's phases and helped the Mayans judge when to plant, harvest and also keep track of time. This calendar took the 365 days of the year and divided them into eighteen months of twenty days each. The 'leftover' five days were considered unlucky and all activities were canceled.

Only priests were allowed to have the knowledge of calendars and math. In this way, they were able to keep power over the other citizens and continue to be respected. The two calendars were consulted separately as well as together. The cogs (teeth) around the outside of both calendars fit and turned together. The combination of the two calendars gave the priests new information in regards to the relationship of the gods to the Mayans.