A Z T E C  A N D  M A Y A  
R E V I V A L

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INTRODUCTION

In Mexico, artists, architects, and artisans use the terms Neo-Aztec, Indigenism, and Neo-pre-Hispanic to identify Mesoamerican influences on the arts. Mexic-Arte Museum has selected art, photographs, books, and ephemera to introduce one of Mexico’s important cultural expressions: the reemergence of pre-Columbian designs in the fine and decorative arts. Although Maya Revival is primarily a designation associated with an architectural style developed in the United States, Mexic-Arte wishes to expand the meaning of this term to illustrate Mexican examples of the reemergence of pre-Hispanic forms.

Under the reign of President Porfirio Díaz, Mexico began laying the cultural foundation that would eventually form the country’s visual paradigm. From the latter half of the 19th century, Mexico expanded its governmental support for the excavation and preservation of many of its pre-Hispanic archaeological sites. As a result, Mexico passed various laws protecting its patrimony, commissioned national monuments, showcased its past in the 1910 Centennial Parade, and participated in various international world’s fairs. Mexico also established the National Museum of Anthropology, allowing for documentation, preservation, and display of some of its important archaeological artifacts, including the Aztec Calendar Stone.

Mexico combined this awareness of past indigenous civilizations with European influence to construct a visual fusion that epitomized the country’s historical background while simultaneously capturing its current cultural expression. Artists developed a new art style by appropriating the iconography of many pre-Columbian ancestral groups, including but not limited to the Aztec and Maya cultures. Continuing in the early twentieth century, as government further embraced its indigenous roots, many artists, designers, and artisans integrated various pre-Columbian visual patterns to pay homage to this new Mexican national identity.
Though many locate the Revival period of Mexico and Mexican art in the early 20th century, it actually started earlier. The seeds for the Revival period were planted in the late 18th and early 19th centuries, due to a series of archaeological excavations that happened in Mexico at that time. As Mexico’s past was realized through discoveries of pre-Columbian art, it became apparent that these pieces were precious to the culture and heritage of Mexico.

The first President of Mexico, Benito Juárez, declared that the archaeological findings of the pyramids were the national patrimony of Mexico. Later, President Porfirio Díaz, upon realizing the importance of the pre-Columbian art pieces, acted to restore the first Museum of Mexico for its treasures. Additionally, Porfirio Díaz chose to showcase the deep and ancient roots of Mexican culture through the revival of indigenous iconography.

President Díaz commissioned artists to travel to World’s Fairs - the cultural and international gatherings in which countries would represent their customs, industries, and art. It was at the 1900 World’s Fair in Paris that Díaz debuted an intricately-designed piano featuring Zapotec glyphs and style that won a gold-medal prize, as seen in the gallery. It was not so much the intent of President Díaz to positively represent the indigenous people of Mexico, as they were still considered inferior by the elites, but to use them as a way to highlight the grandeur of Mexico and its cultural roots. This led to the use of indigenous imagery and iconography in the 20th century.
HOW TO USE THIS GALLERY GUIDE

The purpose of this Gallery Guide is to share our knowledge of a few significant images. Much of the art from pre-Columbian times, including that of the Aztecs (Mexicas), Maya, and other indigenous groups, was comprised of symbols and designs that originated from complex aspects of culture like customs, traditions, rituals, and language. Even though they may appear decorative at first glance, the symbols associated with these indigenous groups represent more than patterns - they represent a way of life. Such images have been revived in modern times for use in the fine and decorative arts.

AZTECS AND MAYA

Many people wonder which indigenous group was the first to inhabit Mesoamerica (an area of distinctive cultures that extends from North-central Mexico to Pacific Costa Rica). The answer to this question is not simple. Indigenous groups, such as the various tribes of the Aztecs (also referred to as Mexicas), Zapotecs, Mixtecs, and the Maya were prevailing simultaneously, though the Olmecs are believed to be the first group to inhabit Mesoamerica, arriving around 1400 B.C.E. in eastern Mexico throughout the region of Veracruz. The Aztecs eventually inhabited the area near the Olmecs, in what is today Mexico City and Teotihuacan. The Zapotecs and Mixtecs made up the area of Oaxaca, along the southern coastal tip of Mexico, and still do today. The Maya continue to inhabit the Yucatan area, in addition to Chiapas, and Quintana Roo, near Guatemala. Both the Aztecs and Maya had advanced civilizations and working knowledge of the stars, sun, and moon. Ritual sacrifice played a significant role within indigenous civilizations, and it was for the numerous gods, whose sacrifices they believed had given them life, that these offerings were made.
Followers of the Aztec religion believed that Huehueteotl presided over the domestic hearth fire of the household. A hearth is the floor of a fireplace, usually made of stone or brick, often extending a short distance into a room. Being a domestic god, Huehueteotl’s image is usually found in residential quarters rather than temples.

For the Aztecs, fire held great significance. It was a symbol of change and renewal. During the ritual of New Fire, all fires throughout the land were extinguished and the entire Aztec population was plunged into darkness. Priests would watch the movement of the stars and look for the signal to tear out a sacrificial victim’s heart; then they would start a fire on the body and take it around to all homes in the area. This ritual, which replicated the way in which Aztecs believed the gods first created fire, postponed the end of the world.

**THE PRIMARY STANDARD SEQUENCE**

This Maya vessel has a hieroglyphic block that is part of a sequence frequently used in ceramics called the Primary Standard Sequence (PSS). The PSS displays information regarding the dedication, shape, and contents of the vessel. For example, on this vessel the initial glyph signs may translate to $u\ ja-y(i)$ meaning “thin walled vessel ceramic vessel” and $yu-k’i-b(i)$ meaning “his/her/its drinking vessel.”
1335 - 1519 The Aztecs establish Tenochtitlán, and the Aztec empire reaches its peak.
1519 Hernán Cortés marches on Tenochtitlán (Mexico City).
1521 The Spanish, led by Cortés, overthrow Tenochtitlán and capture the last Aztec ruler, Cuauhtémoc.
1810 Father Miguel Hidalgo declares Mexican independence on September 16th.
1821 Spain recognizes Mexico’s independence.
1824 Guadalupe Victoria becomes the first president of Mexico.
1859 Mexico elects Benito Juárez as president.
1861 - 1867 French intervention in Mexico.
1862 On May 5th, Mexicans defeat the French in Puebla.
1864 Archduke Maximilian of Austria and his wife, Carlota, arrive in Mexico. The Chapultepec Castle is rebuilt and serves as their official residence.
1867 Benito Juárez elected president of Mexico for a second term. Maximilian is captured and shot, and French forces withdraw from Mexico.
1871 Porfirio Díaz revolts against Benito Juárez.
1872 Benito Juárez dies.
1876-1911 El Porfiriato
1888-1894 Manuel González serves as president of Mexico.
1884 Mexico reelects Porfirio Díaz for a second presidential term. Mexico inaugurates the first railroad uniting itself with the U.S.
1884-1910 Porfirio Díaz elected continuously; this period is referred to as the Porfiriato. Mexico is open to foreign investment with industry and rail transportation expansion.
1888 Mexico reelects Porfirio Díaz for a third presidential term.
1892 Mexico reelects Porfirio Díaz for a fourth presidential term.
1896 Mexico reelects Porfirio Díaz for a fifth presidential term.
1900 Mexico reelects Porfirio Díaz for a sixth presidential term.
1904 Mexico extends Porfirio Díaz’ presidential term another two years.
1906 Mexico reelects Porfirio Díaz for a seventh presidential term.
1910 Mexico reelects Porfirio Díaz for an eighth presidential term.
1911-1913 Mexico elects Francisco I. Madero as president.
1917 Mexico elects Venustiano Carranza as first constitutional president
1920 Mexico elects Álvaro Obregón as president.
1921 President Obregón appoints José Vasconcelos as Minister of Public Education.
1922 Under the Ministry of Public Education, Vasconcelos initiates the Mexican mural movement in public buildings.
1924 Mexico elects Plutarco Elías Calles as president.
1928 Mexico reelects Alvaro Obregón for a second presidential term.
1928 Emilio Portes Gil inaugurated as provisional president.
1929 Mexico elects Pascual Ortiz Rubio as president.
1932 Ortiz Rubio resigns and General Abelardo Rodríguez assumes presidency.
1933 Mexico elects General Lázaro Cárdenas as president.
1940 Mexico elects Manuel Ávila Camacho as president.

1910-1920 Period of the Mexican Revolution.
1911 Porfirio Díaz resigns and flees on May 25th.
Archaeological Monuments, reports that there are 25

Leopoldo Batres, General Inspector of ethnographic, linguistic, and historical studies relative to the Americas. Leopoldo Batres acts as a group who contributes to the progress of Mexico City. The Americanists, founded in France, inaugurates the Gallery of Monoliths.

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The XI Congress of the Americanists takes place in Mexico City. The Americanists, founded in France, as a group who contributes to the progress of ethnographic, linguistic, and historical studies relative to the Americas. Leopoldo Batres, General Inspector of Archaeological Monuments, reports that there are 25 sites with regional inspectors or custodians, including Mitla, Xochicalco, Palenque, El Tepozteco, Zempoala, Monte Albán, Papanitla, La Quemada, Chichén Itzá, Sayil, Texcoco, and Teotihuacán.

The Mexican government passes legislation on May 11th declaring all the archaeological monuments property of the nation. This law for the protection of archaeological and historical sites represents the most important action of Díaz' regime for the care of the national patrimony. The National Museum reports conserving almost 15,000 objects, divided in large lots, in addition to the creation of a new section called the Collection of Indigenous Historic Documents.

In the National Museum, historian Jesus Galindo y Villa organizes the study and classification of the pieces. Archaeological archives are distributed in the Gallery of the Monolith, in the entrance, and in five other galleries under the classifications: astronomy and chronology, mythology, objects of religious cult, urns, ball game, commemorative monuments, ethnography, architecture, and sculpture and diverse pieces.

The Mexican government initiates archaeological excavations at the site of Teotihuacán led by the archaeologist Leopoldo Batres. The Pyramid of the Sun is excavated and restored.

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20th century 1905 The Mexican government initiates archaeological excavations at the site of Teotihuacán led by the archaeologist Leopoldo Batres. The Pyramid of the Sun is excavated and restored.

1910 The expansion of the collections leads writer and historian Justo Sierra to divide the heritage of the National Museum. Thus, in 1910 Díaz founds the National Museum of Archaeology, History and Ethnography.

20th century 1920 The National Museum of Archaeology, History and Ethnography houses more than 52,000 pieces and receives more than 200,000 visitors.

20th century 1924 Twenty year project at Chichén Itzá by the Carnegie Institution and Harvard University begins under direction of Sylvanus G. Morley.

1939 Mexico founds the Instituto Nacional de Antropología e Historia (INAH), and later the Escuela Nacional de Antropología e Historia (ENAH), at the Instituto Politécnico. A 1939 law defines the institute's concept and functions giving the Instituto a great deal of power over sites and archaeological properties. This also establishes federal authority, prohibiting private ownership of archaeological objects. Matthew Stirling begins excavations at the Olmec site of La Venta.

1940 On December 13th, under Presidential decree, the history collection at the Museum of Archaeology, History and Ethnography moves to the Castillo de Chapultepec, and the museum changes its name to the current title: National Museum of Anthropology.
**REVIVAL TIMELINE**

**1867** Leon Mehegin creates one of the first examples of a Neo-pre-Hispanic design with a maquette of the Quetzalcoatl Temple in Xochicalco. The French government and the French Scientific Commission sponsor this creation for the Exposition in Paris.

**1877** Under Porfirio Díaz, the Ministry of Development, led by Vicente Riva Palacio, initiates a competition for a Cuahtémoc monument with the themes of truth, beauty, and utility. The chosen artists are Francisco M. Jimenez, (engineer), Miguel Noreña, Gabriel Guerra, Epitacio Calvo, and Luis Paredes (statue reliefs and sculpture).

**1883** Mexico names Porfirio Díaz as General Commissioner of the Mexican Delegation to the New Orleans World Fair. He visits New York, Chicago, St. Louis, Washington, and Boston.

**1887** President Porfirio Díaz inaugurates the Cuahtémoc Monument on Avenida Reforma in Mexico City.

**1889** Mexico participates in the World Fair of Paris with the Aztec Palace Pavilion. The Paris 1889 and 1900 exhibitions are the most expensive exhibitions staged by Porfrian Mexico. The total cost of Mexico's presence at Paris 1889 constitutes 11 percent of the expenditures of the Ministry of Economic Development for the year 1889; it was the highest sum ever paid by Mexico in a world's fair. Inside Mexico's pavilion, the exhibition showcases objects with Maya and Toltec decorative elements.

**1889** In Yucatán, an arch with Maya elements in the Puuc style is built to welcome President Díaz to Mérida. Another arch was erected with the same objective in Oaxaca.

**1900** Mexico participates in the Paris Universal Exhibition. Díaz' Zapotec Piano wins a gold medal. Porfirio Díaz' government supports the creation and presentation of the *Atzimba Opera* composed by Ricardo Castro honoring famous personages of ancient Mexico.

**1904** The construction of the Bellas Artes (Palace of Fine Arts) starts during the Porfirio. Italian designer Gianetti Florenzo designs the palace incorporating elements inspired by pre-Columbian art, such as the Eagle Warrior.

**1904–1913** Pre-Columbian influences begin to appear in the work of architects Frank Lloyd Wright, Walter Burley Griffin, and Francis Barry Byrne, noted for their Prairie School architecture.

**1908** Mayan Revival Style begins in the United States with the Pan-American Union's announcement of an international competition for the design of its headquarters in Washington D.C. The jury chooses a design by architects Albert Kelsey and Paul Cret that includes Maya, Aztec, and Zapotec symbols and architectural traditions.

**1910** The September Centennial of Mexican Independence begins. Opulent public ceremonies take place in celebration of the 100 years of Mexico's independence from Spain, including a parade with representation of past indigenous groups of Mexico.

**1914** Gerardo Murillo (1875–1964), who called himself Doctor Atl (the Aztec word for water) as a gesture of native pride, founds a ceramic decoration school in Tonalá with his brothers Luis and Cirilo. A few years later, they establish a production cooperative. Doctor Atl presents Antonio Peñafiel's book, *Monuments of Ancient Mexican Art*, commemorating the centennial of Mexican Independence, which contains drawings and motifs from pre-Hispanic cultures that inspire the potters of Tonalá and Tlaquepaque to create new designs.

**1915** Leonard Seed builds the Aztec Theater in Eagle Pass, Texas; it is the first documented theater in the Mayan Revival Style.

**1921** Minister of Education José Vasconcelos takes Diego Rivera to Chichén Itzá where he sees the murals in the interior chamber of the Temple of the Tigers, greatly influencing Rivera's later mural work. Roberto Montenegro and Adolfo Best Maugard organize the first exhibit of Mexican popular and contemporary indigenous art.

**1922** President Álvaro Obregón sends a Mexican exhibition and delegation headed by the Minister of Education, José Vasconcelos, and by the influential General Manuel Pérez Treviño to Brazil’s World Fair. This constitutes the first Mexican presence at an international exposition since the departure of Porfirio Díaz.

**1926** San Antonio builds its own Aztec Theater.

**1926–1920** Jean Charlot works with Sylvanus Griswold Morley, of the Carnegie Institute in Washington, in Chichén Itzá registering through illustration the pre-Columbian reliefs and painted surfaces upon discovery.

**1929** Manuel Amabilis makes a conscious effort to synthesize pre-Hispanic styles with modern construction techniques and uses of space for the Seville World Fair. The entire facade, surrounding fences, and a fountain in the outside gardens, is replete with sculpture in Maya and Toltec styles.

**1930s–1940s** Matthew Stirling of the Smithsonian Institution conducts the first detailed scientific excavations of various Olmec sites in the 1930s and 1940s. Stirling, along with art historian Miguel Covarrubias, becomes convinced that the Olmec predates all known Mesoamerican civilizations.

**1931** William Spratling initiates the jewelry workshop, Taller de las Delicias, based on pre-Columbian designs.
# Mesoamerican Geography, Periodization, and Dates

## Periods & Dates

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**Spanish Conquest 1519 - 1542**

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### Map

- **Ancient Site**: Ancient archaeological sites
- **Modern City**: Modern cities
- **Northwest Area**: Area north of the Gulf of Mexico
- **Aztec, Mixtec, Teotihuacán, Toltec**: Region associated with Aztec, Mixtec, Teotihuacán, and Toltec cultures
- **Olmec, Veracruz**: Region associated with Olmec and Veracruz cultures
- **Zapotec, Mixtec**: Region associated with Zapotec and Mixtec cultures
- **Maya Area**: Region associated with Maya culture
THE LEGEND OF THE EAGLE AND THE SERPENT

Most commonly seen on the Mexican flag, the picture of the eagle perched upon a cactus with a serpent in its beak has great significance to the history of Mexico. Huitzilopochtli (hweet-zil-poach-lee), the god of the sun, ordered the Aztecs to build their city on the spot where he had hurled the heart that he tore from the chest of his defeated enemy and nephew, Copil. He told them that an eagle devouring a serpent would mark the spot. They came upon the predicted image on an island in the middle of Lake Texcoco, and built Tenochtitlán, now known as Mexico City. The Aztecs grew crops on the lake using chinampas (floating mats).

Historians continue to debate whether the symbol is properly represented today. Some argue that there was never a serpent near the eagle. Others claim that what is actually hanging from the mouth of the eagle cannot be deciphered from the Aztec codices (books that were written by pre-Columbian and Colonial-era Aztecs). Finally, a few historians question whether the bird was in fact an eagle and not a caracara, or a falcon. Arguments aside, the image is most commonly represented as it appears on the Mexican flag.

SYMBOLS

Many pre-Columbian designs include shapes and patterns found in nature that resemble flowers, seeds, maize, birds, animals, and human forms. Customarily, designs often depict significant gods and deities that took on multiple appearances. One can identify these deities within the decorative and utilitarian arts, pre-Columbian and Revival style, as they appear in the exhibition. Various gods and mythological stories, along with representational drawings and images found in the gallery, reflect legends and historical accounts that offer insight into the rich culture of Mexico.
CUAUHTÉMOC
THE FALLING EAGLE

Known as the last true emperor of the Aztecs, Cuauhtémoc (kwow-TE-moc) surrendered to the Spanish (led by Hernán Cortés), and was tortured to reveal the location of hidden Aztec gold, which probably did not exist. He withstood the agonizing torture of having his feet held against fire. Cortés eventually had Cuauhtémoc executed for conspiring against him, but whether there actually was a conspiracy or not is debatable. Cuauhtémoc’s image, found within the gallery as a maquette, can be seen in a large sculpture on a historic avenue in Mexico City, the Paseo de la Reforma. His image can also be seen in Roberto Montenegro’s large and colorful painting in the gallery, drawing focus to the mighty eagle falling from the sky.

QUETZALCOATL, THE PLUMED SERPENT

Quetzalcoatl (kayt-sahl-ko-tl), combination of a bird and a serpent, was a powerful god in ancient Mesoamerica. Quetzalcoatl represented both earth and sky, and existed as a serpent in one realm and a bird in another. The representation of both serpent and bird has long been seen in the indigenous groups of Mesoamerica, holding power, fertility, spirituality, and rebirth in addition to signifying the connector or portal to the spirit worlds. During the late postclassic period of Central Mexico, Quetzalcoatl often took the form of the wind and was called Ehecatl-Quetzalcoatl. In this context, the god was thought to be the wind that brings rain clouds. The invading Spanish conquistadors may have been believed by the Aztecs to be either servants of Quetzalcoatl or the deity itself. This was probably due to a combination of their horses (Aztecs had never before seen horses), their strange appearances, and word of their cruelty and military might that preceded them.
REMOJADAS
VERACRUZ, MEXICO

The Remojadas style comes from Vera-cruz and is named after the archeological site where a large number of hollow clay figurines were unearthed. Popular within this style are the Sonrientes, which portray lively human figures with smiling faces, filed teeth, and black asphalt paint. Their purpose is still disputed today. It is thought by some that their faces portray a hallucinogenic state of spiritual ritual. Others think that they are simply associated with festivity and joy. The immense number of them discovered implies that they had an important place in pre-Columbian culture.

The smiling warrior face is also seen in the ornate and adorning pieces carved within the upper level of the Zapotec-style piano. Another noticeable motif within the remojada figure is the round disk adorning the ear lobe. Round disks were often carved from jade and stone. The round, jade disk can also be seen in the film, showcased in the gallery, capturing footage of archaeological digs in Mexico by National Geographic.
TLALOC, CHAC, AND COCIJO: GODS OF RAIN AND FERTILITY

Because the assurance of good crops was so important to the indigenous groups, special ceremonies and offerings were given in honor of the deity of rain. It was believed that through offerings, dance, and rituals, the heavens could be pleased and would, in turn, shower crops and civilizations with rain. Tlaloc, the Aztec god of rain and lightning, can be seen intricately carved on the table furniture piece from the Lance and Erika Aaron collection within the gallery. Another god of rain and lightning, known to the Zapotecs as Cocijo, can be seen in the Zapotec-style piano. Lastly, the Mayan god of rain and lightning Chac is one of the oldest and longest worshipped gods in the Americas.

THE DEATH OF THE MOON AND THE BIRTH OF THE SUN COYOLXAUHQUI

According to Aztec legend, the goddess Coatlique (Qwaht-lee-que), was miraculously impregnated when touched by a ball of feathers. Embarrassed by her mother’s frequent pregnancies Coyolxauhqui (Co-yo-shal-kee), goddess of the moon, and her four hundred brothers decided to murder her. Right after Coyolxauhqui had killed Coatlique, it is said that Huitzilopochtli, god of the sun, sprang from Coatlique’s womb fully armed, beheaded Coyolxauhqui, and pushed her down the steps of the temple. It is believed her head, adorned with shining bells, became the moon. Coyolxauhqui’s disfigured body can be seen in a round stone at the Museo de Templo Mayor in Mexico City. During Aztec sacrifices to the god Huitzilopochtli, the throwing of the sacrificial victims’ bodies down the temple steps was a reenactment of Coyolxauhqui’s humiliating demise.
SELLOS

Sellos (seals or stamps) were predominately made of clay, though a few have been identified that are carved from stone, bone, and even copper. These small stamps came in a variety of shapes: flat, cylindrical, and rounded like a rolling pin. Unidentifiable in exact use, most researchers think the stamps were used as a decorative tool for the body, as well as on bark paper, cloth, and pottery. Some, including the artist and recorder of pre-Columbian stamps, Jorge Enciso*, believe that they may have been used in the stamping of delicacy foods for the gods. Researchers agree further study is necessary to better understand the stamps and their significance.

*Did You Know: Jorge Enciso, an artist from Mexico, documented many of the seals during the early twentieth century revival period by drawing and printing them onto paper. His book, Design Motifs of Ancient Mexico, which categorizes the stamps into flowers, animals, and geometrical patterns, can be found inside the plexi-case within the gallery. See if you can find some examples of the geometrical shapes, like those of the stamps, on the pottery.
The Maya civilization had advanced mathematical knowledge, which led to many accomplishments that include, but are not limited to, the building of their ancient cities, the employment of thousands of construction workers, commerce over a vast geographical area, calculating an accurate calendar, and using geometry to create architecture and in art. Unfortunately, the Spanish destroyed many Mayan artifacts that would have helped us better understand how they managed such great accomplishments. However, we can still draw knowledge from a few surviving Mayan books such as the Popol Vuh and the Book of the Chilam Balam of Chumayel. We can also learn about the traditions of the millions of Maya who are still alive today.

The Mayan numeral system is fascinating not only because it can calculate such large quantities, but because one can see how they developed it through studying nature. Mayas were keen observers of their surroundings, and these observations permeate nearly every aspect of their culture, including their numbers.

Unlike Arabic Numerals, which make up a base ten system, Mayas used a system that is base twenty. That means that the place values of Mayan numbers increased by multiples of twenty. Instead of using ones, tens, hundreds and thousands as place values, they used ones, twenties, four-hundreds and eight-thousands. They also had a symbol for zero. (A concept likely discovered by the Olmecs much earlier.) Their numbers are made up of three symbols. A dot represents one, a bar represents five, and a shell or closed hand represents zero.

Mayan numbers were written from bottom to top. So the number nine, for example, would be written as a line with four dots above it. This is likely from their observation of how plants grow upwards. The dot, to the Mayas, was a bean, small rock, or seed. The bar represented an open hand. Today, in current Mayan markets, purchases are made in terms of “hands.” A person would buy a “hand” of fruits or vegetables.

We often think of zero as representing emptiness. The Mayas believed that zero represented completion, which would explain why a closed hand is often seen as its symbol. The number twenty was also important to the Mayas. Twenty represented a whole person, counting fingers and toes. It makes sense then that the Mayas developed this base twenty system through observing nature and the human body.
Many argue that the Mayas may have had knowledge of the golden ratio (also known as the golden section, the golden mean, and the divine proportion), a proportional ratio approximately equaling 1.618. In equations, the Greek letter Phi represents it. The golden ratio has captivated intellectuals for thousands of years because of its appearance and applications in nature, science, and art.

Contrary to what many believe, the terms “golden ratio” and “golden section” are fairly recent. It is true that the term “divine proportion” has been used since the Renaissance, but referring to Phi as the golden ratio only dates back to the early 19th century. The term “golden mean” was used in classical times to denote something that is balanced. It is likely that people have confused our concept of the golden ratio with the classical concept of the golden mean, which has led to many believing the term is much older than it actually is.

The ratio of $a+b$ to $a$ is the same as $a$ is to $b$, which is equal to Phi. The ratio is only $a+b$ is 1.618 times $a$, which is 1.618 times $b$. This proportion is thought to be aesthetically beautiful. This ratio can be used to make rectangles, called golden rectangles, which in turn can be used to draw golden spirals. These golden shapes appear in many aspects. Greek columns have golden proportions, as do Egyptian pyramids, famous paintings, seashells, human DNA, and many of nature’s claws and horns. These ratios appear too frequently to be ignored.

Examples of the Maya’s use of the golden ratio in architecture can be found in the pyramidal ruins of Chichén Itzá in the Yucatan Peninsula. The appearance of the golden ratio in Mayan architecture has led to much debate over whether the Mayas were aware of the concept of Phi. Mathematicians and historians also believe that the golden ratio may have played an important role in the development of the Mayan calendar. This issue is still being researched and discussed today.
CREATING YOUR OWN
GOLDEN RECTANGLE
An Exercise in Maya Design

Materials You Will Need:
- a cord or string (you may use yarn as well)
- a pencil
- a large sheet of paper or poster board (24” x 24”)
- scissors
- a straight-edge

DIRECTIONS:
Use the step-by-step diagrams as a visual guide to help you along the way.
1. Use the tip of your pinky, which is roughly equivalent to an inch, to measure your string (remember the Mayas did not have specialty measuring tape).
2. Taking the tip of your pinky, start from one end of the string, counting 20 units to the other end. Cut your string here. It should be roughly 20 inches.
3. Double your string over, making two equal parts, but do not cut.
4. Your string should now measure about 10”. Using this measurement, create a square on your paper, marking the four corners of the square and connecting them with your pencil. Use a straight edge to sketch the connecting lines.
5. Next, find the midpoint of the bottom square side. You may do this by simply doubling over your 10” string once again to make 5”. Hold the 5” cord from one end of the bottom side of the square to the middle and mark this point (Point M).
6. Now, unfolding your cord completely, hold one end of the string at Point M, pulling it taut to the top right corner point (Point P₁) of the square. Put your pencil at that corner and wrap the string around it.
7. Holding the string with your index finger at Point M, swing the remainder of the cord down and to the right, marking the curve with your pencil until it is outside of the bottom right corner of the square. Use your straight edge to extend the line from the bottom of the square to the curve.
8. Using your straight edge, extend the lines from the top of the square to the right, and from the point that you made in step 7 upward until the lines meet. You have now completed a Golden Rectangle!
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