NO PREP

The Invention of Agriculture

How Farming Changed Everything

Includes: Student reading, case study, differentiated questions, teacher key

Name: Period: Date:

The Invention of Agriculture: How Farming Changed Everything

The Most Important Decision Nobody Made

Around twelve thousand years ago, in the hills above the Fertile Crescent, something began to change. People who had always moved with the seasons, following herds of deer, aurochs, and gazelle, and returning to the same patches of wild grain each autumn, started doing something different. They began harvesting grain more intensively. They began keeping animals closer to camp. Gradually — over centuries, not overnight —

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Around twelve thousand years ago, in the hills above the Fertile Crescent, something began to change. People who had always moved with the seasons, following herds of deer, aurochs, and gazelle, and returning to the same patches of wild grain each autumn, started doing something different. They began harvesting grain more intensively. They began keeping animals closer to camp. Gradually, over centuries and not overnight, they began to plant seeds deliberately and tend the resulting crops. They began to stay. The transition from foraging to farming, called the Neolithic Revolution, was not a sudden invention or a deliberate decision by any individual or group. It was a slow, gradual process that unfolded independently in multiple locations around the world: in the Fertile Crescent around 10000 BCE, in China around 7000 BCE, in Mexico around 5000 BCE, in West Africa around 3000 BCE. In the Fertile Crescent, the wild ancestors of wheat (emmer and einkorn), barley, lentils, peas, and flax grew naturally in the hills. The wild ancestors of goats, sheep, pigs, and cattle roamed the same landscape. The region was almost uniquely suited for the transition to agriculture, which is one reason why it happened there first.

Domestication: What It Actually Means

Domestication is not simply taming. A tamed animal is one that has learned to tolerate human presence. A domesticated animal is one that has been genetically changed through selective breeding, deliberately or unconsciously, so that it is fundamentally different from its wild ancestor. Domesticated wheat does not shatter when its grain heads ripen, because shattering would cause the seeds to fall to the ground before humans could harvest them; wild wheat shatters because that is how it disperses its seeds. Domesticated sheep are less aggressive, more docile, and produce more wool than their wild ancestors. These changes happened because

humans, over many generations, kept the individuals that were easiest to work with and planted seeds from the highest-yielding plants. The process of domestication was gradual and partly unconscious. Early farmers were not conducting deliberate breeding experiments. They were simply harvesting what was available, tending what grew, and keeping animals that were useful. But the cumulative effect of these choices, over hundreds of generations, was profound genetic change. By about 8000 BCE, the wheat grown in the Fertile Crescent was already distinctly different from its wild ancestor, and it was being grown in places far from where wild wheat naturally occurred, meaning people were deliberately planting and tending it rather than just harvesting what appeared naturally.

The Price of Farming: Health, Labor, and Inequality

Agriculture transformed human life in ways both positive and deeply negative. On the positive side: it allowed much larger populations to live in one place. A farming community could support perhaps 50 to 100 people per square kilometer, far more than a foraging group, which might require several square kilometers per person. This made possible the growth of villages, then towns, then cities. It created the surplus food that freed some people from farming to specialize in crafts, religion, administration, and military service. But the health consequences of the transition to farming were often severe. Archaeological evidence from skeletal remains at early agricultural sites shows dramatic increases in dental cavities (from the carbohydrate-rich grain diet), evidence of nutritional deficiencies, and signs of infectious disease spreading more easily in densely settled communities. Foragers generally had more diverse diets and better overall health than early farmers. They also worked fewer hours. Studies of modern foraging groups suggest that foragers spend approximately 20 hours per week obtaining food, far less than early farmers, who faced the physical demands of plowing, planting, weeding, harvesting, and processing grain. Agriculture also created the conditions for social inequality in ways that foraging generally did not. When food can be stored, it can be owned. When it can be owned, some people can accumulate more than others. When accumulation is possible, hierarchies emerge, and those hierarchies tend to become self-reinforcing. The domestication of plants and animals eventually led to the domestication of human labor as well, in the form of slavery and serfdom.

Jericho and Catalhoyuk: Early Agricultural Settlements

Two archaeological sites give us the clearest picture of what early agricultural life actually looked like. Jericho, in the modern West Bank of Palestine, is one of the oldest continuously inhabited settlements in the world. By around 10000 BCE, people were living in mud brick structures near a permanent water source. By 8000 BCE, Jericho had a massive stone tower — over 8 meters tall — and defensive walls, evidence of a settled community with enough organization to undertake major construction and enough conflict to need protection. The famous walls of Jericho (referenced in the Bible) were part of a long tradition of fortification at this strategic location. Catalhoyuk, in central Turkey, flourished from about 7500 to 5700 BCE and at its peak may have housed 8,000 to 10,000 people living in mud-brick houses so tightly packed that there were no streets: residents entered their homes through holes in the roofs. The site shows evidence of a remarkably egalitarian social structure — burials under house floors show no dramatic differences in grave goods between individuals, suggesting that at Catalhoyuk, the accumulation of wealth had not yet created sharp class divisions. How and why that changed is one of the central questions of the Neolithic.

Key Information: The Neolithic Revolution

Detail	Information
Time Period	Began c. 10000 BCE in the Fertile Crescent
Core Crops	Emmer wheat, einkorn wheat, barley, lentils, peas, flax
Core Animals	Goats, sheep, pigs, cattle (domesticated from wild aurochs)
Key Sites	Jericho (West Bank, c. 10000 BCE); Catalhoyuk (Turkey, c. 7500-5700 BCE)
Population Effect	About 50-100 people per square kilometer, versus several square kilometers per person for foragers
Health Costs	More dental cavities, nutritional deficiency, increased infectious disease

Detail	Information
Social Effect	Created conditions for food storage, ownership, and social hierarchy
Key Question	Was the shift to farming a net gain or a net loss for early human health and daily life?

Case Study: The Debate at Jericho

Spring had come early to the valley, which meant the wild barley on the hillside above the settlement was already close to ripe. Mira knew this because she had been watching it for three weeks, the way her mother had taught her and her mother's mother before that. Her brother Dannu disagreed with her about what to do next. He thought they should leave now, while the hunting was still good to the east. He had heard from a group passing through that the gazelle were running in large numbers two days' walk away. 'We have enough grain from last harvest,' he said. 'The walls can wait.' 'The walls cannot wait,' Mira said. 'We have forty people here now. Last year's flood took the eastern storage rooms. We need to build higher before the rains come back.' 'Forty people,' Dannu said, 'is already too many. We never lived like this before, packed together. Three people were sick last month. The children have bad teeth.' 'Three people were sick,' Mira said, 'but none of them died. We had the healer here, and the healer's supplies. Could you say that when we traveled?' They didn't have an answer for each other. The wild barley ripened, and Mira harvested it with the others. Dannu stayed. As usual, both of them were right about things the other couldn't fully see.

1. The case study presents both farming and foraging as choices with legitimate costs and benefits rather than farming as obviously superior. Based on the reading, what specific evidence supports Dannu's position that settled farming life had serious drawbacks compared to foraging?

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2. Mira's argument centers on scale — 'forty people is already a community that needs infrastructure.' Based on the reading about early agricultural settlements like Jericho, what social changes did the ability to support larger settled populations eventually produce, both positive and negative?

Multiple Choice

1. What was the primary reason the Fertile Crescent was the first region to develop agriculture?

a) Its rulers made deliberate political decisions to encourage farming rather than foraging

b) Trade networks from China introduced farming knowledge to the region

c) The climate of the Fertile Crescent was too dry to support most foraging populations

d) Wild ancestors of domesticable plants and animals grew and lived naturally in the region

2. According to the reading, one serious health consequence of the transition to farming was:

a) Increased dental cavities and nutritional deficiency from carbohydrate-heavy grain diets

b) Loss of the ability to digest wild animal protein after several generations

c) Rapid spread of diseases previously carried only by wild animals that farmers domesticated

d) Reduction in life expectancy due to constant warfare over farmland

3. Catalhoyuk is archaeologically significant because its burial evidence suggests:

a) It was the first site where human sacrifice was practiced for agricultural fertility

b) The community deliberately chose not to store grain in order to prevent wealth inequality

c) Its society was relatively egalitarian, without sharp class differences at that stage

d) Women held all positions of religious and political authority in early agricultural societies

Matching

Write the letter of the correct definition on the line next to each term.

Term	Definition
1. ___ Domestication	A) An early Neolithic settlement in Turkey (c. 7500-5700 BCE) notable for its dense housing and relatively egalitarian burial practices
2. ___ Neolithic Revolution	B) Living in one place permanently rather than moving seasonally to follow food sources
3. ___ Sedentary	C) Food or resources produced beyond what is needed for immediate consumption, enabling storage and trade
4. ___ Surplus	D) The process of selectively breeding plants or animals over generations until they are genetically distinct from wild ancestors
5. ___ Catalhoyuk	E) The gradual transition from foraging to farming that began around 10000 BCE in the Fertile Crescent

Fill-in-the-Blank

1. The Neolithic Revolution occurred independently in multiple regions; in the Fertile Crescent it began around 10000 BCE, but in China it did not begin until around _____ BCE.

2. Archaeological evidence from skeletal remains shows that early farmers had more _____ cavities than foragers, due to their carbohydrate-heavy grain diet.

3. At Catalhoyuk, residents entered their homes through holes in the _____ because the houses were too tightly packed to have streets between them.

Short Answer

Answer each question in 2-4 complete sentences.

1. Explain how the domestication of plants and animals differs from simply taming them, and why this distinction matters for understanding the Neolithic Revolution.

2. The reading argues that agriculture 'created the conditions for social inequality in ways that foraging generally did not.' Explain the chain of reasoning that connects farming to inequality.

3. Based on the reading, would a rational person in 9000 BCE have chosen to become a farmer or remain a forager? Explain your reasoning using specific evidence from the text.