7

History-Social Science Standard 7.7.1.

Student Edition

California Education and the Environment Initiative

Sun Gods and Jaguar Kings

California Education and the Environment Initiative

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Contents

Lesson 1 From Riches to Ruin—Tales of Two Cities

California Connections: From Boom to Bust, California Ghost Towns 2

Copán: The Rise and Fall of an Ancient City 6

Lesson 2 Born in the Shadow of Mountains

Landform and Ocean Facts 9

Lesson 3 From Tropical Forests to Icy Glaciers

Climate Visualization 13

Overview of Climates of Mexico, Central America, and South America 15

Lesson 4 Hotbed of Biological Diversity

Ecosystem Background Information 17

Ecosystems of Mexico, Central America, and South America 19

Lesson 5 Treasure as Tribute from a Rich Land

Key to Tribute Records 20

Aztec Province Glyphs 23

Cihuatián Province *Codex Mendoza* Tribute Record 24

Tepeyacac Province *Codex Mendoza* Tribute Record 25

Tochtepec Province *Codex Mendoza* Tribute Record 26

Xoconochco Province *Codex Mendoza* Tribute Record 27

Tepecuacuilco Province *Codex Mendoza* Tribute Record 28

Lesson 6 Development of Urban Societies

Tenochtitlán: An Ancient Aztec Urban Society 29

Machu Picchu: An Ancient Inca Urban Society 31

From Boom to Bust, California Ghost Towns

Part 1

Many people still associate California with the Wild West. They remember the rough frontier and the promise of wealth that drew cowboys and fortune hunters. Television and movie Westerns keep these memories strong. These shows continue to be popular, glamorizing this era more than 150 years after the Gold Rush.

What is the truth behind the glamour of these so-called wild places? Some of them grew rich quickly (boomed), went broke quickly (busted), and then left their abandoned corpses as ghost towns. How did the way people used resources seal the fates of these towns?

Two ghost towns tell the story. Bodie, located high in the eastern Sierra, promised riches that outweighed its bleak climate. China Camp, a village founded in the 1870s in the mild climate of San Francisco Bay, held its own proverbial "gold mine" in the form of shrimp. The fates of these two towns closely resembled each other, despite the towns' many differences.

Bodie State Park, California

Bodie's Boom

The town of Bodie sprouted in a treeless scrubland at 8,375 feet (2,553 meters), where the peaks of the eastern Sierra rise sharply from the high desert of eastern California. Until the 1800s, the dry, cold climate and rugged landscape supported only small numbers of nomadic Northern Paiute Indians. But the geologic forces that created the unique landscape also exposed gold, a mineral so valuable that settlers flocked to this harsh land.

Although gold was first discovered in Bodie in 1859, it was not until 1875 that a cave-in exposed enough of the ore to attract San Francisco investors who fueled the town's

Drawing of China Camp children

growth. With the financial backing in place for the costly operations needed to extract the ore, Bodie boomed. The Standard Mining Company began massive mining operations and earned more than $784,000 from gold and silver in 1877 (approximately $446,000,000 in 2008 dollars). This bonanza drew hundreds of prospectors, especially as reports spread that ore gushed from a gigantic vein. Early luck led to overly optimistic and ever-bigger investments.

With a single industry at the base of its economy, Bodie developed into a gamble. Certain goods needed to support mining did not exist in the local ecosystem; for example, townsfolk needed wood for construction, mineshaft beams, and heating, but Bodie had few trees. The Bodie and Benton Railway formed in 1881, just to bring in lumber.

Despite the lack of local resources, many services developed to support people in the growing city. Bodie became known as a brash town full of saloons and gambling halls. The real-life version of a Western movie, behavior in Bodie resulted in many shoot-outs and near daily body counts.

Growth of China Camp

Many Chinese immigrants who originally came to the U.S. to work on the railroads found themselves out of work after the Gold Rush. During the recession of the 1870s, many of these workers headed toward the coast and the mild climate of the San Francisco Bay.

Fed by the silt-laden waters of the Sacramento-San Joaquin River Delta, the San Francisco Bay offered a diversity of marine resources, including the delicious California bay shrimp. Saltgrass around the bay supported huge populations of these creatures in the mid-1800s.

Many Chinese in California hailed from the Pearl River Delta, where shrimping was a well-established industry; the new settlers used the same skills to duplicate their success in Northern California. Chinese immigrants settled in numerous “shrimp camps” on the San Francisco and San Pablo bays. China Camp, on the shores of San Pablo Bay directly across from the delta in an area of extensive mudflats, saltgrass, and pickleweed, was the largest of these camps, with 500 residents at its peak.

Like Bodie, China Camp consisted mainly of men. The camp provided a few services and shops, including a marine supply store. Shrimpers in China Camp coordinated their efforts by circling their boats close together; they ate, drank tea, and relaxed as a group as the tide swept shrimp into nets set in tidal mudflats. These shrimpers pulled in large catches thanks to their special bag nets. Initially, they dried most of the catch and sent it back to China. By 1885, the fishermen were bringing in more than 500,000 pounds of shrimp for export and local consumption.

Part 2

Bodie's Bust

The gold in Bodie lasted only a few years. After peaking in mid-1880 at about 7,000, the population dropped to 3,000 by 1882, when several mining companies went bankrupt. An earthquake made a major mine inaccessible, and the miners decided it would be too difficult and expensive to relocate. With the town's only industry fading, many people went elsewhere for opportunities.

The town lingered on as a few citizens tried to make a simple living off the land. But a harsh winter from 1878 to 1879, claimed hundreds of lives from exposure, disease, and a gunpowder explosion. A major fire in 1937, all but leveled what remained of the town.

Mining continued on a smaller scale until 1942, when a new law passed that limited mining to endeavors that aided the war effort. Bodie had to be self-reliant to survive, so when the town could no longer tap its minerals for profit, the population dwindled to a few families. The last family left in 1962. Because Bodie was so remote, residents found it nearly impossible to bring their belongings with them when they left. Many of these items remain in Bodie today, forming a well-preserved ghost town full of artifacts now protected as Bodie State Historic Park.

Crash at China Camp

As demand for bay shrimp grew locally, so did discontent with the success of the Chinese. The anti-Chinese sentiment from the established fishing industry stemmed partly from the bust following the Gold Rush. Unemployed miners traveled to San Francisco

Bodie State Park, California

Shrimp boat, China Camp State Park, San Rafael, California

looking for ways to live off the land; with little work to go around, non-Chinese fishermen pressured the government to weaken the competition.

People began blaming the bay's degrading ecosystem on habitat damage caused by the Chinese shrimpers. Pressure led to prohibitive new laws that required special licenses, limited the fishing season, outlawed traditional Chinese fishing techniques, prohibited export, and restricted catch size.

By blaming the Chinese for the bay's decline, legislators overlooked other possible causes, such as the disposal of untreated sewage and the diversion of fresh water by cities. The outlawing of bag nets in 1911 proved the final blow to the Chinese shrimping industry. Eventually only one family-run company remained at China Camp. That family sold the town to the California Department of Parks and Recreation in 1976; what remains can be visited at China Camp State Park.

Boom and Bust Cycles

Both Bodie and China Camp were founded on one plentiful resource, but residents faced different challenges accessing the resources. During Bodie's boom, financing helped overcome tough physical geography to mine a wealth of minerals. The town went bust when a natural disaster cut off its main way to access these minerals. China Camp boomed because the settlers matched their rich fishing know-how with abundant bay resources. The bust came when social and political pressures kept the shrimpers from using their skills at a time when pollution and other factors increasingly affected the bay's resources.

Both China Camp and Bodie depended so heavily on a single resource that they could not survive when that resource declined or became inaccessible. This problem is typical of many economies based on natural resources. To survive over the long term, a community needs steady access to a variety of resources.

Copán: The Rise and Fall of an Ancient City

Maya at ceremonial ball game

Imagine a landscape blanketed in jungle, surrounded by rugged hills topped with pine and oak. It is wet and warm all year. Rivers tumble from the mountains, eroding the hillsides into flat valleys filled with deep soil. Here in northern Central America, people settled and began farming the rich land as early as 1400 BCE (Before the Common Era). They grew corn, beans, peppers, and other products with the ample rain and sunshine. They lived simple lives in small villages.

This way of life changed in 426 CE (Common Era), when a lord invaded the valley and founded the city of Copán and declared himself king. The king was the social, political, and religious focus of the city's life. There were two main classes of people in Copán: rulers and commoners. The Maya king and the priests made up the ruling class. Peasants and slaves were commoners. Rulers and priests lived within the city, while the common people lived on farms and settlements outside

of the city. They came into the city for special events, ceremonies, and festivals.

Maya religion was based on a belief that linked celestial bodies and animals to natural systems, a healthy world, and good harvests. They believed that all human beings were included in these cycles, and that it was their sacred duty to move in harmony with them. The priests made sacrifices of blood to keep the Maya gods happy.

Standing on top of a brightly painted temple in Copán in 700 CE, you would have looked over a vast, bustling city of more than 25,000 people. Below were palaces, temples, and monuments built from stones from the surrounding area. Central to the city were markets filled with food, gold, jade, cacao, and feathers. In the distance you would have seen thousands of thatched homes surrounded by fields where farmers tended corn and beans. This was truly a land of plenty.

An extensive trade system developed in Copán. The king traded jade and obsidian, food, and materials with other Maya city-states. The Maya developed astronomy, calendar systems, and hieroglyphic writing.

Maya village

They used this knowledge in planning when to plant and when to harvest, and to keep track of the agricultural harvests and trade.

Looking over this prosperous center in 700 CE, nobody would have guessed it would be completely abandoned in just over 200 years. The first blow came in 738 CE when Copán's king was killed during a state visit to a nearby city. Over the next hundred years, various people took the throne for short periods of time, but by 822 CE the royal presence in Copán was gone. Without a leader, the city began to break down. Trade networks and alliances were abandoned, laws were not enforced, and the religious and political order collapsed.

To make matters worse, the fertility of Copán's valley declined. At one time the valley was mostly forested, but by the 700s, the forest had been cut down. Farmers tried to grow more food on their land by putting more crops in smaller areas. But production dropped, facilitated by a drought that lasted for many years.

With less productive land and less access to goods from other cities, people began to leave the area. By 950 CE, Copán had only half of the population that had lived there 200 years earlier. Copán was completely abandoned by 1300 CE, leaving the once glorious temples and palaces to be enveloped by tropical forest.

Landform/Ocean Feature	Description
Altiplano	This high plateau sits in the central Andes, at 11,000 feet (3,353 meters) above sea level. This area was once covered by a vast inland lake. It is now covered with a dense grassland that holds the fragile soil together with deep roots. The grass turns the bright, high-altitude sunshine into energy. Animals, such as llamas and alpacas, which produce highly valued meat and wool, eat this grass.
Amazon Basin	The tributaries of the vast Amazon River run down the eastern side of the Andes. They gather into large rivers that flow slowly across the flat land toward the Atlantic Ocean. Here, the largest rainforest on Earth covers almost 2 million square miles. Many plants and animals, such as orchids, monkeys, jaguars, tropical birds, and butterflies live here. The Amazon lowlands slow the flow of water running off from the Andes. This change of pace allows the water to slowly meander toward the Atlantic, distributing nutrients throughout the forest.
Andes Mountains	The peaks of the Andes rise sharply along the edge of western South America, and contain South America's tallest peak, *Cerro Aconcagua*. These mountains reach higher than 22,000 feet (6,706 meters). The Andes are dotted with volcanoes with rich soils and valleys with mild climates. The mountains also have many gold and silver deposits. The peaks of the Andes push air upward, cooling it. The water vapor in this cool air condenses into rain that flows down the mountains. Air in the high mountains is so cold and dry that foods, such as potatoes, can be freeze-dried for long-term storage.

Landform/Ocean Feature	Description
	Bordered by high mountains on one side and ocean on the other, the Atacama is the driest desert in the world. Some places here have gone more than 400 years without any evidence of rainfall. Minerals, such as salt and copper, are common here. The extremely dry conditions are perfect for preserving things, from foodstuffs to human mummies.
	The Belize Barrier Reef is the second largest coral reef in the world. An incredible variety of organisms live here. They include more than 60 species of coral and more than 300 species of fish. The reef breaks rough ocean currents before they hit the shore, protecting coastal villages from rough water and storm surges. Along the reef, many small islands provide places where ocean water can be evaporated to extract salt. Edible fish and conch that live in the reef can be dried for long-distance transport.
	The clear waters of the Caribbean Sea support some of the most diverse marine communities in the world. These communities include coral reefs, seagrass beds, and mangrove swamps. Fish, brightly colored shells, and coral offer food and other resources for people. The warm water here evaporates into the air. This evaporation increases the rainfall along coasts and powers storms that can grow into huge hurricanes.

Landform/Ocean Feature	Description
	The cold Humboldt Current sweeps north from Antarctica along the Pacific coast of South America. Nutrient-rich sediments rise upward in the water offshore through a process called "upwelling." This shift in the water layers creates one of the most productive marine ecosystems in the world. Here, people harvest tons of anchovies, sardines, tuna, and other fish.
	This inland lake is formed by a number of rivers that flow into a basin surrounded by volcanoes. Vegetation falls into the lake and rots at the bottom, adding nutrients to the soil. Rich sediment and a permanent supply of water make it an ideal location for agriculture. People created raised gardens called *chinampas* in shallow parts of the lake. Much of Mexico City sits on the drained and filled remains of Lake Texcoco; however, some areas continue to be agriculturally productive, including the chinampa gardens of Xochimilco.
	Lake Titicaca is one of the highest lakes in the world. It is fed by water from numerous mountain streams that carry rich soil from the surrounding volcanic peaks. Lake Titicaca provides a source of fresh water in the dry Altiplano. Reeds that grow in the lake are so thick that people make them into artificial islands, upon which they build entire villages.

Landform/Ocean Feature	Description
	This valley is located where the Caribbean and North American tectonic plates meet. It is the only place in the Americas where jade, a valuable gemstone, occurs. This hard green stone is polished into jewelry, masks, and important ceremonial objects. Water from the highlands of Guatemala runs through this valley in permanent rivers. These waters bring rich volcanic soils to the lowlands and provide travel routes for trade.
	The peaks of the Sierra Madre support some of the richest and most diverse natural systems in the world. A high valley divides these peaks into two ranges. The Sierra Madre Occidental is on the west. The Sierra Madre Oriental is to the east. These volcanic mountains help to push air upward over Mexico. This effect on air pressure creates rain that sustains lush vegetation toward the southern part of the range. Active volcanoes, such as Popocatépetl, shower nutrient-rich ash on valleys below, building some of most productive soils in the world. Water flows through the hard rock beneath the soft soil, where it collects in aquifers that come to the surface as freshwater springs.
	This flat area was once seafloor and is made of limestone. The limestone neutralizes acid from plant decomposition in the forest, resulting in unusually rich tropical soils. Limestone erodes easily, forming wells, called *cenotes* that provide access to fresh water. Limestone provides an important building material for people. It can be carved into large blocks and burned to make cement. Burnt limestone added to cornmeal keeps tortillas soft and flexible.

Climate Visualization

You are about to embark on a journey that will take you through some of the most incredible landscapes on Earth. So relax and get ready for the trip of lifetime. Take a deep breath and feel your body slowly floating upward. You are moving south along the rugged coastline. South from California all the way to South America, to the Equator itself.

Breathe through your nostrils and smell the salt air. Now you are on the cool Pacific coastline of Ecuador. Behind you, across hundreds of miles of open ocean, are the islands of the Galápagos. In front of you is a rocky shore battered by waves. Here, the warm Panama Current meets the freezing cold waters of the Humboldt Current, which sweep north from Antarctica. This meeting of the currents creates a rich marine environment teeming with fish. You packed a fishing pole, so you take a while to sit on the cliffs and angle for a bite. Luckily, you brought a full water bottle. Fewer than 29 inches (50 centimeters) of rain fall here over the entire year. As you sit, you keep your sweatshirt on; the temperatures are cool along the ocean as they hover around 65° F (18° C).

You pull off your sweatshirt as you travel slightly further inland. Dry grass rustles underfoot and many of the trees here are leafless. You are in the dry forest of the Ecuadorian coast. You take a drink from your water bottle. Only 20 to 40 inches (51 to 102 centimeters) of rain fall in this region and most of it drops during the rainy season (from June through October). You're beginning to sweat, since it is over 90° F (32° C) during the day here for most of the year; it drops to 70° F (21° C) at night.

Time to get to somewhere cooler and you know just where to go. In front of you, you see the towering peaks of the Andes, the second highest mountain range in the world. As you start up the mountains, things change quickly. The air gets cooler and wetter. The dry forest gives way to green ferns and waterfalls. At just about 5,000 feet (1,524 meters) above sea level, you see fields of corn and coffee all around you. You pull out your umbrella as an afternoon storm starts. There's a moderate amount of rainfall here, about 20 to 100 inches (51 to 254 centimeters) annually. Right now it's still pleasant, about 75° F (24° C). But you are glad you brought a jacket, because it will drop below 50° F (10° C) tonight. The mild temperatures and year-round rain here make it a perfect place for people to live, a land of eternal spring.

As nice as it is in these green valleys, you cannot resist going up toward the snow-covered peaks in front of you. As you go higher, the forests get thinner and thinner. You walk among thick bunches of grass, where herds of furry alpacas graze in the bright sunlight. Here in the Andean Altiplano temperatures stay cool all year-round, at an average of 45° F (7° C). It is harder for you to hike up here at 10,000 feet (3,048 meters), because there is less oxygen in the crisp air.

Aconcagua Mountain, Andes Mountains, Argentina

You put on your hat and stuff your hands into your pockets to warm them.

You continue even higher, until all vegetation disappears, and snow and ice crunch under your feet. You are now higher than 16,000 feet (4,877 meters), on the glaciers that cover the high Andes. You pull down the earflaps on your hat and wrap a scarf around your neck—the dry, freezing cold air whips over the mountains and makes you shiver. It is the frigid conditions here that preserved Inca mummies for hundreds of years on these high peaks. You look out to see nothing but vast, sharp, white and gray mountains all around. Here, any moisture still left in the clouds gathers as ice or snow, and temperatures stay below freezing all day. You cannot believe it is so cold here right on the Equator. To think that before this trip you thought tropical places were all hot!

You see a huge bird circling overhead—it is an Andean condor—and with it you plunge over to the eastern side of the mountains. You fly over the grassy Altiplano and see misty wet forests covering the slopes below. As you drop to lower than 2,000 feet (610 meters) in elevation, you see that the eastern side of the mountains is different from the dry western coast. Flocks of red and blue squawking macaws fly over what looks to be an endless forest, and below you hear the calls of monkeys and smell the sweet aroma of orchids. You are now in the headwaters of the Amazon, where it rains almost daily, up to 250 inches (6 meters) per year. The combination of moist air and tropical latitude means it is as warm at night as it is during the day, about 80° F (27° C).

Now it is time for your journey to end. Nobody at home will believe all of the different climates you have seen in just 250 miles (402 kilometers)—less than the distance between Monterey and Los Angeles.

Tropical Climates: 0°– 30° Latitude

Tropical, Wet

These areas are wet all year. They receive at least two inches (60 millimeters) of rain per month and up to 260 inches (600 centimeters) per year. Temperatures are always warm at 64° F (18° C) or higher. This climate supports tropical rainforests and occurs over the Amazon Basin in central Brazil, eastern Colombia, Peru, Ecuador, and Bolivia. This climate also exists in the forests on the Caribbean side of Central America.

Rainforest, South America

Tropical, Wet and Dry

These areas have a dry season during the winter months. During the driest month fewer than two inches (60 millimeters) of rain fall, with a maximum total of 20–70 inches (50–175 centimeters) of rainfall throughout the year. Seasonally flooded grasslands or dry forests occur in areas with this climate type. This climate type is one of the most common in Latin America. It covers a large portion of Bolivia, Venezuela, Colombia, and southern Brazil. It also occurs in most of southern Mexico and along the Pacific coast of Central America.

Semi-Arid

These areas tend to be grasslands. Between 10 and 20 inches (25–50 centimeters) of rain falls in this climate type per year with only slight variation in daily temperatures. The pampas of central Argentina, the grasslands of central Mexico, and northern Venezuela all experience this climate type.

Arid

Fewer than 10 inches (25 centimeters) of rain fall in arid climate types each year. This climate type sees a wide variation in daily temperatures, with differences between day and night ranging over 50° F (10° C) or more. Deserts form along the Pacific coast from central Chile to Ecuador. They also develop in southern Argentina and northern Mexico.

Arid lands, South America

Mid-Latitude Climates: 30°– 60° Latitude

Humid Temperate

These areas have distinct seasons with cold, dry winters and warm, wet summers. Most of the eastern United States has this climate type, which also occurs in Uruguay, Paraguay, and most of Argentina. Approximately 32 inches (81 centimeters) of precipitation falls here each year. Temperatures range from higher than 90° F (18° C) in the summer to below freezing in winter.

Mediterranean

Summers in these areas are hot and dry and winters mild and wet. Approximately 17 inches (42 centimeters) of rain falls here each year. Temperatures range from near freezing in the winter to higher than 90° F (32° C) in summer. This climate type occurs across much of California. In South America it occurs only along the central coast of Chile, near Santiago.

Marine West Coast

This climate occurs where cold ocean currents run along the coast. This pattern creates relatively mild temperatures that average around 60° F (16° C) and holds moisture year-round. As many as 100 inches (125 centimeters) of rain falls here per year, with most of the rain falling in winter. California's coast redwood forests occur in this climate. In Latin America, this climate spans the southern coast of Chile.

Polar Climates: 60°+ Latitude

Tundra

The tundra experiences a cool climate, ranging from 10° F to 50° F (-12° C to 10° C). Only a small amount of precipitation, 20 inches (50.8 centimeters) or fewer, falls here each year. This climate occurs at the very southern tip of South America.

Any Latitude

Montane

Montane areas see a wide diversity of different climates over a small area. This climate occurs in the Andes that run along the length of western South America and in the Sierra Madre that rings central Mexico.

Montane forest, South America

Tropical Rainforest

Tropical rainforests are located in a band along the Equator, and are found on the Caribbean side of Central America and the Amazon Basin in central Brazil, eastern Colombia, Peru, Ecuador, and Bolivia. They are consistently warm and very humid with high rainfall during a particular time of the year. Tropical rainforests provide a habitat for more than one-half of all species on Earth.

Tropical rainforest, Costa Rica

Pine-Oak Forest

Pine-oak forests are located in central Mexico, Guatemala, Honduras, El Salvador, and Nicaragua. Temperatures are mild year-round, but precipitation varies depending on geography and the season. These regions are rich in plant and animal species, with particularly diverse collections of conifers, amphibians, reptiles, and butterflies.

Tropical Dry Forest

Tropical dry forests exist along the Pacific Coast of Mexico and Central America, as well as in many countries in South America, such as Venezuela, Colombia, Ecuador, Peru, Bolivia, and the east coast of Brazil. These regions are warm and have long dry seasons, but receive enough rain to promote the growth of trees. They are diverse in plant and animal species, but these organisms must be able to withstand the warm, dry climate.

Grassland

Grassland ecosystems are found in central Mexico, Colombia and Venezuela, Bolivia and Peru, Brazil, and Argentina. Grasslands, which vary in temperature, receive enough precipitation for grasses and other plants to grow, but not enough to support forests. A diverse collection of plant and animal species lives in grasslands.

Wetland

Wetland ecosystems, such as swamps, marshes, and estuaries, are found in a wide variety of countries, including Mexico, Guyana, Suriname, French Guiana, Brazil, and Uruguay. While temperatures and rainfall vary, wetlands tend to have milder seasons and are covered in water for at least some period of the year. Wetlands support vegetation adapted for life in saturated soil conditions and are home to a diversity of plants and animals.

Wetland, Panama

Desert

Deserts are located in northern Mexico, along the Pacific coast from Ecuador to central Chile, in northwest Venezuela, in northeast Brazil, and in southern Argentina. These areas are all extremely dry, though they vary in how hot or cold they are. Some of these deserts have little life, but others support a diversity of plants and animals, all with adaptations to allow them to survive dry conditions and temperature extremes.

Atacama Desert, Chile

Alpine

Alpine ecosystems are located in the Sierra Madre Mountains in Mexico and the Andes Mountains in South America. These high, mountainous regions experience short cool summers, long cold winters, and little precipitation. The few animals and plants that live here have adaptations to survive in windy, frozen conditions.

Chaparral

Chaparral ecosystems are located in central Chile and the northwest coast of Baja, Mexico. These regions have hot, dry summers and mild, wet winters. Plants here have adaptations to survive long periods without water, varying temperatures, and poor soil.

Temperate Rainforest

Temperate rainforests are located along the southern coast of Chile, where warm offshore waters affect the climate. These areas receive large amounts of rainfall, have cool summers and mild winters, and are often foggy and humid. Plants require large amounts of moisture, and their diversity of species is less than in a tropical rainforest.

Tundra

Tundra ecosystems are located in the southernmost tip of Chile and Argentina. These areas are extremely cold, frozen for much of the year, and dry. Small plants grow in the summer when the soil thaws, and only a limited number of animals can survive here.

Tundra, Chile

Coral Reef

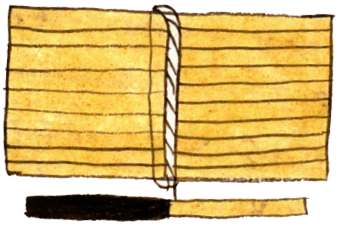
The largest coral reef in the Americas is the Belize Barrier Reef, which extends from the tip of the Yucatán Peninsula in Mexico to Honduras. Coral reefs are typically found in tropical waters that are warm and contain few nutrients. Reefs support an incredible diversity of life.

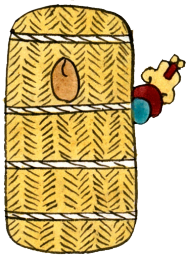
Tropic of Cancer 23.5°
Equator 0°
Tropic of Capricorn 23.5°
55°
Ecosystem Map Key
Tropical Rainforest
Pine–Oak Forest
Tropical Dry Forest
Grassland
Wetland
Desert
Alpine
Chaparral
Temperate Rainforest
Tundra
Coral Reef
N
W
E
S
0
500
1000
Miles

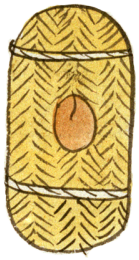
Agricultural Products

Bin of Corn

Bin of Beans and Amaranth

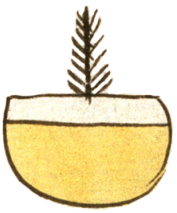

Tobacco Smoking Sticks


Bundle of Cotton

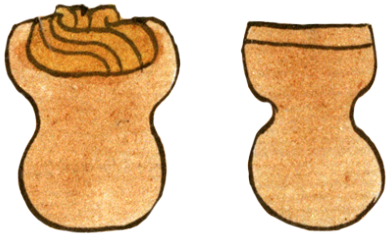

Bundle of Dried Chilies

Bundle of Red Cacao Beans

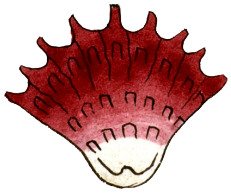
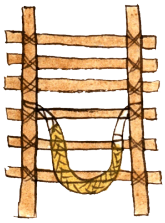
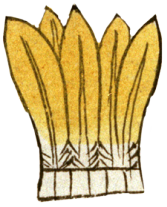
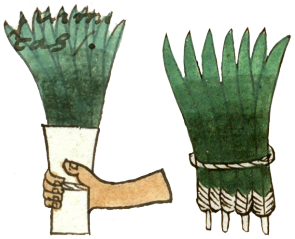
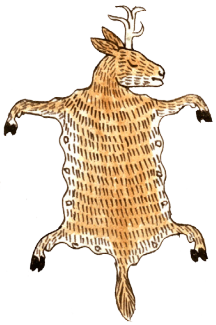
Bundle of Brown Cacao Beans


Gourd Box

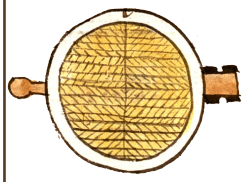
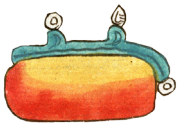
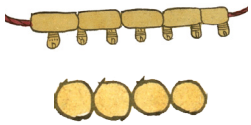
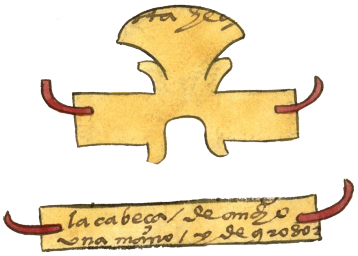
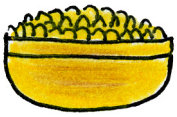
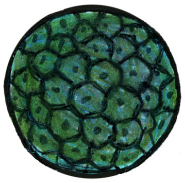
Jar of Honey


Gourd Bowls for Drinking Cacao

Extracted Natural Products

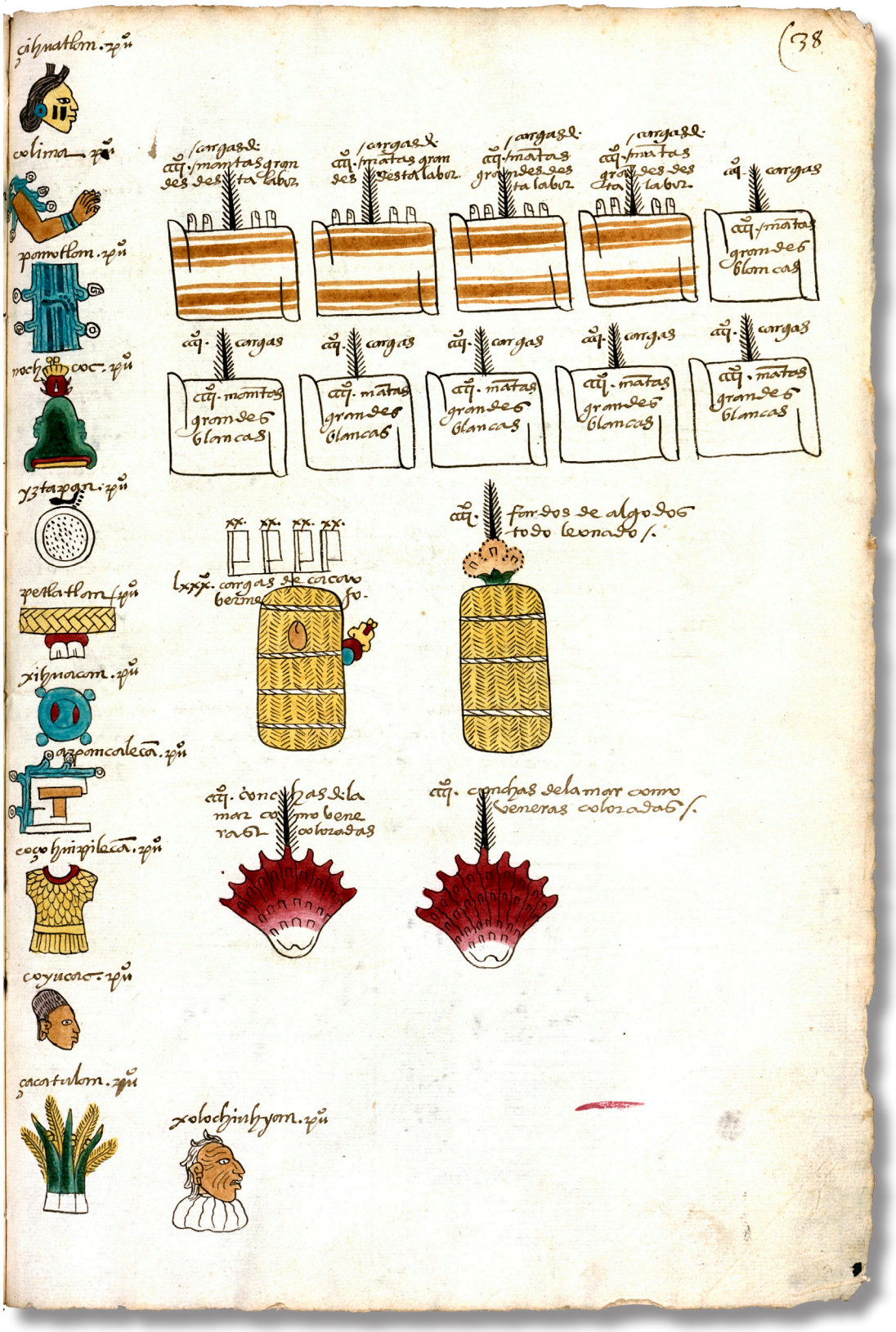
 Red Spiny Oyster Shell	Rubber Ball	Basket of Refined White Copal Incense	Basket of Unrefined Black Copal Incense
Pot of Liquidambar Resin (Used for Medicine and Incense)		 Wooden Carrying Frame	Bag of Small White Feathers
Little Handful of Feathers	 Large Bundle of Feathers	 Little Handful of Quetzal Feathers	Large Bundle of Quetzal Feathers
Jaguar Skin	 Deer Skin	Cane Sticks	Blue Cotinga Bird Skin

Valuable Rocks, Minerals, and Other Items

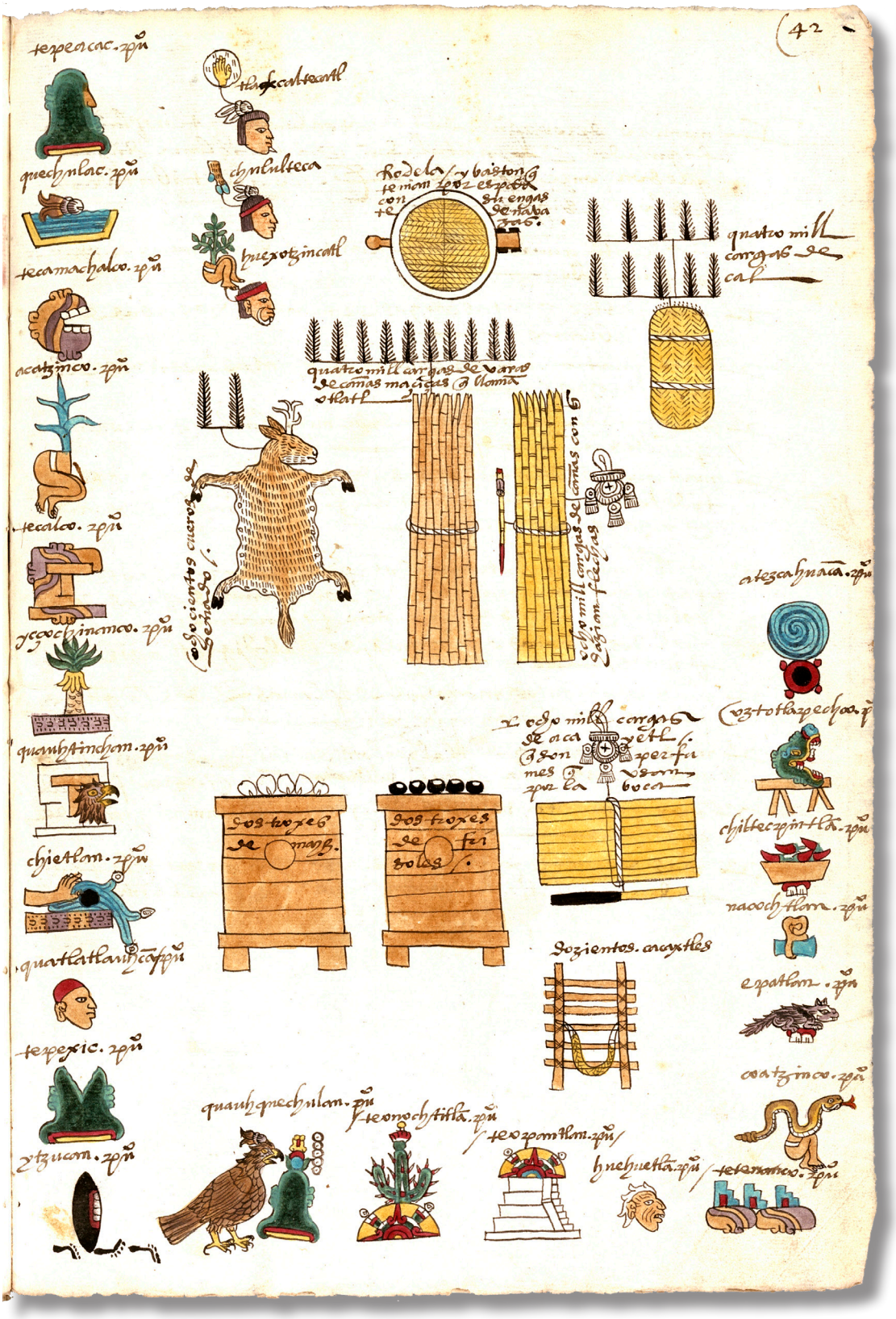
Bundle of Lime	 Obsidian War Club and Wooden Shield	Copper Axe	Lip Plug of Gold/Precious Stone
 Amber	 Gold Beads	Turquoise Beads	Jade or Greenstone Beads
 Gold Headbands	 Bowl of Gold Dust	 Turquoise Plate	

Aztec Province Glyphs	
Cihuatlán Province	
Tepeyacac Province	
Tochtepec Province	
Xoconochco Province	
Tepequacuilco Province	

Province 1: Cihuatlán—Place of Many Women



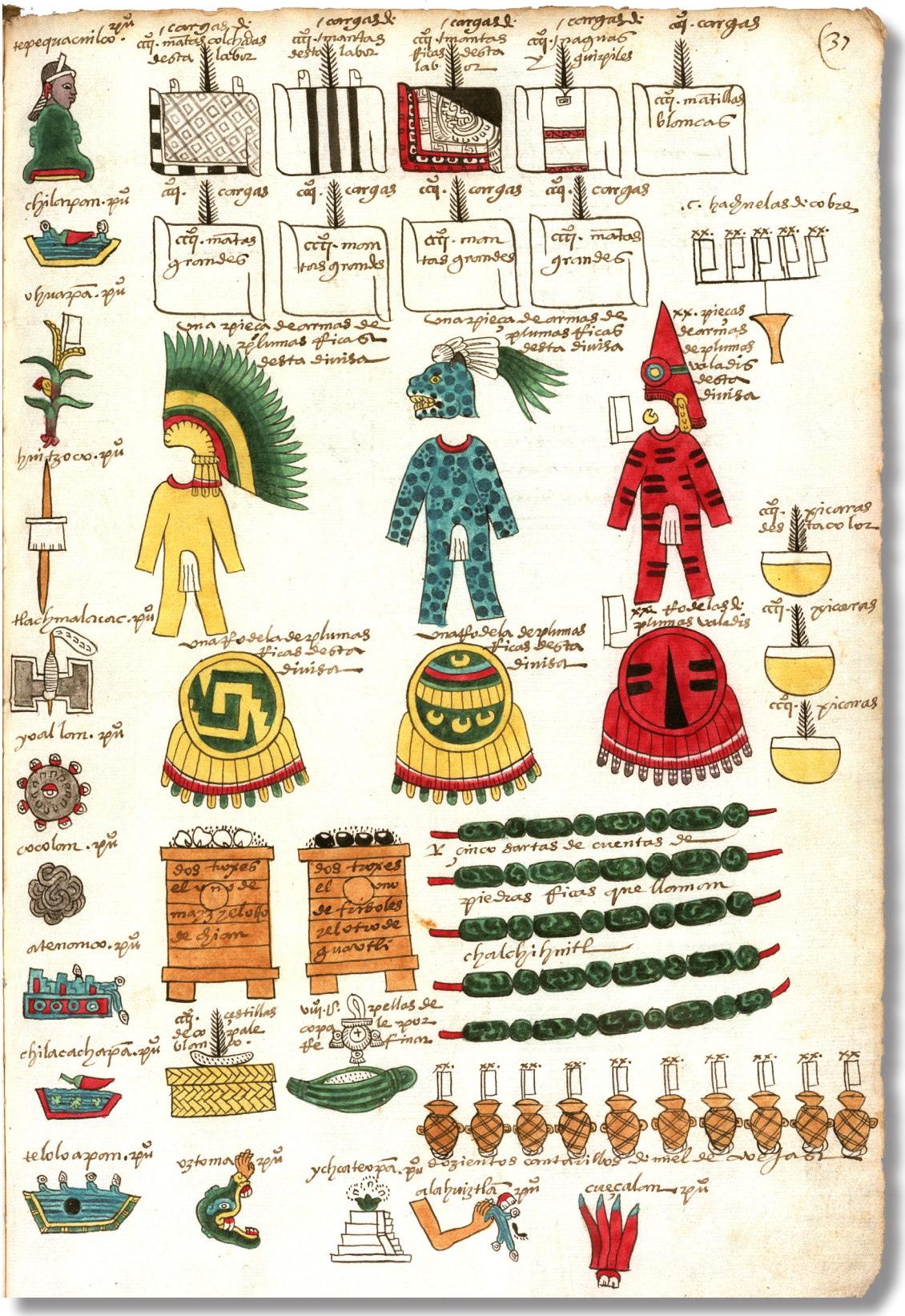
Province 2: Tepeyacac—The Nose of a Hill



Province 3: Tochtepec—On the Hill of the Rabbit

Province 4: Xoconochco—On the Sour Cactus Fruit

Province 5: Tepecuacuilco—Place Where Faces are Painted



Tenochtitlán: An Ancient Aztec Urban Society

Aztec city of Tenochtitlán

Today, Mexico City spreads out across a wide plateau in the Valley of Mexico. It is in the center of the country, and has an elevation over 7,000 feet. Mountains and volcanoes surround the valley. The region has a montane climate, with mild temperatures and a rainy season in the summer. Long ago, a chain of fresh and saltwater lakes and marshes covered most of this valley. Rain flowing down the mountains fills the lakes. The largest of these lakes was Lake Texcoco. This shallow and marshy body of water connected with smaller lakes in the valley, especially during the rainy season.

The ancient Aztec arrived in the Valley of Mexico around 1299 CE. This tribe of fierce warriors had come from the north with their king, Itzcoatl, led by a priest called Tenoch. He took them to the banks of Lake Texcoco. A battle with another kingdom forced the Aztec onto an island in the middle of the shallow lake. The Aztec believed that their god, Huizilopochtli, sent the people a vision: an eagle on top of a cactus, devouring a snake. They saw this as a sign, so the Aztec king founded his capital city on the island in 1325 CE. He called it *Tenochtitlán* after the priest who had led them there.

Aztec society had four classes of people. At the top were the king and his warrior-nobles. Below them were common people who lived and farmed on the lake or outside the city. The commoners made up most of the population. The next level of society was the serfs, who lived and farmed the land of the nobles. Finally, there were the slaves, who were mostly enemy warriors, captured in battle.

The lower classes provided most of the food and other resources used by the ruler and nobles that lived inside Tenochtitlán. The ruling class did not create food or products. Instead, they captured other kingdoms and forced them to pay yearly tribute with gold, silver, food, land, and other resources.

The Aztecs based the largest part of their economy on agriculture and trade. Commoners piled up layers of vegetation and mud in the lake, and made long, raised artificial islands called *chinampas.* These floating gardens were surrounded by canals on three or four sides. Water in these canals naturally irrigated the crops, and kept them from freezing when the weather turned cold. Aztec farmers used lake vegetation, household waste, and silt for fertilizer. They grew maize, beans, squash, and chilies. Aztec women made pottery and wove colorful cloth to trade in the markets.

Tenochtitlán was a sacred place for the Aztec. Its pyramids and temples connected the people to the Sun, water, mountains, and Earth. Aztec rulers sacrificed humans to keep the Sun god happy, and Earth fertile. They designed their temples along east-west lines, following the path of the Sun as it rose and set each day. Astronomers aligned the huge pyramids and other structures with the movements of the Sun, Moon, and planets.

Around the city, a system of canals connected houses, palaces, temples, and even a zoo. Four main roads ran north, south, east, and west out of the city. At the end of each was a town of commoners called a *calpulli*. Farther out, a complex system of roads, bridges, docks, and jetties kept the urban society supplied with goods. Aztec merchants traveled by river to trade with other cultures. In their huge open-air markets, farmers and craftspeople offered their goods for trade.

By 1519, Tenochtitlán was the largest urban society in the pre-Hispanic world. It was the capital of the Aztec Empire, and home to more than 200,000 of the ruling class. Another 200,000 commoners, serfs, and slaves lived outside its boundaries. The empire soon reached the limits of its resources. The ruling class went to their people, and demanded more tribute from the lower classes. This required them to work more or face being sacrificed to the gods. They spent less time creating products and trading in the markets. When Hernán Cortéz arrived from Spain, many of the people had already begun to fight back. The Spanish used this to their advantage, and enlisted commoners to fight against their king.

Aztec Pyramid of the Sun

Machu Picchu: An Ancient Inca Urban Society

Inca tribute

Between two peaks in the Andes Mountains lay the ruins of a mysterious Inca city. The Incas called the city "Machu Picchu." Because of its geography and topography, it has a variety of climates, but it is manly subtropical with warm temperatures during the day and cool at night. It has both rainy and dry seasons.

Inca stonemasons built the city around 1450 CE, just before the Spanish arrived in Peru. Machu Picchu was located 50 miles north of Cuzco, the capital of the Inca Empire. It was a small city, covering only 5 square miles.

Though it was not far from the Inca's largest city, Machu Picchu was difficult to reach. The deep Urubamba Valley lay beneath it with a steep drop to the river below. To cross the river, the Incas wove a strong rope bridge and stretched it from one side to the other. They cut large trees, and wedged the trunks between a 20-foot gap in the steep cliff. From below, no one could tell the city was there. This natural protection kept Machu Picchu hidden from Spanish conquistadors. It was hidden so well that the city was not officially "discovered" until 1911, almost four hundred years later.

The most powerful figure to visit Machu Picchu was the Sapa Inca, the emperor. It is generally believed that he used the city as a retreat, along with members of his royal family and nobility. Commoners also lived in the city. They were called *Ayllu*, and were mostly farmers, builders, and trades people. Everyone, including the nobles, served the Sapa Inca, the empire, and their gods with hard work.

The people built palaces, temples, storage rooms, baths, and houses on the green saddle of land between the two mountains. They constructed them from huge blocks of granite, which they cut and removed from a quarry nearby. No one knows how the people managed to move such heavy stones. What they did with them was even more amazing. They placed the stones on top of each other and shaped them with tools. When they were finished, the stones fit so tightly not even a blade of grass would fit between the cracks.

Agriculture was the main economy in Machu Picchu. The Inca developed many different plants for medicines and food. They grew potatoes and many varieties of maize, as well as other nutritious grains. Inca farmers knew how to cultivate and fertilize the soil. Farmers also developed complex irrigation systems to water their plants.

In Machu Picchu, as well as in other cities in the Andes, Inca farmers constructed terraces on steep slopes. They built retaining walls and filled the bottoms with small stones and clay. Finally, they added 2 to 3 feet of rich, fertile soil. With this method, the Inca grew four times the food needed to feed the people of Machu Picchu. They stored the surplus for the winter months.

Machu Pichu ruins

The Inca worshipped the Sun. In Machu Picchu, the people carved an *Intihuatana* (in-ti-wah-**ta**-na) stone to trace its path. They called this stone “the hitching post of the sun.” Each year, at noon on September 21, the Sun would shine directly over a large stone pillar without making a shadow. The people believed that for this moment they had tied the Sun to the stone, keeping it from moving north for the winter. They also worshipped the mountains and prayed to the gods for good weather, good soil, and good harvests.

Because the city lay undiscovered for so many years, there is no known record of its ancient history. Most historians believe Machu Picchu was a religious retreat for the Sapa Inca, who performed special rituals, sacrifices, and ceremonies there. Though the Spanish never conquered Machu Picchu, it is thought that smallpox may have killed most of its people. The city was abandoned about the same time the Spanish were conquering the rest of the empire.

California Education and the Environment Initiative

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