

TEACHER GUIDE
A Fifth Grade Integrated Reading Unit

The Archaeology of Early Agriculture in Kansas

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**ARCHAEOLOGY POPULAR REPORT
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Project Archaeology is a national heritage education program for educators and their students. Project Archaeology uses archaeological inquiry to foster understanding of past and present cultures; improve social studies, science, and literacy education; and enhance citizenship education to help preserve our archaeological legacy. Project Archaeology operates through independent state programs that offer workshops, educational materials, and continuing support for educators.

Unit Contents

Unit Overview

Understanding By Design
Teaching Reading in Social Studies
Why Archaeology Is Worth Teaching in Fifth Grade
Teaching Instructions
Unit Objectives
Parent Guide

Introduction: Getting Started

Directions
Answer Key: "Getting Started"
Mystery of the Ancient Seeds

Section One: The Archaeology of Early Agriculture in Kansas

Enduring Understanding
Essential Question
Curriculum Standards Integration for Fifth Grade
Section One Objectives
Directions for Section One
What is Archaeology?
Answer Key: "What is Archaeology?"
The Job of an Archaeologist
Answer Key: "The Job of an Archaeologist"
Studying the Minneapolis Site
Meet Dr. Mary J. Adair: A Kansas Archaeologist
The Beginning of Farming in Kansas
Answer Key: "Finding Food 5,000 Years Ago"
Your Turn to Investigate!
Answer Key: "Data Collection"
Section One Assessment: Your Work as an Archaeologist: The Technical Report
Answer Key: "Your Work as an Archaeologist: The Technical Report"
Show What You Have Learned
Answer Key: "Show What You Have Learned"

Section Two: Your Civic Responsibility

Enduring Understanding

Essential Question

Curriculum Standards Integration for Fifth Grade

Section Two Objectives

Directions for Section Two

Protecting Archaeological Resources

Your Past Is Important

Section Two Assessment: Letter to the Editor

Show What You Have Learned

Answer Key: "Show What You Have Learned"

Section Three: Using the Past to Solve Problems Today

Enduring Understanding

Essential Question

Curriculum Standards Integration for Fifth Grade

Section Three Objectives

Directions for Section Three

Let's Review

Keeping our Agricultural Heritage Alive

Carl Leon Barnes and the Three Sisters

Living a Healthy Lifestyle

Fresh from the Garden

Building Safe, Healthy, and Green Environments

Best Times of the Year for Kansas Vegetables

A Container Garden

A Family Garden

A Community Garden

A School Garden

The Three Sisters Garden

Show What You Have Learned

Answer Key: "Show What You Have Learned"

Your Final Performance

Promoting a Garden

Glossary

Overview

This unit supports you in teaching reading in the content areas. It can be completed in 7 to 15 hours.

Understanding By Design

The unit is designed using the *Understanding By Design* model developed by Grant Wiggins and Jay McTighe. Students will come to know these enduring understandings:

- archaeologists investigate the ways people lived in the past
- evidence of the past is worth protecting
- ideas from the past can solve problems today

Content, skills, and assessments will guide students to answer the essential questions:

- how do archaeologists investigate the past?
- why is protecting archaeological resources important?
- how do archaeologists investigate the past?

Teaching Reading in Social Studies

In their book, *Teaching Reading in Social Studies*, Jane K. Doty, Gregory N. Cameron, and Mary Lee Barton state, “Working with students to help them gain the knowledge and skills necessary to become informed decision makers in a democratic society is a powerful responsibility. The study of social studies is much more than memorizing historical facts; geographical statistics; or government, civic, and economic terminology. It is really about problem solving, decision making, reflective inquiry, and critical thinking. More than any other academic area, it is about helping students become strategic thinkers responsible for decisions that impact our society. They must be strategic in their reading and be able to comprehend and use what they read to make informed decisions and choices in the world in which they live.

“Teaching reading in social studies is not so much about teaching students basic reading skills as it is about teaching students how to use reading as a tool for thinking and learning. Research, in general, indicates that learning and reading are active processes where readers construct meaning from the words they read by interacting with the text, using prior knowledge and experience to make connections, generating hypotheses, and making sense of what they read.”

Why Archaeology Is Worth Teaching in Fifth Grade

As an integrative and interdisciplinary subject, archaeology is all about connections—between the sciences and humanities, between times and places, between one human being and all others. Studying the human past gives students a chance to examine their place in time and discover connections with other people through time. Equally important, it promotes a sense of responsibility for the stewardship of Kansas’ cultural heritage. Archaeology is an innovative way to capture students’ attention while addressing many

educational concerns in the classroom—scientific inquiry, problem solving, cooperative learning, and citizenship skills.

Teaching Instructions

- It is highly recommended that you read the Student Magazine and Student Journal before teaching this reading unit. This should fully prepare you to teach.
- The teacher guide will provide you with instructions and answers to Student Journal activity sheets and section reflections (Show What You Have Learned) in the Student Magazine.
- On page 7 you will find a parent guide to this unit. Before beginning the unit you may choose to photocopy and distribute the guide to parents so they can reinforce the learning process.
- Do not give students the magazine and journal to read and complete on their own. It is intended that the teacher guide students and participate with them in uncovering and understanding the unit's enduring understandings and essential questions.
- Every teacher has her or his own teaching style, and every classroom has its unique and varied achievement abilities. It is assumed that teachers will adjust their teaching styles and the unit's activities to meet the unique needs of their classrooms.

Unit Objectives:

In this unit students will:

- In Section One: The Archaeology of Early Agriculture in Kansas
 - explain the science of archaeology
 - conduct an archaeological investigation (scientific inquiry) to understand the changes in early agriculture from 1000 BCE to 1800 CE in what is now Kansas
 - recognize how scientific and historical inquiry leads to new questions.
- In Section Two: Your Civic Responsibility
 - explore the importance of protecting archaeological resources
 - explain their civic responsibility.
- In Section Three: Using the Past to Solve Problems Today
 - think critically about lifestyle choices related to food.

Students will show what they have learned in these ways:

- **Technical Writing:** Summarize what they learned in the archaeological inquiry of early agriculture.
- **Narrative Letter:** Write a letter to a newspaper editor expressing their opinions about preserving archaeological resources.
- **Research:** Gather information about different kinds of gardens.
- **Final Performance of Understanding:** Apply their knowledge to create a plan for a family, school, or community garden that supports a healthy lifestyle and honors their agricultural heritage.

Parent Guide

Dear Parents:

This table outlines a unit that your child is studying about the archaeological investigation of early agriculture in Kansas. It describes what students will learn and how they will show what they have learned. Included are questions for you to ask your child to help reinforce his/her learning and help you stay involved with the learning process. This sheet is for you to keep. Your child will not be responsible for turning it in, nor will he/she be graded on it.

Section	Students will understand	Students will learn/do	Assessment – students will	Ask your child
One: The Archaeology of Early Agriculture in Kansas	Archaeology investigates how people lived in the past.	Learn about how archaeologists work. Use archaeology to investigate early agriculture in Kansas. Recognize how scientific and historical inquiry leads to new questions.	Summarize in a technical report what they learned in the archaeological inquiry of early agriculture.	How does archaeology investigate the past?
Two: Your Civic Responsibility	Evidence of the past is worth protecting.	Discuss the importance of protecting archaeological resources. Explain their civic responsibility.	Write a letter to a newspaper editor expressing their opinions about archaeological resources.	Is it important to protect archaeological resources?
Three: Using the Past to Solve Problems Today	Ideas from the past can inform decisions today.	Think critically about lifestyle choices related to food.	Gather information about different kinds of gardens.	How can ideas from early agriculture help us create a healthy lifestyle today.
Your Final Performance			Apply their knowledge to create a plan for a family, school, or community garden that supports a healthy lifestyle and honors their agricultural heritage. Promote that garden.	

Throughout this unit your child may be asked to visit one or more of these websites.

You may also find them interesting.

Kansas City Center for Urban Agriculture

- cultivatekc.org

Community Gardens in Manhattan, Kansas

- k-state.edu/ufm/community_garden.htm

Starting a Community Vegetable Garden

- aces.nmsu.edu/pubs/_h/H-246.pdf

Container Gardening

- ksre.ksu.edu/bookstore/pubs/ep31.pdf
- containergardeningtips.com/edible-plants-and-containers

The Three Sisters Garden

- kidsgardening.org/node/12033
- reneesgarden.com/articles/3sisters.html
- nps.gov/dewa/naturescience/upload/cmsstgcorn.pdf
- ddl.nmsu.edu/kids/webquests/wqthreesisters_k.html
- faq.gardenweb.com/faq/lists/teach/2003045238014436.html

Other Websites to Help You Create a Garden

Master Gardeners in Kansas

- hfr.ksu.edu/p.aspx?tabid=422

Junior Master Gardeners In Kansas

- hfr.ksu.edu/p.aspx?tabid=426

Kansas State University Research and Extension Service

- ksre.ksu.edu/p.aspx?tabid=24

INTRODUCTION

Getting Started

Directions:

Give each student a vegetable seed (i.e., corn, bean, squash, sunflower without shell) without revealing what type of seed it is. The objective of this exercise is for students to examine the seed and think about where food comes from today and came from long ago. Help students complete the activity on page 1 of their Student Journals. Observe students as they draw their seeds. After the students have completed the drawing and description, have them speculate on the type of seed; if they do not know, provide them with the answer. Then proceed with questions 3-7, discussing each question one at a time.

Answer Key: Getting Started

1. Examine your vegetable seed. Observe its size, shape, color, and texture. Draw and describe it.

Descriptions and illustrations will depend upon the seeds that you distribute.

2. This is a _____ seed.

Identification will depend upon the seeds that you distribute.

3. What is the seed's purpose (function)?

Answers will depend upon the seeds that you distribute. Possibilities include food for humans and/or animals, ingredients for medicines or cosmetics, fiber for textiles, raw material for biofuels, ground cover to prevent soil erosion, fertilizer to enrich the soil, shade, cash crop, or seed for farmers.



INTRODUCTION
Getting Started

In this unit you will understand that:

- archaeologists investigate the ways people lived in the past
- evidence of the past is worth protecting
- ideas from the past can inform decisions today

In this unit you will answer:

- how do archaeologists investigate the past?
- why is protecting archaeological resources important?
- how can ideas from early agriculture help us create a healthy lifestyle today?

Student Journal
Page 1 – "Getting Started." Complete the activity.

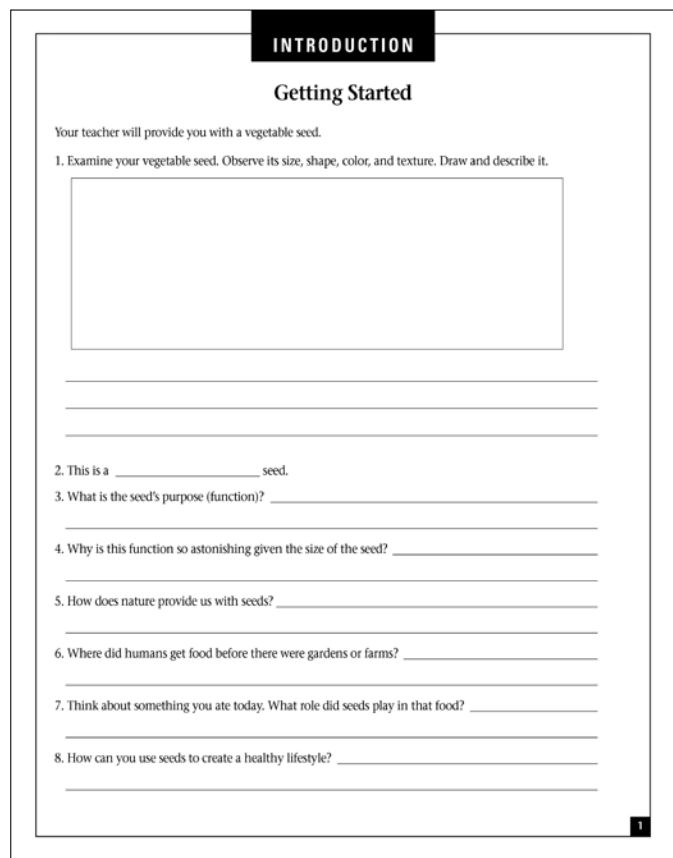
In addition to this magazine, your teacher will give you a **Student Journal**. This symbol  in the magazine will signal when to work in your journal. The journal is yours to keep ... and the learning is yours to keep too.


Roman archaeology volunteers screen for artifacts.


A student volunteer uncovers an artifact.

1

[Student Magazine page 1]



INTRODUCTION
Getting Started

Your teacher will provide you with a vegetable seed.

1. Examine your vegetable seed. Observe its size, shape, color, and texture. Draw and describe it.



2. This is a _____ seed.
3. What is the seed's purpose (function)? _____
4. Why is this function so astonishing given the size of the seed? _____
5. How does nature provide us with seeds? _____
6. Where did humans get food before there were gardens or farms? _____
7. Think about something you ate today. What role did seeds play in that food? _____
8. How can you use seeds to create a healthy lifestyle? _____

1

[Student Journal page 1]

4. Why is this function so astonishing given the size of the seed?

Even though a seed is quite small, the plant that grows from it both above and below the ground surface can serve many functions, like those listed in #3. For instance, stalks, leaves, and fruits above ground can provide nutrition for animals and people and have many other uses as well. The plant's root system below ground can hold soil in place and prevent soil erosion.

5. How does nature provide us with seeds?

Many common plants, from trees to wildflowers, reproduce through seeds. Mature seeds detach from the parent plant and are dispersed. Under appropriate environmental conditions they eventually germinate to produce a new plant.

6. Where did humans get food before there were gardens or farms?

Before there were gardens, farms, or supermarkets, humans gathered wild plants.

7. Think about something you ate today. What role did seeds play?

Accept a variety of answers. For example, "I had sesame seeds on my hamburger bun" or "The lettuce in my salad grew from a seed." Stress the fact that most foods begin as a seed.

8. How can you use seeds to create a healthy lifestyle?

You could plant a garden to raise fresh food. There are some seeds you could eat to add fiber to your diet. You could plant grass, shrubs, and tree seeds to provide a green environment. For the teacher: A healthy lifestyle allows a person to feel good and have the energy to do things. Factors include physical exercise, balanced diet, weight control, enough sleep, not smoking, avoiding drugs, and a positive attitude.

Following the completion of the Getting Started worksheet, use the following questions to introduce the topic of archaeology in Kansas and the role of agriculture. Do this prior to reading *Mystery of the Ancient Seeds* on Student Magazine page 2.

Discuss these additional questions with students:

1. How long ago do you think agriculture began in Kansas?

About 2,500 years ago American Indians started planting seeds. By 500 years ago they were cultivating corn, beans, squash, and other crops.

2. What is archaeology?

Archaeology is a science that investigates past human cultures by looking at artifacts and sites.

3. What do archaeologists do?

Archaeologists are scientists who study people in the past. They investigate archaeological sites by excavating them and analyzing artifacts and features.

4. What can you do to preserve archaeological resources in Kansas?

Archaeological sites contain our only information on how people lived before written records. It is everyone's civic responsibility to help preserve those places. Civic responsibility means caring and being involved in your community.

Mystery of the Ancient Seeds

Use Student Magazine page 2 to interest students in how the science of archaeology is used to study early agriculture in Kansas. In this unit the seed is the hook for uncovering answers about past cultures through archaeological methods. Working through the lessons, students will conclude that the Minneapolis site is 700 years old and the people who lived there were farmers. We are providing you with these answers so that you can better guide the students to reach the appropriate conclusions. These exercises also provide them with the opportunity to practice scientific inquiry, sharpen critical thinking skills, and improve literacy.

Mystery of the Ancient Seeds
Imagine that archaeologists found these seeds in a place where people lived. Archaeologists are scientists who study people in the past. These seeds can tell archaeologists something about how people lived long ago.

- How do you think archaeologists found the seeds?
- How did the seeds survive so long?
- What can archaeologists learn from these seeds about people?

In this unit you will discover the answers to this mystery!



The image shows two dark, oval-shaped seeds, likely ancient, placed on a white surface. Below the seeds is a scale bar labeled "2 CM.". To the right of the seeds is a photograph of a green field with red flowers, possibly a field of wildflowers or a similar plant. A small black square with the number "2" is located in the bottom left corner of the image area.

[Student Magazine page 2]

The Archaeology of Early Agriculture in Kansas

Enduring Understanding: Archaeologists investigate the ways people lived in the past.

Essential Question: How do archaeologists investigate the past?

Curriculum Standards Integration for Fifth Grade

Kansas College and Career Ready Standards

Reading

- **RI.5.1:** The student will quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
- **RI.5.2:** The student will determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
- **RI.5.3:** The student will explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
- **RI.5.4:** The student will determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.

Writing

- **W.5.2 (a-e):** The student will write informative/explanatory texts to examine a topic and convey ideas and information clearly.

Science

Standard 1: Science as Inquiry: The student will develop the abilities to do scientific inquiry, be able to demonstrate how scientific inquiry is applied, and develop understandings about scientific inquiry.

Benchmark 1: The student will demonstrate abilities necessary to do the processes of scientific inquiry.

▲Indicator 1: The student identifies questions that can be answered through scientific investigations.

▲Indicator 2: The student designs and conducts scientific investigations safely using appropriate tools, mathematics, technology, and techniques to gather, analyze, and interpret data.

Standard 7: History and Nature of Science: The student will examine and develop an understanding of science as a historical human endeavor.

Benchmark 2: The student will research contributions to science throughout history.

▲Indicator 1: The student recognizes that new knowledge leads to new questions and new discoveries, replicates historic experiments to understand principles of science, and relates contributions of men and women to the fields of science.

Geography

Standard: The student uses a working knowledge and understanding of the spatial organization of Earth's surface and relationships between peoples and places and physical and human environments in order to explain the interactions that occur in Kansas, the United States, and in our world.

Benchmark 5: Human-Environment Interactions: The student understands the effects of interactions between human and physical systems.

▲Indicator 2: (K) identifies the relationship between the acquisition and use of natural resources and advances in technology using historical and contemporary examples (e.g., compass for navigation, water power, steel plow).

History

Standard: The student uses a working knowledge and understanding of significant individuals, groups, ideas, events, eras, and developments in the history of Kansas, the United States, and the world, utilizing essential analytical and research skills.

Benchmark 1: The student uses a working knowledge and understanding of individuals, groups, ideas, developments, and turning points in the age of exploration.

▲Indicator 1: The student (K) explains how various American Indians adapted to their environment in relationship to shelter and food (e.g., Plains, Woodland, Northwest Coast, Southeast and Pueblo cultures in the period from 1700-1820).

Section One Objectives

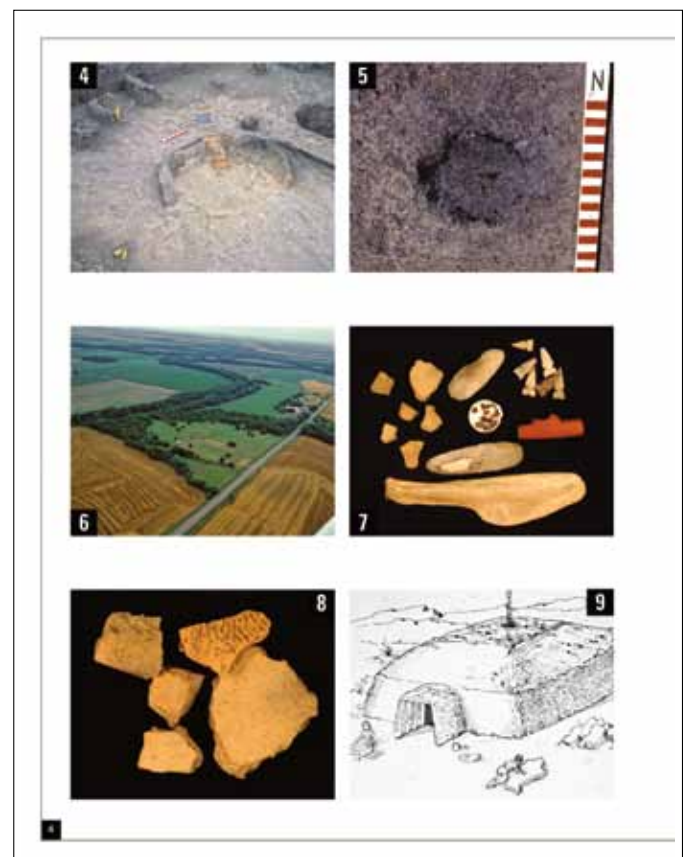
- Students will learn about how archaeologists work.
- Students will use archaeology to investigate early agriculture in Kansas.
- Students will summarize in a technical report what they learned in the archaeological inquiry of early agriculture.

Directions for Section One:

1. Read aloud the Enduring Understanding and Essential Question.
2. Review the text features of Section One as a class.
3. Have students predict what they will learn.
4. Direct students to read Student Magazine pages 3-6.
5. Discuss vocabulary words (in bold) to determine if students understand the meanings.
6. Have the students study the images in "What Is Archaeology?" in Student Magazine page 3-4.
Have the students read the text on Student Journal page 2. The students will then match the vocabulary words to the number of the image that best represents the word. Match the bolded terms with the images on Student Magazine page 3-4.



[Student Magazine page 3]



[Student Magazine page 4]

Answer Key: What is Archaeology?

Terms	Image Numbers
archaeology	3 (excavation) (any other images also qualify)
cultures	9 (earthlodge) (1,2,4,5,7,8) also qualify)
sites	3, 6 (1,4,5,9 also qualify)
artifacts	2, 7, 8
potsherds	7 (on left), 8
features	1 (storage pit), 4 (hearth), 5 (post mold), (9 also qualifies)
evidence	(all images qualify)

SECTION ONE

The Archaeology of Early Agriculture in Kansas


What is Archaeology?

Archaeology is a science that investigates past human **cultures** by looking at **sites** and **artifacts**. A culture is the set of learned beliefs, values, and behaviors generally shared by a group of people. Artifacts are the objects that people made and used. Artifacts include things such as arrow points, **potsherds**, stone and bone tools, animal bone, and plant seeds.

Sites are places where people lived or worked in the past, such as villages or camps. Archaeologists also study **features**. A feature is **evidence** of human activity found in the soil. Evidence is information used to prove something or to help arrive at a conclusion. Examples of features include a dark spot in the soil where a house post once stood, the baked earth and ash from a fire, or a storage pit that was used to store food.

Match the bolded terms with the images on Student Magazine pages 3-4. An image may fit with more than one term.

Terms	Image Numbers					
archaeology	_____	_____	_____	_____	_____	_____
cultures	_____	_____	_____	_____	_____	_____
sites	_____	_____	_____	_____	_____	_____
artifacts	_____	_____	_____	_____	_____	_____
potsherds	_____	_____	_____	_____	_____	_____
features	_____	_____	_____	_____	_____	_____
evidence	_____	_____	_____	_____	_____	_____




2


7. Individually or in pairs have the students read Student Magazine pages 5-6 and complete the “Job of an Archaeologist” worksheet, Student Journal pages 3-4.

The Job of an Archaeologist
 Imagine that you can step into the boots of an archaeologist. What kind of work would you do? There are five phases or steps in the process of uncovering the story of an archaeological site.


Phase 1: Finding Where People Lived
 Archaeologists must first find places where people lived in the past. Sites are found by doing a site survey. A site survey is walking and looking for artifacts or features on top of the ground. Archaeologists look in eroded areas, in the dirt that animals kick out of their burrows, and in the cut banks of streams. Sometimes sites are found when farmers plow their fields or when land is cleared for construction.



Phase 2: Keeping Track
 When archaeologists find a site, they fill out a site record form. This form describes where the site is located, its size, what they find, and how old it is. They file the form at the Kansas Historical Society or a university, so that other archaeologists can use the information in ongoing research.



Phase 3: Uncovering History
 Sometimes archaeologists excavate a site. Excavation is systematically removing dirt from the site so that artifacts and features can be observed and recorded. Archaeologists create different kinds of maps showing what they find and where they find it. They describe, measure, and photograph everything in the excavation. During excavation, archaeologists collect samples such as animal bones and burned seeds, and artifacts such as pottery pieces, arrow points, and other tools. It is important that archaeologists study artifacts and features in the place where they find them. They are trained to understand what an artifact can reveal in the place where it is found.



[Student Magazine page 5]

Phase 4: Studying and Concluding How People Lived
 After excavation archaeologists take the artifacts, maps, and photographs to a laboratory. There they clean, sort, and catalog the artifacts. They study everything that they collect. Their conclusions tell the story of past cultures. This kind of research can take months and sometimes years to complete.



Phase 5: Communicating Research Results
 The last step is to write a final site report. The report tells in detail how the research was done. It tells what archaeologists conclude. The conclusions tell the story of how past peoples lived. Completing a site report may take years. The final report helps other archaeologists who do similar research. They also can be read by anyone interested in learning about archaeology.




Student Journal
 Page 3-4 - “The Job of an Archaeologist.”
 Complete the worksheet.

[Student Magazine page 6]

Answer Key: The Job of an Archaeologist

Phase 1: Site Survey (Finding Where People Lived)

1. *Archaeologists first have to find places where people lived.*
2. *Then they walk the area to find artifacts or features. This is called a survey.*
3. *They look in places like floodplains along rivers, in eroded areas, the dirt that animals kick out of their burrows, and in the cut banks of streams.*

Phase 2: Site Report (Keeping Track)


1. *When archaeologists find a site and artifacts, they write a site report.*
2. *The report tells things like where the site is and how big it is.*
3. *They have to file their report at a university or historical society.*

Phase 3: Excavation (Uncovering History)

1. *Excavation is removing dirt from a site to find artifacts and features.*
2. *Archaeologists create different kinds of maps of the excavation.*
3. *They record everything they find.*
4. *They collect samples.*

The Job of an Archaeologist

Below is a list of the five phases in the process of studying an archaeological site. Write at least two facts for each phase. Then draw a symbol that represents the main idea of each phase. A symbol is usually an image.

You may recognize this symbol: 

Phase 1. Site Survey (Finding Where People Lived)

Phase 2. Site Report (Keeping Track)

3

[Student Journal page 3]

Phase 3. Excavation (Uncovering History)

Phase 4. Laboratory Work (Studying and Concluding How People Lived)

Phase 5. Final Site Report (Communicating Research Results)

4

[Student Journal page 4]

Phase 4: Lab Work (Studying and Concluding How People Lived)

1. *In the lab is where they clean, sort, and catalogue the artifacts.*
2. *Archaeologists study them to answer questions about how people lived in the past.*

Phase 5: Final Site Report (Communicating Research Results)

1. *Archaeologists write a final report.*
2. *The report tells how they did their research.*
3. *The report tells what they learned.*

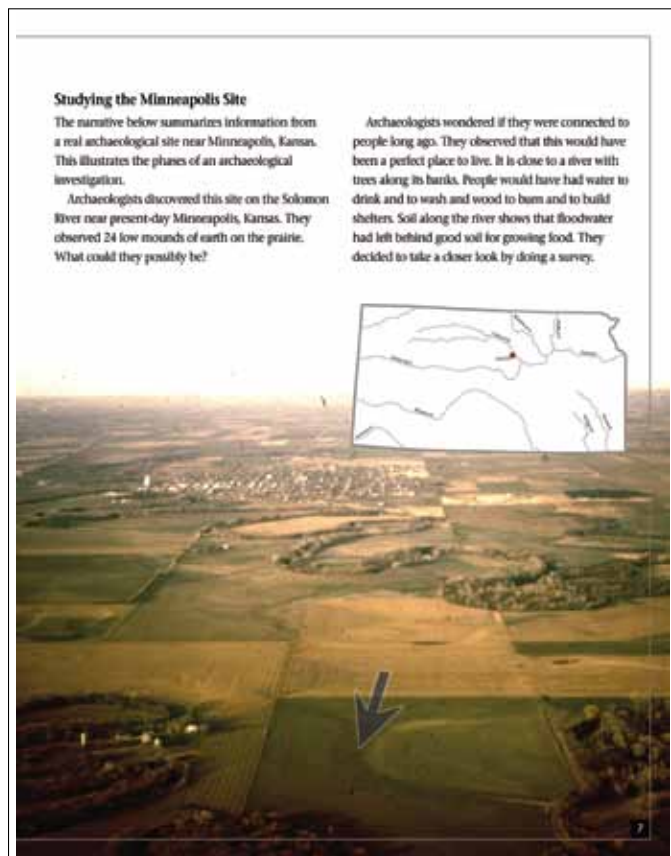
Use these questions to review the job of archaeologists.

- How do archaeologists find sites?
site survey, looking for artifacts or features on top of the ground, in eroded areas, in dirt that animals kick out of their burrows, and in the cut banks of streams, in plowed fields, and construction areas
- What kinds of things are they looking for?
features, artifacts
- Do you think anyone can dig for artifacts or does it require special training? Explain.
Untrained people can destroy evidence by random digging and artifact collecting without keeping records.
- People are encouraged to leave artifacts where they find them and to report them to archaeologists, such as those at the Kansas Historical Society. Why do you think that this is important?
Information reported to KSHS is used to help protect sites from destruction. The final reports written by archaeologists belong to all citizens.

8. Now have students study the narrative text, “Studying the Minneapolis Site” and images about the Minneapolis site in Student Magazine page 7-9. Help them reach conclusions about the site and list their conclusions on the board. Then have the students compare their conclusions with those of the archaeologists:

Archaeologists concluded that the age of the Minneapolis Site is 700 years old. The postholes, tree logs, and clumps of clay suggested that one of the shelters was a very large earthlodge built with logs and clay. The earthlodge was about 47 feet square. The stone projectile points suggested that the people hunted deer, bison, and fish. The bone tools and corncobs indicated that they were farmers. This may have been one of the reasons that they lived on the Solomon River. The soil on the floodplain would have been good for growing food. The Minneapolis Site was home to some of Kansas’ early farmers. Archaeologists concluded that the Solomon River people lived in a manner very similar to other cultures in the region at the time.

Note: Waldo R. Wedel’s report on the Minneapolis site is published in Nebraska History Magazine 15(3): 210-237. It is available at many university libraries.



9. Have the students read and discuss “Meet Dr. Mary J. Adair: A Kansas Archaeologist” on Student Magazine page 9. Make it clear to the students that these are some of her research questions. The students do not need to answer these.

- What is the difference between a wild plant and the same plant grown in a garden?
- How did plants grown in a garden affect diet?
- How did the knowledge of agriculture spread from one group to another?

At the end of the excavation, all of the artifacts, maps, and photographs from the Minneapolis site excavation were taken to the lab in Lincoln, Nebraska.

Archaeologists spent many months studying the artifacts and feature records so that they could answer their research question: *Are the archaeological remains along the Solomon River the same as other prehistoric cultures in the region?*

At the end of his research, Waldo R. Wedel, an archaeologist from Newton, Kansas, who worked on the excavation, wrote a report called, “Minneapolis I: A Prehistoric Village Site in Ottawa County, Kansas.”

**Meet Dr. Mary J. Adair:
A Kansas Archaeologist**



Dr. Mary J. Adair has studied many Kansas and Central Plains archaeological sites and artifacts. She is becoming an expert on prehistoric agriculture in Kansas and provided much of the information for this unit. Prehistory is the time period before written records. Dr. Adair manages archaeological collections at the University of Kansas. She helps researchers use the collections for their studies of how people once lived in this region of North America.

Archaeologists are scientists. Scientists ask questions to guide their research. Dr. Adair has a special interest in learning how people used plants and in how farming began on the Central Plains of North America. These are some questions she asks:

- What is the difference between a wild plant and the same plant grown in a garden?
- How did plants grown in a garden affect diet?
- How did the knowledge of agriculture spread from one group to another?

- Dr. Mary J. Adair



Dr. Waldo R. Wedel







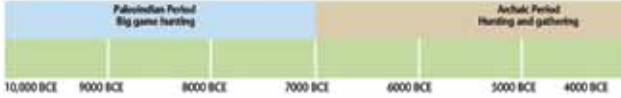
[Student Magazine page 9]

10. Direct students to read “The Beginning of Farming in Kansas” on Student Magazine page 10, stopping at “The First Farmers 2500 Years Ago (500 BCE).” Study the timeline and have the students note the particular dates mentioned in the text. Read “Hunter-Gatherers 3000 BCE” and conduct a discussion. Complete the activity “Finding Food 5,000 Years Ago” on Student Journal pages 5-6.

The Beginning of Farming in Kansas
 Kansas was founded as an agricultural state. Its most important crops are wheat, corn, sunflowers, grain sorghum, and soybeans. These crops feed people in Kansas, the United States, and all over the world. Kansas crops are also used for things like cooking oil and animal feed. But farming began long ago. In this section you will learn when and how farming began in Kansas.

Big Game Hunters 10,000 BCE
 Sometimes people think that Kansas history begins with the arrival of Europeans. But Kansas history begins at least 12,000 years ago (10,000 BCE). The early history of Kansas is the history of American Indians. These first people came here from Asia following big game animals. They were hunting mammoth and giant bison for food. Even after these big game animals became extinct, the nomadic hunting and gathering way of life continued until about 500 BCE. Let's think about what people ate and how they found food 5,000 years ago (5000 BCE).

Hunter-Gatherers 3000 BCE
 How did people get food before they began to grow it? People hunted animals and gathered food, such as wild seeds, fruits, nuts, and roots. Archaeologists call these people hunter-gatherers. Hunter-gatherers moved with the seasons to find food. Imagine the life of hunter-gatherers. Every day they had to search for edible plants and animals. It was very hard work. How did they survive during the winter or when there was a drought? Prehistoric man would have had to look for plants and animals that they had avoided eating before because they tasted bad or were not very nutritious. What if animals were too far away or not in the area at all? The people had to move and find animals to eat. If they could not find food, they may have suffered and died.

[Student Magazine page 10]



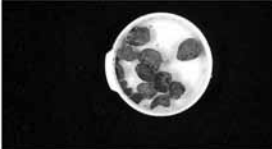

Finding Food 5,000 Years Ago

Archaeologists know about what people ate 5,000 years ago from studying the artifacts left behind. Archaeologists describe the people who lived on the Central Plains of North America 5,000 years ago as hunter-gatherers.

Directions:

1. Below observe the images and read about the evidence found by archaeologists.
2. Use the evidence to make conclusions about what people ate and the tools they used 5,000 years ago.
3. Write a paragraph on the following page about your conclusions. Be sure to include why archaeologists call these people hunter-gatherers. You may illustrate your paragraph if you wish.

Hunting tools	People hunted using a throwing stick that archaeologists call the atlatl . A dart point was fastened at the end of a spear. The spear was laid on the atlatl. The atlatl was held over the shoulder. The hunter threw the spear using the atlatl. This helped the hunter throw the spear farther and harder.
Animal bones	Often archaeologists find bison and deer bones in 5,000-year-old archaeological sites.
Wild seeds	Sometimes archaeologists find seeds from wild plants.
Hearth	Archaeologists find stained soil that shows where people built fires. The fires were used to help the people stay warm and to cook their food. Sometimes archaeologists find seeds in the hearth.

[Student Journal page 5]

Blank writing area for student response.

[Student Journal page 6]

Answer Key: Finding Food 5,000 Years Ago

Students should include some of the following information in their paragraphs.

- *Five thousand years ago people hunted animals. We know this because archaeologists have found atlatls, spears, and dart points in archaeological sites. They also find bison and deer bones. The atlatl helped people throw spears farther and harder so that they could kill animals to eat.*
- *Archaeologists have found the seeds of wild plants in sites. These show that people were gathering wild seeds for food. Sometimes archaeologists find seeds in the hearth. The hearth is where people cooked food.*
- *Archaeologists call these people hunter-gatherers because they hunted for animals and gathered wild seeds for food.*

11. In this part of the investigation, “First Farmers 2,500 Years Ago (500 BCE),” students will think about plant foods only. People were also eating meat, but that is an investigation for another time. Direct the students to study the pictures and captions on Student Magazine pages 11-14. Discuss how these artifacts and features help archaeologists to learn about early agriculture.

- How would history be different if these artifacts had never been found?
- How would history be different if people found these artifacts and either kept them for themselves or threw them away?
- How would history be different if modern plowing destroyed the evidence of storage pits and posts?

The First Farmers 2,500 Years Ago (500 BCE)
American Indians were the first farmers in Kansas. About 2,500 years ago humans began to grow gardens as another way to get food. How is it possible today to learn about these people? They did not write down their stories, so there are no written records. This is the job of archaeologists to investigate. Archaeologists look for evidence in seeds and in farming artifacts and features.

Archaeologists collect soil samples from hearths, pits, and garbage dumps. They separate the seeds from the dirt by flotation. Flotation is the process of “washing” soil samples in a barrel of circulating water.

Studying seeds can tell archaeologists:

- what people ate
- if the food came from wild plants
- if the food came from plants that were grown in a garden

Seeds are often found in the hearths where people cooked. They are found in storage pits where food was stored. They are found in places where people threw away their garbage.



Student Journal
Page 3-6 - “Finding Food 5,000 Years Ago.” Complete the activity.



3000 BCE 2000 BCE 1000 BCE 500 BCE 1 CE 1000 CE Present

Woodland Period
Hunting, gathering,
and gardening



Village Gardening Period

Historic Period

[Student Magazine page 11]

The Mystery of Wild Seeds and Garden Seeds
Remember the mystery seeds at the beginning of the unit? Examine the picture of the marshelder seeds. Note some of the seeds are a different size. Some of the seeds are wild and some were planted and cared for by people. Can you guess which were wild and which people planted?

How do archaeologists know if the seed is from a wild plant or from a plant grown in a garden? Marshelder was a wild plant. People gathered its seeds for food thousands of years ago. Archaeologists noticed a change in the marshelder seeds in sites dating from about 2,500 years ago (500 BCE). The seeds in the top row are from the wild marshelder. The seeds on the bottom are from marshelder planted by humans. When humans planted, cared for, and harvested marshelder seeds, it caused the genetics of the plant to change. Genetics are the biochemical basis of heredity and variation of organisms. One change is that seeds became bigger. Also, the seeds on a single plant ripened at the same time. This meant a more productive harvest for less effort. When a wild seed is changed because humans plant and care for it, scientists say that the new seed is domesticated. Think how remarkable it is that a seed can change simply because humans planted and cared for it.



11

[Student Magazine page 12]

Farming Artifacts and Features

Sometimes ancient seeds don't survive in Kansas soil. As a result archaeologists also look for farming tools and features in sites. This helps them decide whether the people were hunter-gatherers or farmers.



A digging stick was used to dig holes to plant seeds. It was made from a bison tibia (lower leg bone) and a wooden handle.



An antler rake was used to scrape the earth in the garden and keep out weeds. The antler is a solid bony branched structure found on the heads of deer. It was attached to a wooden handle.



A hoe was used to loosen the soil before planting. It was made from a bison scapula (shoulder blade) or chipped stone and a wooden handle.



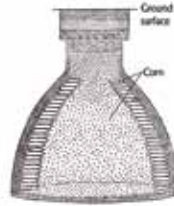
A stone **mano** and **grinding slab** were used to grind seeds into flour to be made into cakes or bread. These implements are a smaller, rounded hand-held stone (mano) and a flat or indented base rock (grinding slab.)



Ceramic pots were used to store and to cook seeds and other raw food. Ceramics are objects made of clay and heated in a fire to make them hard.

13

[Student Magazine page 13]



A **storage pit** was used to store seeds for later eating or planting. Storage pits were dug into the ground and are one type of archaeological feature.



A wooden post leaves a dark stain in the earth when it rots away. This dark stain shows where a post once stood. The post could have been part of a shelter or also a rack for drying foods, like pumpkin strips or meat.



Show what you have learned

1. Where did people get food before there were gardens or farms?
2. How did seeds become domesticated?
3. Answer Section One question: How do archaeologists investigate the past?

Student Journal

Pages 7-20 - "Directions for Collecting Data" Your Work as an Archaeologist: The Technical Report
Page 21 - "Your Work as an Archaeologist: The Technical Report." Write the report.

Your Turn to Investigate!

Archaeologists are scientists, and like all scientists they conduct investigations. Their scientific inquiries often begin with a question. Your investigation questions are:

1. When did farming begin?
2. How did farming begin?
3. How did farming change the way people lived?

14

[Student Magazine page 14]

12. Have the students read, “Your Turn to Investigate!” on Student Magazine page 14 and Student Journal page 7. Archaeologists are scientists, and like all scientists they conduct investigations. Their scientific inquiries begin with questions. The student investigation questions are:

- When did farming begin?
- How did farming begin?
- How did farming change the way people lived?

Ground surface
Corn

A storage pit was used to store seeds for later eating or planting. Storage pits were dug into the ground and are one type of archaeological feature.

A wooden post leaves a dark stain in the earth when it rots away. This dark stain shows where a post once stood. The post could have been part of a shelter or also a rack for drying foods, like pumpkin strips or meat.

Your Turn to Investigate!

Archaeologists are scientists, and like all scientists they conduct investigations. Their scientific inquiries often begin with a question. Your investigation questions are:

1. When did farming begin?
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Student Journal
Pages 7-20 - “Directions for Collecting Data” Your Work as an Archaeologist: The Technical Report
Page 21 - “Your Work as an Archaeologist: The Technical Report.” Write the report.

14

[Student Magazine page 14]

Your Turn to Investigate!

Archaeologists are scientists, and like all scientists they conduct investigations. Their scientific inquiries begin with questions. Your investigation questions are:

1. When did farming begin?
2. How did farming begin?
3. How did farming change the way people lived?

Before you can answer these, you need to collect **data**. Data is factual information gathered in many ways and is used to draw conclusions.


Directions:
You will be working in groups to study archaeological evidence through time. Each group will be assigned one type of artifact or feature to study. You will collect data and present a report to the class.

7

[Student Journal page 7]

13. Before the students can answer these, they need to collect data in Student Journal page 8-20.
- Divide the class into five groups. Each group will be assigned one of the Archaeological Data sheets.
 - As a class review the format of the sheets.
 - Identify the text features including the title, timeline, and column headings. Explain that the first column is the topic of their study and contains its definition. The following four columns provide archaeological data for four sequential time periods.
 - Each group is to study this information and then answer the two questions below the chart.
 - The groups will then present the information they collected to the class. After each presentation, write the answers for both questions on the board. Students will record these answers on “Data Collection” Student Journal page 20.

Archaeological Data—Native Seeds



Evidence
Plants that grew wild and whose seeds were gathered for food.


8000 to 500 BCE	500 BCE to 1000 CE	1000 to 1500 CE	1500 to 1750 CE
Archaeologists find the seeds of these foods <ul style="list-style-type: none"> • nut • grape • plum • sunflower 	Archaeologists find fruit seeds and nuts. For the first time they find the domesticated seeds of the <ul style="list-style-type: none"> • sunflower • marshelder • goosefoot • little barley Archaeologists know that the seeds are domesticated because they are larger than seeds of the native sunflower, marshelder, goosefoot, and little barley.	Archaeologists find the same seeds as in the previous period, but they find an increasingly larger number of domesticated seeds.	Archaeologists find fewer wild seeds but still find domesticated seeds of native plants, such as sunflower.

- Describe how the seeds changed over time.
- Describe what you think the change tells about how people were living in relationship to food.

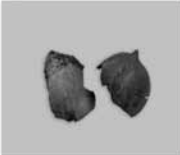
8

[Student Journal page 8]


8000 BCE to 1750 CE




Black walnut shell




Hickory nut shells



Grape seeds




Plum pits




Sunflower seeds


500 BCE to 1750 CE




Sunflower seeds



Marshelder seeds



Goosefoot seeds (shown larger than actual size)



Little barley seed (shown larger than actual size)

9

[Student Journal page 9]

Archaeological Data—Introduced Seeds



Evidence

Domesticated seeds brought into Kansas by humans from other parts of the world.

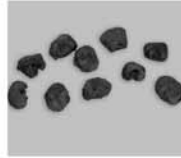
8000 to 500 BCE	500 BCE to 1000 CE	1000 to 1500 CE	1500 to 1750 CE
Archaeologists do not find any domesticated seeds.	Archaeologists find corn seed and cobs for the first time. Corn is not native to Kansas. This means corn seed was brought into Kansas by humans and then planted.	Archaeologists find the domesticated seeds of corn, squash, and the common bean.	A greater amount of corn appears than ever before. Archaeologists continue to find greater numbers of squash and bean seeds.

1. Describe how the seeds changed over time.
2. Describe what you think the change tells about how people were living in relationship to food.

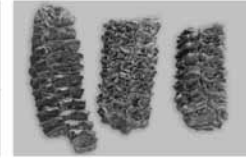
10

[Student Journal page 10]

500 BCE to 1750 CE



Corn kernels



Corn cobs

1000 to 1750 CE



Squash seeds



Common beans

11

[Student Journal page 11]

Archaeological Data—Farming Tools



Evidence

Objects used in farming, storing food, and preparing food.

8000 to 500 BCE	500 BCE to 1000 CE	1000 to 1500 CE	1500 to 1750 CE
Archaeologists find manos and grinding slabs. A mano is a stone held in one hand to grind seed for flour. The seeds are ground on top of a grinding slab, which is a flat stone.	In addition to manos and grinding slabs, archaeologists find a few digging sticks and antler rakes.	Archaeologists find greater numbers of digging sticks and antler rakes. For the first time they find bison scapula hoes.	Archaeologists find even greater numbers of digging sticks, antler rakes, and bison scapula hoes. These tools quickly became less common once metal tools were introduced by people from the Old World.

1. Describe how the artifacts changed over time.
2. Describe what you think the change tells about how people were living in relationship to food.

12

[Student Journal page 12]

8000 BCE to 1750 CE



Grinding slab and mano

500 BCE 1750 CE

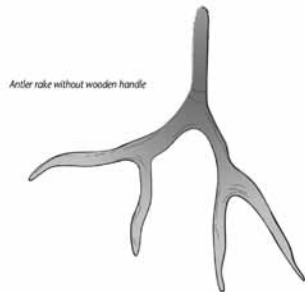


Digging stick tips without wooden handles

1000 to 1750 CE



Bison scapula hoe without wooden handle



Antler rake without wooden handle

13

[Student Journal page 13]

Archaeological Data—Ceramics



Evidence

Objects made from clay and heated in a fire to make them hard. Pottery is one kind of ceramic. Pottery is most often found in broken pieces, as whole pots are rare. These pieces are called potsherds. Pottery was used to store seeds and to cook food.

8000 to 500 BCE	500 BCE to 1000 CE	1000 to 1500 CE	1500 to 1750 CE
Archaeologists do not find any pottery.	Archaeologists find the first potsherds in very small numbers. They are thick and easily broken.	Archaeologists find greater numbers of potsherds. They are thinner and stronger than earlier potsherds.	Archaeologists find even greater numbers of potsherds from thinner, stronger pots in sites. They also find a new style of pot with handles. Pottery became less common when metal pots were introduced by people from the Old World.

- Describe how the artifacts changed over time.
- Describe what you think the change tells about how people were living in relationship to food.

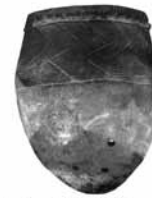
14

[Student Journal page 14]

500 BCE to 1000 CE



Potsherds found in small numbers



Reconstructed Woodland period pot

Reconstructed Village Gardening period pot

1000 to 1500 CE



Potsherds found in greater numbers

1500 to 1750 CE



Reconstructed Protohistoric period pot

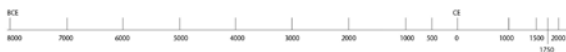


Potsherds found in even greater numbers

15

[Student Journal page 15]

Archaeological Data—Storage Pits



Evidence

A feature in an archaeological site where people stored seeds and food. The food was stored for eating or for planting later.

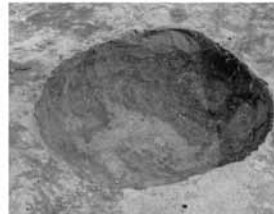
8000 to 500 BCE	500 BCE to 1000 CE	1000 to 1500 CE	1500 to 1750 CE
Archaeologists do not find any storage pits.	Archaeologists find very few storage pits. The ones they find are shallow and therefore cannot store very much.	Archaeologists find many storage pits. The ones they find are deeper than the earlier pits, which means that they can store more.	Archaeologists find even more storage pits.

- Describe how the features changed over time.
- Describe what you think the change tells about how people were living in relationship to food.

16

[Student Journal page 16]

500 BCE to 1000 CE



Shallow storage pit

1000 to 1500 CE

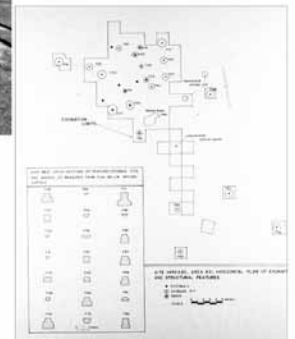


Deeper storage pit

1500 to 1800 CE



Many storage pits exposed in excavated house floor



Map of a different excavated area with many kinds of storage pits

17

[Student Journal page 17]

Archaeological Data—Housing



Evidence

The remains of houses in a site appear as features, such as dark stains in the earth that show where posts once stood and where hearths were placed.

8000 to 500 BCE	500 BCE to 1000 CE	1000 to 1500 CE	1500 to 1750 CE
Archaeologists do not find any house sites.	Archaeologists find a few house sites.	Archaeologists find more house sites. They rarely find more than two or three houses in one place.	Archaeologists find a greater number of house sites. Some of these sites have 20 or more houses.

- Describe how the features changed over time.
- Describe what you think the change tells about how people were living in relationship to food.

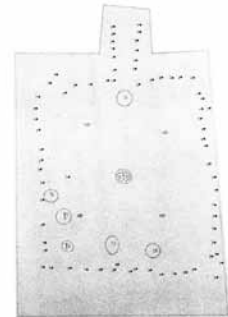
18

[Student Journal page 18]

1000 to 1500 CE

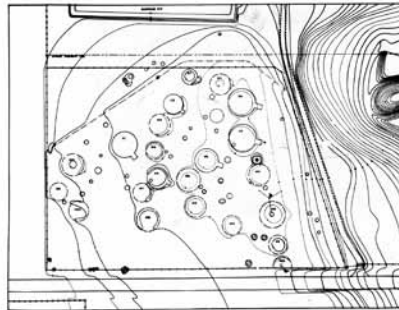


Excavated house floor



Map of excavated house floor in photograph to left

1500 to 1750 CE



Map of village site with many houses

19

[Student Journal page 19]

Investigation Data Collection Sheet

- Describe how the artifacts or features changed over time.
- Describe what you think the change tells about how people were living in relationship to food.

Native Seeds

-
-

Introduced Seeds

-
-

Farming Tools

-
-

Ceramics

-
-

Storage Pits

-
-

Housing

-
-

20

[Student Journal page 20]

Answer Key: Data Collection

1. Describe how the artifacts or features changed over time.
2. Describe what you think the change tells about how people were living in relationship to food.

Native Seeds and Plants

1. *At first people were only eating wild foods. Around 500 B.C. humans started planting wild seeds. We know this because the domesticated seeds are bigger than the wild seeds. By A.D. 1500 there were fewer wild seeds.*
2. *This might mean that people were eating more foods that they planted and eating fewer wild foods.*

Introduced Seeds and Plants

1. *There were no domesticated seeds during the 8000 to 5000 BCE period. Corn was the first domesticated seed, and it appears in sites that date between 500 BCE and 1000 CE. Between 1000 and 1500 CE people were planting corn, beans, and squash. By 1500 CE people planted more and more corn.*
2. *Corn must be an important food.*

Farming Tools

1. *Farming tools first start appearing in archaeological sites of the 500 BCE to 1000 CE. Over time archaeologists find more and more of these tools.*
2. *This must mean there were more people or that there were more people farming, or both.*

Ceramics

1. *Archaeologists find more and more pottery sherds in sites that were occupied later in time. Pots are harder to move from one place to another than stone or bone tools.*
2. *This must mean that people were living in one place, maybe so that they could take care of their crops.*

Storage Pits

1. *Archaeologists find more and deeper storage pits in sites that were occupied later in time.*
2. *This might mean that people were storing a lot of food because they are growing more and more of their food.*

Housing

1. *Archaeologists find more and more houses in sites that were occupied later in time.*
2. *This might mean that more people were living together in one place because they were staying near their crops to care for them and harvest them.*

14. Refer students to “Your Work as an Archaeologist: The Technical Report” on Student Journal page 21. This is their assessment for Section One. The work of archaeologists does not end with uncovering artifacts and solving mysteries. Their responsibilities are complete when they publish a technical report. This report includes their conclusions about what they found so other people can learn from their work.

Your Work as an Archaeologist: The Technical Report

The work of archaeologists does not end with uncovering artifacts and solving mysteries. Their responsibilities are complete when they publish a technical report. This report includes their conclusions about what they found so that other people can learn from their work.

Describe how you gathered your information for this investigation on early farming in Kansas.

Answer your investigation questions. Your answers are your conclusions based on the evidence of the artifacts and features.

1. When did farming begin?

2. How did farming begin?

3. How did farming change the way people lived?

21

[Student Journal page 21]

Answer Key: Your Work as an Archaeologist: The Technical Report

Describe how you gathered your information for this investigation on early farming in Kansas.

I studied how artifacts and features changed over time. First, my group completed the archaeological data sheet _____. (native seeds, introduced seeds, farming tools, ceramics, storage pits, or housing) Then my group presented our information to the class. Finally, we recorded the results from each of the groups on our data collection sheet.

Answer your investigation questions. Your answers are your conclusions based on the evidence of the artifacts and features.

1. When did farming begin?

Farming began sometime between 500 BCE and 1000 CE. In sites dating to this period, archaeologists find the first domesticated seeds of wild plants. Archaeologists know that the seeds are domesticated because they are bigger than the wild seeds of the same plant. In sites of this same period, archaeologists find the first introduced seed (corn), the first digging sticks and antler rakes, the first potsherds, and the first deeper storage pits.

2. How did farming begin?

People first planted seeds from native plants, such as marshelder, sunflower, and little barley. These are the first domesticated seeds found in sites dating from 500 BCE and 1000 CE.

3. How did farming change the way people lived?

Archaeologists do not find any ceramics or farming tools in sites from the period 8000 to 500 BCE. They find few house remains or storage pits. Archaeologists find only wild seeds in sites of this period. This means that people probably moved around a lot looking for and gathering food.

Domesticated seeds from native plants first appeared between 500 BCE and 1000 CE. Seeds become domesticated only when they are planted and cared for by humans. Corn also is found in sites from the period 500 BCE to 1000 CE. Corn is a domesticated seed. People started to farm during this time. They probably gathered wild seeds too, so that they had enough food.

Archaeologists find more and more evidence of farming in sites that were occupied later in time—more domesticated seeds, including beans and squash, more farming tools, potsherds, storage pits, and house remains. People probably were eating more of the foods that they planted than gathering and eating native seeds and plants. More houses might mean that the population was getting bigger. More houses might also mean that people were living close to their crops so that they could care for them.

15. For an enhanced discussion you might want to include some items from this archaeologist's summary of early farming. Remind your students that this archaeologist has more experience and more information to draw upon.

From studying this prehistoric period, Dr. Robert J. Hoard, Kansas State Archeologist, drew these conclusions. Life changed once people began to grow food. Before farming, hunter-gathers moved often as they followed the animals they hunted. They hunted in one place for about one or two weeks and then moved on to find more animals. When archaeologists first find evidence that people were growing their food, they also find evidence of people living in one place for a longer time. These places often are found near rich floodplain soils along rivers in central and eastern Kansas, where people probably grew crops. Plants take a lot of care. Farmers stayed around to pull weeds or chase off (or hunt and eat) animals that might eat their crops. When they harvested, they sometimes had more than they could eat right away. They stored the extra food in pits near their home. They protected the stored food so it stayed dry and safe from pests. All of this caused farmers to live in places for a greater part of the year than hunter-gatherers.

16. Use "Show What You Have Learned" on Student Magazine page 14 to reflect with students on their new knowledge.

The image shows a page from a student magazine with several sections:

- Top Left:** A diagram of a storage pit. It is a wide-mouthed jar-like shape dug into the ground. Labels include "Ground surface" at the top and "Can" pointing to the interior of the pit.
- Top Middle:** A photograph of a dark, circular hole in the ground, which is a storage pit.
- Top Right:** A photograph of a wooden post being inserted into a hole in the ground.
- Text (Left):** "A storage pit was used to store seeds for later eating or planting. Storage pits were dug into the ground and are one type of archaeological feature."
- Text (Middle):** "A wooden post leaves a dark stain in the earth when it rots away. This dark stain shows where a post once stood. The post could have been part of a shelter or also a rack for drying foods, like pumpkin strips or meat."
- Section: "Your Turn to Investigate!"**
 - Archaeologists are scientists, and like all scientists they conduct investigations. Their scientific inquiries often begin with a question. Your investigation questions are:
 1. When did farming begin?
 2. How did farming begin?
 3. How did farming change the way people lived?
- Section: "Show what you have learned"** (with a question mark icon)
 1. Where did people get food before there were gardens or farms?
 2. How did seeds become domesticated?
 3. Answer Section One question: How do archaeologists investigate the past?
- Section: "Student Journal"**

Pages 7-20 - "Directions for Collecting Data" Your Work as an Archaeologist: The Technical Report
Page 21 - "Your Work as an Archaeologist: The Technical Report." Write the report.

[Student Magazine page 14]

Answer Key: Show What You Have Learned

While these answers are not worded in the voice of a fifth grader, they should give a sense of how students might respond. Many of these questions are open-ended and could have many answers. The most likely answers are given here. Allow students to be critical thinkers.

1. Where did people get food before there were gardens or farms?

People were hunter-gatherers before they were farmers. They found food by moving with the seasons. They gathered wild seeds, nuts, and fruits, and hunted animals.

2. How did seeds become domesticated?

Seeds became domesticated when people first planted native seeds from the wild. Planting them, caring for them, and harvesting them domesticated the seeds.

Use these questions to extend your discussion with the class.

3. When and how did agriculture begin?

Agriculture began about 500 BCE. Agriculture began when people planted native seeds and then cared for and harvested them.

4. How did farming change over time?

First people planted wild seeds that became domesticated. Then they planted domesticated seeds, such as corn, that they got from other people in a different region. Gradually people gathered fewer native seeds and relied more on farming. They settled in more permanent villages so that they could care for the crops.

5. How are domesticated seeds different from wild seeds?

Domesticated seeds are bigger. In turn, the bigger seeds grow healthier, bigger plants with more seeds. Also, the seeds on a single plant ripen at the same time. This makes harvesting easier.

6. What else do you want to know about the farmers who lived thousands of years ago?

Accept any answer.

7. How can the first farmers be considered part of your agricultural heritage?

They are part of my agricultural heritage because they were the first farmers in Kansas. Farming is a way of life in Kansas and all over the world. Farming is how we get the food we eat, even if we buy our food in grocery stores.

8. Who are the scientists who study how humans lived before there was written history?

Archaeologists

9. What is this science called?

Archaeology

10. The essential question for this section was: Why is archaeology important? How would you answer this question as a result of what you have learned?

Archaeology is important because we can learn about how people lived in the past, especially before written history. If we did not have someone who knows how to find and interpret artifacts, features and sites, we would not know about the past before written records.

Your Civic Responsibility

Enduring Understanding: Evidence of the past is worth protecting.

Essential Question: Is it important to protect archaeological resources?

Curriculum Standards Integration for Fifth Grade

Kansas College and Career Ready Standards

Reading

- **RF.5.4 (a-c):** The student will read with sufficient accuracy and fluency to support comprehension.
- **RI.5.1:** The student will quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
- **RI.5.2:** The student will determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
- **RI.5.4:** The student will determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.

Writing

- **W.5.1 (a-d):** The student will write opinion pieces on topics or text, supporting a point of view with reasons and information.

Science

Standard 1: Science as Inquiry: The student will develop the abilities to do scientific inquiry, be able to demonstrate how scientific inquiry is applied, and develop understandings about scientific inquiry.

Benchmark 1: The student will demonstrate abilities necessary to do the processes of scientific inquiry.

Indicator 1: The student identifies questions that can be answered through scientific investigations.

Section Two Objectives:

- Students will discuss the importance of protecting archaeological resources.
- Students will explain their civic responsibility.
- Students will write a letter to a newspaper editor expressing their opinions about preserving archaeological resources

Directions for Section Two:

1. Read aloud the Enduring Understanding and Essential Question.
2. Review the text features of Section Two as a class.
3. Have students predict what they will learn.
4. Discuss vocabulary words (in bold) to determine if students understand the meanings.
5. Have students read the poem “Preserving Pieces of the Past” in Student Magazine, page 15. This can be done through a class choral reading. For example: One way is to divide the class into six groups and have each group read a stanza. A second option is to read the poem as a whole class and add movement to represent the ideas. A third method is to have the whole class read the first and last line of each stanza, while each group reads the second and third stanza.

Seeds. (whole class)

Seeds preserved for thousands of years. (group one)

Seeds found by archaeologists. (group one)

Seeds that unlock the mystery of farming

3,000 years ago. (whole class)

Tools. (whole class)

Digging stick, mano and grinding stone, antler

rake and hoe. (group two)

Tools found by archaeologists. (group two)

Tools used to grow and prepare food. (whole class)

A. Discuss with students:

- What is the poem’s message?
- Is archaeology an important science? Explain.
- How might history change if artifacts are destroyed or lost?

SECTION TWO

Your Civic Responsibility

In this section you will discuss the importance of protecting archaeological resources and write a letter to a newspaper editor expressing your opinion. Your question is: **Why is protecting archaeological resources important?**

Preserving Pieces of the Past

Seeds.
Seeds preserved for thousands of years.
Seeds found by archaeologists.
Seeds that unlock the mystery of farming 2,500 years ago.

Tools.
Digging stick, mano and grinding slab, antler rake, and hoe.
Tools found by archaeologists.
Tools used to grow and prepare food.

Ceramics.
Little pieces of pottery.
Potsherds found by archaeologists.
They tell the story of seeds stored and cooked.

Storage pits.
First small, then bigger, and then more of them.
Storage pits found by archaeologists.
They tell the story of seeds gathered and stored.

House sites.
One house, a few houses, many houses.
Archaeologists find evidence of communities getting larger over time.
Farming provides more food for more people.

Seeds, ceramics, storage pits, house sites.
History preserved for thousands of years.
Preservation, discovery, and research
Unlock the mystery of the past.

What is the poem's message?

18

[Student Magazine page 15]

6. Have students read “Protecting Archaeological Resources” in Student Magazine pages 16-17. Discuss with students:
- How can the protection of archaeological resources help Dr. Adair answer her research questions?
 - Is it important to protect archaeological resources? Explain.
7. Instruct students to go back to Mystery of the Ancient Seeds on Student Magazine page 2. Have them page back through Section One and through their Student Journals and observe the artifacts and features that they studied. Ask them to think about what archaeology taught them about that small seed.
8. Lead students in a cultural reconstruction activity, “Your Past Is Important.”
- Instruct students to find an object or a picture at home or to make a drawing that tells something about their past or their family’s past. Put the object in a bag and bring it to school.
 - Ask students to share their object, picture, or drawing with a partner. Describe what it represents about their past.
 - Have students return the object, picture, or drawing to the bag.
 - Tell students to imagine that their objects have been lost or taken. They are gone forever.
 - Discuss with students:
 - What part of your past is lost?
 - How does this make you feel? Explain.
 - How is the loss of your object similar to people taking and keeping artifacts?
 - Is it your civic responsibility to protect archaeological resources? Explain.

Protecting Archaeological Resources

Every day in America, more roads are built and more land is covered with houses and shopping malls. Whenever land is dug up, artifacts and sites from the past might be lost forever. Evidence is also lost when people pick up artifacts and take them home. When people dig in a site without recording important information as archaeologists are trained to do, they destroy what can be learned. The history of that site is lost forever. It is a civic responsibility for people to leave archaeological sites and artifacts just as they find them and to report their finds. Civic responsibility is caring and being involved in your community.

As a result of being a good citizen, archaeological evidence is preserved. Archaeologists can then do their job. They never stop asking questions about the past.

Every question they investigate leads to more questions. For example Dr. Adair has many more questions that she wants to answer:

- How far west in Kansas were people able to grow crops?
- What other native plants did prehistoric people grow?
- How important were crops to the diet and general health of people?

Because artifacts are preserved at universities, Dr. Adair can return to the artifacts in storage to research new questions.




(Above) Dr. Adair measures a charred corn cob from an excavation site.
(Left) Archaeologists examine a site as construction threatens to destroy it.


One way to practice your civic responsibility is to report what you find. You should contact the Kansas Historical Society's Cultural Resources Division, 6425 SW 6th Avenue, Topeka KS 66615-1099, 785-272-8681, ext. 240.



[Student Magazine page 16]

What Else You Can Do

If you want to learn more about archaeology, you can be a volunteer at the Kansas Historical Society's Kansas Archeology Training Program, held each June. You will work alongside professional archaeologists as you excavate sites and clean and catalog artifacts in the lab. You must be at least 10 years of age. Anyone between the ages of 10 and 18 must be with an adult. For more information visit kshs.org/katp. Other agencies also have similar programs. For example, visit the U.S. Forest Service's Passport in Time Program at passportintime.com and Earthwatch at earthwatch.org.



A volunteer clears soil material in an excavation unit.

Student Journal
Page 22 - "Letter to the Editor." Write the letter.

Show what you have learned

1. Often people think that the only thing archaeologists do is find cool stuff. Is this true? Explain.
2. Should someone who is not a trained archaeologist dig to find artifacts? Explain.
3. What part of history can be lost if an untrained person digs for artifacts and keeps them?
4. If you find an artifact or a site, what should you do? Explain.
5. Why might protecting archaeological resources be your civic responsibility?
6. Answer Section Two question: Why is protecting archaeological resources important?

[Student Magazine page 17]

10. Use "Show What You Have Learned" on Student Magazine page 17 to reflect with students on their new knowledge. While these answers are not worded in the voice of a fifth grader, they should give a sense of how students might respond. Many of these questions are open-ended and could have many answers. The most likely answers are given here. Allow students to be critical thinkers.

Answer Key: Show What You Have Learned


1. Often people think that the only thing archaeologists do is find cool stuff. Is this true? Explain.

This is not true. Archaeologists do find cool things, but they also do surveys to find places where people lived. They do excavations and then clean, label, and catalogue everything they find. They write reports about their excavation, and they explain what they learn from excavations. Sometimes this takes months or years to complete.


2. Should someone who is not a trained archaeologist dig to find artifacts? Explain.


No, only archaeologists should do excavations. They have the right tools and know how to excavate very carefully. They know how to make maps of the excavation, and they know how to study the artifacts. There are opportunities for amateurs to work with professional archaeologists on real sites, like people do at the Kansas Archeology Training Program Field School.

What Else You Can Do
If you want to learn more about archaeology, you can be a volunteer at the Kansas Historical Society's Kansas Archeology Training Program, held each June. You will work alongside professional archaeologists as you excavate sites and clean and catalog artifacts in the lab. You must be at least 10 years of age. Anyone between the ages of 10 and 18 must be with an adult. For more information visit kshs.org/katp. Other agencies also have similar programs. For example, visit the U.S. Forest Service's Passport in Time Program at passportintime.com and Earthwatch at earthwatch.org.



A volunteer clears soil material in an excavation unit.

 **Student Journal**
Page 22 - "Letter to the Editor." Write the letter.

 **Show what you have learned**

1. Often people think that the only thing archaeologists do is find cool stuff. Is this true? Explain.
2. Should someone who is not a trained archaeologist dig to find artifacts? Explain.
3. What part of history can be lost if an untrained person digs for artifacts and keeps them?
4. If you find an artifact or a site, what should you do? Explain.
5. Why might protecting archaeological resources be your civic responsibility?
6. Answer Section Two question: Why is protecting archaeological resources important?

17

[Student Magazine page 17]

3. What part of history can be lost if an untrained person digs for artifacts and keeps them?

The only evidence of how people lived before written records are the things they left behind. If people dig in archaeological sites and keep artifacts, the knowledge can be lost. Artifacts need to be left in place. Where the artifacts are located is often as important as the artifacts themselves.

4. If you find an artifact or a site, what should you do? Explain.

I should leave the artifact in the place where I find it. I should call a university or historical society and report what I found and where I found it.

5. Answer the Section Two essential question: Why is protecting archaeological resources important?

Protecting archaeological resources is important because I am preserving the history of my state, which is at least 12,000 years old. The only things we have to help us know about that history are artifacts, features, and archaeological sites. If we harm these things, we will understand less about the earliest people of our state. This makes protecting archaeological resources my civic responsibility. Note to teacher: Help students make the connection to civic responsibility.

Using the Past to Solve Problems Today

Enduring Understanding: Ideas from the past can inform decisions today.

Essential Question: How can ideas from early agriculture help us create a healthy lifestyle today?

Curriculum Standards Integration for Fifth Grade

Kansas College and Career Ready Standards

Reading

- **RF.5.4 (a-c):** The student will read with sufficient accuracy and fluency to support comprehension.
- **RI.5.1:** The student will quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
- **RI.5.2:** The student will determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
- **RI.5.4:** The student will determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
- **RI.5.7:** The student will draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.

Writing

- **W.5.1 (a-d):** The student will write opinion pieces on topics or text, supporting a point of view with reasons and information.

Science

Standard 6: Science in Personal and Environmental Perspectives: The student will apply process skills to explore and develop an understanding of issues of personal health, population, resources and environment, and natural hazards.

Benchmark 1: The student will understand scientific knowledge relative to personal health.

▲Indicator 1: The student identifies individual nutrition, exercise, and a rest needs based on science and uses a scientific approach to thinking critically about personal health, lifestyle choices, risks and benefits.

Geography

Standard: The student uses a working knowledge and understanding of the spatial organization of Earth's surface and relationships between peoples and places and physical and human environments in order to explain the interactions that occur in Kansas, the United States, and in our world.

Benchmark 5: Human-Environment Interactions: The student understands the effects of interactions between human and physical systems.

Indicator 1: The student (A) examines varying viewpoints regarding resource use (e.g., American Indian vs. European settler, past vs. present).

Indicator 2. The student (K) identifies the relationship between the acquisition and use of natural resources and advances in technology using historical and contemporary examples (e.g., compass for navigation, water power, steel plow).

Section Three Objectives:

- Students will think critically about lifestyle choices related to food.
- Students will gather information on different kinds of gardens.

Directions for Section Three:

1. Read aloud the Enduring Understanding and Essential Question.
2. Review the text features of Section Three as a class.
3. Have students predict what they will learn.
4. Discuss vocabulary words (in bold) to determine if students understand the meanings.
5. Have students review by turning to Student Magazine pages 13-14 and Student Journal pages 8-19. Instruct them to use these archaeological artifacts and features to summarize what they learned about early farming in Kansas. They can demonstrate their knowledge by:
 - performing a skit
 - creating a drawing
 - writing a narrative or expository paragraph
 - writing a poem
 - having a class discussion
6. Suggest to students that they can use the past to help solve problems today. Ask students how they might use what they learned about early farming to make life better today. Brainstorm a list of ideas and post them in the classroom.
7. Read “Keeping our Agricultural Heritage Alive,” Student Magazine page 19-21.

8. Discuss with students:

- How is Carl Barnes preserving his agricultural heritage?
- How might you do the same?
- Ask the students what they have thought about corn prior to reading this. How does this article show the American Indian's view of corn?
- Is all of Kansas in the same bioregion?

Keeping our Agricultural Heritage Alive

It is spring. The sun is shining. The earth is warming. You hold the tiny seeds of a lettuce plant in your hand. You dig a hole and place the seeds inside. You cover the hole and give the seeds some water. One day the lettuce plants poke out of the ground. You continue to water the plants to help them grow. Finally the lettuce is big enough to eat. You cut a leaf from a plant and pop it in your mouth. It tastes sweet and fresh. You cut enough lettuce to make a big, yummy salad. Could we go back to growing some of our own food perhaps in a family garden, a community garden, or a school garden? How might a garden contribute to a healthy lifestyle?



Lettuce plants flourish in a garden.

Carl Leon Barnes and the Three Sisters

Meet Carl Leon Barnes. Mr. Barnes' spirit name is White Eagle. He was born in Tynone, Oklahoma, in 1928. At the age of 14 he learned from his grandfather that he was part Cherokee. At the age of 21 this knowledge led him to his life's work. Since 1942 he and his wife, Kamm, also known as Earth Dove, have preserved more than 500 kinds of ancient corn. Some people call Mr. Barnes "The Keeper of the Sacred Seed." He has many stories to share about ancient corn and "The Three Sisters." *(continued next page)*



19

[Student Magazine page 19]

Carl Leon Barnes and the Three Sisters *(continued from page 19)*

Corn was first grown in Mexico. Corn seeds first arrived in what is now Kansas around 1,700 years ago. Corn is important to American Indians everywhere because it is a gift from their Creator. In some of their creation stories, the Creator made the grasses first, including corn. The animals were created second and needed the grasses to live. Corn then is a source of life.



There are hundreds of different kinds of ancient corn in the colors of the rainbow and in black and white. Mr. Barnes believes that the various colors can heal and give energy to different parts of the body. For example, red corn affects the feet and legs; yellow corn, the stomach; green corn, the heart; blue corn, the throat; and purple corn, the head.



The Three Sisters
Corn • Beans • Squash

20

[Student Magazine page 20]

Early American Indian farmers planted corn, bean, and squash seeds in the same hole. Together the plants supported each other. The corn provided a structure on which the beans could climb. The beans helped the corn stalk stand strong in the wind. At the bottom of the corn stalk, the leaves of the squash vines shaded the soil, so that it held water longer. Planting corn, beans, and squash together came to be known as "The Three Sisters."

Today Mr. Barnes provides ancient corn seeds and teaches others to plant "The Three Sisters." He says, "There are three types of poverty—mental, physical, and spiritual. When you hum to the soil and raise corn, all of these poverties disappear." What do you think Mr. Barnes means?

Mr. Barnes is a great teacher. Listen to his words and discuss his message with your classmates. "We must plant as many different types and varieties of seeds as we can in each separate bioregion of the country. [A bioregion is a natural area defined by its plants, animals, geography, and climate.] The soil, the insects, the birds, and nature in general will tell us which ones [seeds] are best for our place; we must listen, look, and we will learn. We then will find our living relationship with the nature of the place we live in. This will help bring a balance, because it is truth. Working with seeds, we give protection and value to those relationships and give ourselves life and a gift to future generations."



Bioregions data developed by the U.S. Environmental Protection Agency. Map provided by the Kansas Data Access and Support Center (KDASC).

21

[Student Magazine page 21]

9. Read and discuss “Living a Healthy Lifestyle,” Student Magazine page 22-23.

10. Read “Building Safe, Healthy, and Green Environments” on Student Magazine page 24.

11. Discuss the different types of gardens. Ask students if they are familiar with other types of gardens (for example, herb gardens).

12. Supplementary information that will provide students with more details on growing a container, family, school, or community garden has been included in this guide. If possible, give your students a chance to work in the computer lab to explore some of the Internet sites that are suggested. If students do not have access to the Internet, the class can contact the County Extension Office or the Kansas State University Extension Office in Manhattan for many publications about plants and gardens.

Living a Healthy Lifestyle
 We constantly hear that people today are overweight, exercise less, and are not as healthy. As a result, the U.S. Congress has said that schools must create a wellness plan. What is your school's wellness plan? How might growing a school garden support this plan?

Fresh from the Garden
 Diana Hershberger, Rosemary Menninger, and Wendy Franzen are Topeka gardeners who contribute their time to help people create community and school gardens. Some of the food they raise is donated to local food banks. They want to share their ideas for healthy eating and encourage others to try similar projects. Read and discuss their ideas.

“The poor quality of mass-produced food, chemical additives in processed foods, genetic modification of crops, and pollution caused by large-scale agriculture are all reasons to grow your own food.”
 — Wendy

Today we need healthy food just like early farmers did 2,500 years ago. One way to ensure a good food supply is to grow our own. This food becomes ingredients for healthy meals. At home, at school, or in a community garden, you could grow beans, peas, lettuce, cucumbers, tomatoes, peppers, corn, squash, broccoli, kale, and carrots. They contain vitamins A, C, E, K, B6, B1 and minerals, such as calcium, iron, zinc, and potassium. Together they make you strong and healthy. They protect your body from illnesses, such as cancer, heart attacks, flu, or colds. With food that you grow, you can be creative and make attractive meals and snacks for yourself, your family, and friends.

When you pay attention to the taste, smell, and appearance of what you are eating, you are likely to eat more slowly, eat less, and enjoy your food more. Fresh produce from a garden often has more taste than fruits and vegetables purchased at a store. More importantly, fresh produce keeps most of its minerals and vitamins as it travels the tiny distance from your garden to your plate to your stomach.

“Greens add lots of nutrition to the diet. They come in many varieties and are easy to grow and include in many dishes. Yellow vegetables have good nutritional value and are better fresh from the garden. Root crops can be surprising and tasty.”
 — Rosemary



A student waters the garden.

22

[Student Magazine page 22]

“A sense of community, including sharing stories and traditions, may have been true in prehistoric gardening as it is in today's community gardens. Community gardens bring neighbors together and provide fresh and nutritious food to people who might otherwise go hungry.”
 — Diana

Planting, bending, shoveling, digging, cutting, picking, hoeing, watering—these are gardening verbs that mean your body is on the move. There are many benefits to exercise. It cleans your mind, makes you feel happy, creates a healthy heart, and makes you strong. And for all your effort, you get to eat good food too.

A garden takes empty space and turns it back to nature. Plants bring color to the landscape—red peppers, orange carrots, yellow corn, purple eggplant, and green peas. Orange and black-spotted lady bugs, green praying mantises, yellow bees, black wasps, and song birds of different kinds move into the garden. Plant flowers that attract butterflies, and you have nature galore right in your own backyard, community, or school.

Nothing of value is won without hard work—football games, first prize in 4-FL, straight As in school. Gardens take time, attention, and hard work, but when you sit down to a super fresh meal, there can be a great sense of satisfaction. To learn more about Diana Hershberger and the school gardens she helps create, visit topekagarden.webs.com.




Students dig in the Topeka community garden. Inset: Diana Hershberger and Wendy Franzen.

23

[Student Magazine page 23]

Building Safe, Healthy, and Green Environments

Now it's time to gather information on growing a garden. There are many kinds of gardens:

- a pizza garden with tomatoes, peppers, onions, garlic, and broccoli
- a salad garden with lettuce, spinach, chard, radishes, onions, and peas
- “The Three Sisters” garden of corn, beans, and squash, all planted in the same hole together
- a container garden with vegetables planted in small pots near your back door or on your patio.

Garden ingredients are:

- soil in a plot of land or in a container
- sun
- plant food
- seeds
- water
- a willingness to nurture plants

That's all you need! Give it a try! Your teacher has additional information on gardening, such as the best time to plant and how to construct a garden. Use the information that you gather from this exercise to develop your final performance.

Show what you have learned

1. What does a healthy lifestyle mean to you?
2. Before creating a garden, think about the obstacles that might stop you and how you can overcome them. An obstacle is somebody or something that prevents progress.
3. Make a list of people who could support you in creating your garden.
4. How does gardening honor your agricultural heritage?
5. Answer the Section Three question: How can ideas from early agriculture help us create a healthy lifestyle today?




24

[Student Magazine page 24]

Best Times of Year for Kansas Vegetables

To find out which garden plants grow best in Kansas, contact a County Extension agent or check Kansas State University's Research and Extension Horticulture Library for the Vegetable Garden Planting Guide, MF315.

- ksre.ksu.edu/bookstore/pubs/mf315.pdf

A Container Garden

Students can grow a garden in a window with good sunlight, on a porch, a doorstep, or outside your classroom door. All the garden needs is sunshine, water, plant food, and good soil. Potting soil or topsoil can be purchased almost anywhere. The container should have holes in the bottom for drainage and hold at least six to eight inches of soil.

- ksre.ksu.edu and type "container gardening" in the search box.
- containergardeningtips.com/edible-plants-and-containers

A Family Garden

A family garden can be grown in a container on the porch, patio, south-facing window, or in the yard. Family gardens can start out small and grow bigger each season. Have students brainstorm where a garden could be located.

- www.fns.usda.gov/sites/default/files/nibbles_newsletter_33.pdf
- www.fns.usda.gov/sites/default/files/digin_athome.pdf

A Community Garden

In some communities people join together to plant a garden. The space may be divided into family plots. People feel happier and healthier when they talk, laugh, and work together. Many towns in Kansas have community gardens. Check out these websites for more information:

- kansascommunitygardens.org

Kansas City Center For Urban Agriculture

- cultivatekc.org

Community Gardens in Manhattan, Kansas

- k-state.edu/ufm/community_garden.htm

Community Garden in Olathe, Kansas

- olatheks.org/parksrec/community-garden

Starting a Community Vegetable Garden, New Mexico State University

- aces.nmsu.edu/pubs/_h/H-246.pdf

A School Garden

Your class may decide to create a school garden. If you were to do this, the students would learn to grow food, find out how fresh food tastes, eat healthier, get more exercise, work with a community of other kids, and feel proud of their accomplishments. It doesn't get any better than that. You may want to contact the organizations listed below and invite a representative to help you with the project.

Master Gardeners in Kansas

- hfr.ksu.edu/p.aspx?tabid=422

Junior Master Gardeners in Kansas

- hfr.ksu.edu/p.aspx?tabid=426

Kansas State University Research and Extension Service

- ksre.ksu.edu/p.aspx?tabid=24

Great Garden Detective Adventure

- www.frns.usda.gov/tn/great-garden-detective

Your school can apply for an annual national school garden grant.

- grants.kidsgardening.org

“The Three Sisters” Garden

Have students use these sites to explore more about “The Three Sisters” garden.

- kidsgardening.org/node/12033
- reneesgarden.com/articles/3sisters.html
- nps.gov/dewa/naturescience/upload/cmsstgcorn.pdf
- ddl.nmsu.edu/kids/webquests/wqthreesisters_k.html
- faq.gardenweb.com/faq/lists/teach/2003045238014436.html

13. Use “Show What You Have Learned” on Student Magazine page 24 to reflect with students on their new knowledge. While these answers are not worded in the voice of a fifth grader, they should give a sense of how students might respond. Many of these questions are open-ended and could have many answers. The most likely answers are given here. Allow students to be critical thinkers.

Answer Key: Show What You Have Learned

1. What does healthy lifestyle mean to you?

A healthy lifestyle allows a person to feel good and have the energy to do things. Factors include regular physical exercise, balanced diet, foods prepared in healthy ways, plenty of water, reasonable portions of food, weight control, enough sleep, not smoking, avoiding alcohol and drugs, and a positive attitude.

2. Before creating a garden, brainstorm the obstacles that might stop you. Sometimes when we think about the obstacles to a project, we can prepare ourselves to overcome them.

Obstacles can include getting permission to dig up a plot of ground, infertile soil, insects, weeds, need for basic garden tools and seeds or bedding plants.

3. Make a list of people who could support you to create a container, family, community, or school garden.

Parents, brothers and sisters, neighbors, teachers, principal, 4-H club members, scouts, etc.

4. How does gardening honor your agricultural heritage?

Farming began in Kansas thousands of years ago. Until about 1950 many people grew their own food, but today most of us no longer do this. This history is part of our agricultural heritage.

5. Answer the Section Three essential question:

How can ideas from early agriculture help us create a healthy lifestyle today?

People used to grow their own food. Many of us could grow gardens today. Planting and caring for a garden is a good way to be outside and to get exercise. The food we eat from a garden is very good for us.

Building Safe, Healthy, and Green Environments

Now it's time to gather information on growing a garden. There are many kinds of gardens:

- a pizza garden with tomatoes, peppers, onions, garlic, and broccoli
- a salad garden with lettuce, spinach, chard, radishes, onions, and peas
- "The Three Sisters" garden of corn, beans, and squash, all planted in the same hole together
- a container garden with vegetables planted in small pots near your back door or on your patio.

Garden ingredients are:

- soil in a plot of land or in a container
- sun
- plant food
- seeds
- water
- a willingness to nurture plants

That's all you need! Give it a try! Your teacher has additional information on gardening, such as the best time to plant and how to construct a garden. Use the information that you gather from this exercise to develop your final performance.

Show what you have learned

1. What does a healthy lifestyle mean to you?
2. Before creating a garden, think about the obstacles that might stop you and how you can overcome them. An obstacle is somebody or something that prevents progress.
3. Make a list of people who could support you in creating your garden.
4. How does gardening honor your agricultural heritage?
5. Answer the Section Three question: How can ideas from early agriculture help us create a healthy lifestyle today?

24

[Student Magazine page 24]

Promoting a Garden

As a final product for The Archaeology of Early Farming in Kansas unit, assign the RAFT on Student Magazine page 25. By using the RAFT exercise students will apply what they have learned about the value of archaeology and agricultural heritage to develop a persuasive presentation that will encourage members of the audience to plant a garden and raise nutritious food.

YOUR FINAL PERFORMANCE

Promoting a Garden

Now you can apply what you have learned by solving a real problem that can be presented to a real audience. The strategy that you will use is called RAFT. It allows you to choose an interesting form for presenting your information. RAFT is an acronym for the following words.

R stands for Role:
What is your role as the creator of this project? You are a student who has used archaeology to learn about early agriculture in Kansas. You have learned about the importance of protecting archaeological resources. You have also learned how the past can guide us to solve problems today. Now you will create a plan to encourage others to plant a garden.

A stands for Audience:
Who will be seeing your product? Your teacher may have a specific audience in mind, but you may choose to develop your project for one of these groups: your school, your neighborhood, your community, a day care center, a senior citizen home, a church, or your family.

F stands for Format:
What is the best way to present your information? Your persuasive presentation should communicate the importance of growing a garden to support a healthy lifestyle. You may choose to present your project in any form that you and your teacher agree upon. Some options are: PowerPoint, poster, video, booklet, or podcast.

T stands for Topic:
What is this product about? Through this unit you have come to understand that farming and growing food is part of your agricultural heritage. The early American Indian farmers are our first role models. Like them, you can grow some of your own food. Planting, tending, and harvesting a garden and eating garden-fresh food helps you lead a healthy lifestyle. Your goal is to develop a product that will encourage your audience to plant a garden.

Your final product must include:

- Who will participate in the creation of the garden? Who will benefit from the garden?
- What will be the responsibility for each person or groups of persons?
- When will the garden be created?
- Where will the garden be created?
- Why will the garden be created?
- How will the garden be created?
- Include what you have learned from archaeology about the earliest farmers.
- Explain how gardens honor our agricultural heritage.

25

[Student Magazine page 25]

GLOSSARY

agricultural heritage: a way of living related to growing food passed down through generations

ancient: belonging to the past; very old

antler: a solid bony branched horn found on the head of animals in the deer family

archaeological resources: artifacts, features, and sites that archeologists use to investigate past cultures

archaeologist: a scientist who studies people in the past. This includes people who lived before written history.

archaeology: a science that investigates past human cultures by looking at artifacts and sites; sometimes spelled archeology.

aromatic: with a pleasant smell

artifacts: objects made and used by people in the past

atlatl: spear thrower

bioregion: a natural area defined by its plants, animals, geography, and climate

ceramics: objects made from clay and heated in a fire to make them hard. Pottery is one kind of ceramic.

civic responsibility: caring and being involved in your community

culture: the set of learned beliefs, values, and behaviors generally shared by a group of people

data: factual information gathered in many ways and used to draw conclusions.

domesticated seeds: seeds changed as a result of human actions

evidence: information used to prove something or to help arrive at a conclusion

excavation: systematically removing dirt from an archaeological site so that artifacts and features can be observed and recorded

feature: evidence in the soil of human activity. An example is a storage pit used to store seeds and food.

final report: detailed written description of how archaeological research was done and what archaeologists conclude to tell the story of how past peoples lived

floodplain: an area of low-lying land where rich soil is deposited when a river floods

flotation: a method using circulating water to separate seeds and other small items from soil samples

genetics: the biochemical basis of heredity and variation of organisms

hearth: a place where a fire is built for heating and cooking

inferred: concluding something based on evidence

introduced seeds: domesticated seeds brought into Kansas many years ago from other regions

laboratory: a place where artifacts are cleaned, sorted, and catalogued and analysis is carried out

mano and grinding slab: a smaller, rounded hand-held stone (mano) and a flat or indented base rock (grinding slab) used to grind seeds into flour

native seeds: seeds from wild plants that grow naturally in a certain area

obstacles: somebody or something that prevents progress

potsherds: pieces of broken pottery found in archaeological sites

prehistoric, prehistory: the period of time before written records

scapula: shoulder blade

sites: places where people lived or worked in the past, such as villages or camps

site record form: written description of an archaeological site that records its location, size, visible artifacts and features, age, etc.

site survey: archaeologists walking across the ground and looking for artifacts or features on the surface

storage pit: a feature in an archaeological site where people stored food and other items, such as seeds, for later use

tibia: one of the lower leg bones

NOTES



PROJECT
ARCHAEOLOGY



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