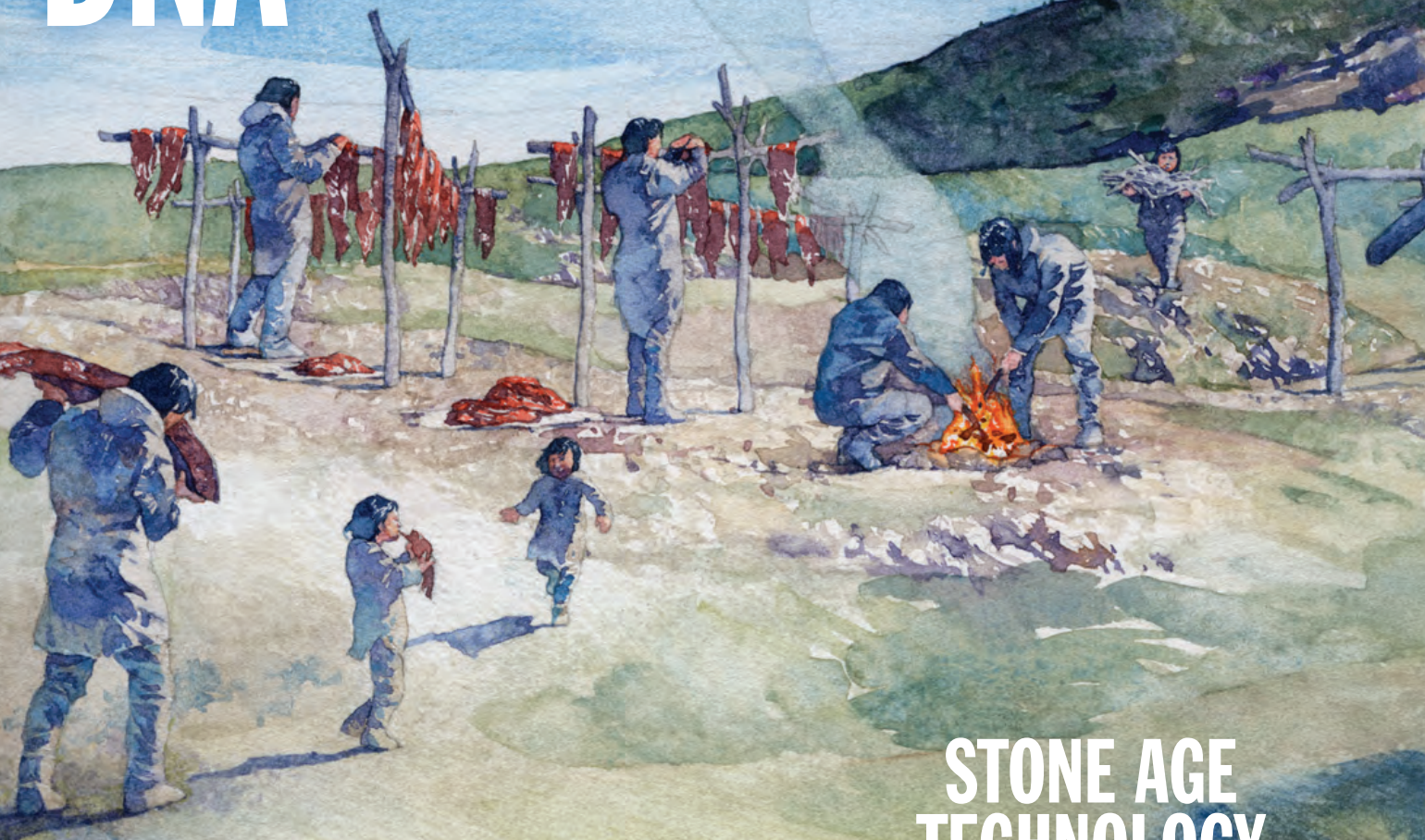




World's Early People



DIGGING UP
DNA



**STONE AGE
TECHNOLOGY**



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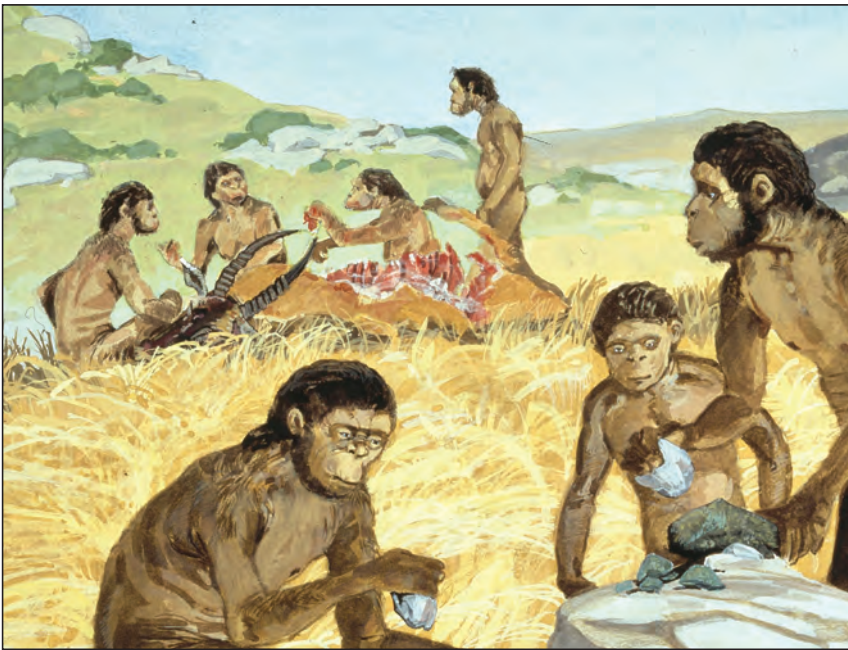
Who Lived in the Stone Age?

When you think of “old,” what comes to mind? Last year’s shoes? Life before the Internet? Try a little earlier – 2.5 million years earlier!

That’s about the time some of the first *hominins*, or humanlike species that walk upright, started making tools from rocks. Their tools were simple – mainly stones split to form a point or a sharp edge.

But they helped hominins to thrive.

The first species to make tools is from the genus (category) we call *Homo* (human). It is known as *Homo habilis*, or “handy person.” It most likely lived in Africa 1.5 to 2.4 million years ago. *Homo habilis* represented a big change. How big? Big enough that we call its time the Paleolithic era, or the Old Stone Age.



◀ **THE BRAINS** of *Homo habilis* were about half the size of present-day human brains. However, the brains of *Homo habilis* were larger than the brains of the hominins that came before it. This may have contributed to its

ability to make and use tools. *Homo habilis*’s tools and brain-power helped it spread. Over millennia, it adapted, or made changes that helped it survive, to live in regions that earlier species had found too harsh.



▼ **HOMO ERECTUS**, or “upright person,” was probably a lot like *Homo habilis*, but taller and thinner, with a bigger brain. While it may have lived as

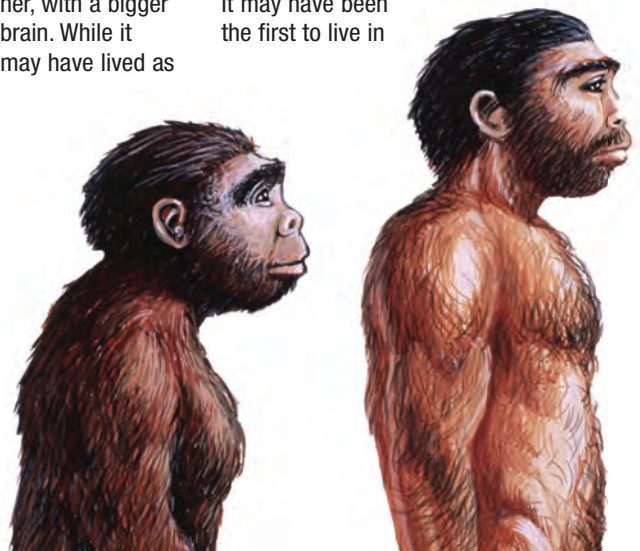
early as 2.5 million years ago, *Homo erectus* was at its peak about 1.9 million years ago. It may have been the first to live in

communities, hunt for food, create art, and control fire for warmth and preparing food.

▲ **WHAT DOES** *Paleolithic* mean? It comes from the English word *paleo*, meaning “of pre-historic times,” and the Greek word

lithos, meaning “stone.” The suffix *-ic* turns the whole thing into an adjective. Some of the most advanced hominins

lived during the Paleolithic period, or Old Stone Age. During this time, many different kinds of tools were made from stone.



▼ **HOMO ERECTUS** mastered fire. Have you ever sparked a flame with a piece of flint? It's not easy! Cooking made food tastier

and easier to eat. Firelight made it easier to see things at night, and it kept predators away. Heat made rock brittle so it could

be split into tools. Eventually, fire would help early humans smelt metals, so they could make better tools and weapons.



▼ **HOMO ERECTUS** also made another change – mates stayed together to raise their young. That's called “pair bonding.” With two parents to feed, care for, and pro-

tect them, children were more likely to survive. It's hard to imagine a characteristic more important to us modern humans than our tight family ties.

Scholars agree that our species, *Homo sapiens*, began about 200,000 years ago. That's about 50,000 years before *Homo erectus* died out.



◀ **WITH ALL THESE** advantages, it's no wonder *Homo erectus* successfully migrated, or moved, over much of the world. In a period longer than 1.5 million years, it adapted to a wide variety of environments. An environment is the surroundings and conditions in a particular geographical area. *Homo erectus* lived in many regions of Africa and Eurasia, including China, Vietnam, Indonesia, and India.

Here Comes *Homo Sapiens*

When *Homo sapiens* (“wise person”) first came on the scene about 200,000 years ago, it was just one of multiple *Homo* species. It looked a lot like a modern human. But it could – and did – meet other species that lived in the same areas and were just about as advanced. However, *Homo sapiens* was the first modern human. The progress it made led to civilization as we know it.



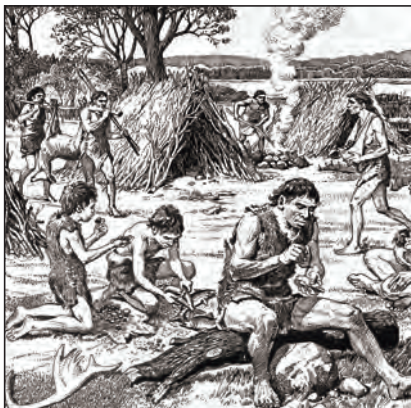
► **AT FIRST, *Homo sapiens***’s brain was about the same size as similar species’ brains. But *Homo sapiens* was lighter, with smaller muscles. It was more adaptable. Most

important, its brain size kept growing from generation to generation. It could learn from experience and adapt better to change.

Most scholars think bigger brains made *Homo sapiens* need more food. That drove it to hunt and gather more.



BY THEN, ALL THE existing *Homo* species walked upright, used fire, and made similar stone tools. Within their own species, they began to work together to hunt large animals. This helped them get more protein. Some scientists think some species may have learned tool-making techniques from each other.



◀ **As *Homo sapiens*** changed from scavengers into hunter-gatherers, communities became more common. Survival was very hard for people on their own or in small groups. They could easily starve, be

attacked by predators or larger clans, or freeze. Groups of about 30 extended family members began to work together. They built shelters, gathered food, and protected one another.

NEANDERTHALS AND DENISOVANS

Homo erectus and *Homo sapiens* lived at the same time as Neanderthals and Denisovans. These two *Homo* species also used tools, lived and hunted in groups, and used fire.



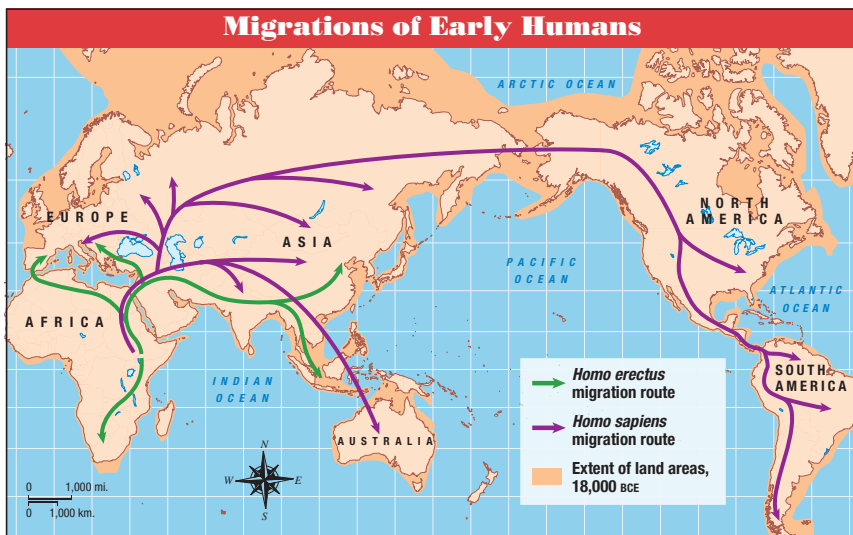
▲ NEANDERTHALS

were squat and muscular. They had heavy brows and big noses. People joke that Neanderthals weren't smart. But they practiced rituals and buried their dead, activities that usually happen in fairly complex cultures. They lived in Western and Central Europe and much of Asia. Their barrel-chested bodies were well adapted to surviving cold winters in the north, where the weather was so different than on the warmer African plains.



▲ DENISOVANS

were discovered in 2010 in the Denisova Cave in the mountains of Siberia. Not much is known about their appearance. Bone needles and other tools show that, like the Neanderthals, they used tools extensively. Denisovans appear to have lived at the same time as Neanderthals and *Homo sapiens*.



▲ **MANY *Homo*** species followed herds of animals. They had no choice but to stay close to their food source.

They also moved on when they had gathered all the nuts, berries, and edible plants in an area. Sometimes

food was especially scarce, such as during a drought. Then they would travel to new regions. Can you

determine, from looking at this map of early migration, which of the species was more adaptable?

➤ **As *Homo erectus*** had before it, early *Homo sapiens* also migrated out of Africa to other continents. But with its greater adaptability, it was much better prepared to survive. Taller and built to travel faster, it could cross terrain much more quickly. Technologies – tools, clothing, fire, and other innovations – helped *Homo sapiens* adjust to new environments more rapidly.



The Mystery of Prehistory

Analyzing evidence isn't just the secret to solving crimes on TV. Carbon dating of bones and weapons, DNA evidence of family relations, and food remains – archaeologists use all these things and more. They treat many things they dig up as evidence of events that happened long before people could write things down.

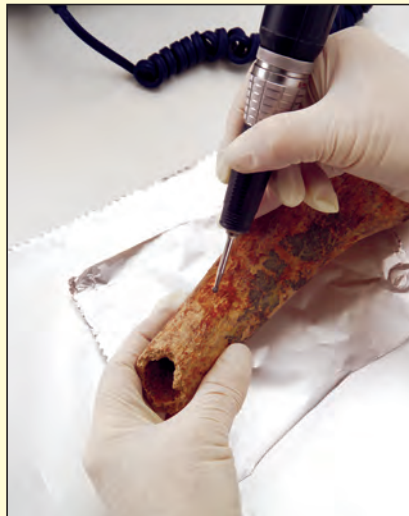
What is archaeology? It comes from the Greek word for the study of ancient things. Archaeologists study early humans, but they also examine and learn from history – sometimes as recent as the last century.



STONE TOOLS AND WEAPONS tell a story of how early people survived. The tools they used were adapted to the types of animals they hunted and the plants they ate. If they pounded grain or nuts into flour, they most likely left behind tools for that purpose. Spears and other weapons reveal the ways they protected themselves.



BONES can be carbon-dated, a technique that determines when a person or animal lived. Bones can be examined to analyze health, age at death, and even, sometimes, how someone died! If a bone has marks on it, it might tell scientists what kinds of tools or weapons were used. It can also show which animals were part of the diet.



DNA ANALYSIS tells scientists where an animal or an early person's parents and ancestors came from. It reveals whether any of those ancestors belonged to another *Homo* species. It can determine if an early human had certain diseases. It can even tell which people were descended from a certain individual.

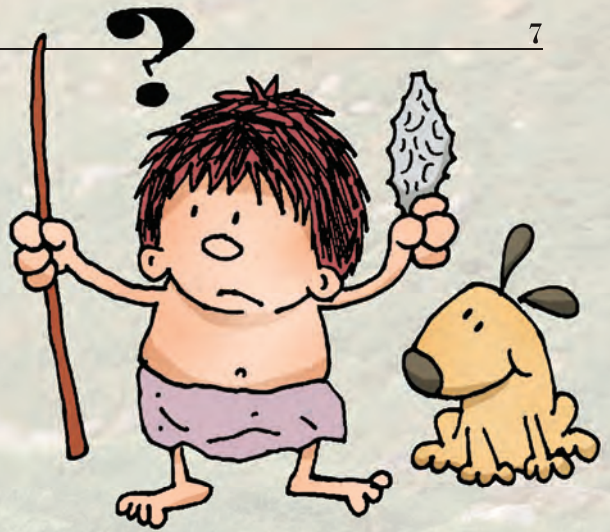


FOOD REMAINS tell scientists which edible plants and animals grew nearby. They show if the plants that were eaten in the past are the same plants that grow today. They give clues about how much of a group's diet was plants and how much was animal protein. Bones can reveal whether people cooked their food and if they ate large animals.



CAMPsites reveal more than just a group's diet and how it used fire. They can also show whether a group lived there year-round or only sometimes. Such sites give clues about home life, types of shelter and clothing, and whether the people who stayed there had any possessions.

➤ **IF YOU WERE** an early *Homo sapiens*, what one tool would you find most useful? Would you want a stone blade to cut meat and vegetables? A spear for hunting? A bone needle to sew clothing?



CRANIAL (HEAD) SIZE MEASUREMENTS help archaeologists put together a timeline that shows which species' brains grew over time. Measurements help scientists estimate a species' intelligence. Researchers can compare the size data with other information and see how brain size affected survival.

Try This!

PLAY ARCHAEOLOGIST!

Archaeologists often need to identify strange and unusual things. Invite your friends to bring a few weird items. To start the game, set one of yours on the table. What is it? Each player gets one guess per round, and if nobody guesses right, you move on to the next player's item. When it's your turn again, you have to answer one question about the item before your friends guess again. The last player whose item is identified wins!

Meet the Hunter-Gatherers

Imagine that winter is closing in. You and your clan have collected and eaten all the edible plants around you for miles. You're competing for food not only with other humans, but with other animals, too, and the herds have been growing smaller by the day. It's time for you and your clan to leave. You'll spend tonight in a shelter made of reeds and branches found near your campsite.

Last summer and fall, life was a breeze. Tasty food was so easy to come by that finding the day's food took just a few hours. Your clan might come back here next summer, but right now you're heading for places where you found food last winter. You're hoping for the best.



▲ **HOW DID HUMANS** find their way to nearly every continent by the time the last Ice Age ended? Scientists think that during that Ice Age, glaciers

froze over much of Earth, trapping a large amount of the oceans' water. As a result, sea levels dropped, and land bridges that had once been underwater were

revealed, opening pathways for early humans to travel from Africa to Asia. Later, some may have traveled over the ocean to Australia. And when the glaciers

melted again 15,000 years ago, others may have crossed a land bridge from Asia to North America.

▼ **HUNTER-**gatherers were often nomads — people who travel from place to place. They found makeshift homes or made shelters with materials that were easy to carry. They didn't own much. If the weather changed

and their usual territory no longer provided food, they had to adapt to survive. One option was to migrate to new regions. Another was to develop strategies, or plans of action, that would help them thrive in one location.



▼ AS DIFFERENT

groups of nomads established patterns of migration, each began to develop its own society, or way of living together. People took on roles, or jobs and duties that they carried out for the group. Groups that returned to a particular place each year developed a culture, or rules and traditions, they followed at that location. The more they interacted with an environment, the more complex their society became. Common languages and shared belief systems took shape.



In **NORTH AMERICA**, the Clovis people used spears to bring down big Ice Age animals. Later, as those animals' numbers decreased, people adapted to the continent's many environments.

In **SOUTH AMERICA**, people lived in communities like Monte Verde, which had wooden homes draped with animal skins. Fishing settlements began to form where rivers met the Pacific Ocean.

In **EUROPE**, people fished with nets and harpoons and hunted with bows and arrows. They built wood shelters and canoes and established long-term camps.

In **AFRICA**, hunter-gatherer groups adapted to survive in the deserts, savannas, and woodlands and coastal areas. In a cave found near Nelson's Bay, in what is now South Africa, scientists have found evidence of many eras of occupants. Fishers there used hooks and nets. Hunters used bows and arrows.

In **ASIA AND THE PACIFIC**, the settlement of Abu Hureyra along the Euphrates River grew to about 300 members. In the north, people made clay pots. They made tools and weapons made of bamboo.



The Stone Age Toolbox

It's hard to believe that these simple tools represented the first technological revolution. But that's how progress happens. Someone invents a simple tool to do a job better, and then someone improves on it. That's how humankind has gone from spearheads to smartphones!

BONE NEEDLES were used for sewing hides or soft bark into clothing or shelter materials.



HAMMERSTONES were flat stones used to hammer, break open nuts, flake flint, and make tools.



HAND AXES were made of flint or other flaky stone. They were used to cut meat, dig for tubers, throw at prey, and chop wood and bark.





BURINS were chisel-like tools made of sharp-edged flakes of stone used to carve or engrave wood or bone.



SPEARHEADS were made of stone or bone and mounted on sticks. They were used to hunt and fish, and as weapons.



SCRAPERS were sharp-edged stones used to prepare animals to be eaten, to clean hides, and to make bark or wood smooth.



AWLS were long pointed spikes used for piercing wood or hides.

The Agricultural Revolution

If you lived 10,000 years ago, you might have never traveled. Sitting around the fire pit, however, your grandfather might tell stories about the old days. He might recall when your people were always on the move. Your father might reply, "Traveling was exciting, but the great thing about growing food instead of searching for it is simple: nowadays, we usually have enough to eat. Yes, we have to stay close by to protect the livestock, water the plants, and scare away pests. We also have to sow seeds and harvest crops before animals get to them – but isn't life better now?"

And it was better. Major change happened when people realized they could grow a lot of food in one place. Large groups could live close together, and almost everyone could eat well. That innovation, or new idea, was at the heart of the agricultural revolution. It probably started in the Middle East, an area that includes southwestern Asia and northeastern Africa. Then the basic techniques of farming – sowing seeds, watering soil, harvesting – spread quickly through major regions of the world. For many, these techniques replaced hunting and gathering as a way of life.

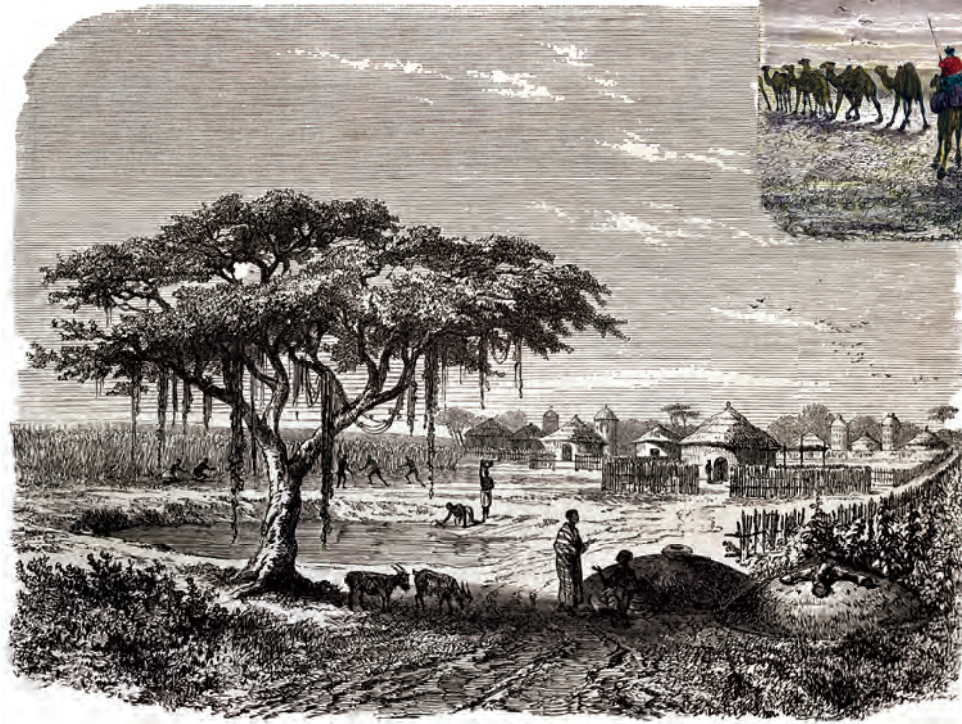


◀ **AT SOME POINT** way back in time, a drought, or dry spell, made it difficult to rely on the foods nomadic people usually ate. They needed more reliable sources of food, so they began to take steps to make sure food would be available. They started planting seeds by scattering them on top of the soil, knowing some would grow, and keeping livestock, or animals, in pens.

➤ **ANIMALS LIKE** sheep and goats became domesticated, or conditioned to work with humans. Then they could be shepherded, with

the help of dogs, over many miles of grazing grounds. This is called “pastoral nomadism.” People who did not settle in towns or villages continued

living this way for many years. They moved their herds from one pasture to another, stopping to trade for supplies.



◀ **WITH SO MUCH** food in one place, there was no need to roam far to find it. People had moved between seasonal camps, but they started staying put in

permanent camps. Then they expanded the camps into settlements. Eventually, the settlements that had been populated the longest grew into villages and towns.



◀ **ABU HUREYRA IS** a good example of a place that was changed by the agricultural revolution. It was a settlement along the Euphrates River in the Tigris-Euphrates River Valley. Nomads had been stopping there for a very long time, because herds of gazelle liked the area – probably because fields of grain naturally grew there. It was logical for people to stay there, farming the grain and keeping the gazelles close by. The camp slowly grew into a village.



▲ **CLOTHING WAS** usually made of animal pelts, or skins, before the agricultural revolution. But then people started shearing sheep for their wool. That was around the

same time that farmers first planted cotton: about 6,000 years ago. Why do you think people started using cotton and wool instead of pelts?

From Farm to Village

Once people didn't have to spend all their time hunting and gathering, they had time for new things. Lots of new things. With the agricultural revolution in full effect, communities advanced quickly. Huge changes in technology, communications, religion, jewelry, art, and self-expression were all part of human progress.

Many new technologies sprang from the aftermath of the agricultural revolution: better tools such as plows made farming easier. Boats became more sophisticated.

So did weapons. There were advances in clothing, sewing, rope-making, and even storage containers. People started smelting, or melting, metals to create tools, containers, and weapons. Greater need for metals led people to start mining. At first, people smelted copper. Later, they added tin to copper to make bronze, a stronger alloy, or mix of metals. That led to the Bronze Age, beginning about 3500 BCE. Still later, people smelted iron, which led to the Iron Age, starting about 1200 BCE.

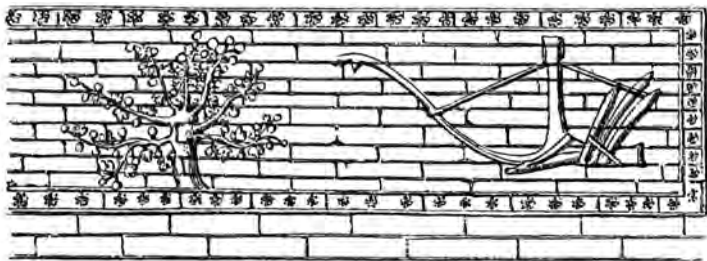


◀ **MORE FREE TIME** meant people could sit and think. Around this time, people began to explore religions. They worshipped their ancestors, who they believed were watching over them. People also started shar-

ing their emotions and thoughts. These changes led to deeper forms of reflection and communication, including philosophy. This era saw advances in the arts, such as music, dance, and painting.

➤ **IN MANY** agricultural communities, just a few families owned the land and passed it down to their children. These people became community leaders and the wealthy elite. Because the wealthy had so much control over food production, others were forced to obey them. The richest and most powerful people became rulers.





▲ **ADVANCES IN** technology, such as better plows and irrigation, allowed people to farm more easily and efficiently. Early plows were

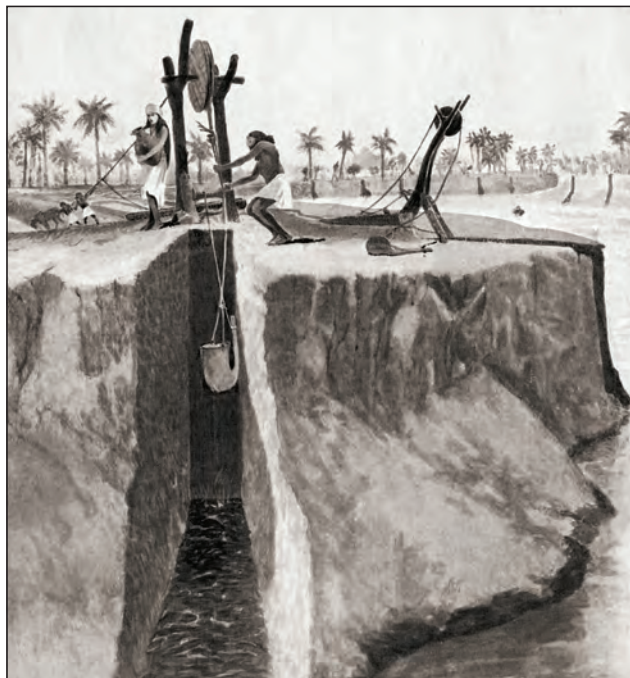
made of wood, so they moved slowly and did a poor job of breaking the ground. Once stone tips were added, plows performed better and could

be pulled by work animals. Likewise, ditches that brought water from faraway sources helped crops get enough water to produce big yields.



▲ **PEOPLE ALL OVER** the world adapted ideas from the agricultural revolution to suit their needs. On the steep slopes of southeastern Asia,

farmers built steps, or "terraces." They flooded these flat areas with water to grow rice, which became a staple of their diet.



▲ **FARMS NEED** water. In order to farm, early peoples needed a consistent source of water, so they created ditches to irrigate their plants.

Their systems became more and more complex, so that they could deliver just the right amount of water at the right time. Fire, too, had

its place in agriculture. Farmers could burn down plants to clear land for new crops in a process called "slash-and-burn" farming.

➤ **IN AREAS WITH** good soil, farmers planted many crops. They grew grains, roots, and medicinal plants. They learned to grow plants they could use for clothing, such as flax for making linen. They raised many types of animals to help with work, to provide wool for clothing, and to eat. In Europe, they built homes of wood, straw, and other materials. By 5500 BCE, in what is now Central Europe, the Bandkeramik people had established farming communities and started producing uniquely marked pottery.



The First Towns

Many farming communities that did well eventually grew into larger communities. They expanded from camps, to villages, to towns. Up to 3,000 people might call one of these towns home. With so many people living together, some were able to offer services. They would use special skills or provide labor in exchange for the goods they needed.

Towns with plenty of surplus goods became important centers for barter. Merchants (sellers) and landowners formed the highest social classes when economies began to develop. The towns with the most resources were able to negotiate exchanges not only for goods but also for political power.



◀ In 7000 BCE, Jericho was a flourishing town with plenty of water for irrigation. Crops grew well, and farmers produced plenty of surplus. Jericho had special rituals for honoring the dead, which indicates that it had a sophisticated culture. Travelers

would often stop for the night in Jericho, which lies near Jerusalem. It grew into an important trading town. When people needed something, they were more likely to find somebody willing to trade for it in Jericho than anywhere else nearby.

► ÇATAL HÜYÜK WAS much like Jericho, with excellent farming, trade routes, and rituals to honor the dead. Located in what is now Turkey, this town is believed to have been the first place where people wove linen cloth from flax. They made some of the world's earliest plant-based clothes.





▲ As such towns became more prominent, the people who worked in them began to follow a division of labor,

each doing what he or she did best. Abundant food meant that more people had extra goods. They were able to hire people

to work as artists. Painters were paid to decorate homes. Sculptors were paid to carve bulls or other significant items.



▲ In towns and cities, some large bills – like the costs of building walls and fortresses – had to be paid by the people. On top of that, rulers said they should be paid for serving as rulers, since it took up all their time. They began

to collect a portion of the crops, livestock, and goods produced by the people who lived in the towns they controlled. Usually, people had no choice but to pay as much as the ruler demanded. That's how taxes got started.



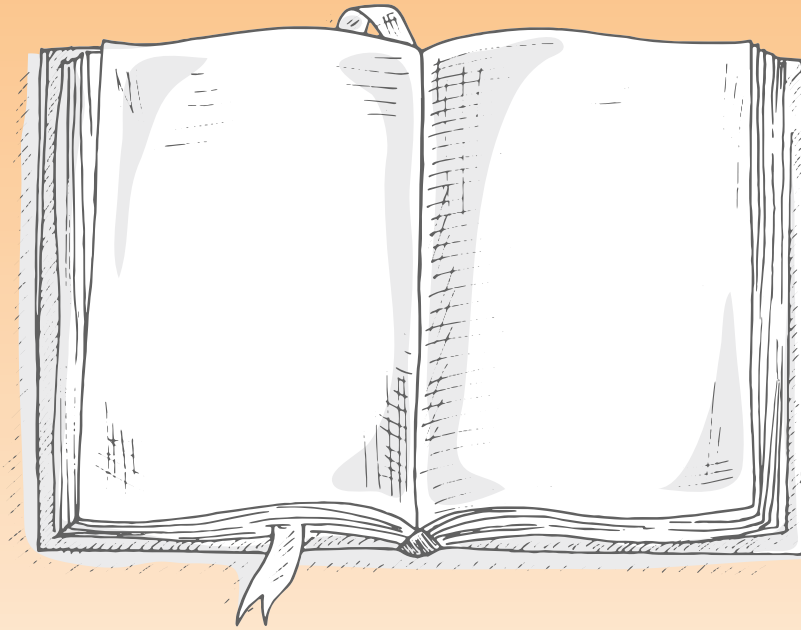
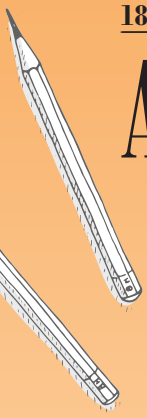
◀ DIVISION OF LABOR

led to a class system, with wealthy merchants and landowners at the top. Important family members held top government positions, which means they decided the laws and who had to follow them. In general, they handed down their ruling privileges to their children. Those who had no land or goods to exchange were at the bottom of the social classes, or hierarchy of the powerful and wealthy.

THINK PIECE!

When people first began living in settlements and towns, hunting and gathering was the only way they had ever lived. If new people started moving in near the camp where your clan lived, you might be meeting unfamiliar families. Would you feel excited? Angry? Afraid? What would you do?

Activities



MAKE A RESEARCH NOTEBOOK

What do you wonder about the world's early people and how they were able to adapt to their environments? Scientists often use research notebooks during their studies. Like a scientist, create your own research notebook, filling it with ideas, information, and any questions you may have. Be sure to illustrate your notebook with drawings and maps.

WRITE A NARRATIVE

Think about what life might have been like in ancient Çatal Hüyük. How did people spend their time? What did they do together? What might they have talked about? Write a short narrative set in Çatal Hüyük. Create characters and a plot that are realistic in this setting. Include details from the magazine to make the history of this ancient town come alive.



MAKE CONNECTIONS WITH THESE RELATED TITLES



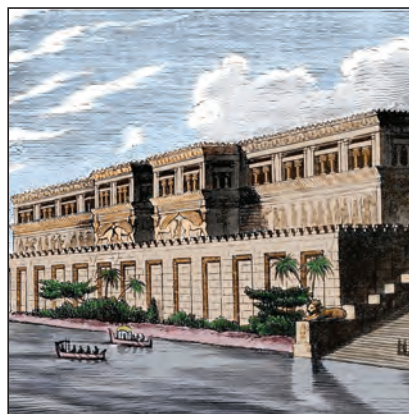
Archaeology

Understanding the daily lives of ancient people is the driving force behind archaeology. The pottery, tools, and weapons these civilizations left behind provide a window into their culture. From mapping a site and sifting dirt, to using delicate brushes to unearth artifacts, learn all about the essential work of archaeologists.



Language

It's more than just the words and sounds we use to communicate. The study of language helps us understand our past. From ancient hieroglyphs and the first papyrus scrolls, to sign language and computer programming, language is at the center of human society.



Mesopotamia

Ever wonder when the first written records appeared, when the wheel was invented, or where our modern counting system came from? Believe it or not, these and many other innovations – like glass, farming, complex legal systems, and basic astronomy – came from one civilization, the very first: the Mesopotamians.

LEARN MORE ONLINE!



- The San culture of the Kalahari Desert in southern Africa is a hunter-gatherer society that still exists. The San use bows and arrows to kill antelope and rope traps to catch small animals.
- When archaeologists arrive at a new site, they can't just grab a shovel and dig. They might miss a rock that is actually a spearhead. They might accidentally break a *hominin* bone. So what can they do?
- One benefit of traveling as a clan was that hunters could work together. That way they could bring down bigger animals than they could alone or in small groups.
- The population of the world grew dramatically because of the introduction of agriculture. Successful farming produced excess food for people and for livestock.



CALIFORNIA STANDARDS

HSS 6.1 Students describe what is known through archaeological studies of the early physical and cultural development of humankind from the Paleolithic era to the agricultural revolution.

6.1.1 Describe the hunter-gatherer societies, including the development of tools and the use of fire. **6.1.2** Identify the locations of human communities that populated the major regions of the world and describe how humans adapted to a variety of environments. **6.1.3** Discuss the climatic changes and human modifications of the physical environment that gave rise to the domestication of plants and animals and new sources of clothing and shelter.

Historical and Social Sciences Analysis Skills:

Chronological and Spatial Thinking

1. Students explain how major events are related to one another in time.
2. Students construct various time lines of key events, people, and periods of the historical era they are studying.



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GRADE 6 TITLES

World's Early People

Mesopotamia	Ancient India
Ancient Egypt	Indian Empires
Archaeology	Ancient China
Language	Early Romans
Ancient Hebrews	Roman Empire
Early Greeks	Christianity and Rome's Legacies
Golden Age of Greece	Olmec and Maya
Ancient Persia	Civil Rights

ON THE COVER: A tribe of hunters makes use of the woolly mammoth they have caught.
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