**Full Lesson**

# The Inka Empire:
## What innovations can provide food and water for millions?

### Grades
- 5–8

### Subjects
- Geography, History, Economics, Environmental Science, STEM (Science, Technology, Engineering, Mathematics)

### Key Message
The empire built by the Inka during the fifteenth and sixteenth centuries in South America stands as one of the most remarkable achievements in the history of the world. Using both peaceful assimilation and warfare, the Inka were able to integrate far-flung and diverse communities into a single empire equivalent to the size of California, Nevada, Arizona, New Mexico, and Texas combined. The Inka developed innovative techniques to provide food and water for millions of people and used highly advanced engineering knowledge to link disparate cultures across their vast empire. A new system of government was created based on the redistribution of resources and the Andean principle of *ayni*[1], which allowed the empire to flourish until the Spanish conquest in the middle of the sixteenth century. Today, Quechua and Aymara indigenous communities in the Andes still practice reciprocity and use similar water management and agricultural techniques handed down from their Inka ancestors.

[1] The meaning of ayni [pronounced EYE nee] in Andean cultures is akin to “reciprocity.”

## Student Outcomes

**Students will know that:**

- *Tawantinsuyu* [pronounced tah wahn teen SOO yoo] is the name for the Inka Empire; it means "the four parts together" in the Quechua language.
- Ayni, or reciprocity, informed how the Inka organized and governed their empire.
- Terracing minimizes land erosion and flooding as well as increases the space available for cultivation.
- Irrigation is a method of supplying water to land or crops to help plants grow.
- *Colca* [pronounced KHOL kah] is a food preservation and storage system.
- Building on thousands of years of domestication of native plants in the Andes, the Inka improved the quality and increased the variety of corn, quinoa, potato and other tubers.

**Students will understand** that to integrate and sustain millions of people, the Inka developed innovative water management and agricultural systems.

**Students will be able to** evaluate sources in order to construct an argument about how people can use innovations to address difficult problems and find solutions to challenging situations.

## A Note to Teachers: NMAI Education Approach

- This online lesson offers a new way to teach and think about the Inka Empire. Exploring a variety of sources, students evaluate information and use evidence to answer the question, "What innovations can provide food and water for millions?" The lesson is structured yet flexible and respects an educator's own knowledge and expertise. As such, teacher materials offer suggestions rather than prescriptions for classroom implementation.

- Following a C3 inquiry design, the lesson begins with a compelling question to anchor students' investigations. Supporting questions develop the academic content necessary to engage students with the concept of innovation in the context of Inka water management and agricultural systems. Featured sources include maps, videos, video fly-outs in the Andes, interactives, images, animations, interviews, and Inka-period and contemporary Andean objects from the NMAI collection to generate student curiosity and build knowledge. Students craft conclusions about the significance of Inka innovations that allowed them to feed and provide water for millions.

# Academic Standards

## Framework for Essential Understandings about American Indians

- NMAI's Essential Understandings reveal key concepts about the rich and diverse cultures, histories, and contemporary lives of Native peoples. Woven throughout the lesson, the following Essential Understandings provide a foundation for students to thoughtfully approach the complexity of the Inka Empire. The Essential Understandings directly correlate to the National Council of the Social Studies' ten themes that form a framework for social studies standards.

## NK360° Essential Understandings

- **EU3: People, Places, and Environments**—For thousands of years, indigenous people have studied, managed, honored, and thrived in their homelands. These foundations continue to influence American Indian relationships and interactions with the land today.
- **EU7: Production, Distribution, and Consumption**—American Indians developed a variety of economic systems that reflected their cultures and managed their relationships to others. Prior to European arrival in the Americas, American Indians produced and traded goods and technologies using well-developed system of trails and widespread transcontinental, intertribal trade routes. Today, American Indian tribes and individuals are active in economic enterprises that involve production and distribution.
- **EU8: Science, Technology, and Society**—American Indian knowledge resides in languages, cultural practices, and teaching that spans many generations. This knowledge is based on long-term observation, experimentation, and experience with the living earth. Indigenous knowledge has sustained American Indian cultures for thousands of years. When applied to contemporary global challenges, Native knowledge contributes to dynamic and innovative solutions.

## Common Core State Standards

- **CCSS.ELA-Literacy.CCRA.R.1:** Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
- **CCSS.ELA-Literacy.CCRA.W.1:** Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.
- **CCSS.ELA-Literacy.CCRA.W.7:** Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.

## College, Career & Civic Life–C3 Framework for Social Studies State Standards

- **D2.Geo.2.6-8:** Use maps, satellite images, photographs, and other representations to explain relationships between the locations of places and regions, and changes in their environmental characteristics.
- **D2.Geo.3.6-8:** Use paper based and electronic mapping and graphing techniques to represent and analyze spatial patterns of different environmental and cultural characteristics.
- **D2.Geo.4.6-8:** Explain how cultural patterns and economic decisions influence environments and the daily lives of people in both nearby and distant places.
- **D2.Geo.5.6-8:** Analyze the combinations of cultural and environmental characteristics that make places both similar to and different from other places.
- **D2.Geo.6.6-8:** Explain how the physical and human characteristics of places and regions are connected to human identities and cultures.
- **D2.Geo.9.6-8:** Evaluate the influences of long-term human-induced environmental change on spatial patterns of conflict and cooperation.
- **D2.His.3.6-8:** Use questions generated about individuals and groups to analyze why they, and the developments they shaped, are seen as historically significant.
- **D2.His.16.6-8:** Organize applicable evidence into a coherent argument about the past.
- **D2.Eco.1.6-8:** Explain how economic decisions affect the well-being of individuals, businesses, and society.
- **D2.Eco.3.3-5:** Identify examples of the variety of resources (human capital, physical capital, and natural resources) that are used to produce goods and services.
- **D2.Eco.7.6-8:** Analyze the role of innovation and entrepreneurship in a market economy.

## National Science Education Standards

- **E1.1:** Abilities of Technological Design, including evaluate completed technological designs and products; communicate the process of technological design.
- **F5.4:** Science and Technology in Local Challenges, including science and engineering work in many different settings.

## Next-Generation Science Standards

- **Practice 2:** Developing and using models.
- **Practice 6:** Constructing explanations (for science) and designing solutions (for engineering).

# The Meaning of Innovation

## Lesson Components

- **Opening Video "Inka Innovative Engineers—Food and Water for Millions:"** A video animation featuring Inka innovative practices on water management and agriculture presented from the perspective of two middle school students.

## Student Worksheet

- ***The Meaning of Innovation***

## Connection to the Compelling Question

- What is innovation and why is it important? This lesson previews key concepts presented in the compelling question, "What innovations can provide food and water for millions?" Students begin their inquiry by watching a video that sets the stage for thinking about Inka innovation and their accomplishments in water management and agriculture.

## Ideas

- The worksheet, *The Meaning of Innovation,* can be done by students individually, in pairs, or in small groups. The activity is designed to explore the meaning of the word "innovation" through definitions, characteristics, examples, and non-examples.

# Suggested Lesson Procedure

## Hook

- Ask students what the word "innovation" means. Discuss students' definitions, examples, and ideas.
- Consider prompts such as:
    - What innovations have been introduced in their lifetimes?
    - How have these innovations changed the world?
    - How might life be different without them?
- Show the video "Inka Innovative Engineers—Food and Water for Millions" to the class.

# The Meaning of Innovation

## The Meaning of Innovation

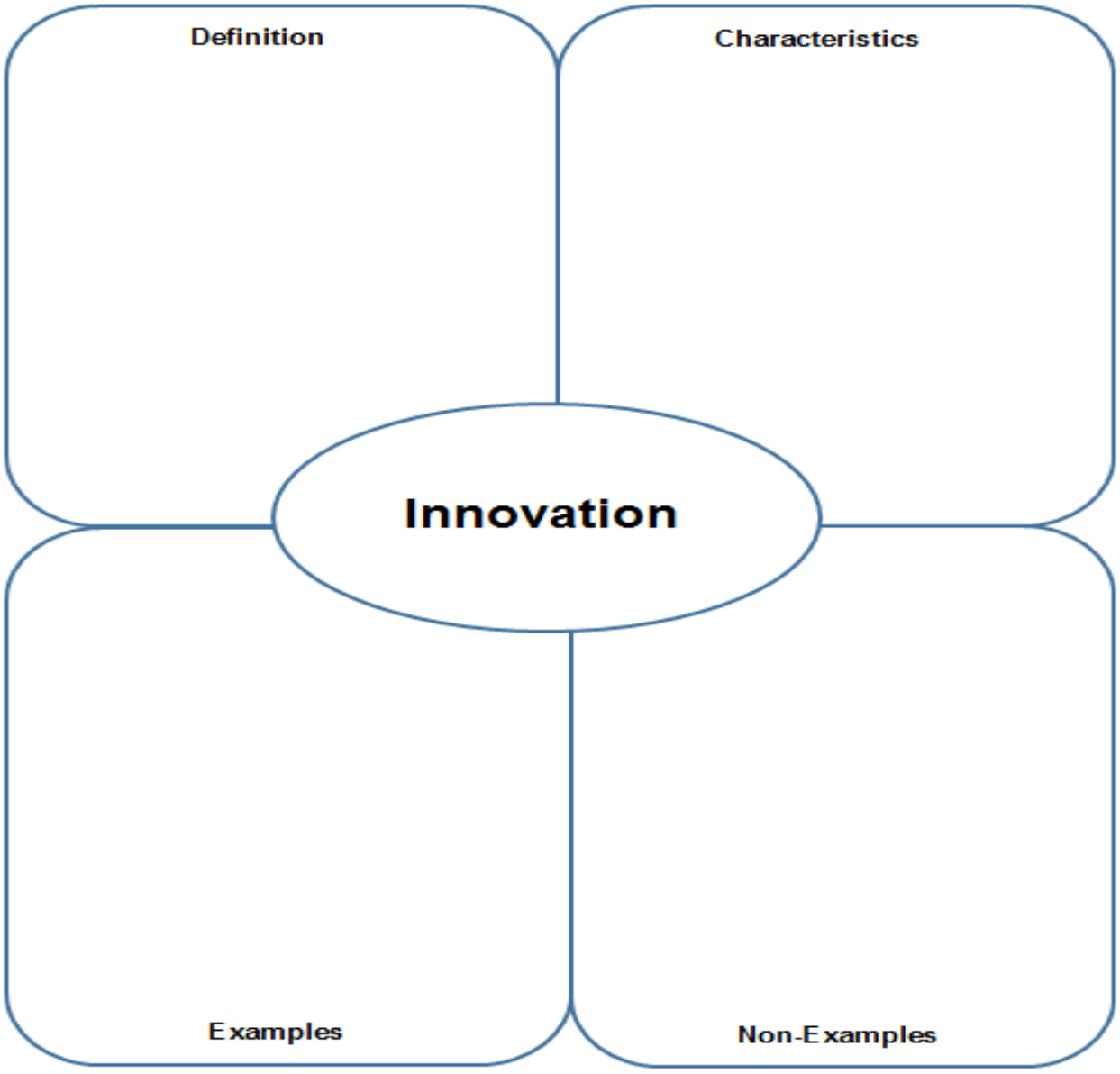
- Using *The Meaning of Innovation* worksheet, students can create their own definitions for the word “innovation.” For example, innovation can be defined as “a new idea, tool, or method to solve a problem,” or simply, “a new way to solve a problem.”
- Students may offer examples of contemporary innovations, such as smartphones, Netflix, refrigerators, food preservatives, tractors, pesticides, chemical fertilizers, supermarkets, self-driving cars, etc. For non-examples, students might list old innovations such as rotary or pay phones, ice boxes, the plow, and the railroad. This discussion can trigger ideas about innovation, and whether old technologies that were innovative at one point are the “non-examples” of today.
- Guide students in whole-class or small-group discussion using the following questions: What innovative solutions are used today to feed millions of people in the U.S.? How about the rest of the world? Which solutions are environmentally sound? Which solutions are harming the environment? How does innovation look different depending on the context of place and time?

***Next:*** *Students turn their attention to the Inka Empire and explore its geographic features, ways of living, and history.*

**Name** _____

# The Meaning of Innovation

**Directions**: Fill out the graphic organizer to think about the word "innovation" from four different angles.

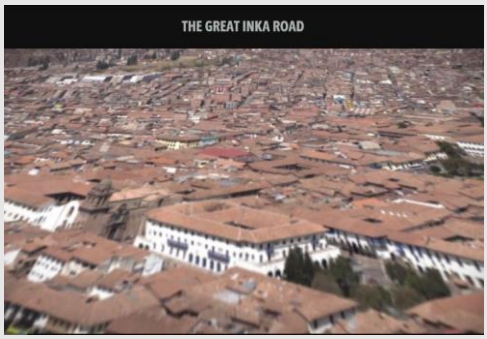


# Who Were the Inka?

## Lesson Components

**Thematic Exploration: Geography, Ways of Living, History**

**Theme 1: Geography of the Inka Empire**

| Image | Description |
|---|---|
|  | Locator Map: Use this map to find the location and extent of the Inka Empire. |
|  | "Fly-out" Video Animation: Take a virtual trip from Cusco, the capital of the Inka Empire, to the four *suyus*[2] of the empire. Learn about the Great Inka Road's vital importance to the empire. |
|  | Interactive Tool with Images: View photo galleries of the Inka Empire. Each of the four suyus had diverse populations, environments, and resources. |

[2] The meaning of suyu [pronounced SOO yoo] in the Quechua language is "region."

# Who Were the Inka?

**Theme 2: Inka Ways of Living**

| Image | Description |
|---|---|
|  | Inka Origin Story: View a narrated slideshow that tells the creation story of the Inka. Look for examples of Andean values represented in the story. |
|  | Inka Astronomy Interactive "Milky Way—The Road in the Sky:" Use this interactive tool to find important Inka constellations that connect to ways of living in the Andes. |
|  | Lithographs Slideshow: Explore the detailed drawings of Inka life near the time of the Spanish invasion by the renowned Inka illustrator, Felipe Guaman Poma de Ayala. |

# Who Were the Inka?

**Theme 3: Inka History**

| Image | Description |
|---|---|
|  | Inka Timeline: Investigate images, photographs, and NMAI collection objects that span from ancestor cultures to the present day. Learn about the four Inka ancestor cultures, the Spanish invasion, and how descendant cultures carry on the legacy of the Inka Empire. |

## Additional Sources

- **"The Inka Empire—Tawantinsuyu:"** An essay offers additional background and context.
- **Resistance and Adaptation:** Images, videos, and text showcasing the resiliency of Inka descendant cultures in the Andes today.
- **The Inka Empire's Impact on the World:** Examples of how Inka foods, minerals, medicines, and engineering have affected our world.
- **Inka Innovation in Masonry:** 3D viewer interactives showcasing Inka innovations in stone work.

## Student Worksheet

- ***Who Were the Inka?***

## Connection to the Compelling Question

- The Inka built a sophisticated and vast empire that they called Tawantinsuyu to integrate and support diverse communities in challenging geographical environments. Students learn about the geography, ways of living, and history of the Inka through a thematic exploration that introduces them to the Inka Empire and how innovation was a hallmark of the empire.

# Who Were the Inka?

## Ideas

**Thematic Exploration: Geography, Ways of Living, History**

Students investigate aspects of the Inka Empire through three themes. Consider structuring the investigation as a jigsaw followed by a whole class sharing and discussion of highlights from each theme.

- Groups of 3–6: Each student or student pair is assigned a set of sources.
- Each student or student pair reviews the sources and completes their section of the graphic organizer, *Who Were the Inka?*
- Following the thematic source analysis, lead a whole class sharing and discussion to check for understanding of each thematic element.
- Students work in small groups to complete the remaining sections of the organizer. Each student or student pair shares their findings for the set of sources assigned.
- Individually, students complete the formative task: A written summary of the Inka Empire.

# Suggested Lesson Procedure

## Hook

- Three themes that students will use to learn more about the Inka Empire and culture:
    - **Geography:** Study of the terrain.
    - **Ways of Living:** Beliefs, daily practices, and traditions.
    - **History:** Study of past events.

## Thematic Source Exploration

- Divide class into small groups (3-6 students/group)
- One student or student pair is assigned a set of sources:
    - **Geography:** Map showing the location and extent of the Inka Empire in South America, “fly-out” topography video, and interactive photo gallery of the suyus.
    - **Ways of Living:** The Inka Origin Story; Inka astronomy interactive; and lithographs from an Inka chronicler at the time of the Spanish invasion.
    - **History:** A timeline with images and photos of key events in Inka history, spanning from the Inka ancestor cultures to the present.
- Each student or student pair uses the *Source Investigation Questions* in the graphic organizer to analyze the set of sources assigned (Geography, Ways of Living, or History).

# Who Were the Inka?

- Students write their responses to the questions on the graphic organizer, *Who Were the Inka?* (Part A).
- Students return to their small group and share their responses. Consider leading a class discussion and check for students' understanding of each thematic element.
- Students or student pairs work in their small groups to complete the remaining sections in Part A of the graphic organizer and share their findings.

## Summary: Who Were the Inka?

- Individually, students use the graphic organizer to complete the formative task of crafting a written summary that answers the question, "Who were the Inka?" (Part B).

## Wrap Up

- Students share and discuss written summaries.
- Extension: Compare summaries with the essay "The Inka Empire—Tawantinsuyu."

***Next:*** *Students consider how the Inka used innovation to manage water.*

# Who Were the Inka?

# Source Investigation Questions

## Theme 1: Geography of the Inka Empire

1. Locator Map:
   a. Investigate the location and size of the Inka Empire. What countries were part of this empire?
   b. Use Google Maps™ to find the length of one of the Great Inka Road's main arteries: Quito, Ecuador to Santiago, Chile. Find the distance between Miami, Florida and Seattle, Washington. What does this comparison tell you about the size of the Great Inka Road?
2. The Great Inka Road:
   a. View the "fly-out" video from Cusco to the four suyus of the Inka Empire. What do you notice about the landscape?
3. The Four Suyus:
   a. Locate the photo galleries (select a suyu or region to explore).
   b. Identify the geographical features that characterize the selected suyu.

## Theme 2: Inka Ways of Living

1. Origin Story of the Inka:
   a. Watch the Inka Origin Story (narrated slideshow). What Andean values are highlighted?
2. Astronomy Interactive "Milky Way—The Road in the Sky:"
   a. Locate and examine the constellation, "Llamacñawin with Unallamacha," meaning "Eye of the llama with baby llama." This was the most important constellation to the Inka.
   b. Explore more constellations. Select one and explain how it connects to ways of living in the Andes.
3. Lithographs:
   a. What do the Guaman Poma de Ayala lithographs and text say about the Inka way of life and organization during the empire?
   b. How do the Guaman Poma de Ayala images compare to contemporary jobs?

## Theme 3: Inka History

Explore the timeline and examine information. Record your observations on:

1. Four Ancestor Cultures: Chavin, Tiwanaku, Wari, Chimu
2. Spanish Invasion: The Road, Impact, Resistance, and Adaptation
3. Current-day Cultures: How do the descendants of the Inka carry on the legacy of their ancestors?

**Name** _____

# Who Were the Inka?

**Part A**: Write your answers to the source investigation questions in the space provided below. Craft a summary statement about the theme you explored.

| **Geography of the Inka Empire** | **Source Investigation Answers** |
|---|---|
| Sources<br>• Locator Map<br>• Video "fly-out" from Cusco featuring The Great Inka Road<br>• The Four Suyus Photo Gallery | |
| Summary statement: What do these sources say about the **geography of the Inka Empire?** | |

| **Inka Ways of Living** | **Source Investigation Answers** |
|---|---|
| Sources<br>• Origin Story of the Inka<br>• Milky Way—The Road in the Sky<br>• Lithographs | |
| Summary statement: What do these sources say about **Inka ways of living?** | |

| **Inka History** | **Source Investigation Answers** |
|---|---|
| Source<br>• Timeline | |
| Summary statement: What does the timeline say about **Inka history?** | |

**Name** _____

# Who Were the Inka?

**Part B**: Based on the evidence you collected from your sources, write a one-paragraph summary that answers the question, “Who were the Inka?” In your summary, include information from each theme: geography, ways of living, history.

# The Importance of Water Management: How did the Inka apply innovation to water management?

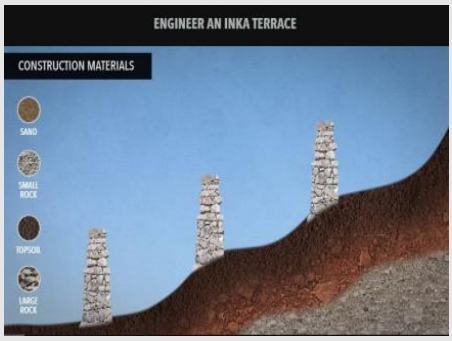
## Lesson Components

**The Power of Water: Urubamba River**

| Image | Description |
|---|---|
|  | Urubamba River Video: Witness the sheer power of this river in the Andes. Consider how we depend on water and the extent to which we can control its force. |

# The Importance of Water Management

**Explore Inka Water Management**

| Image | Description |
|---|---|
|  | 360-degree Panoramic: Explore the Inka ancestral site of Pisac showing erosion and terracing. |
|  | Preventing Erosion Video: See how the Inka prevented erosion by controlling the destructive force of water. |
|  | Engineer an Inka Terrace: Put your engineering skills to the test. Place materials in the correct order to create a stable terrace. |
|  | Tipón Video and Water Management Interactive: Discover how water was distributed to irrigate agricultural terraces and supply water to the local population. |

# The Importance of Water Management

**Contemporary Connections: Inka Water Management Today**

| Image | Description |
|---|---|
|  | Drinking from an Inka Fountain Video: See how water is still available for drinking in Machu Picchu. |
|  | Interviews with Local Experts: Read interviews with local experts from the Sacred Valley in the Cusco Region of Peru who still use water management methods introduced by the Inka. |

## Student Worksheet

- ***Inka Water Management***

## Connection to the Compelling Question

- In this lesson, students will construct their own understanding of water management by investigating several innovative engineering techniques used by the Inka Empire.

## Ideas

- Exploring Inka Water Management: Students can investigate the videos and interactives independently or in small groups.

# The Importance of Water Management

## Contemporary Connections

- As an extension, ask students to refer to the sources "Tipón Video," "Water Management Interactive," and "Interviews with Local Experts" and accompanying images to find evidence that demonstrates how Inka innovation is reflected in water management methods today.

# Suggested Lesson Procedure

## Hook

- Ask: Do you ever think about where our water comes from (water fountains, tap water, etc.)? Discuss students' responses. Beyond drinking, what other ways do we depend on water? Discuss ideas.
- Is there such a thing as having too much water? Discuss examples (floods).
- What happens when there isn't enough water? Discuss examples (droughts).
- Finding solutions to challenges like floods and drought that require innovation: Students will investigate how the Inka used innovation to design a complex water management system.
- As needed, preview vocabulary: erosion, terrace, irrigation.
- Show the Urubamba River video. What do students notice about the force of the water in this video? Why might this be important in designing a water management system?

## Exploring Inka Water Management

A key feature of water management is controlling the power of water. The Inka designed a comprehensive system that included preventing erosion and distributing water for irrigation and drinking. Students use the featured sources to investigate how the Inka engineered a water management system for a vast empire.

Working independently or in small groups, students consider three key concepts: erosion, terracing, and irrigation. Students use the worksheet *Inka Water Management* to guide their exploration of the featured sources.

Students might explore the sources in the following order:

1. Preventing Erosion video: See how terracing can be a tool for controlling the force of water.
2. Engineer an Inka Terrace interactive tool: Practice building a terrace to better understand how Inka drain design helped to slow the speed of water.

# The Importance of Water Management

3. Tipón Video and Water Management Interactive: Explore how water is redirected to irrigate agricultural terraces and supply the contemporary town of Tipón with drinking water.

## Forming Conclusions: Inka Water Management

Students use evidence from the sources they examined and construct a response to the question, “How is water management an example of innovation?”

## Wrap up

Discuss student responses. Ask them what evidence they found to support their conclusions. Extension: How are ancient water management systems being used today? Students view the Machu Picchu video and read interviews with local experts.

***Next:*** *Students examine Inka innovation through a complex system of agriculture attuned to diverse geographical environments and microclimates.*

**Name** _____

# Inka Water Management

## Vocabulary: Define each term

| Erosion: | Terracing: | Irrigation: |
|---|---|---|
| | | |

## Erosion and Terracing

**Sources: Preventing Erosion Video, Engineer an Inka Terrace Interactive**

- How did the innovative practice of terracing help to prevent erosion? Include evidence from the Preventing Erosion video.
- After investigating the Engineer an Inka Terrace interactive, write in the table below the order (bottom to top) in which the Inka placed the construction materials (sand, small rock, soil, and large rock) to build terraces.

| | |
|---|---|
| TOP<br>_____<br>Order of Construction Materials<br>_____<br>BOTTOM | |
| | |
| | |
| | |

## Irrigation

**Sources: Tipón Video and Water Management Interactive**

- How was water distributed to irrigate agricultural terraces and supply water to the local population?

**Forming Conclusions: Inka Water Management**

- How is water management an example of innovation? Support your conclusion with evidence from the sources you examined.

# Feeding an Empire: How did the Inka apply innovation to agriculture?

## Lesson Components

**Andean Foods**

| Image | Description |
|---|---|
|  | Andean Foods Slideshow: View a slideshow that showcases the great variety of foods in the Andes. |

## Challenges and Innovations

**Challenge: Extending the Agricultural Area**

| Image | Description |
|---|---|
|  | Terracing Slideshow: View a slideshow of Inka terracing in various ancestral and contemporary contexts in the Andes. |
|  | Interview with Local Expert: Read an interview with an agriculture and terracing expert in the Andes who continues to use food growing methods introduced by the Inka. |

# Feeding an Empire

**Challenge: Preservation and Storage**

| Image | Description |
|---|---|
|  | Colca Video: Learn about the Inka storehouses that fed and supported the Inka Empire. |
|  | Explore a Colca Interactive: Use an interactive tool to investigate the features of this unique Inka food preservation and storage system. |

**Challenge: Food Diversification**

| Image | Description |
|---|---|
|  | Microclimates Graphic: Examine this graphic to better understand the meaning of “microclimate environments.” |
|  | Potato Planting Video: See a video of father and son in Toqra, Cusco Region, Peru, preparing the land to plant potatoes using an Inka plowing tool called *chaquitaqlla* that has been in continuous use in the Andes for more than 600 years. |

# Feeding an Empire

## Student Worksheets

- ***Agricultural Innovation***

## Connection to the Compelling Question

- What challenges might come with providing food for millions? What opportunities for innovation arise in response to such challenges? In this lesson, students discover how the Inka applied principles of sustainability and reciprocity to build innovative agricultural practices.

## Ideas

- **Challenges and Innovation:** Extending the Agricultural Area, Preservation and Storage, Food Diversification
- Students can investigate the videos, interactives, images, and an interview independently or in small groups.

# Suggested Lesson Procedure

## Hook

- Show the Andean Foods Slideshow.
- Ask: What Inka foods do you and your family eat?
- Foods domesticated thousands of years ago are still staples for more than seven million Quechua and Aymara indigenous people living in the Andes today, as well as for millions around the world. What does this say about Inka innovation?
- Preview vocabulary as needed: colca, terracing, microclimate.

## Challenges and Innovations

Students explore three categories of agricultural challenges and innovations: Extending the Agricultural Area, Preservation and Storage, and Food Diversification. For each challenge, students will see how the Inka applied innovation to engineer a solution.

The worksheet *Agricultural Innovation* is a tool for helping students synthesize the big ideas of Inka agricultural innovation. As students explore each featured source, take time to check for understanding of key content and concepts:

- Extending the Agricultural Area: Terracing allowed the Inka Empire to grow crops in areas that might otherwise be compromised by immense rainfall and subsequent erosion.

# Feeding an Empire

- Preservation and Storage: Colca, an Inka system of food storage and preservation, sustained the empire. The engineering and location of the colcas help keep the contents dry and cool. The colca system helped to guarantee the survival of the empire and its people in years when harvests were poor.
- Food Diversification: The Inka practiced food diversification in response to challenges posed by microclimate environments. In turn, the variety of foods nourished communities and colcas allowed for surplus food to feed those communities whose crops had produced poorly.

## Current-Day Applications

Consider a contemporary environmental challenge. What lessons about innovation could we learn from the Inka to help us engineer a solution to the problem? Students can record their ideas on page two of the worksheet, *Agricultural Innovation*.

## Wrap Up

Share ideas. What Inka innovations did students think could be applied to modern-day challenges?

***Next:*** *Students apply what they learned about water management and agricultural innovations in the Inka Empire to answer the compelling question, "What innovations can provide food and water for millions?"*

**Name** _____

# Agricultural Innovation

## Vocabulary: Define each term

| Colca: | Terracing: | Microclimate: |
|---|---|---|
| | | |

## Challenges and Innovations

Provide an example of how Inka innovation addresses each challenge.
Support your answer with evidence from the sources you examined.

- **Challenge:** How can we grow crops and control the speed of water on steep hillsides?

- **Challenge:** How can we preserve and store food so that millions of people have enough to eat?

- **Challenge:** How can we manage microclimates in order to grow a variety of foods?

## Inka Innovation and Contemporary Challenges

Think of an environmental challenge that we face today. What lessons about innovation could we learn from the Inka to help us engineer a solution to the problem? Support your ideas with evidence from the sources you examined.

# Making the Case for Innovation

## Lesson Components

**Interactive Digital News-Article Generator**

- After selecting a predesigned template in the interactive digital tool, students determine what featured sources from the inquiry best support their argument. Students will be able to write captions, quotations, headlines, body text, and bylines to support their argument.

## Connection to the Compelling Question

- How do sources help us form an argument? What sources helped you learn about Inka innovation?

## Summative Task

- Drawing on evidence from their exploration of the featured sources, students apply what they have learned about water management and agricultural innovations in the Inka Empire.

# Suggested Lesson Procedure

## Hook

- **Ask:** How can people use innovation to tackle difficult problems and find solutions to challenging situations? Discuss examples.

## Constructing a Summative Argument

- To support students' application of evidence in building an argument, this culminating activity features an interactive digital news-article generator, *The Andean Messenger: Making the Case for Innovation*. Students can build a news article by constructing a written argument to answer the compelling question: What Innovations Can Provide Food and Water for Millions?

# Taking Informed Action

## Lesson Components

- This section is optional but recommended. Students can review text and photos that illustrate examples of Andean reciprocity today.

## Connection to the Compelling Question

- How do sources help us form an argument? What sources helped you learn about the concept of *ayni*, or reciprocity? Can we consider *ayni* innovative?

## Summative Task

- Drawing on evidence from their exploration of the featured sources, students apply what they have learned about water management and agricultural innovations in the Inka Empire.

# Suggested Lesson Procedure

## Reciprocity—Andean Style

- Students use images and text featuring contemporary Andean cultures to investigate the concept of *ayni*, or reciprocity, and how it is still relevant today.

## Taking Informed Action

- Look for reciprocity in your community.
- Students investigate local community efforts of reciprocity (e.g., food banks; waterway and community cleanups; water conservation efforts; soup kitchens; homeless shelters) and find ways to participate.
- Use discussion questions to encourage students to reflect on the importance of volunteerism and community work.

## Discussion Questions

- Why is it important to be involved in volunteer group efforts that benefit your community?
- How can you and your family benefit from community work?
- What volunteer opportunities are available in your school or community, and how can you become involved?