

# Archaeology for Education



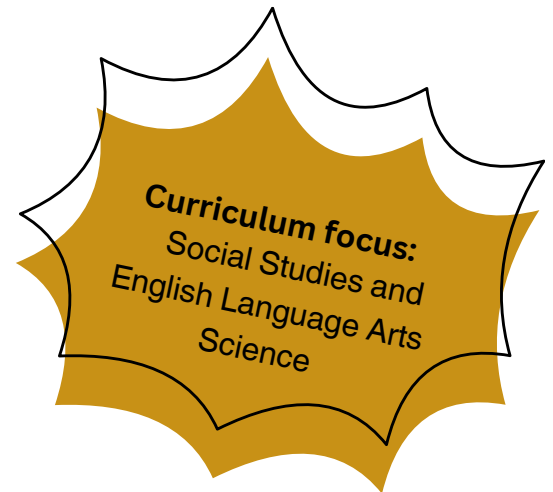
Archaeology is a fascinating area for educators to use to help students develop a richer understanding of the past as well as the critical and creative thinking skills needed to build a sustainable future. In 2022-2023, funded by a SSHRC Connections grant (“African Archaeology in Support of School Learning”), archaeologists and educators came together to contribute to a special issue of the journal *African Archaeological Review - Archaeology for Education*.

Contributors were encouraged to focus on *story* as a way to engage readers in why and how archaeology matters for K-12 students’ learning. In this special issue, you will find a wide variety of stories that highlight the human histories, technologies, science, and problem-solving that form the long, complex history of Africa written with educators in mind.

Before using the following learning resource, we encourage you to read the corresponding article for your own background knowledge and to inspire you to create, teach, and share your own activities and lessons about Africa and archaeology.



## **How African Pasts Can Inspire Alternative Responses to Climate Change: a Creative Writing Experiment.**



### 1. Text: The Future Was Now

- Questions from the text
  - How does studying the past help us better plan for the future?
  - How we grow food matters
- Research project: Connecting with local food history

### 2. Text: The Whisper of Pots

- Questions from the text
- Pastoralism and Herding
- Clues about the Past - Lothagam North Pillar Site
- Examining Pottery Fragments

**This educational resource was developed from an article in the special edition:**

Logan, A.L., Grillo, K.M. (2023). How African Pasts Can Inspire Alternative Responses to Climate Change: a Creative Writing Experiment. *African Archaeological Review*, 40, 507–517. <https://doi.org/10.1007/s10437-023-09543-8> © The Authors 2023. Licensed under [CC BY](https://creativecommons.org/licenses/by/4.0/).

# The Future was Now

Abena and Sustainable African Solutions in 2065 CE

by Dr. Amanda Logan

Abena awoke to a cool breeze laced with the scent of the season's first rains. She inhaled deeply, hoping the sweet, life-giving air would convince her to get ready for work. It was still dark, but she eased out of bed, wrapped in a bright wax print cloth that had belonged to her grandmother. It was soft with age, creased by years of laundering. The cloth reminded Abena of her grandmother's stories, her ancestors, their struggles, and the lessons they gifted her.

The rain's arrival was no surprise. Abena had noticed how certain trees changed, sure signs that the rains were coming.

"The trees are as good as any other meteorological instrument," she remembered her grandfather saying.

He always liked to point out this leaf and that fruit could tell her what was coming.

In these moments, the future felt less scary and more knowable.



Long ago, Abena and her ancestors learned to read the signs of the trees, the animals, and the plants around them. They had heard what happened to the People Across the Sea, who did not bother to pay attention. The stories came from long before Abena was born, but her grandparents had carefully told and retold them so their descendants would be prepared. Grandmother told of how the People Across the Sea grew greedy. They choked the air and waterways with all manner of foul substances, overheating the planet in the name of the newest iPhone, 4D TV, and other things that, looking back, seemed frivolous when lives were at stake.

She told Abena of how the Harmattan  
grew harsher and longer as a result.

—dry winds from the Sahara—

The growing season kept getting shorter.

Swarms of locusts devoured what little had grown.

Times were desperate.



Her ancestors were faced with a choice: pack and leave their homes behind in search of a better way or figure out how to make do with what they had.

It was the year 1982 CE. Abena's grandmother, Afriye, was only nine at the time. She nervously clutched her cloth in bed that night and listened to her parents talking quietly outside.



“Rains are better to the south of us,” her father said. “We could stay with my brother for a while to see if it might work for us.”

“But Kof, he doesn't have space or food for all of us,” her mother replied. “What if we didn't take everyone?” said her father.

“I know it's not ideal, but we might not have a choice.”

“Family is all we have,” replied her mother. “We'll stay here together. We'll figure something out.

And they did. Instead of leaving behind the elders who might be too frail to travel, they asked them questions.

And they did.

Instead of leaving behind the elders who might be too frail to travel, they asked them questions. They heard about the wars of the mid-nineteenth century, the locust plagues of the 1930s, the horrible droughts of the late 1960s, and the political challenges of the early 1980s. Each time, their people turned to the elders and relied on passed-down repertoires of practical knowledge about how to survive.

They learned how to capture the locusts and enjoy their sweet meat. How to find edible leaves in the bush, even new ones, tasting them one person at a time to test their safety. They planted foods like cassava and yams that grew underground, where no locusts could destroy them.



And they managed.



After some years, the People Across the Sea came again.

But this time, they were there to learn.

Abena fixed herself breakfast on her solar-powered stove. Sun crept through the sunroof, warming her earthen-walled home. She pedaled her bicycle to work, thankful for the freshly graveled road, which spared her clothes from becoming muddy. Good, she thought, one less thing to wash. There are better uses for clean water.

She parked her bike in a sea of others in front of the diminutive facade of the Sustainable African Solutions building—or “sass” (a jocular adaptation of the institute’s acronym, SAS), as Abena and her colleagues sometimes joked, recalling the Time Before, when African ecological knowledge was disparaged as primitive. The earthen-walled headquarters was massive, bringing together experts from all over the continent. It was modeled after Timbuktu, an ancient center of learning in the area formerly known as Mali. Underneath the SAS logo was their motto: “Eat Where You Live.”



Abena entered the building and went to her work group, the Forest-Savanna Transition unit. At SAS, people worked in units determined by ecological zone rather than international boundaries.

After all, those boundaries were not that helpful when it came to climate change since it is not exactly something that can be fenced in.

Today was a big day. Abena and her group were presenting their ideas to the whole organization. Abena wondered why she was so nervous.

Her workmates were usually open-minded and generous with their feedback. Maybe it was because she was pushing for more investment in “mini-livestock”: cultivating insects as renewable protein sources. She was worried that the People Across the Sea would push back; they had always had weird nonsensical taboos against eating bugs.

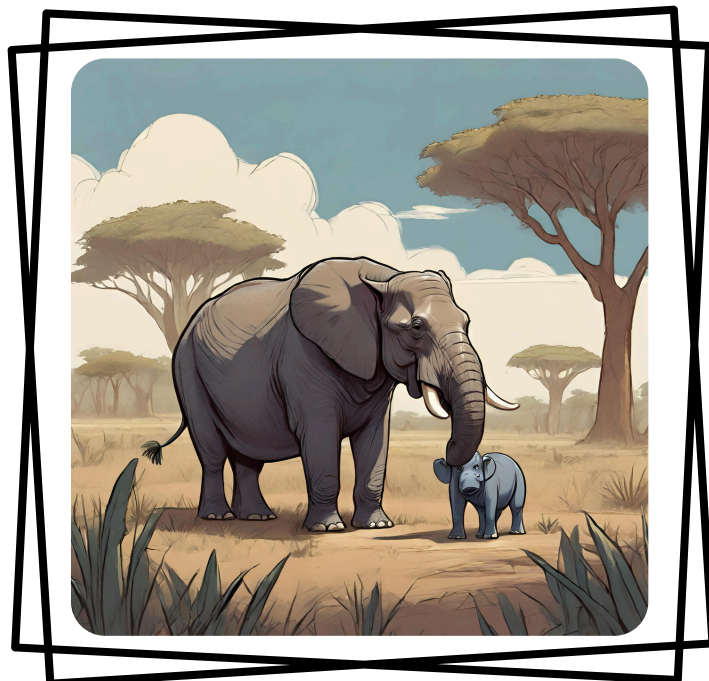
If only they had the courage to taste the sweet meat of locusts, they would be hooked.

But she was also worried about the Arid Grasslands folks, especially those from eastern Africa who work on encouraging mobile pastoralism as an economic strategy. Would they see her insect push as competition to their focus on promoting large livestock protein sources? She knew her fears were probably unfounded. SAS was all about collaboration. But anxiety is not always logical.

Her worries made her think of her negative experiences as a schoolgirl two decades earlier when the world was slowly letting go of the habits of the past and was even more delayed in accepting the future. Most of her teachers had been trained in the Time Before. Their textbooks were hangovers from the colonial past. All the examples were of White girls and boys who ate apples and played in the snow, things that she had never experienced as a West African. She grew up eating fresh mangoes, ripe from the trees, and dancing in glee under the coolness of the first rains.



Her school rooms were mostly bare, except for the tattered world maps with outdated country boundaries drawn by colonial powers.



At age 16, she gave a presentation to her social sciences class about repopulating the savanna with large mammals that had gone extinct—animals like elephants and hippos that were central to maintaining local ecosystems.

Her teacher, Mr. Mensah, was unimpressed. “Child, why do you talk of things no one cares about?” he chided.

“Sir? Why would we not want to restore some of what was lost?” she asked.

“Abena, you need to look to the future, not the past!” he refrained.

He gave her a failing mark. He crushed her confidence.

But time was the ultimate judge.

In Abena's time, the new world order looked to the past for inspiration. They chose what made sense for the future. Why not? What better test for ideas than to see how they played out before?

Abena's people had a long history of survival. They had lived in Banda, in what used to be called Ghana, for over a millennium. Knowledge of these achievements was passed on in stories like those her grandparents told her as a child. They told of violence in the time of their grandparents' grandparents when their families were forced to make difficult choices about whether to leave or stay. Of those who were lost as villagers fled to the safety of caves high in the hills. Of the importance of staying together, whenever possible. Passing down this story from the 1800s was what helped them weather twenty-first-century droughts.

A story was never just a story; it was full of practical knowledge that helped them persist. Even the cloth she slept with, creased with years of love, referenced the big changes of her grandmother's grandmother's time. Wax prints were a quick way of producing brightly colored and intricately patterned clothes that were popular for much of the twentieth century. But they were made a world away, in Europe and then China.

Before colonialism, her ancestors had always loved intricately designed textiles and had exclusively made their own cloth. The grandmothers' grandmothers spun locally grown cotton into thread.



The grandfathers' grandfathers dyed the strands with a dark, rich blue from local indigo plants, wove the threads into all manner of patterns, and then stitched them together to make large pieces.

Clothes were highly valued, worn for special occasions that marked life transitions like marriage, and ultimately passed down from one generation to the next, just like hers.



Remnants of their choices and activities also lay in the ground for centuries, even millennia.

Archaeologists found remains of towns, buildings, and local industries—cloth, metal, pots, ivory, gold, and more—that were in great demand near and far. The ingenuity of her ancestors and their neighbors was so alluring that the People Across the Sea came in search of their great riches starting in the 1400s.

This economic diversity helped them weather the worst drought on record for a millennium that lasted an astonishing 250 years (c.1400–1650 CE). When demand for one product dried up, they had other things to trade.

But most importantly of all, they had pearl millet and sorghum, two native grains that weathered even the worst droughts. In the Time Before, most People Across the Sea had never tasted sorghum's sweetness or enjoyed the nutty aroma of pearl millet.



Now, they are the world's most important food crops, thanks to their nutritiousness and ability to grow in arid zones. If not for the tenacity of her ancestors, knowledge about crops like this would have been lost forever.

*As the world got warmer and drier, what would they have eaten instead?*

Remembering the trials, tribulations, and remarkable persistence of her ancestors helped.

Abena took a deep breath and jumped on the video call she had been dreading.

**The future was now.**

## Questions

1. Explain the following quotes with evidence from the text.  
“Grandmother told of how the People Across the Sea grew greedy.”
2. The motto on the SAS building says: “Eat Where You Live.” What does that mean?
3. What is economic diversity? According to Abena, how did economic diversity help her ancestors?
4. What are the important food sources in the story? Why are they important?

## How does studying the past help us better plan for the future?

This story was inspired by archaeological and community research that has been done in Banda. Banda is a rural region of Ghana, ten hours north of the capital city, Accra. People have lived in this area for thousands of years.

### How do we know what people were eating so long ago?

Archaeologists can look at burnt seeds, grains, and animal bones to learn what people were eating in the past. In Ghana, there was a megadrought that lasted from around 1400-1650 CE. A megadrought is a severe drought that both covers a large area and lasts for a long period of time. Even though they were living during a megadrought, people in this area still had lots of food.



Sorghum grains, BTT,17-19479

### Why?

People adapted to the drought by growing local foods that could tolerate the dry conditions. In Western Africa, pearl millet and sorghum were popular food plants. People also ate a variety of meats.

Archaeologists have also found trade goods from the time like beads, copper, and pottery that came from outside the area. This tells us that they could not only feed themselves but they had a thriving economy.

### What changed?

#### **The People from Across the Sea came.**

In the late 1800s, archaeologists start to see evidence of food stress. This was the same time that Banda became part of a British colony. Young farmers and artisans were stolen from the community and sold into slavery. The British also wanted to increase their own trade and undercut local goods production. People stopped making goods in gold, iron, and ivory. Now 70% of local people work in farming, fishing, and forestry. Because they sell most of their crops for cash, they often have to buy extra food to feed their families.



## How we grow food matters



Intercropped field of yams, casava, and calabash near Banda-Ahenkro.

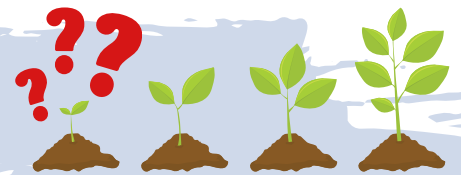
BTT, 17-16772

During the 1980s, many farmers changed their crops to tobacco to sell. In the early 21st century, they started growing cashews. These two crops are different from traditional crops like yams and calabash. When you grow yams and calabash, you plant multiple plants together - this is called **intercropping**.

Intercropping is good for the land because the different types of plants help each other by providing shade, providing support for climbing vines, and helping keep the soil rich in nutrients. When you grow a plant like tobacco or cashew, you clear the area and cut down all the trees. **Monocropping** depletes the soil of nutrients and is more susceptible to disease.

In the early 2000s, the Banda Paramount Chief and Traditional Council stopped tobacco growing in the area because they could see the harm it was doing to the land. Soil fertility was poor and the wood needed to dry the tobacco leaves was causing deforestation. Women were finding it harder to get enough firewood for their cooking fires.

**What plants were grown or tended for food in your area?**



Research local plant history where you live.

Choose one plant that was eaten in your area before colonial times.

- How was the plant grown? Was it grown using monocropping or intercropping? Was it tended in a wilder environment rather than planted?
- How was the plant prepared to eat?
- What impact did colonialism have on this plant as a source of food?
- Would it be beneficial to learn from the past and start using this plant as food again now?
- How would it help address climate change and food security?
- What else should we know about your plant?

# The Whisper of Pots

Fifth millennium CE, near what used to be called Lake Turkana, in a region previously known as northwestern Kenya. Three thousand years in the future.

by Dr. Katherine Grillo



The small girl, Akaina, sings to her pots, and the pots sing back. She smiles and walks from her home toward her goats, who have found relief from the sun by the sausage trees.

It is hot.

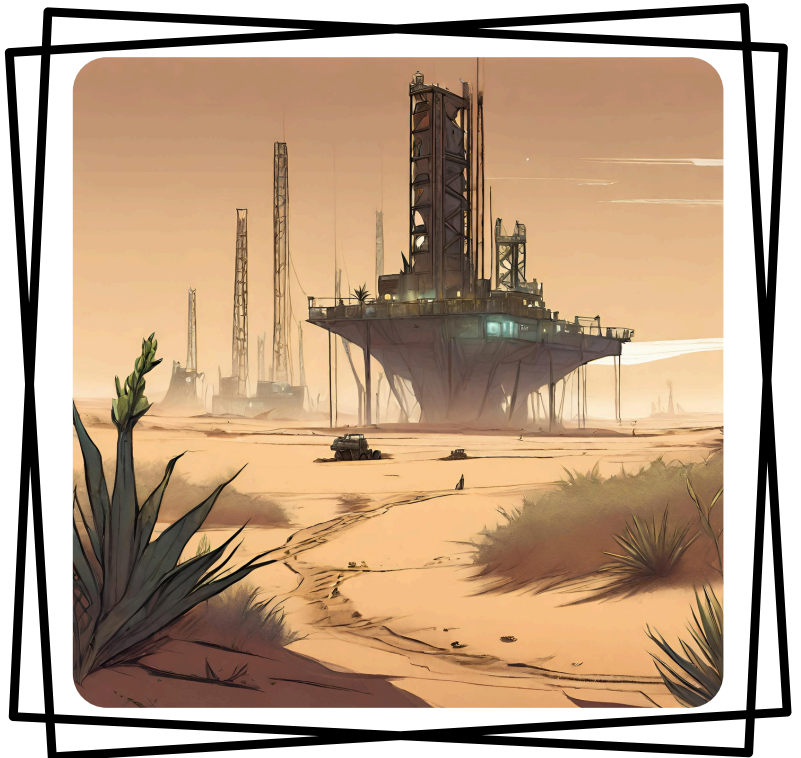
She knows where the wild gourds grow and where she is bound to find her friends, the carmine bee-eaters, swooping toward buzzing flowers to find their supper. These flowers grow in circular patches, hotspots crowded with life, that dot the landscape. They seem like gifts just for her from the past, from the cows once penned at night who kept quiet but knew full well the worth of their poop.

**Relics dot the surrounding plains.**

The cranes, towering steel behemoths that once bobbed their heads for oil, are nearly buried now.

She has heard the legends of the Middle Time from her grandparents. From their strongholds in the south, the Kine foretold suffering and decided to help—stopping the oil birds before they drank the world dry, committing to upholding peace, providing medicine for their animals, and discovering vaccines for new viruses.

An uncountable number of people, with hooved animals alongside, have passed through the Basin in times since. A hundred languages have been heard here. Some families have stayed for generations; some migrated onwards. Everyone, even the dimmest of sheep, remembers the amazonite-green waters of the lake.



Herding has been a resilient way of life in eastern Africa for seven thousand years, the elders tell Akaina. Look how the sheep, the cattle, the donkeys, and the goats have all survived.

You have probably never seen the strange, long-legged ones with the hills on their backs, but they kept us alive when water was scarce before the rivers, small lakes, and native grasses returned all around us. Remember that mobility allowed herders like us and those who came before to cope with each crisis during even the worst seasons of Middle Time—moving the animals to far-away places with rain and lush pasture and moving whole houses when the rains are only found even farther away. Moving our herds and our homes still prevents overgrazing, and we still rely on old bonds and agreements between us to manage these plains to the best of all.



Akaina remembers perching in a tree watching the archaeologists, all older women from her community, scan the ground by the hills with a heavy gold medallion. The MarionR81 catches faint mumbles from the depths and translates those mysterious foreign words back to them in their own language.

Archaeology, as a profession, has endured. Its methods have improved, although the archaeologists still enjoy getting their hands dirty, troweling, brushing, and sifting through bits of the past.



A voice, muffled, calls out to them: “Won’t anyone listen? I lie here below, with a giant boulder crushing my head. I am an old man, surrounded by people who love me but have grown tired of hearing the same stories for seven thousand years.”

The women have heard this voice before. “Tell us!” they say. “Tell us, again, about the First Meeting!”

**The old man obliges.**



“In my day, we walked day and night through the rain and the heat and the pouring rain. That’s a very important part of the story. We walked with our herds. They were hungry, and we had heard legends about a great lake with great fields of grass just beyond. Follow the river, and we’d find our way.”

Akaina, in the tree, knows which lake he means. The elders spoke of generations going by and the lake shrinking, and then growing again, and then shrinking. It was now nearly full to the brim of the Basin.

The old man continues, “We arrived, and the fishers greeted us with words we could not understand. We had little to offer them besides bony goats. They gave us giant fish and sweet honey; they could see we had suffered. We promised to work together. Our connections were strong and sustained us. We thanked our goddess Kind Donkey for guiding us to this peaceful place. We sacrificed our most beautiful pots for her to carry with pride. Why have the youth now forgotten her? Could someone please bring me some soup?”



### The archaeologists know.



They have seen those connections in the sharp pieces of black stone people shaped into knives, traded across the vastness of the Basin and beyond in Early Time.

By Middle Time, different objects came from afar and kept people in touch: The archaeologists often find clunky hand-sized devices, with wires and screens, covered in dust. What have most people used these devices for, Akaina wondered. Maybe to tell each other about where the grass grows, the best prices for cattle, next week’s wedding, perhaps how they fish when the rains fail. Some things, she imagines, barely change.

Akaina studies for her exams. The planetary alliance of herders, the Drove, has high standards for admission into their training program for envoys. Her courses have weighty titles like Uncertainty Management, Non-Equilibrium Dynamics, and Resilience Theory. They are filled with the jargon of long-ago scientists, whose tattered manuscripts in strange scripts were rescued and re-embraced after the dark times. Those scientists—ecologists, ethnographers, and archaeologists—documented the deep knowledge about responding to dynamic and changing environments that herding peoples bring to their work. Akaina studies hard and knows more than she thinks.

Since she was a small child, the archaeologists from her community have told her tales of how herding families have survived in this place for millennia. Flexibility has been key, they say. Here is how people adjusted where they moved when the rains changed and when the lake filled its lungs or exhaled. Here is what they ate, they would explain. Here is what they want you to know.

As an envoy for the Drove, Akaina would share the good news. The Collective of Wizards, the COW, has developed machines that integrate archaeological data, Bovifuture climate monitoring, and wisdom offered by elders. The COW can accurately foretell the rains, which to Akaina still seems like magic. Livestock will die, often many, but herders can once again stock their herds accordingly in anticipation.



Some will cultivate ancient crops like finger millet on the banks of the rivers and lakes, and some will cultivate sorghum for feasts. Some enterprising young people will engineer new crops, good for the planet and people alike.

The tragic disruptions of Middle Time are long past since the world woke up and listened to people like hers. Akaina has three days before her exams. She is confident but nervous and hopeful.



She has just one more thing to do to prepare. She looks at her shelf and whispers a few quiet words to her pots. **They whisper back.**

She chooses her most treasured bowl and walks out her door toward the hills.



## Pastoralism and Herding



A long time ago, people who lived near Lake Turkana in eastern Africa had a diverse diet. They ate meat and milk from their livestock, and they also ate fish from the lake. Archaeologists are still trying to figure out how much these people moved around.

### **Did they stay close to the lake to graze their animals, or did they travel all over the Turkana Basin?**

**Pastoralism** in Africa began over 7,000 years ago when hunter-gatherers in the Sahara Desert started raising cattle, sheep, and goats. These animals were originally brought to Africa by herders from southwestern Asia. When the Sahara Desert began to dry out due to climate change, people migrated to different areas, including western Africa, the Nile Valley, and the Rift Valley in eastern Africa.



Camels belonging to Turkana herders, having a swim in Lake Turkana, 2008. Photo by Katherine Grillo

**Herding** has been very important in Africa's history. Herding communities helped start ancient Egyptian societies and were important to the wealth of kingdoms at Great Zimbabwe in southern Africa. Today, livestock are very important in the lives of millions of African families.

Pastoralists have been living in the Rift Valley of southern Kenya for at least 3,000 years. Archaeologists and ecologists have found evidence of this in the form of **hotspots**, which are the remains of old livestock enclosures. These hotspots are very rich in biodiversity because of the ancient dung deposits.

Research shows that herders have a positive impact on the environment and have helped shape the African landscape for thousands of years. They are adaptable and can handle unpredictable situations, which makes herding a resilient way of life, especially as the climate changes.

Even if it becomes impossible to grow crops in some areas because of a lack of rain, herding could still be a good way to make a living. It's important for communities to get help so they can keep moving around with their animals and find good places for them to graze

### **Did the ancestors in your area work together for food security?**

Look at the historical evidence in your area. How did the ancestors provide food for their families?

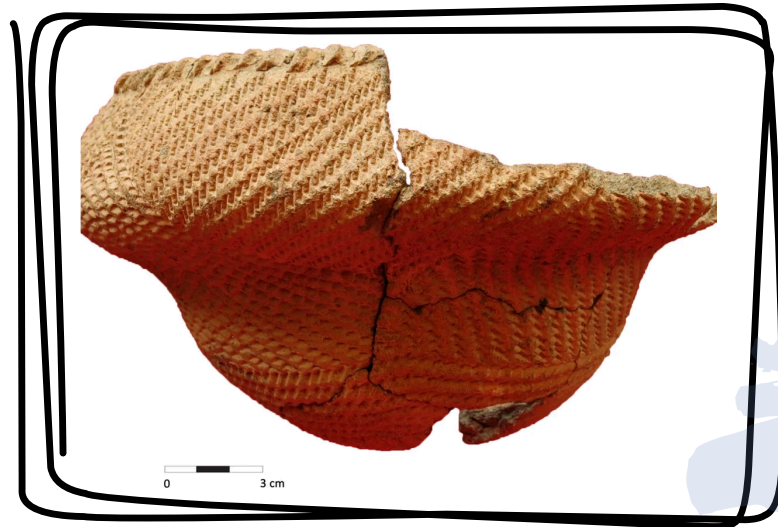
- pastoralism and herding
- hunting and gathering
- farming and livestock in a fixed place

Did they practice one way? or did they use a mix of ways to ensure there was food for their communities?

## Clues about the Past – Lothagam North Pillar Site

Along the shores of Lake Turkana in eastern Africa, archaeologists have discovered special places called **pillar sites**. These sites are like ancient cemeteries where people who lived over 5,000 years ago were buried. One of these sites, called *Lothagam North Pillar Site*, has been carefully studied by archaeologists. They found the graves of at least 580 people!

The people buried at Lothagam North Pillar Site were buried with beautiful pottery, tools made of a special rock called obsidian, and beads made from ostrich eggshells and colorful stones.



Decorated "Nderit" bowl, found by archaeologists at the Lothagam North Pillar Site. Photo by Katherine Grillo

### Nderit pots

Archaeologists have been studying **Nderit pots** found at sites around Lake Turkana in eastern Africa. These pots were made by pastoral people who lived in the area thousands of years ago. Archaeologists used to think that the elaborate Nderit pots may have only been used for ceremonies, like funerals.

However, new scientific analysis of **food residue** found inside the pots suggests they were also used in everyday life. Some of the pots contain residues from dairy products, meat, fat, and bones from both wild animals and livestock. This tells us that the pastoralists who made these pots used them for cooking and eating.

By analyzing the **amount of residue** in the pots found around Lake Turkana, archaeologists can learn more about how they were used. Pots with low amounts of residue might have been used as serving dishes or for cooking occasionally. Pots with higher amounts of residue were probably used for cooking more often.



Landscape in the Turkana Basin today, with the Lothagam West Pillar Site visible in the foreground. Photo by Katherine Grillo

***These objects tell us a lot about the people who lived in this area thousands of years ago.***

Archaeologists often find broken pieces of pottery and attempt to reconstruct pottery and ceramic vessels once they are back in the lab. By looking at the different characteristics of each fragment they can determine which fragments are from the same vessel.

## Examining pottery fragments

Archaeologists often find broken pieces of pottery and attempt to reconstruct pottery and ceramic vessels once they are back in the lab. By looking at the different characteristics of each fragment they can determine which fragments are from the same vessel.

They also try to figure out:

- What **type of vessel** it is such as a plate, a bowl, a cup, or a pot.
- What **portion of the vessel** is represented by the fragment such as a rim, a neck, a side, a base, or a handle.
- What **type of decoration** including incised, cord impressed, painted, glazed decorations.



Clay cooking pots, BTT 17-16860

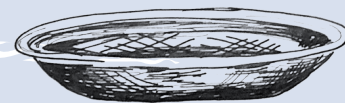


Sorting pottery from Makala Kataa, 1994, BTT 17-17543

If it is a newer ceramic piece, there may even be a maker's mark present, usually on the base. A maker's mark is like a brand name stamp indicating where and by whom it was manufactured.

The archaeologist will then try to fit the pieces back together to get a clearer picture of what the vessel initially looked like before it was broken. Archaeologists often use white glue and regular scotch tape to piece the vessel back together!

## Try assembling pottery fragments



1. Lay out the pottery pieces from your sample bag.
2. Sort them into different vessels if there are more than one.
3. Photograph and/or sketch your pieces using a scale. How can you keep track of your photos and your notes so that you can make sense of your documentation later?
4. What type of vessel do you think it is? Why?
5. What portion of the vessel is represented by the fragment?
6. What type of decoration is on the sherd?
7. Try to reassemble your fragments.
8. What are the challenges for reassembling pottery fragments?

## References:

Logan, A.L., Grillo, K.M. (2023). How African Past Can Inspire Alternative Responses to Climate Change: a Creative Writing Experiment. *African Archaeological Review*, 40, 507–517.  
<https://doi.org/10.1007/s10437-023-09543-8>

## Image references:

- Photos taken by Amanda Logan and Kate M. Grillo can be found in the article above.
- Illustrations were created by Canva AI image generator.
- Photos from Banda Through Time (BTT) have an item number. You can find the images and more information in the digital repository *Banda Through Time* hosted by University of Victoria Library:  
<https://exhibits.library.uvic.ca/spotlight/iaff>

## Teacher notes:

*Examining pottery fragments* – You can break up any old pottery for students to try and reassemble. The pottery fragments can be put in a bag or can be “buried” in a tray of dirt or sand if you want to students to take the extra step of excavating the pottery as well as assembling.