5th Grade Complex Societies Inquiry

What Makes a Complex Society Complex?

The Dresden Codex. Public domain.

Supporting Questions

1. How did the Maya use writing to represent activities in their culture?
2. What did the Aztecs do to master their watery environment?
3. Why were roads important to the Inca Empire?
# 5th Grade Complex Societies Inquiry

## What Makes a Complex Society Complex?

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<tbody>
<tr>
<td><strong>5.2 COMPLEX SOCIETIES AND CIVILIZATIONS</strong>: Between 1100 B.C.E. and 1500 C.E., complex societies and civilizations developed in the Western Hemisphere. Although these complex societies and civilizations have certain defining characteristics in common, each is also known for unique cultural achievements and contributions.</td>
<td><strong>How did the Maya use writing to represent activities in their culture?</strong></td>
<td><strong>Source A</strong>: Excerpt from <em>Writing in Maya Glyphs</em></td>
<td><strong>What did the Aztecs do to master their watery environment?</strong></td>
<td><strong>Source A</strong>: Description of the <em>chinampa</em> system</td>
<td><strong>Why were roads important to the Inca Empire?</strong></td>
<td><strong>Source A</strong>: “Inca Roads and Chasquis”</td>
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<tr>
<td><strong>Gathering, Using, and Interpreting Evidence</strong></td>
<td><strong>Write a paragraph describing how the Maya used writing and how others have worked to understand it.</strong></td>
<td><strong>Source B</strong>: “Maya symbols and Glyphs” chart</td>
<td><strong>Make a chart of the benefits of swamp agriculture and the use of chinampas.</strong></td>
<td><strong>Source B</strong>: Illustration of a <em>chinampa</em></td>
<td><strong>Make a diagram illustrating how the Inca road system functioned and how Inca runners used that system.</strong></td>
<td><strong>Source C</strong>: An Inca Chasqui runner</td>
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<td><strong>Geographic Reasoning</strong></td>
<td><strong>Source C</strong>: 19th-century reproduction of the <em>Dresden Codex</em></td>
<td><strong>Source C</strong>: Photograph of a modern <em>chinampa</em></td>
<td><strong>EXTENSION</strong> Prepare a diagram or a chart that illustrates the complexity of one or more of the societies featured in this inquiry.</td>
<td><strong>ARGUMENT</strong> What makes a complex society complex? Construct an argument (e.g., detailed outline, poster, or essay) that explains what makes societies complex using specific claims and relevant evidence from historical sources.</td>
<td><strong>ASSESS</strong> Discuss the benefits and drawbacks of these new technologies.</td>
<td><strong>ACT</strong> Write a letter to an entrepreneur about the benefits of the new technologies and related challenges.</td>
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**C3 TEACHERS™**

**INQUIRY DESIGN MODEL™**

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Overview

Inquiry Description

This inquiry provides students with an opportunity to evaluate a series of innovations by three complex civilizations—Maya, Aztec, and Inca. In examining the compelling question “What makes a complex society complex?” students explore how complex societies and civilizations adapt to and modify their environment to meet the needs of their people. Students use the social studies practices of Comparison and Contextualization as they work with sources related to the ancient writing developed by the Maya, specialized agricultural methods developed by the Aztecs, and transportation/communication networks developed by the Inca. The goal of this inquiry is to provide enough background about these innovations and technological advancements to support students as they develop arguments about what makes societies complex.

In addition to the Key Idea listed previously, this inquiry highlights the following Conceptual Understandings:

- (5.2a) Civilizations share certain common characteristics of religion, job specialization, cities, government, language and writing systems, technology, and social hierarchy.
- (5.2b) Complex societies and civilizations adapted to and modified their environment to meet the needs of their people.

NOTE: This inquiry is expected to take three to five 40-minute class periods. The inquiry time frame could expand if teachers think their students need additional instructional experiences (i.e., supporting questions, formative performance tasks, and sources). Teachers are encouraged to adapt the inquiries in order to meet the needs and interests of their particular students. Resources can also be modified as necessary to meet individualized education programs (IEPs) or Section 504 Plans for students with disabilities.

Structure of the Inquiry

In addressing the compelling question “What makes a complex society complex?” students work through a series of supporting questions, performance tasks, and sources in order to construct an argument supported by evidence while acknowledging competing views.

Staging the Compelling Question

In staging the compelling question—“What makes a complex society complex?”—teachers may facilitate a discussion about a recent innovation or change in society that represents something complex (e.g., cell phones or the Internet). This activity may begin with students defining the characteristics of a complex society. Examples of common characteristics of a complex society include religion, job specialization, cities, government, language and writing systems, technology, and social hierarchy. This larger discussion provides teachers with an opportunity to introduce the concept of complexity as an element of a society that is composed of many connected parts.
Supporting Question 1

The first supporting question—“How did the Maya use writing to represent activities in their culture?”—highlights the role of writing in Mayan civilization. The formative performance task directs students to write a paragraph describing how the Maya used writing and how others have worked to understand it. The three featured sources provide students with opportunities to learn more about the Mayan writing system. Featured Sources A and B offer background information on and examples of Mayan writing, including glyphs and numbers. Featured Source C is a selection from the Dresden Codex. Written in the 10th or 11th century, the Dresden Codex is the oldest known book in the Americas and is an example of the technical innovation of writing that supported the rise of the Mayan civilization.

Supporting Question 2

For the second supporting question—“What did the Aztecs do to master their watery environment?”—students build on their understanding of the unique innovations that ancient civilizations in the Western Hemisphere used to survive and thrive by analyzing the agricultural accomplishments of the Aztec people in their capital city of Tenochtitlán. The formative performance task calls for students to make a chart of the benefits of chinampas and the swamp-based agricultural system of the Aztecs. The featured sources include a description of the chinampas system, a drawing of an Aztec chinampa, and a photograph of a modern chinampa.

Supporting Question 3

By answering the third supporting question—“Why were roads important to the Inca Empire?”—students use geographic reasoning to examine how the Inca adapted to meet the geographic challenges that the Andes Mountains presented. In the formative performance task, students make diagrams illustrating how the Inca road system functioned and how Inca runners used that system. Featured Sources A and B are a background article on the Inca road system and an image bank of that system and the Chasqui, the Inca messengers. Featured Source C is an illustration of a Chasqui.

Summative Performance Task

At this point in the inquiry, students have examined numerous technical innovations of the three major ancient civilizations in the Western Hemisphere—Maya, Aztec, and Inca. Students should be expected to demonstrate their
understandings of these innovations and to use evidence from multiple sources to support their distinct claims. In this task, students construct an evidence-based argument responding to the compelling question “What makes a complex society complex?” It is important to note that students’ arguments could take a variety of forms, including a detailed outline, poster, or essay.

Students’ arguments likely will vary, but could include any of the following:

- The Mayan, Aztec, and Inca civilizations were complex societies that creatively adapted to their environments.
- Mayan practices of language and writing show that they were complex.
- The ability of Aztecs to master their watery environment shows that they were complex.
- The Inca system of roads and communication network suggests that the empire was a complex society.
- Civilizations can be complex without possessing the latest in new technology by adapting creatively to their environments.

Students could extend these arguments by preparing a diagram or a chart that illustrates how the three innovations of writing, chinampas, and roads represent elements of complexity for the societies featured in this inquiry. The diagram or chart should show how each of these three societies created something new and how that innovation allowed the people in that society to do new things.

Students have the opportunity to Take Informed Action by drawing on their understandings of how ancient civilizations in the Western Hemisphere developed technologies and systems (e.g., writing, chinampas, and roads) to become complex. In order to understand how technologies affect society today, students may find examples of new technologies available or under development (e.g., smartphones or self-driving cars). With this understanding in place, students can assess the benefits and drawbacks that result from these new technologies. Students may then act by writing a letter to an entrepreneur about the new technology and related challenges.
THE BASICS OF ANCIENT MAYA WRITING

Maya writing is composed of various signs and symbol. These signs and symbols are often called ‘hieroglyphs,’ or more simply ‘glyphs.’ To most of us, these glyphs look like pictures, but it is often hard to say what they are pictures of....

Unlike European languages, like English and Spanish, the ancient Maya writing did not use letters to spell words. Instead, they used a combination of glyphs that stood either for syllables, or for whole words.

We will call the glyphs that stood for syllables ‘syllable glyphs,’ and we’ll call the glyphs that stood for whole words ‘logos.’ (The technically correct terms are ‘syllabogram’ and ‘logogram.’)

It may seem complicated to use a combination of sounds and signs to make words, but we do the very same thing all the time. For example, you have seen this sign:

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Everyone knows that this sign means “one way to the right.” The “one way” part is spelled out in letters, as usual. But the “to the right” part is given only by the arrow pointing to the right. Thus, this street sign is a combination of words and pictures that is very much like the way the Maya wrote things. After all, when a picture is worth a thousand words, why spell it out?

Writing in Maya Glyphs: Names, Places & Simple Sentences—A Non-Technical Introduction to Maya Glyphs from the Aid and Education Project. Inc. © 2008. Used with permission from Mark Pitts.
http://www.famsi.org/research/pitts/MayaGlyphsBook1Sect1.pdf
Supporting Question 1

**Featured Source**

**Source B**: Ancient-symbols.com, chart showing logograms the Maya used to express words and ideas, “Maya Symbols and Glyphs,” 2014

The Dresden Codex is thought to be a copy of an 11th-century Mayan book (or codex) that was created in the 15th century. The codex is the oldest known book from the Americas and was brought to Europe by Spanish conquerors. Five pages of the document were reproduced in the first Western publication of the codex, an 1810 book on the Americas published by Alexander von Humboldt.

NOTE: This text was modified to increase student accessibility.

Aquaculture

Chinampas were a creative and productive approach to agriculture developed by the Aztec civilization. They consisted of a series of alternating canals and narrow artificial islands. All parts of the chinampas were used to produce food.

- The land was used to grow vegetables, trees, chickens, etc.
- The surface of the water was used to raise ducks and grow floating plants, such as lotuses.
- The middle of the water was used for fish and aquatic plants.
- The bottom of the water was used for prawns, catfish, etc.
- The edge between the water and the land was used to grow reeds, taro, typha (as chicken feed), etc.
- Vines above the water were used to grow grapes, strawberries, and other vine fruits while shading the water.

Each part of the chinampas worked with the other. The vines dropped nutrients into the water. The water provided nutrients for reed crops, which in turn fed land-based animals.

Aztec chinampas were fertilized with compost and with mud brought up from the bottom of the lake. The water flowing around the island created a microclimate in which extremes of temperature were mitigated.

Supporting Question 2

| Featured Source | Source B: Artist unknown, Illustration of the chinampas raised-bed Aztec style of agriculture, no date |

| Featured Source | Source C: Christian Legorreta, photograph of modern *chinampas* and canals, *Chinampas and Canals in San Gregorio Atlapulco*, 2015 |

© Christian Legorreta.
Inca Roads and Chasquis

The Incas were magnificent engineers. They built the most elaborate network of roads and bridges of any ancient culture. The success of its empire was partly due to being able to reach and control each corner of their territory. Inca engineers used and improved roads left by earlier cultures such as the Chimu, Wari and Tiwanaku among others.

The Incas built more than 14,000 miles/22,530 km of paved roads. There were two main roads, both connected the territory north to south extending along the coast and another along the Andes. Both roads were connected by a shorter network of roads. Along the coast they built a 3,000 m/4,830 km road that connected the Gulf of Guayaquil, Ecuador in the north to the Maule River, Chile in the south. The Andean royal road constructed in the highlands extended along the Andes Mountains. It reached Quito, Ecuador in the north, passed through Cajamarca and Cusco and ended near Tucuman, Argentina. The Andean Royal road was over 3,500 miles long, longer than the longest Roman road.

The Incas did not know the wheel and did not have horses either. Most of the transportation was done by foot using llamas to carry goods from one part of the empire to another. Roads were used by messengers or chasquis carrying messages across the empire.

Bridges were built all across the empire. They built spectacular suspension bridges or rope bridges using natural fibers. These fibers were woven together creating a rope as long as the desired length of the bridge. Three of these ropes were woven together creating a thicker and longer rope; they would continue braiding the ropes until they had reached the desired width, length and strength. The ropes were then tied together with branches of trees and pieces of wood were added to the floor creating a cable floor of at least four to five feet wide. The finished cable floor was then attached to abutments supporting the ends on each side. They also attached ropes on both sides of the bridge that served as handrails. The last existing Inca suspension bridge is located near Cusco in the town of Huinchiri.

Because the Inca Empire controlled such a vast territory they needed a way to communicate with all its corners. They set up a network of messengers by which important messages would be conveyed. These messengers were known as Chasquis and were chosen from the strongest and fittest male youngsters. They ran many miles a day to relay messages. They lived in cabins or tambos along the roads usually in groups of four or six. When a chasqui was spotted, another one would run to meet him. He would run beside the incoming messenger trying to listen and to memorize the message, he would also relay the quipu if he was carrying one. The tired chasqui would stay and rest in the cabin while the other one will run to the next relay station. In this way messages could travel over 250 miles a day.

In case of an invasion or a rebellion an emergency message was sent through a chain of bonfires. As each group of chasquis saw the smoke they would lit a bonfire that could be seen by the next cabin or tambo. The Sapa Inca...
would send his army toward the bonfire before the cause was known, usually on his way he would meet a messenger and learn from him the exact nature of the emergency.

Archeological findings show that some tambos or relay stations were more elaborate than others. They were probably used as a place for officials or the Sapa Inca to stay during their traveling across the empire.

Supporting Question 3

**Featured Source**

**Source B:** Image bank: Inca roadways

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Image 2: The Inca’s engineering of roadways and agricultural terraces in mountainous terrain was one key to the expansion of the empire.
©istock/© v0v.
Supporting Question 3

**Feature**

**Source C:** Illustration of an Inca Chasqui runner, based on the 17th-century document *El Primer Nueva Corónica y Buen Gobierno* [The First New Chroniclle and Good Government] by Huaman Poma Ayala, a Quechuan nobleman who criticized the Spanish, no date

*NOTE: The Chasqui was a messenger in Inca society*