

Machu Picchu

A Reading A-Z Level Z1 Leveled Book
Word Count: 1,817

Connections

Writing

Create a travel brochure for Machu Picchu. Include information from the book to entice travelers to visit this ancient site.

Social Studies

Research to learn more about the terrace farming technique used by the Inca people. Create a model of it and describe how it works.

LEVELED BOOK • Z¹

Machu Picchu

Reading A-Z

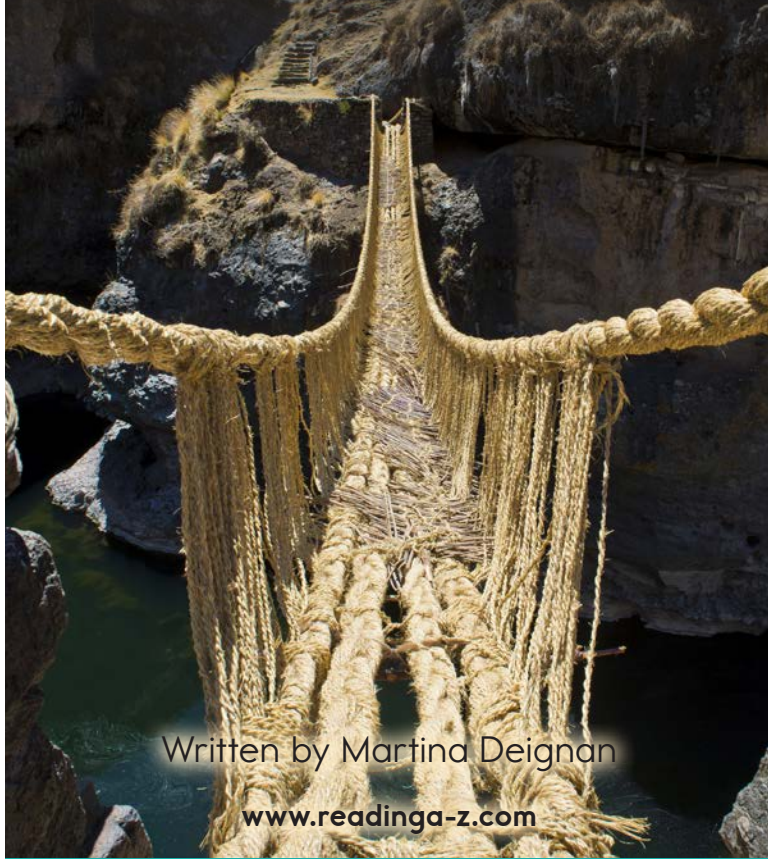
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Focus Question

What do people today know about Machu Picchu and the Inca people?

Words to Know

aqueducts	polygonal
artifacts	quarry
conquistadors	solstices
debunked	strategic
Inca	terraces
observatory	World Heritage Site

Title page: The Q'eswachaka (kes-wah-CHAH-kah) suspension bridge over the Apurimac (ah-poo-REE-mahk) River is the last-known working suspension bridge built by the Inca. A similar bridge once spanned the Urubamba River. It was a secret entrance to Machu Picchu.

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Machu Picchu
World Landmarks
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Correlation

LEVEL Z1

Fountas & Pinnell	W-X
Reading Recovery	N/A
DRA	60



Machu Picchu is high enough that clouds often pay a visit. In the Inca language, *machu* means "old," and *picchu* means "peak."

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A Mysterious City

Machu Picchu, in the Andes Mountains of Peru, is known as the "City in the Clouds" because at 2,350 meters (7,710 ft.) above sea level, it is often surrounded by dense fog.

This mysterious and haunting ancient city of the **Inca** was unknown to most of modern civilization for over four hundred years. However, in 1911 it was rediscovered and recognized as a priceless treasure of the Inca Empire.

An Explorer and Adventurer

American explorer and archaeologist Hiram Bingham had studied old charts and texts. He became convinced that somewhere in the Andes was an Incan capital city—one never found by Spanish invaders.

Bingham traveled to Peru in hopes of finding this city. A local Peruvian farmer told him the location of a city that had been abandoned long ago. Bingham made the steep and difficult climb up the long, overgrown path. What he saw as he reached the top amazed him. Through tangled vines and trees, he gazed at a remarkable ruin of Incan architecture that included stone walls, **terraces**, and sacred temples.

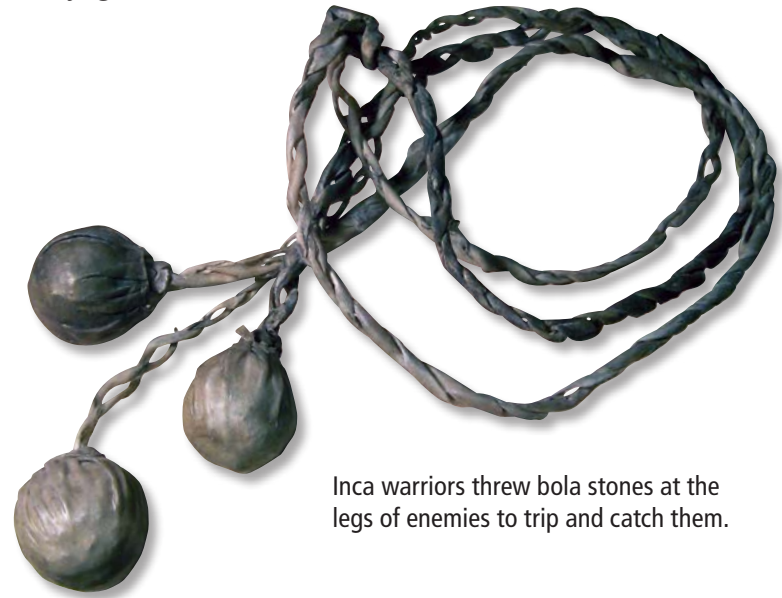
While Bingham is credited with making Machu Picchu known to the world, he may not have been the first outsider to visit it. Evidence suggests that missionaries and other explorers reached the site decades before him. However, they were less vocal about what they found there.



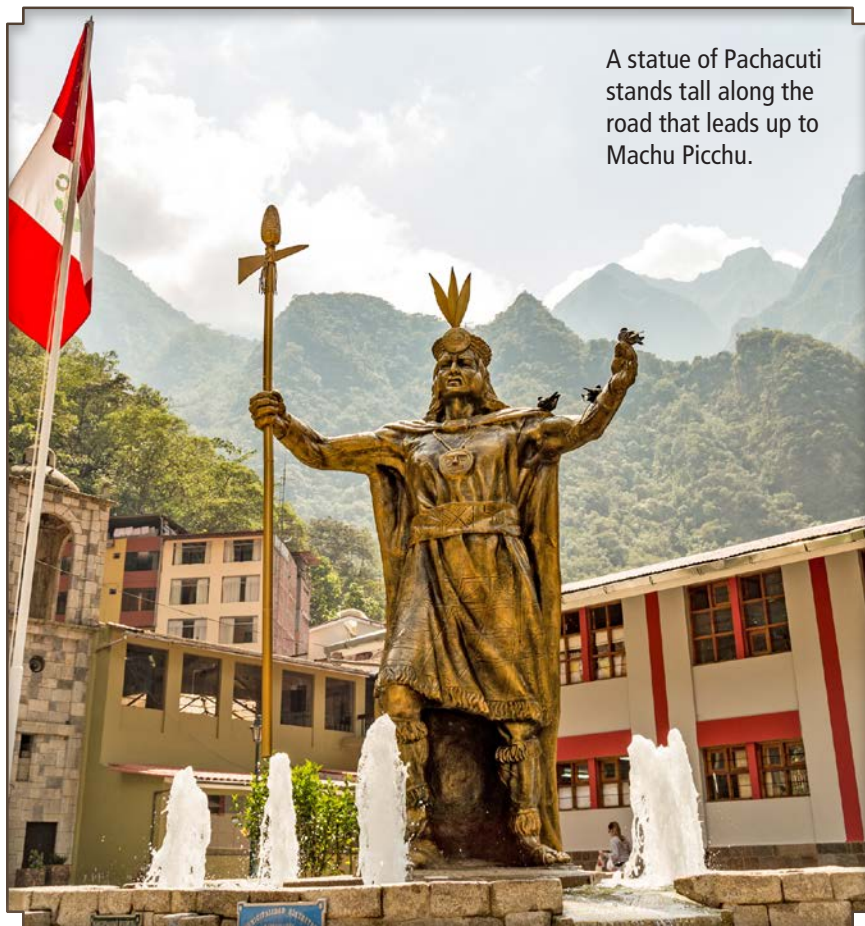
Who Were the Inca?

Since no one has discovered a written Inca language, archaeologists and historians attempt to understand their history by making educated guesses. In the more than one hundred years since the rediscovery of Machu Picchu, historians and archaeologists have pieced together theories about the Inca and why and how they may have built the city.

Some historians think that the Inca were originally a small clan of cave dwellers living in the Andes Mountains. By 1400 CE, the Inca began to conquer other groups living in the area. As the Inca folded more people into their society, their army grew.



Inca warriors threw bola stones at the legs of enemies to trip and catch them.



A statue of Pachacuti stands tall along the road that leads up to Machu Picchu.

Between 1438 and 1471, during the reign of the emperor Pachacuti (pah-chah-KOO-tee), the Inca experienced some of their most prosperous years. A fierce and mighty warrior, Pachacuti commanded a strong army and defeated many neighboring kingdoms. Under his leadership, the size of the empire stretched beyond the borders of present-day Peru to include present-day Ecuador. Machu Picchu was most likely built for Pachacuti.

Why They Built

No one knows why the Inca built Machu Picchu. Archaeologists have theories, though—many different theories. Bingham first thought Machu Picchu was the birthplace of Inca society. He later changed his mind and thought it was the legendary last refuge of the Inca, where Inca rulers battled Spanish **conquistadors**. Today, archaeologists know that refuge was actually in the jungle, many kilometers from Machu Picchu.



Archaeologists excavate part of Machu Picchu in 2016.

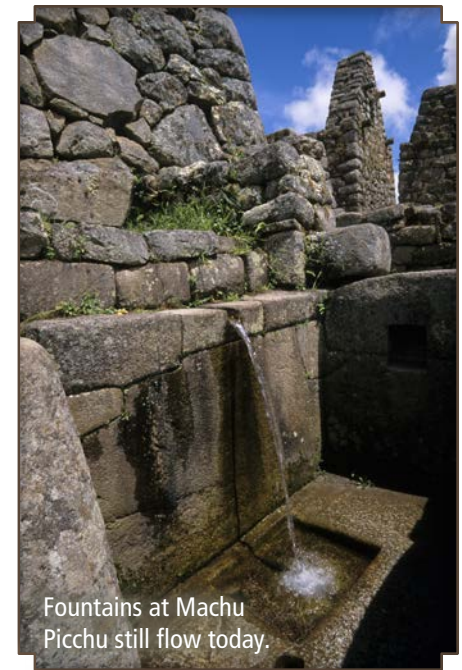
Another **debunked** theory is that Machu Picchu was a temple devoted to chosen women, a holy order dedicated to the Inca Sun god, Inti. Bingham's team found dozens of skeletons buried at the site and thought nearly all were women. In 2000, though, another Yale archaeologist found that only half the skeletons were women. Some were infants and children. Today, archaeologists largely agree that the skeletons were not those of priestesses.

Dozens of other hypotheses have been put forth about Machu Picchu. Various scholars thought it was a prison, a trade hub, a women's retreat, a city devoted to the coronation of kings, or a station for testing new crops. Today, many archaeologists think that Machu Picchu served as a royal estate for Inca emperors and nobles. Whatever its purpose, experts think the Inca began building Machu Picchu in the fifteenth century. They chose the spot for the city because of its **strategic** location. They could observe people moving below in the valley, but those below could not see that there was a city on top! Even if they had seen it, the location would have been easy to defend.



The steep mountains rising up to the city would have made it a hard place to attack.

Another advantage to its location would have been the area's abundant natural resources. Although the Urubamba River flows far below Machu Picchu, a rain-fed spring feeds the area. A stone foundation still stands today where the water emerges from the ground. The Inca built a system for collecting spring water into the hillside. A canal carried river water to fountains that were used as a source of drinking and bathing water, and although the canal also crossed the agricultural terraces, experts are not sure whether it was a source of irrigation.



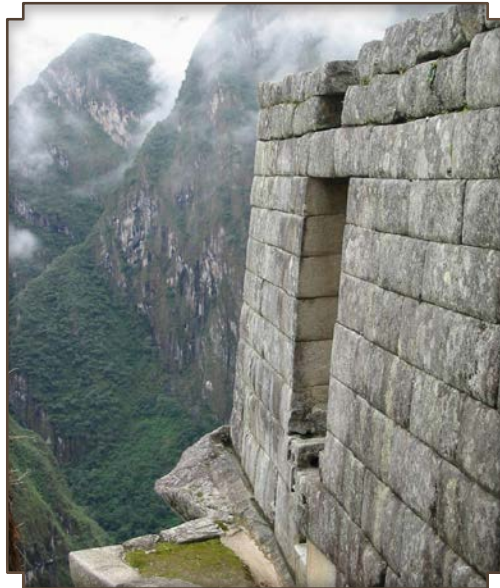
Fountains at Machu Picchu still flow today.

What They Built

Hiram Bingham thought the Inca might have chosen the location due to a granite **quarry** nearby. He theorized that this meant workers did not have to carry heavy boulders from a great distance. In fact, the majority of stones used in the construction of Machu Picchu are fairly small.

The Inca are famous for the **polygonal** stones they used in their buildings. They were skilled stone carvers who may have used the wooden wedge technique. This involved drilling holes into rocks, inserting wet wooden wedges into them, and waiting until the wedges froze. Since ice has greater volume than water, it would have forced the rock apart. The wooden wedge technique cannot explain the smoothness and perfect straightness of the bricks, however, so how the Inca shaped the enormous blocks of granite remains a mystery. Carving granite stones is difficult even with today's technology.

Next, the builders fit the stones together so well that no mortar was needed. Today, if you tried to slip a knife between these stones, it would not fit. The walls are that sturdy.



The walls at Machu Picchu are in remarkably good shape despite having stood on the mountaintop for centuries.

As for the city's design, the Inca divided Machu Picchu into two sections: an urban sector that contained the main buildings and an agricultural sector where crops were grown.

The urban sector included a district where workers and their families lived, along with living quarters for the king and important officials. It also included the Temple of the Sun, which might have been used as a solar **observatory**. The Inca constructed buildings with carefully placed windows that would receive light at certain times of the year. At the Temple of the Sun, direct sunlight enters a window on the east wall and shines on a large rock in the center of the room on the summer and winter **solstices**, in late December and June, respectively. Some historians think only priests were allowed inside.



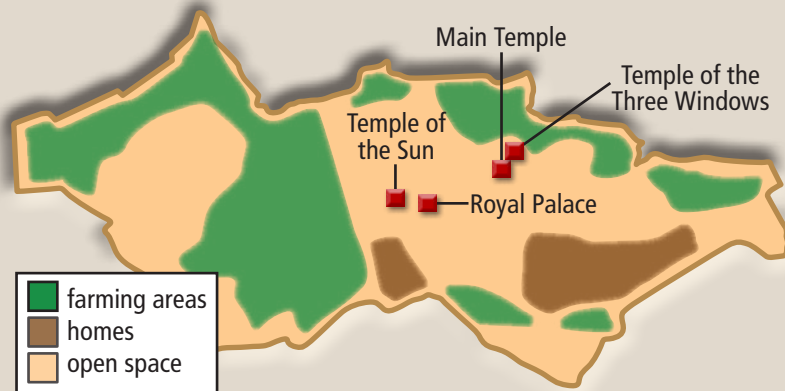
Sunlight shines into the Temple of the Sun on the winter solstice.

Machu Picchu Features



Royal Palace

Temple of the Three Windows



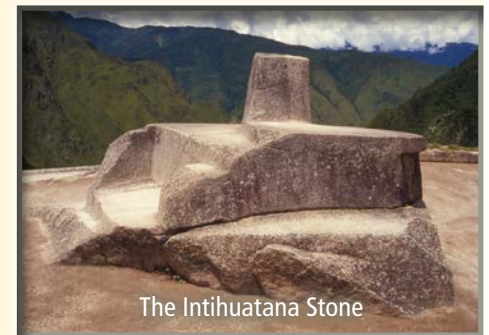
Archaeologists think the city was built for rich and powerful Inca in the 1450s. It was a royal spot where the ruler could relax and entertain important visitors. A total of about 150 homes were built at Machu Picchu. They housed about 750 residents and were all about the same size. The royal palace and home of the Inca emperor, Pachacuti, was perhaps the grandest of all.

In the western part of Machu Picchu is the temple district, also known as the Acropolis. Here sits the Temple of the Three Windows, a large hall with three trapezoidal windows in one wall—the largest-known windows in Incan architecture. Nearby is the Hitching Post of the Sun, also known as the Intihuatana (een-tee-wah-TAH-nah) Stone. It is a sundial that consists of a wide pillar and pedestal, carved as a single unit and standing 1.8 meters (6 ft.) tall.

Located at the southern end of the site, the agricultural sector was made up of dozens of leveled terraces, each designed to support the ones around it on the steep mountainside. Without terraces, it would have been difficult for the Inca to grow crops on the steep mountain slopes.

Carved in Stone

The Hitching Post of the Sun, or Intihuatana Stone, was carved from a single piece of rock. At midday on the vernal and autumnal equinoxes—the dates marking the start of spring and autumn—the Sun is directly over the pillar, so it does not cast a shadow. A rough translation of Intihuatana from Quechua (KECH-wah), the language of the Inca, is “to tie up the Sun.”



The Intihuatana Stone



The terraces at Machu Picchu are so well designed that they still stand today.

When the Inca built Machu Picchu, about 200 centimeters (79 in.) of rain fell every year. That amount of rainwater could have eroded the soil, but Inca engineers designed the agricultural sector so that the rainwater would seep through the soil to a layer of rocks and gravel placed underneath. From there, the water flowed to **aqueducts** along the sides of the terraces into the forest below. This system, which drained the water safely and efficiently, helped keep Machu Picchu's terraces and other structures from collapsing.

The Inca and the Spanish

Although the city has stood for hundreds of years, experts think people lived there only until the early or mid-1500s. Events elsewhere in the Inca Empire ultimately led to Machu Picchu's desertion.

When Huayna (WY-nah) Capac became the new ruler in 1493, he extended the empire farther than ever before. By the time he died in 1527, the Inca ruled more than twelve million people, who spoke at least twenty different languages. After he died, his two sons, Huascar (WAHSS-kar) and Atahualpa (ah-tah-WAHL-pah), ruled separate sections of the empire peacefully for a couple of years but eventually fought for control of the whole empire. In 1529, civil war broke out. Atahualpa gained control from his brother in 1532, but only for a short time.

A few years later, the Spanish conquistador Francisco Pizarro arrived in the Inca empire with 180 soldiers and 37 horses. Pizarro took the Inca by surprise. They had never seen guns or horses in battle before and were quickly overwhelmed. Thousands of Inca warriors died, and Pizarro took Atahualpa hostage. The Inca offered Pizarro more than 22 metric tons (24 t.) of gold and silver that they had collected throughout the Inca Empire to free their ruler. Still, Pizarro ordered him killed. Atahualpa's death led to the downfall of the empire,



The painting *Pizarro Spurned the Friendship of the King of the Incas* depicts how the first meeting between the conquistador and the Inca ruler might have begun.

and people lived in Machu Picchu for only a few decades longer.

There is no evidence that the conquistadors ever attacked or even reached the mountaintop citadel. Instead, it was desertion that ended habitation of this mysterious city. Historians think that the years of fighting during the civil war and the spread of smallpox, which was brought to Mexico by European explorers in the 1520s, had considerably weakened the empire by the time Machu Picchu was abandoned. Experts estimate that over several decades, the Inca population declined by 95 percent. Food supplies to the city may have stopped, and the site was most likely too remote for people to stay without support.

As a result, time and nature hid Machu Picchu from the modern world as trees and vines began to cover the city. It stayed hidden for centuries, known only to locals who farmed in the area.



Machu Picchu Today

The people of Peru are very proud of Machu Picchu, and in 1983 the ancient city was designated a United Nations Educational, Scientific, and Cultural Organization (UNESCO) **World Heritage Site**. UNESCO seeks to preserve important historical places that have special cultural or physical significance. Machu Picchu is recognized as a place that can teach future generations a great deal about the Inca culture.

When Hiram Bingham left Machu Picchu, he took thousands of **artifacts** with him. These went to Yale University so he could study them during his years of research. When Bingham died, there the artifacts remained. For almost a century, the Peruvian government asked that they be given back. In 2007 an agreement was reached, and the university returned most of the artifacts.

To preserve the ancient ruins, the Peruvian government has limited Machu Picchu's daily visitors to 2,500 since 2011. Security cameras, timed visits, and certified guides have also added an extra layer of protection to the famed city.

Today, historians continue to study Machu Picchu in hopes of discovering new information about the Inca. We have learned a great deal about their history and customs, but there are many more mysteries to uncover about this amazing culture and place.

Glossary

- aqueducts** (*n.*) artificial channels that carry water from one place to another (p. 15)
- artifacts** (*n.*) objects made or used by humans long ago (p. 18)
- conquistadors** (*n.*) the Spanish word for *conquerors*; men who conquered areas of the New World for Spain in the sixteenth century (p. 8)
- debunked** (*adj.*) shown to be untrue (p. 8)
- Inca** (*n.*) a people and empire present in the Andes Mountains of South America until the Spanish conquest (p. 4)
- observatory** (*n.*) a place used for scientific observation of things in nature, such as astronomical objects, weather, or earthquakes (p. 12)
- polygonal** (*adj.*) having three or more straight sides (p. 11)
- quarry** (*n.*) a place where marble, slate, or other kinds of stone are excavated (p. 10)
- solstices** (*n.*) the two times of the year when the Sun is farthest from the equator (p. 12)
- strategic** (*adj.*) designed for a purpose; relating to a careful plan for solving a problem or achieving a goal (p. 9)
- terraces** (*n.*) flat areas made in a hillside that are used for farming (p. 5)
- World Heritage Site** (*n.*) a natural or human-made place that has cultural or scientific value and is recognized and protected by the United Nations (p. 18)



Three train lines take people to visit Machu Picchu. Some adventurous tourists take a challenging three-to-four-day hike to reach the site.