6th Grade Agriculture and Human Civilization Inquiry

Was the Development of Agriculture Good for Humans?

The ard was a tool used to break up soil to get it ready for planting crops.

Copyright © Virneth Studios. Used with permission. http://3dhistory.co.uk/timeline-british/00-pre-history.php.

Supporting Questions

1. How did environmental changes and new technologies affect the development of agriculture?
2. How did the development of agriculture in Mesopotamia lead to the development of writing?
3. What were the consequences of agriculture for humans?
### 6th Grade Agriculture and Human Civilization Inquiry

**Was the Development of Agriculture Good for Humans?**

<table>
<thead>
<tr>
<th>New York State Social Studies Framework Key Idea &amp; Practices</th>
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<tr>
<td><strong>6.3 EARLY RIVER VALLEY CIVILIZATIONS IN THE EASTERN HEMISPHERE (ca. 3500 BCE – ca. 500 BCE):</strong> Complex societies and civilizations developed in the Eastern Hemisphere. Although these complex societies and civilizations have certain defining characteristics in common, each is also known for unique cultural achievements and contributions. Early human communities in the Eastern Hemisphere adapted to and modified the physical environment.</td>
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<td><strong>Gathering, Using, and Interpreting Evidence</strong></td>
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**Staging the Question**

Make a list of the greatest innovations and write a statement about why particular innovations appear on the list.

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<td>How did the development of agriculture in Mesopotamia lead to the development of writing?</td>
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<th>Formative Performance Task</th>
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<td>Create a chart with information about how climate change and improved tools contributed to the development of agriculture.</td>
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<tr>
<td>Write a paragraph about how writing emerged in Mesopotamia and describe the implications of that development.</td>
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<td>Develop a claim supported by evidence that agriculture had a range of consequences for human culture.</td>
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**ARGUMENT** Was the development of agriculture good for humans? Construct an argument (e.g., detailed outline, poster, or essay) that addresses the compelling question using specific claims and relevant evidence from historical sources while acknowledging competing views.

**EXTENSION** Conduct a Socratic dialogue addressing the compelling question.

**UNDERSTAND** Find an example of a modern development (like agriculture) that has resulted in a variety of consequences for humans.

**ASSESS** Determine the intended and unintended consequences of the innovation identified.

**ACT** Publish a public service announcement about the intended and unintended consequences of the innovation.
This inquiry provides students with an opportunity to investigate the role of agriculture in the growth of complex societies. Students will examine sources related to the development of agriculture, the emergence of ancient writing in Mesopotamia, and the rise of social inequalities as they construct an argument in response to the compelling question “Was the development of agriculture good for humans?” This question takes advantage of students’ intuitive understanding that the development of agriculture was essential and advantageous for humans, and then offers them a chance to explore some of the intended and unintended consequences of agriculture. This inquiry focuses on Mesopotamia and represents just a slice of what students should learn about the development of agriculture and the establishment of human civilization, so additional inquiries may be needed to fully represent the key idea.

The inquiry opens with the compelling question “Was the development of agriculture good for humans?” enabling students to examine the benefits and costs of agriculture for human culture and civilization. The three supporting questions, the formative performance tasks, and the featured sources are designed to build students’ reasoning as they grapple with the compelling question.

The first supporting question asks students to examine the development of agriculture. This breakthrough allowed humans to move from a hunter-gather lifestyle to a settled lifestyle of farming and herding, marking the shift between the Paleolithic and Neolithic eras. Students will examine a chart depicting temperature changes over the past 18,000 years, a timeline of innovations related to the development of agriculture and the domestication of animals, as well as images of tools humans used as they slowly developed their farming skills and eventually established sophisticated agricultural practices.

The second and third supporting questions focus on the advantages and disadvantages of agriculture and call into question our traditional notions of the development of agriculture as singularly advantageous to humans. These tasks focus on Mesopotamia as a case study for how the development of agriculture affected humans. It is important for students to know that agriculture developed differently in different places around the world; thus, the impact of agriculture varied from place to place. Formative Performance Task 2 focuses on the development of writing in Mesopotamia as one positive outcome of agricultural development. Students examine how writing emerged in Mesopotamia to meet the needs of managing grain surpluses from human agricultural practices. Formative Performance Task 3 provides students with an opportunity to explore additional outcomes of agriculture in Mesopotamia, including an increasing population, the emergence of private property, and the rise of infectious disease in the newly emerging social systems.

NOTE: This inquiry is expected to take four to six 40-minute class periods. The inquiry time frame could expand if teachers think that their students need additional instructional experiences (i.e., supporting questions, formative tasks, 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.
Content Background

More than 15,000 years ago, hunters and gatherers began to settle in permanent villages along the Tigris and Euphrates rivers as the overall climate became warmer and led to more favorable conditions for farming.

These rivers provided the lifeline for civilizations such as Mesopotamia to develop and flourish as they offered access to transportation, cleanliness and health, irrigation of crops, food, and protection. As early humans learned to modify and adapt to their environments, notably by harnessing water to serve a community, they made social and technological advancements that, together, are known as the Neolithic Revolution.

Much debate, however, is centered on the impact of agriculture on early humans. Advances in agriculture and the domestication of animals in such places as Mesopotamia allowed people to form semi-sedentary and sedentary settlements, which led to the development of complex societies and civilizations. The case of Mesopotamia provides an interesting example of how the development of agriculture affected social structures and everyday life for humans living in the area. As humans began to establish permanent settlements along the Tigris and Euphrates flood plain, they built up new systems for organizing and managing the new complexities of everyday life. In Mesopotamia, writing emerged in response to these new complexities. At the same time, social hierarchies developed to maintain order and protect agricultural production. Some social scientists argue that the development of agriculture included negative outcomes, such as increased malnutrition and starvation, the rise of epidemic diseases, and the origin of a hierarchical class system marked by great differences between rich and poor. What is beyond dispute though is that the development of agriculture was a turning point in human history.

Content, Practices, and Literacies

This inquiry has been designed to provide students with an opportunity to practice Gathering, Using, and Interpreting Evidence. These skills are featured as one of six practices in the New York State K-12 Social Studies Framework and are applied as students examine sources in all three formative performance tasks toward the construction of an evidence-based argument in the Summative Performance Task. Students also practice the skills of Chronological Reasoning and Causation as they work to understand how agriculture developed approximately 12,000 years ago and how ancient tokens led to writing, a symbol of advancing human culture, in Mesopotamia. Students continue to practice these skills as they examine some of the unintended consequences of the development of agriculture as represented in Mesopotamian society.

Students’ content knowledge and skills are assessed throughout the inquiry. The formative performance tasks in this inquiry include the creation of a chart that outlines the development of agriculture, an explanation for how writing emerged from agriculture in Mesopotamia, and the construction of a claim supported by evidence that agriculture had a range of consequences for human culture. The formative performance tasks and activities are designed to build upon each other by providing students with the content and practices necessary to successfully complete the Summative Performance Task.

The New York State P–12 Common Core Learning Standards for English Language Arts & Literacy offer social studies teachers numerous opportunities to integrate literacy goals and skills into their social studies instruction. The Common Core supports the inquiry process through reading rich informational texts, writing evidence-based arguments, speaking and listening in public venues, and using academic vocabulary to complement the pedagogical directions advocated in the New York State K–12 Social Studies Framework. At the end of this inquiry is an explication of how teachers might integrate literacy skills throughout the content, instruction, and resource decisions they make.
Staging the Compelling Question

<table>
<thead>
<tr>
<th>Compelling Question</th>
<th>Was the development of agriculture good for humans?</th>
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<tbody>
<tr>
<td><strong>Featured Source</strong></td>
<td><strong>Featured Source A</strong>: James Fallows, article ranking human inventions, “50 Greatest Breakthroughs Since the Wheel,” <em>Atlantic Monthly</em>, November 2013</td>
</tr>
</tbody>
</table>

Most people assume that the development of agriculture was an amazing and universally positive accomplishment. The compelling question is designed to get students to think about this accomplishment in terms of the consequences for humans. For example, when humans figured out how to irrigate crops, harvests increased and the population grew, but irrigation also contributed to an increase in waterborne diseases.

To introduce the compelling question, students might examine a list of great human innovations. Such lists are fairly easy to come by, such as the top 10 from a list of “50 Greatest Breakthroughs Since the Wheel” found in the *Atlantic Monthly*:

1. The printing press, 1430s
2. Electricity, late 19th century
3. Penicillin, 1928
4. Semiconductor electronics, mid-20th century
5. Optical lenses, 13th century
6. Paper, second century
7. The internal combustion engine, late 19th century
8. Vaccination, 1796
9. The Internet, 1960s
10. The steam engine, 1712


Students could make their own lists of the greatest innovations before or after seeing a list such as this one, and then write a statement explaining why particular innovations appear on their lists. The idea is to encourage students to consider how humans have benefited from these innovations and, at the same time, to explore the costs of innovations to human culture.
Supporting Question

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| Featured Sources | **Source A:** Timeline of the Neolithic Revolution  
**Source B:** Historical temperature data  
**Source C:** Image bank: Neolithic farming tools |
| Conceptual Understanding | (6.3c) Mesopotamia, Yellow River valley, Indus River valley, and Nile River valley complex societies and civilizations adapted to and modified their environment to meet the needs of their population. |
| Content Specifications | Students will explore how the selected complex societies and civilizations adapted to and modified their environment to meet their basic needs for food, clothing, and shelter. |
| Social Studies Practices | ☑ Gathering, Using, and Interpreting Evidence  
☐ Chronological Reasoning and Causation |

Supporting Question

As early humans fine-tuned their hunting and gathering skills, a series of environmental changes and the gradual adaptation of tools that had been used to harvest wild plants contributed to the development of agriculture. The emergence of agriculture allowed humans to create permanent settlements with the hope of a stable food supply. This supporting question asks how changes and innovations unfolded, keeping a specific focus on warming temperatures and creation of hand tools for working with crops. These changes and technical innovations occurred over a long period of time, but together they represented a remarkable leap forward. Increasing temperatures opened the door for humans to learn how to cultivate wild plants, while new tools allowed humans to better manage crops and increase crop yields.

Formative Performance Task

For this first formative performance task, students will learn about how agriculture developed by analyzing featured sources, including a chart of global temperatures over the past 18,000 years, a timeline of events in the Neolithic Revolution, and images of Neolithic tools. Teachers need to help students think about the development of agriculture as a process that played out over a long period in many places and facilitate discussion of patterns of agricultural development that yielded both similarities and differences. Although this task deals with how humans developed agriculture in general, the remainder of the inquiry focuses on the rise of agriculture in Mesopotamia. The task is for students to create a chart with information about how climate change and improved tools contributed to the development of agriculture. Teachers can support students in constructing their descriptions using the organizer that follows.
Summarize this information or data. How does this information or data help you to better understand how agriculture developed?

| Historical Temperature Data |  |
| Agricultural Tools |  |

This formative performance task is students’ first step toward creating an evidence-based argument. Students’ basic understanding of the birth of agriculture is an essential step toward thinking about how the development of agriculture contributed to human progress and resulted in a wide range of consequences.

### Featured Sources

**FEATURED SOURCE A** is a timeline of agricultural-related events in the Neolithic Revolution. This information will help students gain the necessary background information about the chronological development of agriculture and the domestication of animals.

**FEATURED SOURCE B** is a chart with historical temperature data. Although scientists and archaeologists are still debating the extent to which climate changes contributed to the development of agriculture, it is important for students to understand that agriculture started during a period of increasing temperatures. Featured Source B shows global temperatures over 18,000 years. The chart uses the average global temperature today as a baseline so students may make comparisons to other times in history.

**FEATURED SOURCE C** is an image bank showing farming tools that Neolithic humans used to manage crops. Included are an axe, a sickle, a grinding stone, and a primitive plough called an “ard.” Humans used these tools to clear areas, cut the stalks on grains and other crops, and process food. Collectively, such tools represented an important step in the process of humans coming to recognize that certain food sources could be processed and stored.

Teachers might support students’ analysis of these images using the following questions:

- What do you see in this image?
- What do you think this tool was used for?
- How did this tool support the development of agriculture?

The answers to these questions should form the foundation for students’ descriptions in the formative performance task, which students may work on individually, with a partner, or in small groups.

### Additional Resources

Additional sources may be needed for students to construct their explanations about the development of agriculture. One such example is:

Supporting Question 1

**Featured Source**  
**Source A:** Timeline showing “Neolithic Innovations in Mesopotamia,” 10,000–2000 BCE

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**Neolithic Innovations in Mesopotamia**

(Before Common Era)

- Ground stone invented (unknown)
- Sheep domesticated
- Wheat and barley cultivated
- Lentils cultivated and pigs domesticated
- Hafted stone ax first used and cattle domesticated
- Plow, yoke, and harness first used
- Horses domesticated

Supporting Question 1

**Featured Source**

**Source B**: Graph showing historical temperature data since 18,000 BCE

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**Average Global Temperature Data**

The chart shows temperature change over the past 18,000 years. The horizontal axis indicates the years before the present (B.P.). The vertical axis shows changes in temperature from the current average global temperature.

Adapted from J. A. Eddy, OIES, and R. S. Bradley, University of Massachusetts, Earthquest, Spring 1991.
Supporting Question 1

| Featured Source | Source C: Image bank: Neolithic farming tools |

Image 1: An ax (bottom) used for clearing, flint sickles (top right) used for harvesting cereal crops, and a flat rock and stone (top left) used for grinding flour.

Image 2: The ard was a tool used to break up soil to get it ready for planting crops.

Copyright © Virneth Studios. Used with permission. http://3dhistory.co.uk/timeline-british/00-pre-history.php.
Supporting Question 2

<table>
<thead>
<tr>
<th>Supporting Question</th>
<th>How did the development of agriculture in Mesopotamia lead to the development of writing?</th>
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</table>
| Featured Sources | **Source A:** Sumerian counting tokens  
**Source B:** Sumerian numeric system  
**Source C:** Clay tablet with cuneiform symbols |
| Conceptual Understanding | (6.3a) Humans living together in settlements develop shared customs, beliefs, ideas, and languages that give identity to the group. |
| Content Specifications | Students will explore how the selected complex societies and civilizations adapted to and modified their environment to meet their basic needs of food, clothing, and shelter. |
| Social Studies Practices | 🔍 Gathering, Using, and Interpreting Evidence  
🔍 Chronological Reasoning and Causation |

**Supporting Question**

As agriculture became more complex, humans began to create some of the habits, customs, structures, and techniques that we associate with civilizations. For example, people in Mesopotamia, in particular the region of Sumer, developed ways to record information about crops and animals that they later transformed into writing. The first writing systems date as far back as 8000 BCE when Neolithic humans started using counting tokens with simple markings on small stones to represent and communicate ideas. The tokens were used to represent the quantity of a commodity. For example, a cone-shaped token might represent a small amount of grain. Sumerian priests and royalty used tokens to record whether people had paid what they owed the temple or had received goods from the temple stores (like seed grain) in return for their labor.

Archaeologist Denise Schmandt-Besserat describes this initial system of writing in her 1996 book *How Writing Came About*. She argues that humans developed this simple system of recording ideas as a precursor to more complex symbolic writing. Sometime around 3000 BCE Sumerians and Egyptians developed more complex systems of writing. These systems made use of cuneiform and symbolic representations.

Although the focus of this inquiry is on the emergence of writing in Mesopotamia, students should know that writing emerged independently in other places, including China and Egypt. Given the similarities and differences among these writing systems, the possible directions of influence are unclear.

This supporting question asks students to think about how writing emerged in Mesopotamia to address the needs that humans had to be more organized.

**Formative Performance Task**

Students continue their investigations of the development of agriculture by considering how people invented writing to address issues that emerged in agricultural societies. The formative performance task calls on students to write a paragraph about how writing emerged in Mesopotamia and describe the implications of that development. To support students in this task, teachers might describe the methods Sumerians used to record their grain surpluses then provide them with the featured sources. Students could be guided to understand how the evolution of writing
and record keeping contributed to human culture. In their paragraphs, students should describe the Sumerians’ invention of counting tokens and their later development of cuneiform writing. They should identify the relative time of each development and place those developments in sequence within the larger scope of the Neolithic period. This work will provide students an opportunity to practice chronological reasoning.

**Featured Sources**

**FEATURED SOURCE A** depicts Sumerian counting tokens. The earliest tokens were designed in particular shapes, such as a cone or a sphere. Each shape represented a specific crop or commodity. The more complex tokens developed later had markings on the stone shapes. These complex tokens represented a certain quantity of a specific commodity.

**FEATURED SOURCE B** is an image of symbols used in the unique Sumerian numeric system. The source illustrates how humans in Sumer developed symbols to represent the physical counting tokens.

**FEATURED SOURCE C** is an image of a clay cuneiform tablet. Around 3200 BCE, Sumerians started etching symbols on clay tablets in order to represent ideas. This form of writing was an innovation in that the system included a collection of symbols on a single surface.

All three sources include images and related text. To support students as they analyze the sources, teachers should provide them with an organizer like the one below.

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
<th>Summarize the text with the image. What is the key idea? What are two supporting details?</th>
<th>How is this source evidence of the development of writing?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Source A: Image bank: Sumerian counting tokens</strong></td>
<td>Describe what you see in the image. How might these items have been used in Sumerian society?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Source B: Sumerian numeric system</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Source C: Clay tablet with cuneiform symbols</strong></td>
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</tbody>
</table>

**Additional Resources**

Additional sources may be needed as background content or other examples of writing. Following is a useful content source:

  [http://www.mesopotamia.co.uk/writing/story/sto_set.html](http://www.mesopotamia.co.uk/writing/story/sto_set.html).
Supporting Question 2

| Featured Source | Source A: Sumerian counting tokens |


The first counting stones, like these, were made in the Neolithic period. This period was a time of great change for humans. People, who had been hunters and gatherers before, were starting to become farmers. Farming allowed people to produce more food than they could actually eat. The extra food provided by agriculture meant that some people did not have to spend their time gathering food. They could spend their time making other things, such as clothes, jewelry, and pottery, as long as they could convince the people who did produce food to give some of their surplus to them.

Some of the surplus food that was produced needed to be stored as seed for the next year, and the rest could be distributed to people who did not produce food themselves. Communities needed to decide how this would be done and how the land that produced the food would be owned. In Sumer, these decisions were first made by the priests who ran the temples and then by kings and their officials. They decided that much of the land belonged to the temple and the king and that everyone owed some labor, crops, or other goods as taxes or rents. They also decided they needed a way to keep track of these payments, which led to the development of these tokens.

Sumerians developed a system of tokens consisting of plain tokens that were designed in specific shapes, like a cylinder or a cone, and were meant to represent quantities and concepts, such as sweet or wood. Complex stones had carvings or marks to represent more complex ideas and specific things like wheat, sheep, and wool.
Another challenge people overcame was how to represent large numbers. Instead of making numerous inscriptions for large numbers, Sumerians developed a numbering system. Doing so allowed them to represent multiple instances of the same symbol. Like many people today, Sumerians used a base-10 system. Unlike people today, Sumerians also used a counting system in which the number 60 was a base.
Supporting Question 2

| Featured Source | Source C: Clay tablet produced between 3100–2900 BCE, with cuneiform symbols |

Administrative account of barley distribution, Jamba Nasr, Uruk III style. 3100–2900 BCE.

The development of writing was a slow and gradual process. Sumerians began using tokens as counting stones to keep track of payments, taxes, and trade around 8000 BCE. Soon, however, this process became too difficult to manage. After about 4,000 years, people realized that the tokens were not really needed. Instead, they could make symbols that represented the tokens in clay.

By about 3000 BCE, Sumerian images of tokens on clay tablets began to change. This new style of writing came to be known as “cuneiform,” which means wedge-shaped. The strokes were made by pressing a reed stylus into clay. The direction of writing also changed: Instead of writing top to bottom, people began to write from left to right in horizontal rows.
Supporting Question 3

<table>
<thead>
<tr>
<th>Supporting Question</th>
<th>What were the consequences of agriculture for humans?</th>
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<tbody>
<tr>
<td>Formative Performance Task</td>
<td>Develop a claim supported by evidence that agriculture had consequences for human culture.</td>
</tr>
</tbody>
</table>
| Featured Sources             | **Source A:** Graph of population changes in the Neolithic period  
**Source B:** Image bank: Life in Paleolithic and Neolithic communities  
**Source C:** Graph of changes in rates of disease |
| Conceptual Understanding     | (6.3d) Political and social hierarchies influenced the access that groups and individuals had to power, wealth, and jobs and influenced their roles within a society. |
| Content Specifications       | This conceptual understanding has no content specifications. |
| Social Studies Practice      | 🔴 Gathering, Using, and Interpreting Evidence |

Supporting Question

Building upon their understandings of how agriculture developed and how writing subsequently emerged to meet the demands of humans in managing agriculture productivity, the third supporting question asks students to consider the consequences of agriculture on society, including both positive and potentially negative results. Students have already examined one positive outcome in the development of writing. Other positive outcomes of agriculture include population growth and economic productivity. Jared Diamond, author of *Guns, Germs, and Steel*, makes an argument in "The Worst Mistake in the History of the Human Race" that early humans' transition from hunter-gatherer to sedentary agricultural societies had some negative effects on human culture. Diamond and others suggest that, after humans created agriculture, they began to experience a rise of epidemic diseases and a rise in inequality resulting from property ownership. Although Diamond's argument is somewhat counterintuitive, it provides an opportunity to balance and deepen the story of human progress and to help students recognize that history is not a straight path of progress.

This third supporting question moves students closer to the Summative Performance Task by providing them with an opportunity to extend their considerations of the effects of agriculture. The idea of consequences in the compelling question is not to suggest that humans got something wrong. Instead, the idea is to focus students' attention on the idea that history is complex and on the notion that predicting the consequences of innovations is challenging.

Formative Performance Task

The formative performance task requires students to make a claim about the consequences of agriculture. Making claims is sophisticated work. When making a claim, students are committing to a belief about why something in the past happened. In this instance, some students might claim that agriculture was, on balance, a good thing, while
others might take their clues from the source on the rise of disease and claim that agriculture created problems for humans. It is likely that most students will come down in the middle but, whatever they decide, they will need to support their claims with evidence.

Students should begin their work on this formative performance task by making a statement of belief. Teachers can support students in this process with starters such as these:

- Agriculture led to ________________________.
- I believe agriculture was ________________________.
- As a result of the development of agriculture, humans were able to ________________________.

As students continue their work, they should locate and record evidence from the sources that have been provided. By completing this task, students practice the skills of Gathering, Using, and Interpreting Evidence.

**Featured Sources**

**FEATURED SOURCE A** a population graph, depicts the rise in population that occurred after the development of agriculture. Although the graph does not show it, the world population had been steady for millennia before approximately 10,000 BCE.

**FEATURED SOURCE B** consists of two images of human settlements that depict life before and after agriculture. These sources may be used to help students recognize that property and private spaces came into existence with agriculture. In the Paleolithic period, humans lived in communal settings sharing hunting and gathering tasks and the rewards of those efforts. With the rise of agriculture in the Neolithic period, humans began to produce surpluses of food and other materials, such as tools, clothes, and decorative items.

**FEATURED SOURCE C** illustrates the rise in disease-related death rates for humans in the Neolithic period. Diseases came from multiple sources that all emerged as a result of agriculture. Waterborne diseases increased as humans created irrigation systems that altered the flow of water and put them in close contact with these new water sources. Diseases from animals increased as humans domesticated and penned animals, coming in regular close contact with animals in ways they had not before. Famines became more prevalent as humans began to depend on food stores that were subject to destruction from natural and human causes.

**Additional Resources**

Additional sources include the following:

## Supporting Question 3

| **Featured Source** | **Source A:** Graph of population changes during the Neolithic period, “World Population Growth,” 12,000 to 1000 BCE |

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![Graph of population changes during the Neolithic period](image)


## Supporting Question 3

<table>
<thead>
<tr>
<th>Featured Source</th>
<th>Source B: Image bank: Life in Paleolithic and Neolithic communities</th>
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### Paleolithic

![Image 1](© David Hawgood; licensed for reuse under the Creative Commons Attribution-ShareAlike 2.0 license.)

**Question:**
Think about how humans spent much of their time outside their homes or dwellings. What does this picture tell you about Paleolithic life?

**Evidence/rationale:**

### Neolithic

![Image 2](© AWK/Masterfile.)

**Question:**
Think about how humans lived inside these buildings. What does this picture tell you about Neolithic life?

**Evidence/rationale:**

Taken together, what do we learn from these two images about the transition from the Paleolithic to the Neolithic eras?
Supporting Question 3

**Featured Source** | **Source C**: Graph showing changes in rates of death and population growth, 12,000 to 5000 BCE

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**Changes in Population and Death Rates, 12,000 to 5000 BCE**

Adapted from Razib Khan, “Grain, Disease, and Innovation,” Discover magazine website, June 18, 2011.

This chart illustrates changes over time as humans moved from hunter-gather societies to societies formed around agricultural production. The chart indicates when agriculture appeared in human culture, when the first diseases and pandemics (widespread diseases) emerged, when the first famine appeared, and when humans began to develop new ways to produce food. The chart shows that over this period, death rates and population increased.
### Summative Performance Task

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<td><strong>EXTENSION</strong></td>
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</tbody>
</table>

In this task, students write a response to the compelling question "Was the development of agriculture good for humans?" At this point in the inquiry, students have examined the conditions and tools that made agriculture possible, the impact of agriculture on early human societies through the example of writing, and some of the consequences of agriculture. The Summative Performance Task allows students to apply what they have learned by making a claim-based argument supported with evidence.

The compelling question has considerable pedagogical value and is reflective of an intellectual argument about the costs and benefits of agriculture. Inherent in the question and the formative performance tasks is the possibility that students will arrive at different conclusions. Students should be cautioned not to overuse any single source. They should be expected to demonstrate the breadth of their understanding and their ability to use evidence from multiple sources to support their distinct claims. The Evidence Chart can be used to provide students with support as they build their arguments with claims and evidence.

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

- Despite any problems that developed, the rise of agriculture was a benefit to humans.
- The problems associated with the growth of agriculture have been significant and undercut some of its value to human beings.
- Agriculture may have been a mistake, but it is hard imagine what humans would have done without it.

It is possible for students to find support for any of these arguments in the sources provided and through their analyses of the sources.

### Extension

To further students’ understanding of the content in general and their arguments in particular, an extension activity provides an opportunity to participate in a Socratic dialogue. By its nature, a Socratic dialogue is a dialectic approach to argumentation. The form involves students making claims that are, in turn, challenged for the purpose of strengthening that initial claim. Socratic dialogue assumes that students’ initial ideas or claims are naive, problematic, or maybe even false. Socratic dialogue can be uplifting for students, but it demands that they be challenged in their thinking. Ways to support Socratic dialogue include using a preexisting claim that is presented by the teacher, practicing with a partner, or even using a text to argue against. Jared Diamond’s article “The Worst Mistake in the History of the Human Race,” which is referenced in Formative Performance Task 3, could serve that purpose.
# Evidence Chart

## Initial Claim

What is your opening claim about the consequences of agriculture? This claim should appear in the opening section of your argument. Make sure to cite your sources.

## Evidence

What evidence do you have from the sources you investigated to support your initial claim? Make sure to cite your sources.

## Additional Claims

What are some additional claims you can make that extend your initial claim? Make sure to cite your sources.

## Additional Evidence

What additional evidence do you have from the sources you investigated that support your additional claims? Make sure to cite your sources.

## Double Check

What ideas from the sources contradict your claims? Have you forgotten anything? Make sure to cite your sources.

## Pulling It Together

What is your overall understanding of the compelling question? This should be included in your conclusion. Make sure to cite your sources.
Taking Informed Action

<table>
<thead>
<tr>
<th>Compelling Question</th>
<th>Was the development of agriculture good for humans?</th>
</tr>
</thead>
</table>
| **Taking Informed Action** | **UNDERSTAND** Find an example of a modern development (like agriculture) that has resulted in a variety of consequences for humans.  
**ASSESS** Determine intended and unintended consequences of the innovation identified.  
**ACT** Publish a public service announcement about intended and unintended consequences of the innovation. |

Taking informed action can manifest itself in a variety of forms and in a range of venues. Students may express action through discussions, debates, surveys, video productions, and the like; these actions may take place in the classroom, in the school, in the local community, across the state, and around the world. The three activities described in this inquiry represent a logic that asks students to (1) understand the issues evident from the inquiry in a larger and/or current context, (2) assess the relevance and impact of the issues, and (3) act in ways that allow students to demonstrate agency in a real-world context.

For this inquiry, students examine some of the social costs of agriculture balanced against the more apparent advantages that have accrued to humans. The development of agriculture was an innovation and, as students explored in the opening activity, perhaps the most important human innovation ever. The concept of human innovations frames this Taking Informed Action opportunity. Specifically, students should find an example of a modern innovation and examine the positive and negative consequences of that innovation so that they may take informed action by helping people learn more about those consequences.

To understand the problem, students will need to brainstorm modern innovations. Some possible innovations on the students’ list might include the Internet, the automobile, and television as well as more subtle innovations, such as diet soft drinks. The idea is that students are identifying things that may be perceived of as improvements, but carry with them a range of consequences. After identifying the innovation, students should assess the innovation from their perspectives by determining the intended and unintended consequences of that innovation. Students should examine their capacity to take informed action while recognizing the limitations they could face when trying to do so. As a culminating activity, students may act by creating a public service announcement (PSA) about intended and unintended consequences of the innovation. The PSAs should be brief and to the point (15 to 30 seconds long) and could take the form of an audio recording or a short video. Teachers can support students as they share their PSAs as widely as possible using available public outlets.
Common Core Connections Across the Grade 6 Inquiry

Social studies teachers play a key role in enabling students to develop the relevant literacy skills found in the New York State P–12 Common Core Learning Standards for English Language Arts & Literacy. The Common Core emphasis on more robust reading, writing, speaking and listening, and language skills in general and the attention to more sophisticated source analysis, argumentation, and the use of evidence in particular are evident across the Toolkit inquiries.

Identifying the connections with the Common Core Anchor Standards will help teachers consciously build opportunities to advance their students’ literacy knowledge and expertise through the specific social studies content and practices described in the annotation. The following table outlines the opportunities represented in the Grade 6 Inquiry through illustrative examples of each of the standards represented.

<table>
<thead>
<tr>
<th>Compelling Question</th>
<th>Was the development of agriculture good for humans?</th>
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<table>
<thead>
<tr>
<th><strong>Common Core Anchor Standard Connections</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Reading</strong></td>
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</table>
| **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.  
See Formative Performance Task 3: Students read a series of graphs in order to make a claim about the consequences of agriculture for humans. |
| **CCSS.ELA-LITERACY.CCRA.R.7** Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.  
See Formative Performance Tasks 1, 2, and 3: Students examine images of Neolithic tools in Task 1, images of Sumerian counting tokens in Task 2, and images of Paleolithic and Neolithic communities in Task 3. |
| **Writing** |
| **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.  
See Formative Performance Task 3: Students are working with claims and evidence. |
| **CCSS.ELA-LITERACY.CCRA.W.5** Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.  
See the Summative Performance Task: Students complete an Evidence Chart as they plan for writing their summative argument. |
| **Speaking and Listening** |
| **CCSS.ELA-LITERACY.CCRA.SL.1** Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively.  
See the Summative Performance Task: Students participate in a Socratic dialogue on the compelling question “Was the development of agriculture good for humans?” |
| **Language** |
| **CCSS.ELA-LITERACY.CCRA.L.3** Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.  
See Appendix A: Agriculture Inquiry Vocabulary: Students use the vocabulary guide to understand words and phrases they encounter in the formative performance tasks. |
### Appendix A: Agriculture Inquiry Vocabulary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ard</td>
<td>A simple tool used to break up the ground for planting crops.</td>
</tr>
<tr>
<td>ax</td>
<td>A simple tool used to split and shape wood.</td>
</tr>
<tr>
<td>cuneiform</td>
<td>A system of symbols used in ancient writing.</td>
</tr>
<tr>
<td>domesticate</td>
<td>The process of taming animals for use in farming.</td>
</tr>
<tr>
<td>famine</td>
<td>A period when food is not available and people begin to starve.</td>
</tr>
<tr>
<td>infectious disease</td>
<td>A type of sickness that can be spread easily to and among a population.</td>
</tr>
<tr>
<td>Mesopotamia</td>
<td>An area in the Middle East between the Tigris and Euphrates rivers where the ancient Sumerian civilization was located.</td>
</tr>
<tr>
<td>Neolithic</td>
<td>Period of human history beginning 12,500 years ago and lasting until 4,500 years ago. This was a time when humans began using advanced stone tools and developed agriculture.</td>
</tr>
<tr>
<td>Paleolithic</td>
<td>Period of human history beginning 2.5 million years ago and lasting until 12,500 years ago. This was a time when humans used simple stone tools and lived as hunters and gathers.</td>
</tr>
<tr>
<td>pandemic</td>
<td>A large outbreak of an infectious disease that affects many people over great distances.</td>
</tr>
<tr>
<td>sickle</td>
<td>A simple tool with a handle and curved blade used to harvest crops.</td>
</tr>
<tr>
<td>Sumerian</td>
<td>One of the earliest human civilizations; it dated back 6,000 years and was centered in the region of Sumer. The civilization was located in Mesopotamia between the Tigris and Euphrates rivers.</td>
</tr>
<tr>
<td>tokens</td>
<td>Small objects used by Neolithic humans to count and calculate.</td>
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</tbody>
</table>