

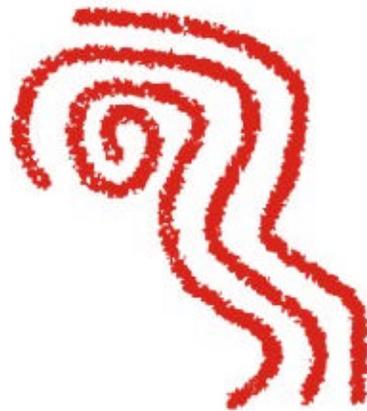
KENTUCKY ARCHAEOLOGY

Episode One

Ancient Fires at Cliff Palace Pond A Companion Guide for Middle and High School Teachers

by

Judy Sizemore



**Kentucky Heritage Council
Video Education Series
Frankfort, Kentucky
2000**

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Kentucky Archaeology is a series of short documentaries that explore new research about the state's rich cultural heritage. Commissioned by the Kentucky Heritage Council, each episode examines a unique aspect of archaeology, with a blend of interviews, artifacts, rare archival images and video of ancient American Indian sites in Kentucky. The first three episodes of the series were premiered on KET, The Kentucky Network in early December 2000. Visit the Series' web page (<http://www.state.ky.us/agencies/khc/video.htm>) to read more detailed summaries of the episodes:

Episode One: Ancient Fires at Cliff Palace Pond, the video for which this Companion Guide was produced, examines landmark research on Kentucky's first forest managers.

Episode Two: The Adena People: Moundbuilders of Kentucky examines the legacies of the Adena people whose ancient culture is renowned for massive burial mounds.

Episode Three: Saving a Kentucky Time Capsule documents efforts to preserve dozens of ancient American Indian mud glyphs (drawings) discovered deep inside a Kentucky cave.

Copies of these three episodes on one videotape are available through the Kentucky Heritage Council, 300 Washington Street, Frankfort, KY, 40601. Phone: 502/564-6661. They cost \$10.00 plus \$4.00 shipping and handling.

The lesson plans for each episode, like this one, are available for downloading from the Kentucky Heritage Council's Video website listed above. Or hardcopies can be ordered by contacting the Heritage Council at the address listed above.

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TEACHERS NOTE:

There are two other items you must have in order to successfully complete these lessons:

Ancient Fires at Cliff Palace Pond, a short (10:30 min) video commissioned by the Kentucky Heritage Council. It can be purchased from the Council for \$10.00 plus \$4.00 shipping and handling. Call 502-564-6661 or write the Council at 300 Washington Street, Frankfort, KY 40601.

Forests, Forest Fires & Their Makers: The Story of Cliff Palace Pond, Jackson County, Kentucky, a short 28-page booklet by Paul A. Delcourt, Hazel R. Delcourt, Cecil R. Ison, William E. Sharp, and A. Gwynn Henderson. Available from the Kentucky Archaeological Survey, 1020-A Export Street, Lexington, KY, 40506-9854. Phone 859-257-5173. Cost: single copies available free to teachers for classroom use. Price for five or more is \$5.00 each; discounts are available for 20 or more.

Activity Sheet and Handout Credits

Pollen Change Over 10,000 Years Grid activity sheet: Information taken from "Prehistoric Use of Fire, The Eastern Agricultural Complex, and Appalachian Oak-Chestnut Forests: Paleoecology of Cliff Palace Pond," by Paul A. Delcourt, Hazel R. Delcourt, Cecil Ison, William E. Sharp, and Kristen Gremillion, published in *American Antiquity*, volume 63, pages 263-278 (1998).

Magnified Pollen Grains handout: Illustrations taken from *How to Know Your Pollen and Spores* by Ronald O. Kapp. Wm. C. Brown Co., Dubuque, Iowa (1969).

Kentucky Before Boone poster handout: Design and layout by Jimmy A. Railey, Kentucky Heritage Council, Frankfort, KY (1989).

Cliff Palace Pond Profile handout by Jim Giles, Command Z Studio, Cincinnati, OH. In **KENTUCKY ARCHAEOLOGY**, *Episode One: Ancient Fires At Cliff Palace Pond*. Kentucky Heritage Council, Frankfort (2000).

Introduction

Although we often think of science and history as two separate fields of study, they are actually interwoven. As technology provides scientists with increasingly sophisticated tools for scientific research, our understanding of the past, both human and ecological, is constantly modified. The *Ancient Fires at Cliff Palace Pond* video documents how two branches of science, archaeology and paleoecology, were brought together in a research project that confirmed archaeologists' ideas about the lifestyles of American Indians living along the western edge of Kentucky's Appalachian Mountains 3,000 years ago. Understanding how ancient peoples used fire to manage the forest will help us decide how we should manage our forest resources for future generations.

This inter-disciplinary research project is an excellent example of the application of scientific research to real-world problems such as the management of natural resources. In fact, the motivation for undertaking the study was to determine the past and *future* role of human-induced fire in Eastern Kentucky forests. The long-held assumption that we can best maintain the balance of our forests' ecosystems through the suppression of fire has been challenged in recent years by those who insist that a healthy forest ecology is actually dependent on frequent, light intensity fires. By proving that ancient native peoples used precisely this type of fire-based management to produce what is thought of as the "typical" Appalachian ridge and slope forest, scientists have provided forest managers with insights into the ways that this forest must be maintained.

This Companion Guide provides middle and high school teachers with eight classroom-tested activities that will enhance students' understanding of the complex issues presented in the video. Although the major emphasis is on science and social studies, the activities encompass math, technology, language arts, and arts and humanities. They could be used by a team of teachers or by a single teacher to present a cross-disciplinary unit.

Essential Questions

How does our understanding of the natural environment change as scientists apply modern technology to the study of ancient cultures?

What lessons can we learn from ancient technologies that can help us better manage our natural resources today?

How do various branches of science work together to investigate a problem?

How can the medium of video be used to present complex issues in a manner that is accurate and engaging?

Kentucky Academic Expectations Addressed

Goal 1: 1.1-1.16

Goal 2: 2.1-2.6, 2.8, 2.10, 2.16-2.20, 2.22, 2.23, 2.36

Goal 5

Goal 6

High School Science Content Addressed

Scientific Inquiry (1.16, 2.1)

Students will

- identify and refine questions and identify scientific concepts that guide the design of scientific investigations.
- design and conduct different kinds of scientific investigations for a wide variety of reasons.
- use equipment (e.g., microscopes), techniques (e.g., microscope skills), technology (e.g., computers), and mathematics to improve scientific investigations and communications.
- review and analyze scientific investigations and explanations of others.

The Interdependence of Organisms (2.3, 2.6)

Students will

- examine interrelationships and interdependencies of organisms in ecosystems and the factors that influence the interactions between organisms.
- explore how human activities alter ecosystems.

Applications/Connections (2.1, 5.1-5.3, 6.1-6.3)

Students will

- examine the interaction between science and technology.
- use science to analyze the use of natural resources by an increasing human population.
- investigate how science can be used to solve environmental quality problems (e.g., over-consumption, food distribution).
- use science to investigate natural hazards and human-induced hazards.
- analyze the role science plays in everyday life and compare different careers in science.
- recognize that scientific knowledge comes from empirical standards, logical arguments, skepticism, and is subject to change as new evidence becomes available.

Activity: First Thoughts – A Pre/Post Viewing Activity

Grade Level: 7-12
Time Required: 45-60 minutes
Curriculum Areas: Science, social studies

Curriculum Connections
(KY Academic Expectations): **1.3, 1.4, 2.1, 2.6, 2.19, 2.20, Goals 5 and 6 – Students will**

- make sense of various things they observe.
- make sense of messages to which they listen.
- understand scientific ways of thinking and working.
- understand how living and non-living things change over time.
- understand the factors that influence changes.
- understand the relationship between people and geography.
- apply their knowledge to real life situations and develop historical perspective.
- think and solve problems.
- connect and integrate experiences and new knowledge.

Materials:

1. "First Thoughts" activity sheet for each student.
2. *Ancient Fires* video.

Introduction: Before viewing the video, ask students to complete the "First Thoughts" activity sheet. Allow 10-15 minutes for the task. Emphasize that this is not a paper that will be graded, but that it will draw their attention to particular aspects of the video that you want them to notice.

Procedure: Watch the video (11 minutes in length). Using the three questions in "First Thoughts" as a guide, ask students to tell what they learned from the video. How did the video confirm, modify, or expand their thoughts on these three topics? What do they suppose was the hypothesis of the paleoecologists as they began their research at Cliff Palace Pond? What methods did they use to test their hypothesis? What conclusions did they reach? What are the implications of this research for future forest management? Allow about 15 minutes for the discussion.

Ask students to refer to their "First Thoughts" and write a learning log entry outlining what they learned from the video. Tell them to be sure to include the three points in "First Thoughts."

Assessment Suggestions: Assess as you would any daily learning log entry.

Extensions:

1. Read pages 17-22 in *Forests, Forest Fires & Their Makers*. Ask students to compare and contrast the lifestyle of gardeners of the Woodland Period with the lifestyle of the farmers of the Late Prehistoric Period. Ask them to include at least three similarities and three differences.
2. Making fire was not easy in prehistoric times. Have students research fire making techniques and write a how-to piece about it. Tell students to be

sure to consider the necessary ingredients for fire (heat, fuel, and oxygen). If possible, invite someone to your class who can demonstrate the process, or obtain a copy of *The Theft of Fire Curriculum Unit* and video (see **Resource List**).

First Thoughts

1. Wherever people live, they have an impact on their environment. Sometimes they make major changes to the land, and sometimes the changes are very minor. Think about how American Indians lived in Kentucky about 2,000-3,000 years ago. Describe the impact you think they had on their environment.

2. Fire is a tool that has been used by people for thousands of years. Think about how American Indians lived in Kentucky about 2,000-3,000 years ago. Describe the ways they might have used fire.

3. We learn about the past in many ways. One way is to study the muck that settles at the bottom of a pond. What do you think scientists might learn from analyzing the muck at the bottom of a pond?

Activity: Pollen Analysis

Note to the Teacher: This activity has been adapted (with permission) from *Intrigue Of The Past: A Teachers Guide for Fourth Through Seventh Grade* (see **Resource List**).

Grade Level: 7-12

Time Required: 45-60 minutes

Curriculum Areas: Science, math

Curriculum Connections

(KY Academic Expectations):

1.3, 1.9, 1.11, 1.12, 2.19, Goals 5 and 6 - Students will

- examine interrelationships and interdependencies of organisms in ecosystems and the factors that influence the interactions between organisms.
- explore how human activities alter ecosystems.

Materials: For each student:

1. Pages 5-7 from *Forests, Forest Fires & Their Makers* booklet (schools may copy pages as needed).
2. "Pollen Change Over 10,000 Years" activity sheet.

For the teacher:

1. "Magnified Pollen Grains" copied on a transparency.
2. Samples of plants if possible.

Introduction: Ask students to share what they recall about the importance of the study of pollen samples from the muck at the bottom of Cliff Palace Pond. Read page 5 through the third paragraph of page 7 in *Forests, Forest Fires, & Their Makers*.

Procedure: Using the projected master of "Magnified Pollen Grains," review from which plant each pollen grain comes. If possible, bring examples of the plants to the classroom.

Distribute copies of *Forests, Forest Fires, & Their Makers*. Ask students to scan the booklets to find pictures of the pollen grains and information about the time and conditions in which they flourished. List this information on the board.

- Northern White Cedar (*Thuja occidentalis*) and Red Spruce (*Picea rubens*): Both grew in the cool, temperate climate of the Early Archaic Period after the close of the Ice Age.
- Cat-tail (*Typha latifolia*): Grew in a ridgetop marsh during the Early Archaic Period.
- Buttonbush (*Cephalanthus occidentalis*): Replaced cat-tail as Cliff Palace Pond became an open pool due to increased rainfall during the Middle Archaic Period.
- Eastern Hemlock (*Tsuga canadensis*): Flourished in the warmer climate of the Middle Archaic Period, but then was attacked by the hemlock looper moth and destroyed in a catastrophic wildfire around 3,000 years ago.
- Eastern Red Cedar (*Juniperus virginiana*): This was the first tree to return after the devastation of the hemlock wildfire, but it was quickly replaced by oak.

- Oak (*Quercus* spp.): During the Middle Archaic Period, oaks and other warmth-loving trees made up much of the forest. Oak returned after the widespread devastation of the hemlock wildfire. Oak and other fire-tolerant trees continued to thrive during the Late Archaic Period as prehistoric peoples began to use low-intensity fires to manage the forests.
- Pine (*Pinus* spp.): Pines grew in profusion during the Late Archaic Period as recurring fires transformed the forests.
- Chestnut (*Castanea dentata*): Chestnuts are fire tolerant and thrived from the Late Archaic Period into the 20th century, when the species was destroyed by blight. Chestnuts were a prime source of food for people and wildlife.
- Goosefoot (*Chenopodium* spp.): Pollen from this plant appeared with greater frequency as people during the latter part of the Late Archaic Period domesticated these wild plants in their gardens. It was cultivated throughout the Woodland Period and during the Late Prehistoric Period.
- Dock (*Rumex acetosella*): The appearance of the pollen from this non-native plant in pond sediments indicates the arrival of Europeans (and their plants) about 200 years ago.

Distribute the “Pollen Change Over 10,000 Years” activity sheet. Make sure students understand that the vertical line on the left indicates time and that the graph shows an increase in amounts moving from left to right. Ask them to identify the pollen grains and interpret the graph. Specifically, how did the forest change over ten thousand years and what were the reasons? How did the climate effect change? What changes were induced by insects? In what way did the native peoples cause changes?

You may ask students to work individually or in small groups to answer these questions. You may ask them to share their conclusions in written or oral format.

Closure: Ask students to summarize what kinds of information can be learned from studying pollen in layers at the bottom of ponds. Why is it important that the pond layers were undisturbed? What would happen to this ecological record if the pond site were bulldozed?

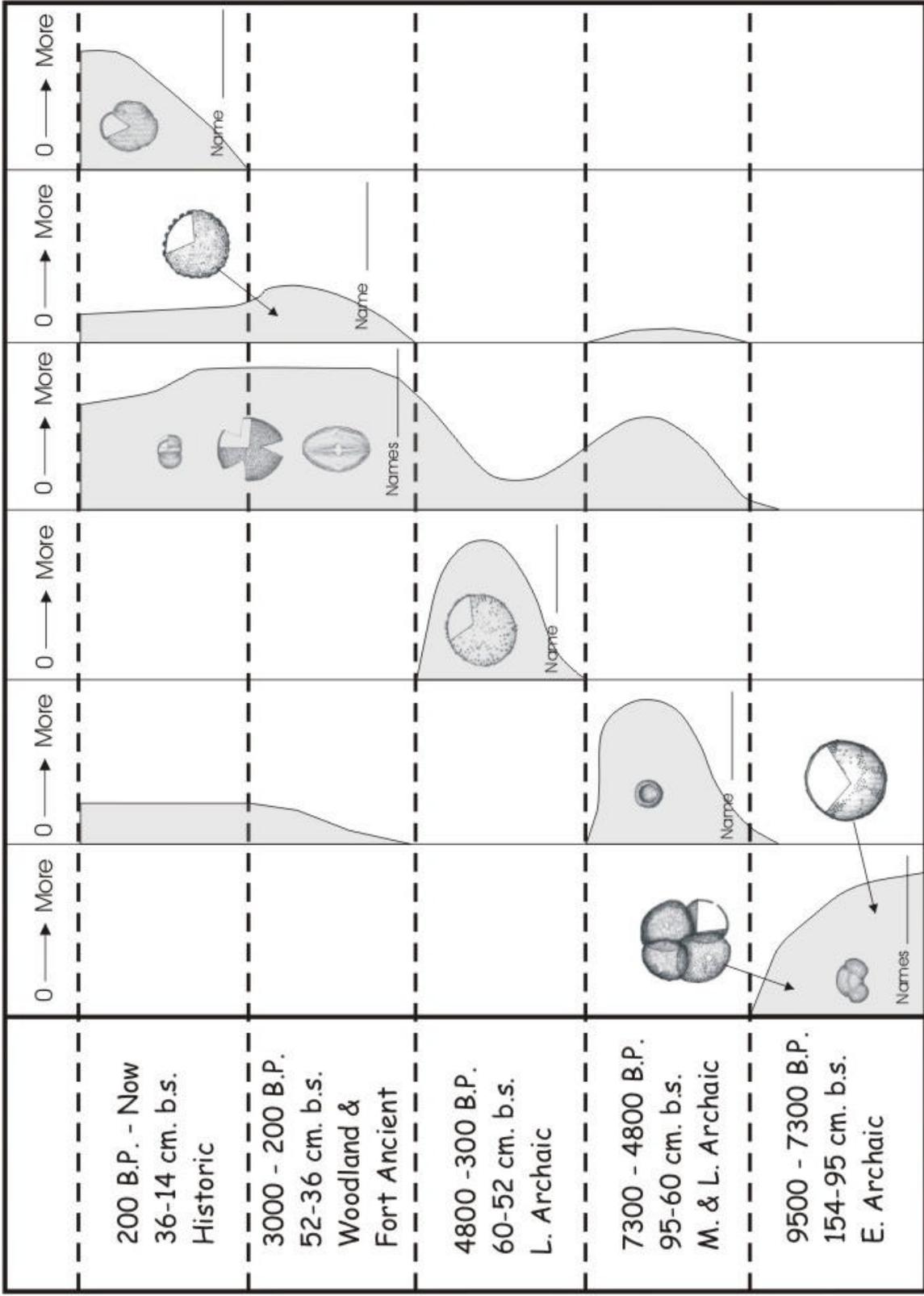
Assessment Suggestions: Assess students on the basis of their identification of the pollen grains and the application of their knowledge to interpreting the pollen change graph.

Extensions:

Read pages 7-9 in *Forests, Forest Fires, & Their Makers*. Ask students to compare and contrast the methods used by paleoecologists and archaeologists to develop a picture of the past at Keener Point Knob. Ask them to include at least three similarities and three differences.

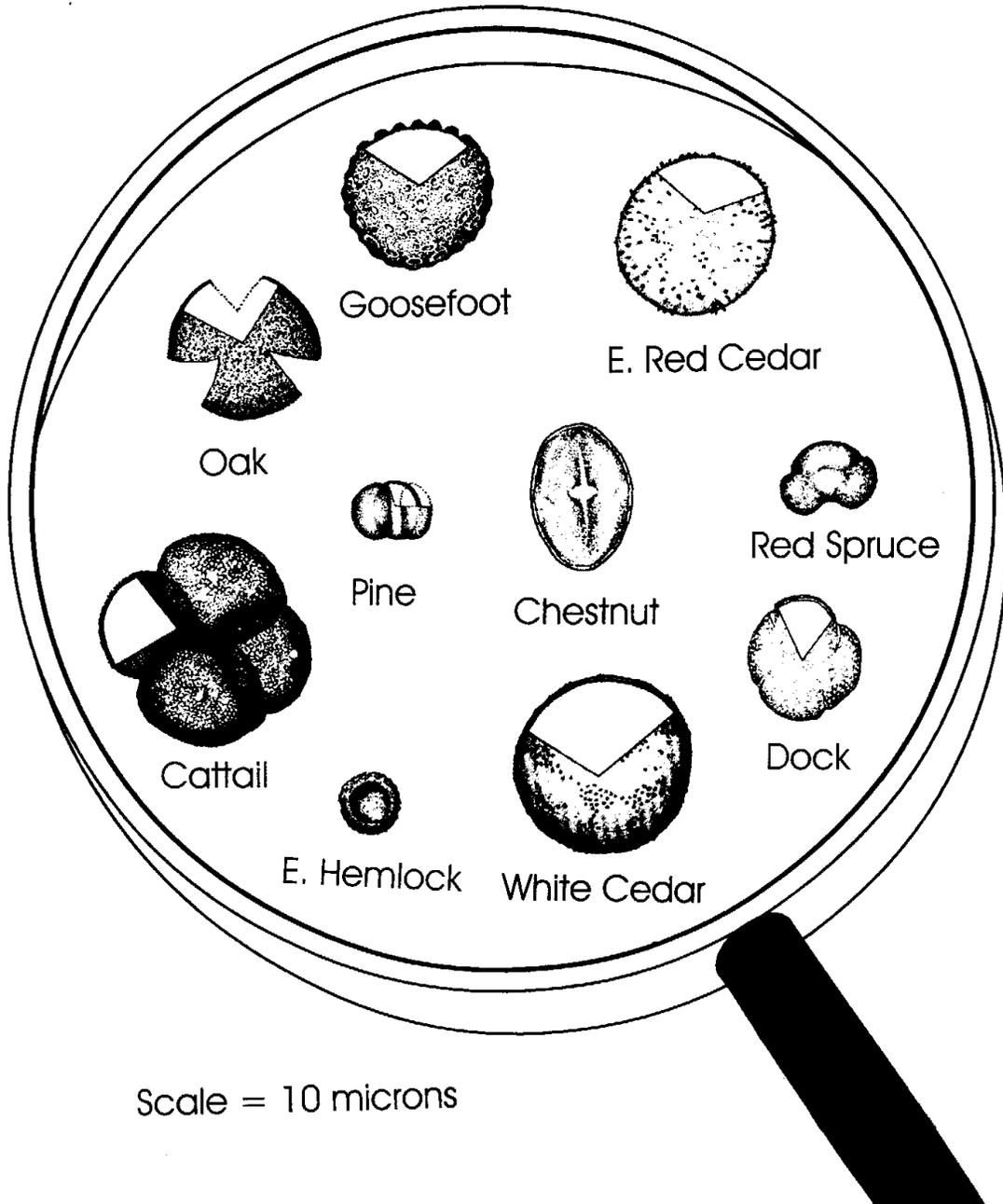
Pollen Changes Over 10,000 Years

Name: _____



B.P. = Before Present
 cm. b.s. = centimeters below water surface

Magnified Pollen Grains



Activity: Charting the Past

Note to the Teacher: Free, poster-sized “Kentucky Before Boone” posters can be ordered from the Kentucky Heritage Council (see **Resource List**).

Grade Level: 7-12

Time Required: 3 sessions of 45-60 minutes each

Curriculum Connections
(KY Academic Expectations):

1.1-1.4, 1.9, 1.10, 1.13, 1.16, 2.19, 5.1 – Students will

- use reference tools.
- make sense of things they read, observe, and hear.
- use mathematical ideas and procedures to communicate.
- organize information.
- make sense of ideas and communicate ideas through visual arts.
- use technology (optional).
- recognize the relationship between people and geography.
- use critical thinking and problem solving skills.

Materials: For each student:

1. Small “Kentucky Before Boone” poster handout.
2. “Cliff Palace Pond Profile” handout.
3. Page 10 from *Forests, Forest Fires & Their Makers* booklet.

For small groups:

1. *Ancient Fires* video.
2. *Forests, Forest Fires & Their Makers* booklet.
3. Poster boards, rulers, and basic art supplies.

Introduction: Distribute the three handouts and explain that each is a visual representation of the chronology of the past. Ask students to express what they like and dislike about each chart, stressing clarity, correlation of information, and visual appeal.

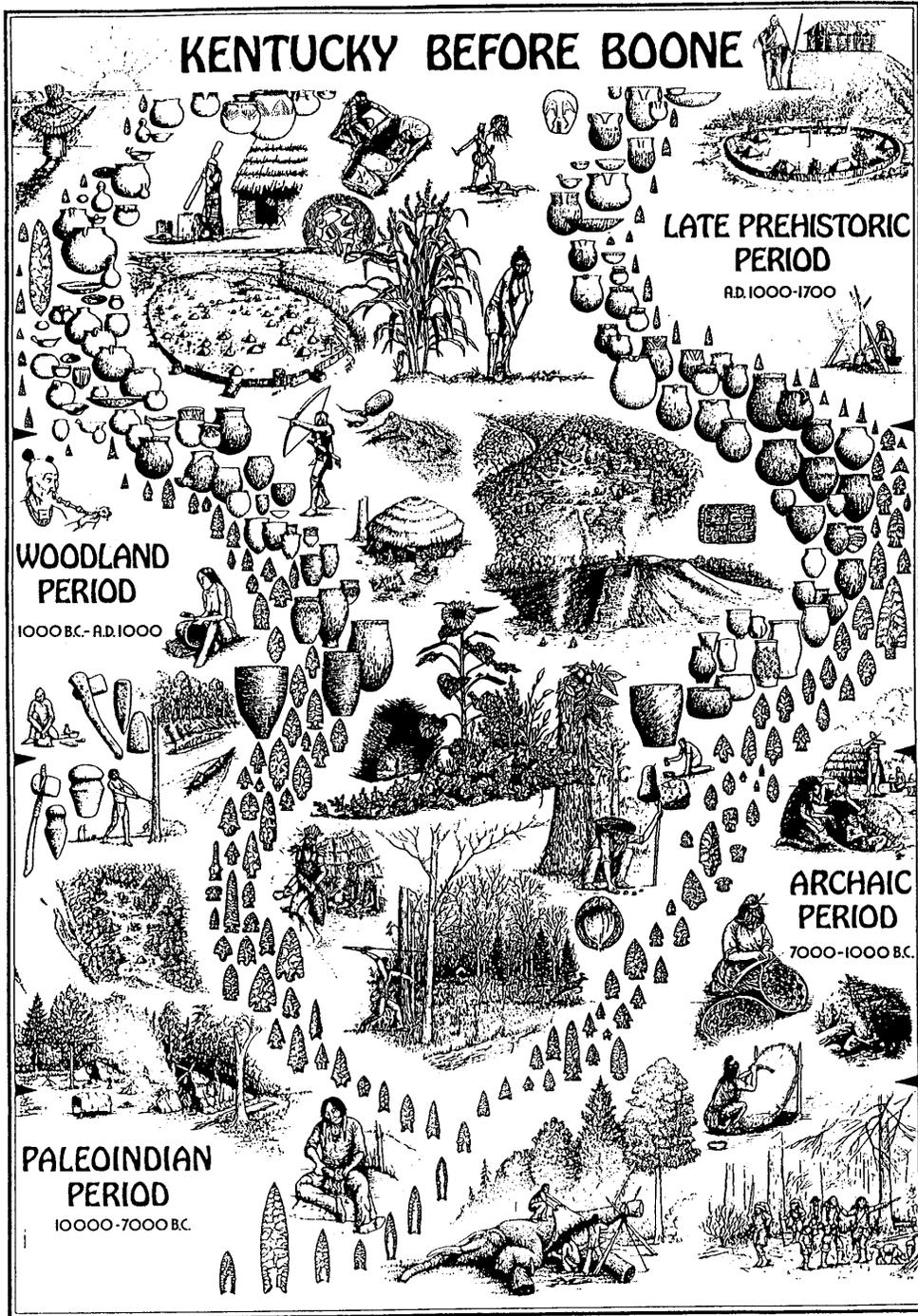
Procedure: Divide students into small teams and assign them the task of preparing a chart of the past that combines some of the information about Cliff Palace Pond in a new and appealing way. Provide them with poster boards, rulers (or yardsticks) and basic art supplies. Access to computers with graphing software is optional.

Ask each group to present their chart to the class, explaining what information they have shown and how it is displayed. Ask them to include a description of the process they used to create the charts.

Assessment Suggestions: Ask students to develop a rubric for scoring the posters before they begin work. This way, they will know exactly what is expected and can identify the elements of effective charts.

Extensions:

1. Ask students to make oral presentations for another class or to a group such as the SBDM team or the PTA.
2. Display the posters in the hall.



KENTUCKY BEFORE BOONE

LATE PREHISTORIC PERIOD
A.D. 1000-1700

WOODLAND PERIOD
1000 B.C. - A.D. 1000

ARCHAIC PERIOD
7000-1000 B.C.

PALEOINDIAN PERIOD
10000-7000 B.C.

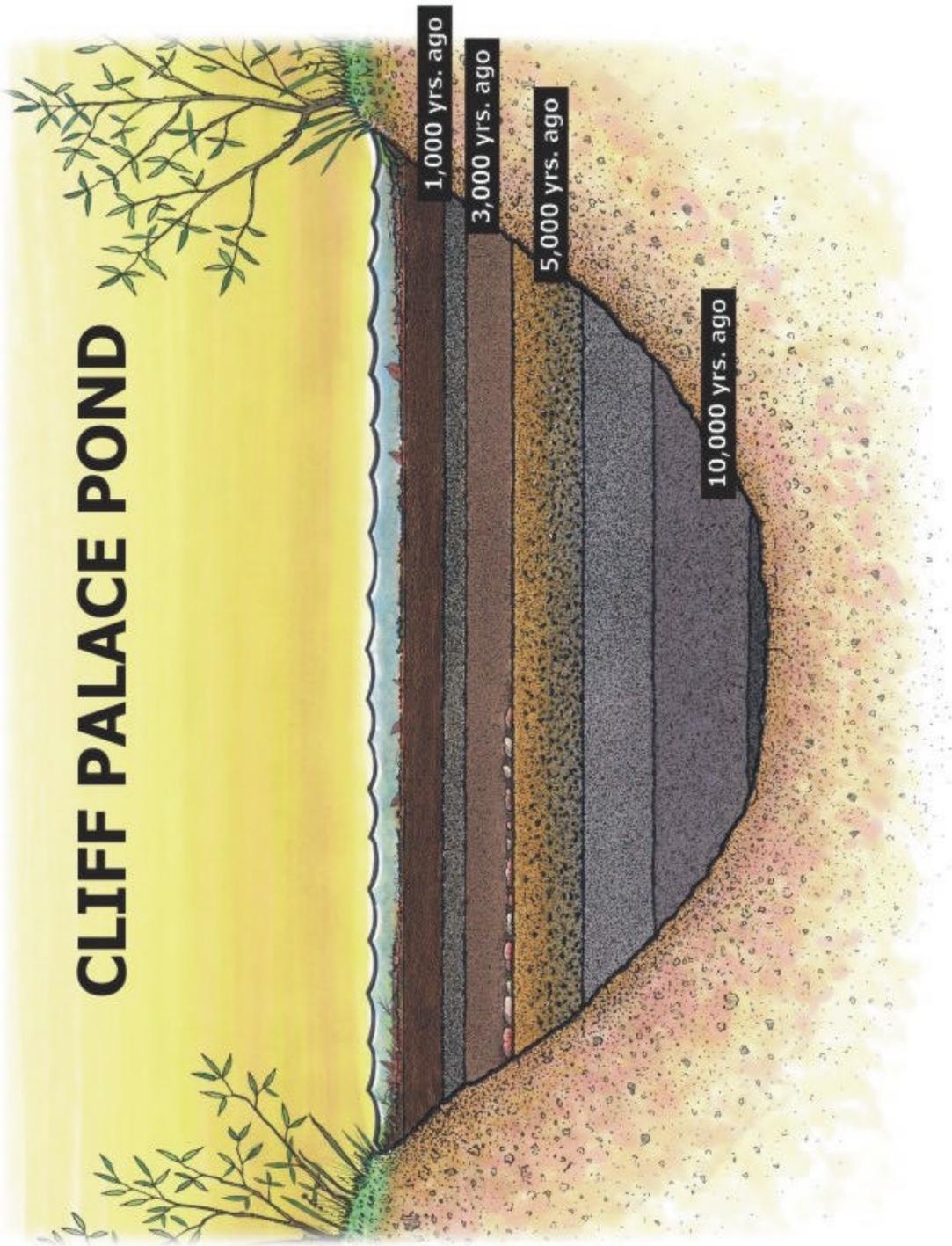
©1989 KENTUCKY HERITAGE COUNCIL
Design and Artwork: Jimmy A. Bailey

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Kentucky Heritage Council
State Historic Preservation Office
Frankfurt, KY 40601

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CLIFF PALACE POND



Activity: Changing Perceptions

Grade Level: 7-12

Time Required: 3 sessions of 60 minutes each

Curriculum Areas: Science, social studies, drama, language arts

Curriculum Connections
(KY Academic Expectations)

1.1-1.4, 1.11, 2.1, 2.20, 2.22, 5.1, 5.2 - Students will

- use reference tools.
- make sense of things they read, observe, listen to.
- write using appropriate forms for different audiences and purposes.
- understand scientific ways of thinking and recognize that scientific knowledge comes from empirical standards, logical arguments, skepticism, and is subject to change as new evidence becomes available.
- develop historical perspective.
- make presentations to convey a point of view.
- use critical thinking skills.
- use creative thinking skills.

Materials:

1. *Ancient Fires* video.
2. *Forests, Forest Fires & Their Makers* booklet.
3. Access to research materials.

Introduction: Research at Cliff Palace Pond has changed the way we view the early American Indian cultures that lived in the Escarpment Region of Eastern Kentucky. We now realize that these people did not live in a “virgin forest” but that they manipulated their environment for their own purposes. Similarly, other scientific and/or archaeological research has dramatically altered the way we view the past, from both an ecological and a human perspective.

Procedure (Session One): Ask students to identify how our understanding of the cultures of American Indians living in the region of the Daniel Boone Forest has been changed by the research that took place at Cliff Palace Pond. Ask them to think of other examples of how scientific research has changed the popular perception of the past.

Explain that they will work in teams to develop a short skit based on how scientific research has altered our ideas of the past. You may assign specific examples or allow students to make their own choices.

Student teams will conduct research to identify:

- the popular perception prior to the scientific research
- the scientific research and its

results

- the reaction of the public to the release of the research findings.

(Session Two): Student teams will develop a short skit based on their research. Skits could take the form of a discussion between people who do and do not accept the new ideas or of a scientist trying to convince someone of a new idea.

(Session Three): Student teams will present their skits for one another.

Assessment Suggestions: You might involve students in creating a rubric for scoring the skits based on how clearly they have presented the impact of the

new scientific research on popular perception. Is it clear what the new scientific findings are? Is it clear who conducted the research and what methods were used? Is it clear what previously held perception this research challenges?

By involving students in creating the rubric, you let them know exactly what is expected of them. You could allow the student audience to score the performances on the basis of the rubric.

Extensions:

1. Video the skits and allow teams to self-critique their performance, refine it, and present it a second time.
2. Collaborate with the language arts or drama teacher to refine the skits for public presentations or to develop plays from one or more of the skits.
3. Discuss how future research might radically change the ideas that we hold today. Develop a skit based on this futuristic research.

Activity: The Artist's Touch

Grade Level: 7-12
Time Required: Open, depending on desired results
Curriculum Areas: Social studies, visual arts
Curriculum Connections (KY Academic Expectations):
1.1-1.4, 1.13, 2.22, 5.1, 5.2 – Students will

- use reference tools.
- make sense of things they read, observe, listen to.
- make sense of ideas and communicate ideas using the visual arts.
- create works of art to convey a point of view.
- use critical thinking skills.
- use creative thinking skills.

Materials: For each student:
1. "The Artist's Touch" handout.
For small groups:
1. *Ancient Fires* video
2. Access to this website:
<http://www.state.ky.us/agencies/khc/cliff.htm>
3. *Forests, Forest Fires & Their Makers* booklet.
4. Access to art materials.

Introduction: This project can be done as a collaboration among science, art, and/or social studies teachers or by one teacher, but the focus should be on the use of art to communicate ideas based on solid research. You may elect to create murals on the theme of the video or on some entirely different theme.

Procedure: Ask students to recall the visual images that were part of the video. Watch the video again, drawing their attention to the paintings by Rex Robinson, or view the paintings on the *Ancient Fires* website: <http://www.state.ky.us/agencies/khc/cliff.htm>. Ask what they think the artist's paintings add to the video.

Ask students to read "The Artist's Touch" and to explain why the producer wanted to include an artist on the production team.

Explain that the class is going to divide into teams to create documentary murals depicting historic or prehistoric cultures. They will use a process similar to the one that Robinson used. In other words, they will need to do research to ensure that the mural they produce is accurate as well as artistically successful. You (or a

committee of collaborating teachers) will act as the advisory panel.

Assign the theme or allow students to select a theme. It is helpful to select a setting that they can actually visit to get a sense of place, but it is possible to work with photos if they are excellent and detailed. (You might arrange to visit an actual archaeological site in your community.) Teams will need to decide on the cultural group, period, and season for their mural and begin to do research. The research must include visual images as well as written information. Students should collect as many relevant images as possible from books, from the Internet, and from videos. They will find that some of the images present conflicting interpretations of the era they are trying to portray, so

they will need to come to a group consensus on what information they consider most valid.

The most important point at this stage is that students take the information and translate it in an original way instead of copying an image they have found. They need to produce a series of "thumbnail sketches" (small, rough sketches) and consider them as a group. Which give the best sense of the lifeways of the cultural group? How might they combine ideas from the various sketches that students have produced? What details could be added to emphasize important aspects of the culture? What should be the focal point of the final mural? Students should meet with their advisory panel to show their thumbnail sketches and explain how they plan to proceed to develop a concept sketch. Advisors should point out any inaccuracies or weaknesses in the plan and discuss this with the students.

Students will then work together to develop a concept sketch. The concept sketch will give the broad idea of how the finished piece will appear, but it does not have to be perfectly detailed or drawn to scale. The group should meet with the advisory panel again to get approval for the accuracy of their concept before proceeding. Students should also analyze their concept sketch from an artistic point of view and refine it, considering how the principles of design are used to move the viewer's eye through the composition.

The next step is to produce a concept design, which contains the details and is drawn to scale. The students can then transfer the design to the wall or other surface by enlarging mechanically (using an overhead projector), or by square gridding the design to match a larger grid on the wall, or free hand.

After the major lines are on the wall, students can begin adding color and value. Painting is not difficult if students develop good work habits and approach the work sequentially, starting with the background and working toward the foreground. For large areas, they should use larger brushes, for details, sharp pointed brushes. Robinson gives the following advice to students:

- Dip the brush into the paint half way up the hairs of the brush and rake it off on the inside of the can.
- Take the brush like an elevator up to the wall.
- Pat the paint on to the wall toward the center of the outlined area to unload the brush.
- Use the brush to pull the paint outward from the center to cover the outlines.
- Fill one area at a time. Some areas will have flat color and should be smoothed to the same value. Others will show a gradation from one color to another or through different values of the same color.
- Add more information to your painting by creating texture, either with brush handling or with sponges.
- Use the devices artists use to create a sense of depth such as overlapping and scale, with closer objects appearing larger. To give the impression that certain areas (like mountains) are further away, add more sky color to areas that are farthest away.

- The details and foreground are the last efforts and can make a great difference in creating focal areas and a sense of depth.

When the work is complete, ask each group to make a short presentation for the other groups explaining what their mural represents.

Assessment Suggestions: Work can be assessed in three areas: accuracy in terms of the subject matter, successful use of the elements of art and principles of design to communicate an idea, and the success of the collaboration.

Extensions:

1. If you make a video, the mural can be incorporated into the video.
2. Have a reception to unveil your mural and honor the artists.
3. Have students write historical fiction using the mural as the setting.
4. Reenact an historical event using the mural as a backdrop.

The Artist's Touch

When Tom Law, producer for Voyager Media Group, Inc., began work on a series of video shorts about the prehistory of Kentucky, he knew that he wanted to include original paintings as well as artifacts, live action, and archival photos in his videos. "I feel an artist's rendering remains the best way to illustrate what archaeologists know about the past and to put a human face on stories often told through inanimate objects such as spearpoints," Law says. "The artist's rendering provides the context for the story we tell, illustrating the way ancient peoples interacted with each other and their environment."

Law contacted Rex Robinson, a painter with a wealth of experience in creating images of the past. With partial funding from the Kentucky Arts Council, Robinson took on the task of painting images that could be blended into the video. It was a challenging undertaking because the images not only had to be compelling, but they also had to be accurate. Robinson spent many long hours meeting with the video advisory panel, a team of archaeologists who monitored the entire process for accuracy.

"It sounds like it might be a stifling experience to create historically accurate paintings," says Rex Robinson, "but I enjoy the special challenge of creating an image that is realistic. To me, visiting a prehistoric site and learning about it is like a time machine experience. I absorb all that I can about that place and what is known about the people who lived there in some ancient time. It is as if I am transported back in time and can see the past. My goal as an artist is to celebrate that vision and share it with others through my paintings."

Once the paintings were complete, Law considered how to blend them into the video in the most effective way. "Robinson placed a red-tail hawk in the foreground of the 'bird's-eye' view panel, which provided a perfect visual transition into a wide or establishing shot of the Keener Point Knob plateau," says Law, adding, "The viewer becomes the hawk."

The paintings add a dimension of humanity to the video that could not be accomplished any other way. "The accuracy of these artist's renderings is critical because they will be published in other mediums, from websites to books." Tom Law adds, "Computer animation is a wonderful tool for the reconstruction of ancient structures such as earthworks, pyramids or villages. However, quality computer animation is very expensive. And, even if we had the money, I feel traditional artist's renderings remain the best way to illustrate human expressions, group dynamics and individual dress - no matter if the subject is an ancient people or your own family today."

Activity: Creative Writing

Note to the Teacher: Before introducing this activity, make sure that your school library has several folktales or myths about how humans (or animals) obtained fire. Several tales are listed below, but there are many others. Some collections of folktales contain stories about the origin of fire. You might also want to check at elementary school libraries, as many folktales have been retold as children's picture books.

<p>Grade Level: 7-12</p> <p>Time Required: 2-3 sessions of 60 minutes each (more if you want to allow time for revision)</p> <p>Curriculum Areas: Language arts, social studies</p> <p>Curriculum Connections (KY Academic Expectations): 1.2-1.4, 1.10, 1.11, 2.26, 5.1, 5.2 – Students will</p> <ul style="list-style-type: none">• make sense of things they read, observe, listen to.• organize information.• write using appropriate forms.• through the arts and humanities, students recognize common human experiences and attitudes.• use critical thinking skills.• use creative thinking skills. <p>Materials:</p> <ol style="list-style-type: none">1. Access to folktales and myths.
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Introduction: With your students, review the importance of fire to the early inhabitants of Eastern Kentucky. Discuss additional ways that fire is used today. Explain that the use of fire began so far back that no one knows exactly how people first learned to make fire, but that most cultures have stories about how fire came to the people. In some cultures, this is supposed to have happened in a time when people and animals spoke to one another.

Procedure (Session One): Tell students that you want them to do library research to find folktales or myths that explain how people obtained fire. These can be from Native American cultures or from other world cultures. Depending on how many resources are available, you may assign students to work in teams. Ask students to read two different tales

about the origin of fire and to make a Venn diagram comparing and contrasting the tales.

(Session Two): Review the Venn diagrams made by students and consider the similarities and differences of tales from various cultures. Can you identify any elements common to several tales? To a majority of tales? Which tales include animals that act like humans? Which tales include elements of trickery or thievery? What are some of the significant differences among tales?

Ask students to imagine what life would be like without fire on earth. How would our culture and our technology be different?

Ask students to write their own tale about how people obtained fire. This can be based on their idea of how it might really have happened, or it might be highly imaginative.

Assessment Suggestions: Assess as you would any writing assignment.

Extensions:

1. Allow further time to develop and refine stories.
2. Invite a guest to your classroom who can demonstrate early fire making technology.
3. Take students on a field trip to the Living Archaeology Weekend at Gladie Creek. For information, contact Johnny Faulkner, Stanton Ranger District, Daniel Boone National Forest at 606-663-2852. Or visit the Forest's Website at <http://www.r8web.com/boone.htm>

Folktale Resource List

The Theft of Fire Curriculum Unit, produced by the Klamath Trinity Joint Unified School District's Title V Indian Education Program, is available from OYATE, 2702 Mathews Street, Berkeley, CA, 94702. Phone: 510-848-6700.

<http://www.oyate.org>

"Story of Light" video, featuring students of Cherokee Elementary School, is available from Cherokee Museum, Cherokee, NC, 28719. Phone: 828-497-3481.

<http://www.cherokeemuseum.org>

Listed below are several books that are good sources of folktales about fire. If not available in your school's library, all of these books are available from

<http://www.amazon.com>

1. *Eleven Nature Tales: A Multicultural Journey* by Pleasant DeSpain ("Starfire," a traditional story from Zaire). August House Publishing, Little Rock, AR.
2. *Coyote and the Firestick: A Pacific Northwest Indian Tale* retold by Barbara Diamond Goldin. Harcourt Brace.
3. *Fire Race: A Karuk Coyote Tale of How Fire Came to the People* by Jonathon London, Lanny Pinola, and Julian Lang. Chronicle Books, San Francisco, CA.
4. *Grandmother Spider Brings the Sun: A Cherokee Story* retold by Geri Keams. Rising Moon Publishers.
5. *Nanabosho Steals Fire* by Joseph McLellan. Pemmican Publishing.
6. *When the World Ended, How Hummingbird Got Fire, How People Were Made, Rumsien Ohlone Stories* by Linda Yamane. Oyate, Berkeley, CA.

Also search for stories about Prometheus in collections of Greek mythology.

Activity: Making a Video Documentary

Note to the Teacher: You could present this activity 1) as a simple, one-session activity (outlined in Session One) to help students consider what goes into making a video documentary, or 2) you could actually involve students in making a finished video production.

Grade Level: 7-12
Time Required: Open
Curriculum Areas: Social studies, technology, language arts
Curriculum Connections
(KY Academic Expectations
1.2-1.4, 1.13, 1.16, 1.9, 2.22, 5.1, 5.2, Goal 6 – Students will

- make sense of things they read, observe, listen to.
- make sense of ideas and communicate ideas using the visual arts.
- use technology.
- use mathematical ideas to solve problems.
- create works of art to convey a point of view.
- use critical thinking skills.
- use creative thinking skills.
- integrate knowledge and experiences.

Materials:

1. *Ancient Fires* video.
2. *Forests, Forest Fires & Their Makers* booklet.
3. "Making *Ancient Fires*" handout.
4. "Storyboard" activity sheet.
5. Access to a video camera.

Introduction: After watching the video, distribute "Making *Ancient Fires*" to students. Allow time for them to read it.

Procedure (Session One): Distribute "Storyboard" activity sheets to students. Explain that they are going to analyze the "layers" in the opening minute of the video by creating a storyboard. In the boxes, they should draw a rough sketch of the image seen on the screen and underneath it, they should write the words that are said or describe the sounds or music they hear. Tell them they will begin with the first scene of burning leaves and continue through the aerial shot with the narration ending "in order to protect this beautiful and rugged landscape."

They may work in teams, with some students responsible for noticing sounds, others for transcribing the narration, and others for noticing the sequence of images. You will have to replay the first minute of the video several times to allow students to capture everything.

(Following Sessions): Decide how much time you want to allot to the

video project and then discuss with students what must be done to accomplish the job. You may select the topic or allow students some input into this decision. You should choose a local subject, whether your video is going to be about ancient peoples or historic archaeology. Think in terms of producing a 3-5 minute documentary short.

Lead a discussion about what jobs must be done and assign roles or ask for volunteers.

You will need an advisory panel of “experts.” This can be four students who should research the topic from different perspectives, as “experts” in various fields. This group will advise the production team on what is needed to tell the story. They also may appear in the documentary (You may also be able to bring in some real experts from the community.)

You will need a producer, someone to keep everything organized and everyone on task. You may take this role yourself or assign a student. You may want to have one or more assistant producers.

You will need a director of photography, an audio assistant and a production assistant for fieldwork. Because you will not have access to a huge collection of “stock” photos and recorded sound effects to draw upon, you may select several students to collect images and sounds. You may want to use artifacts or photos of artifacts. (If you did the mural project, you could use that as part of your imagery.)

You will need a scriptwriter or a team of writers.

You will also need an accountant. Even though you won’t actually have to pay your panel of experts or other “personnel,” it is a good idea to assign fees and come up with a budget. This not only provides practice in business and math skills, but also provides a framework for the project. You cannot spend more than you have in your budget. This means that you will have to make some hard choices as you produce your video, just as real producers must do.

The first step is to have a planning meeting and to develop a work schedule. Discuss what is most important to include and what resources you have at hand. Decide what must be done and when and assign preliminary tasks. You will need several planning sessions as the work progresses.

If you have no editing equipment, you will have to shoot your entire video in the camera. This requires very careful planning. Have students use storyboards to present ideas for discussion and to line out exactly what will happen in the video, matching visual images with narration, sound effects, and music where appropriate. (Assign one student to check on copyright clearances.)

When you are shooting on site or doing interviews, you will need to pay very close attention to background noises, which can ruin a video. Even noises that you often overlook (like an air conditioner or fan) can cause serious problems. You will want to send your producer and audio assistant to scout the location before the actual filming so that they can decide how to handle any noise problems. You also need to consider good lighting and what makes a good back drop.

Think stylistically. Decide whether you are going to hear the interviewer on camera (as in a hosted video) or whether the video will be narrated (where the interviewer is not on camera.) Make sure people who are being interviewed are ready. Have them practice before the interview is filmed.

Remember that good lighting and clear sound are vital to a good video. It is best to keep the filming techniques simple. Don’t try to get too complicated

with zooming in and pulling out. It is often best to leave camera steady (a static shot) and let the content drive the video.

If you do have access to editing equipment, you will want to provide yourselves with a selection of shots to choose from. Shoot wide, medium and close up to give choices in editing. Do not forget the importance of an establishing shot, one that sets the scene and provides information. If you have the equipment to do it, insert name keys or identification keys. These can save you time in your narration.

Be sure to include final credits, listing not only the students but also school staff and community members who contributed their time or expertise. If you are shooting without editing equipment, you can simply write this on a large poster board and scroll down.

When the video is complete, have a "premier showing" and invite another class, school staff, and/or parents and community to see it.

Assessment Suggestions: Each student should be assessed on the basis of how well and how promptly they complete their assignments. (You will need some flexibility in this because it is often difficult to determine in advance how difficult a certain assignment is going to be.)

Extensions:

1. If possible, broadcast your video over the school system and/or have it shown on a local cable television station.

Making *Ancient Fires at Cliff Palace Pond*

Tom Law is a producer of video documentary films, including *Ancient Fires at Cliff Palace Pond*. He believes that his subjects should be presented in an accurate, engaging, and honorable manner. When working on a documentary about native peoples and archaeology, he always works with a panel of experts in the field and seeks additional advice from American Indians. "It is vital in the type of work that I do to respect what experts, advisors and native people are telling you," Law says.

"Most documentary projects, especially those using public funds, have about three intertwined phases," explains Law, "planning, research and script development, and production and distribution. The planning phase defines the project, the audience, the subject matter and the issues. The research and scripting phase ends with a 'working script,' which often includes the narration, lists of potential images, lists of potential sounds and music, as well as comments from informational interviews (off camera) with experts. The production and distribution phase includes all the rest - field production, final script reviews, graphics, editing, support materials (viewer/teacher guides and website design), distribution and publicity plans."

The field production work, in this case, was done at Cliff Palace Pond, a remote site in the Daniel Boone National Forest. "Cliff Palace Pond was the most beautiful and challenging site to document on videotape," says Law. "We videotaped the pond and rockshelters at various seasons, shot aerials from a helicopter during regular USDA Forest Service flights, and had a full crew on hand to shoot site interviews with Cecil Ison and Rex Mann on a glorious day in October."

The "full crew" included Director of Photography, Beth Fowler, Jim Prues, the audio assistant (who concentrated on audio aspects of the shoot), and Randy Embertson, production assistant. Embertson's main responsibility was handling the "Jimmy jib", a twenty-foot long pole that is used as a camera mount to capture such scenes as archaeologist Bill Sharp walking up the ancient stairs carved into the cliff face.

Once the script was in its final form and the field production was complete, Law began to edit the materials to create the finished video. Because he has access to non-linear editing equipment, he can freely manipulate the audio and video materials. First he recorded the narration and interviews and then began to "layer" visual cover shots to illustrate the interviews or narration. "Then I started fine-tuning it with additional music, sound effects, and natural sounds. When I edit, I think in terms of layers and how all those different elements can blend together to clearly convey meaning. I am looking foremost for clarity."

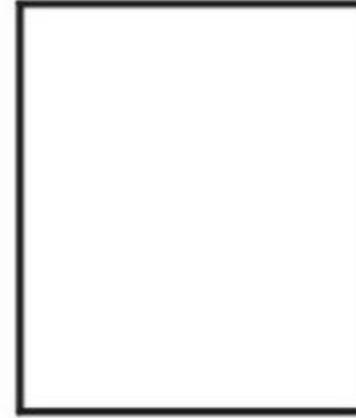
STORYBOARD



1. _____



2. _____



3. _____



4. _____



5. _____



6. _____

Activity: Focus on Careers

Grade Level: 7-12
Time Required: 2 sessions
Curriculum Areas: Practical living/vocational skills, language arts

Curriculum Connections

(KY Academic Expectations

1.2, 1.11, 1.16, 5.1, Goal 6 –

Students will

- make sense of materials they read.
- write using appropriate forms.
- use technology.
- use critical thinking skills.
- integrate knowledge and experiences.

Materials: For each student:

1. "Hazel R. Delcourt, Paleoecologist" handout.
2. "Rex Robinson, Artist" handout.
3. Copy of pages 5-6 from *Forests, Forest Fires & Their Makers* booklet.
4. *Ancient Fires* video.
5. Access to the Internet or other resources for conducting career research.

Introduction: After watching the video, ask students to make a list of all the careers of people who were involved in the research at Cliff Palace Pond and the people who were involved in the production of the video. Have students check their lists against the credits given in the video.

Procedure (Session One): Distribute "Hazel R. Delcourt, Paleoecologist" "Rex Robinson, Artist", and a copy of pages 5-6 *Forests, Forest Fires & Their Makers* to students and allow time for them to read the pages. Ask students to respond to the following prompt:

Both Hazel Delcourt and Rex Robinson are pursuing careers based on interests that they formed early in life. What are some of your hobbies and interests? What careers might allow you to pursue these interests?

If necessary, assign completion for homework.

(Session Two): Ask students to research careers in the arts or in the sciences and to write a brief report on one career that they find interesting.

The report should include information

about job opportunities in the field, potential earning range, required education, and skills needed.

You may add a third session to allow students to present their findings to each other.

Assessment Suggestions: Assess as you would any career exploration assignment.

Extensions:

1. Invite scientists or artists to visit your class and talk about their careers.
2. Take students on a visit to a museum of arts and science. If possible, arrange a visit with the director.

Hazel R. Delcourt, Paleoecologist

Dr. Hazel Delcourt is a paleoecologist and a professor in the Department of Ecology and Evolutionary Biology at the University of Tennessee in Knoxville. Her husband, Dr. Paul Delcourt, is also a professor and paleoecologist. The couple shares a fascination with the landscapes and ecosystems of the past. Like detectives, they study microscopic “clues” like tiny fossilized pollen grains and minute bits of charcoal ash to understand how ecosystems evolved and changed over time.

“My interest in plant ecology began as a young girl growing up along the shore of Lake Michigan, where I enjoyed the sand dunes, their development, and their plant and animal life,” explains Dr. Hazel Delcourt. “Paul gained an interest in ecology/paleoecology as an undergraduate student studying the vegetation of Davis Lake bog in central Michigan. He was influenced by a particular teacher, Dr. Ron Kapp of Alma College, whose enthusiasm for the subject was contagious.

“When we went to graduate school together at Louisiana State University, Baton Rouge, we studied different aspects of the same study area, the Tunica Hills of southeastern Louisiana. I was interested in the flora and plant geography, and Paul began to study the plant fossils preserved in stream terrace deposits. We were drawn to the area by reports of strange intermingling of northern and southern plants and animals, both today and in the past, and we became intrigued to solve a series of unfolding mysteries about past and present landscapes in the southeastern United States.

“The most satisfying part of our work in paleoecology is in applying what we have learned about the past to understanding the present and to preserving biological diversity into the future. From our studies in Quaternary paleoecology, we know that during times of rapid climate change, the ecological cards are shuffled, resulting in new combinations of plants and animals in a dynamically changing world. In the future, our ecosystems will be imperiled because global and regional climates are now changing at a rate unprecedented in earth history.

“Our advice for high school students who might be interested in a career in ecology or paleoecology is to learn as much math and science as available in their high school college prep track. In college, a liberal arts background gives a broad perspective, and a major in biology or geology can prepare a student for studying ecology, paleoecology, or paleontology. A major in anthropology or archaeology can lead one in the direction of environmental archaeology, if a minor in biology or geology or a double major is obtained. High school students can seek out summer research opportunities with field crews in archaeology through nearby community colleges or universities. College students can find some great summer field camps in biology or geology.”

Dr. Hazel Delcourt is presently writing a book entitled “Reading Landscapes of the Past” for McDonald and Woodward Publishers.

Rex Robinson, Artist

Rex Robinson, born in Madisonville, Kentucky in 1952, is considered by many people to be one of Kentucky's most talented artists. He has always had a special interest in depicting the history and sociology of his native state.

"When I was in the eighth grade," Rex recalls, "I planned to be an anthropologist or a museum director because of the great interest I had in nature and science. As I progressed through high school, I found that, while my interest in history, nature, and science continued to grow, my deepest interest was in using art as a way to respond to the world around me and to create visions of the past. I'm fascinated by the way things look. I began in high school documenting the heritage of my community."

Soon after graduating from Wesleyan College with a degree in art education, Robinson had the opportunity to expand his interest in documenting the life and heritage of his birthplace. Through a government grant, he was commissioned to produce fourteen large paintings illustrating life in a seven-county region. The paintings were exhibited in the Louisville Speed Museum and the Evansville Museum of Arts and Science before becoming permanent exhibits in the public buildings of the seven counties.

"My first opportunity to work for a museum came when the Owensboro Museum of Science hired me to paint the background for a diorama of Archaic Indian life," Rex says. "Since then I've been involved in the creation of over sixty murals in museums, schools, corporations, and residences. I especially like working with museum directors. I have a great deal of freedom to be expressive, but at the same time a responsibility to be accurate. I do research and become absorbed in the information. I enjoy being monitored by people I respect, who are so full of knowledge and anxious to share that with others."

Rex has won numerous awards and has shared his love of painting with students all over the state of Kentucky as an artist-in-residence with the Kentucky Arts Council and as a continuing education art instructor at Owensboro Community College. He recently earned his Master's Degree in Art Education from Western Kentucky University.

Rex's advice to students who are interested in art is to "start to form your own personal creative identity. Open up and scan back through history and study the artists of the past and present. Find ten artists or works that totally amaze you and learn all you can about them. Go to museums and studios, read about approaches to art in magazines like *The American Artist*, take every workshop and art class possible and try to develop relationships with mentors. Then sift through those approaches, try them, identify with them, build on them, and develop a synthesis of your own likes. Pay attention to light and the way that it brings out form and texture. Be creative (express yourself) every day. We are all art students forever, and if you're not practicing every day, you're not a very good student. We are each personally responsible for our own creative development. Education degrees are necessary to teach art, but not to create it. Many artists build their careers on the basis of their experience and creativity."

Glossary of Fire Terms

Surface fire - A fire burning along the surface without significant movement into the understory or overstory, with flame length usually below 1 meter (3.3 feet).

Understory fire - A fire burning in the understory, more intense than a surface fire and with flame lengths of 1-3 meters (3.3-9.8 feet).

Crown fire - A fire burning into the crowns of the vegetation, generally associated with an intense understory fire.

Prescribed fire - A fire ignited under known conditions of fuel, weather, and topography to achieve specific objectives.

Prescribed natural fire - A fire ignited by natural processes (usually lightning) which is allowed to burn within specified parameters of fuels, weather, and topography to achieve specific objectives.

Wildfire - A fire, naturally caused or caused by humans, that is not meeting land management objectives.

Fuel load: Standing or fallen dead trees that will catch fire easily.

Fire suppression: Forest management that includes putting out wildfires.

Fire exclusion: Fire suppression without the balancing use of prescribed burns.

Fire tolerant: Species of trees that are slow to burn under normal conditions, such as pine, oaks, black walnut, and chestnut.

Fire intolerant: Species of trees that will catch fire more quickly and do not recover well after forest fires, such as red maple, sassafras, basswood, beech, and Eastern hemlock.

Fire dependent: Species of plants that thrive best in areas with regular, low intensity fires that open light gaps in the forest and increase the rate at which nutrients are returned to the forest soil. These plants are often the first to appear after a forest fire. They include such food-producing shrubs as blueberry and huckleberry.

Resource List

Curriculum Materials

Many curricular resources are available from the **Kentucky Archaeological Survey**. You may contact the Survey at 1020-A Export Street, Lexington, KY, 40506-9854, call them at 859-257-5173, or email your request for information to Gwynn Henderson, the Survey's Education Coordinator:
aghend2@pop.uky.edu

Selected curriculum materials of interest available from the **Survey** include the following:

1. ***Culture History of Kentucky Coloring Book*** by Virginia G. Smith contains line drawings of Indians at work and of the items they used in daily life throughout the 12,000 years of Kentucky prehistory.
2. ***Columbian Kentucky*** by Vicky Middleswarth is a two-week lesson plan developed, in part, from actual archaeological research at prehistoric sites in Kentucky. To be used as a companion activity program with ***Kentuckians Before Boone*** (see **Archaeology Books for Kids** section below). Subjects covered include native games, foods, clothing, burial practices, and houses. Includes resource lists.
3. ***Guidelines for Evaluation of Archaeology Education Materials*** by the Society for American Archaeology Public Education Committee. A very good resource. Good discussion of the purpose and benefits of archaeology; discusses major misconceptions about archaeology and archaeologists; and outlines concepts essential to understanding archaeology. Provides a three-part guidelines section for evaluating existing archaeological education materials and in developing new ones (i.e., minimal information, archaeological method and theory, and educational/curricular elements).
4. ***Native Peoples, Continuing Lifeways Teacher Resource Packet***, edited by Stephanie Darst and David Pollack, contains an array of materials about Kentucky prehistory and American Indians. It includes a Teachers' Guide to the "Kentucky Before Boone" poster used in **Charting the Past** in this Companion Guide; a discussion of four widespread misconceptions about Kentucky's American Indians; an outline of the similarities and differences between the Late Prehistoric Mississippian peoples in western Kentucky and the Fort Ancient peoples in central Kentucky; a discussion of American Indian oral traditions; and sections about native basketry traditions, music, language, and plant foods. Each packet also contains classroom applications, lists of available resource materials and persons; places to visit; and

teaching/assessment strategies prepared by teachers keyed to particular outcomes specified by the Kentucky Education Reform Act (KERA).

5. ***The Native Peoples of Eastern Kentucky: An Integrated Thematic Unit Based on Local Prehistory*** by Judy Sizemore and A. Gwynn Henderson is divided into eight different sections that touch on archaeology, local and state-wide prehistory, prehistoric technology, site stewardship, and unlearning American Indian stereotypes. The 14 classroom-tested lessons, activity suggestions, and accompanying content materials integrate social studies, language arts, science, math, and arts & humanities subjects. In addition to the printed guide, the unit includes pictures (either as slides [n=21] or as slide images on a videotape) of people demonstrating prehistoric technology such as stone tool making, pottery making, and cooking; and of archaeologists at work in a rockshelter in Eastern Kentucky, showing field techniques (digging, troweling, screening, taking notes).

The **Survey** also produces a series of short booklets written for the general public on Kentucky archaeological sites and topics. ***Forests, Forest Fires, & Their Makers: The Story of Cliff Palace Pond, Jackson County, Kentucky***, used throughout this Companion Guide, is Number Four in the series. Other booklets include:

1. ***Slack Farm and the Caborn-Welborn People***, by David Pollack, Cheryl Ann Munson, and A. Gwynn Henderson, which describes the lifeways a village farming society that lived in western Kentucky from about A.D. 1400-1700 and presents information about the looting of the Slack Farm.
2. ***Mute Stones Speak: Archaic Lifeways of the Escarpment Region in Jackson County, Kentucky*** by William E. Sharp and A. Gwynn Henderson, which describes the lifeways of hunters and gatherers who lived in Eastern Kentucky 8,000 years ago and discusses how archaeologists learn about the past from the artifacts people left behind.
3. ***Prehistoric Hunters and Gatherers: Kentucky's First Pioneers*** by Leon Lane, Eric J. Schlarb, and A. Gwynn Henderson, which presents a new explanation for how Paleoindian and Early Archaic peoples colonized and settled the mountainous portions of Cumberland and Clinton counties.

Curricular materials and items of interest from **Other Sources** include the following

The Theft of Fire Curriculum Unit, produced by the Klamath Trinity Joint Unified School District's Title V Indian Education Program, which is available from OYATE 2702 Mathews Street, Berkeley, CA, 94702. Phone: 510-848-6700.
<http://www.oyate.org>

Project Learning Tree – The Changing Forest: Forest Ecology

For information, visit the Project Learning Tree website at <http://www.plt.org> or contact the Kentucky State Coordinator: Gwen Holt, Kentucky Division of Forestry, 627 Comanche Trail, Frankfort, KY, 40601. Phone: 502-564-4496.

Appalachian Literature, Appalachian Culture: Literature-based Cross-curricular Activities for the Primary and Intermediate Classrooms by Judy Sizemore and Ginny Eager. One hundred classroom activities linked to particular examples of Appalachian literature (contemporary Appalachian writers and books with Appalachian themes) tried and tested by teachers and library media specialists. Two chapters deal with books about American Indians: Chapter 12 Kentuckians Before Boone by A. Gwynn Henderson and Chapter 13 Itse Selu: Cherokee Harvest Festival by Daniel Pennington (listed in the **Archaeology Books for Kids** section). Published by Forward in the Fifth, 433 Chestnut St., Berea, KY, 40403. Web page <http://www.fif.org> Phone 606/986-3696. Available from Harmony House Publishers, 1002 Kent Road, Goshen, KY, 40026. Phone 1-800-809-9334

Archaeology and You by George E. Stuart and Francis P. McManamon is a great introductory on-line booklet to the field of archaeology. It provides a brief discussion of archaeology in America, covering basic information about the science of archaeology, archaeological terminology and some of the more spectacular sites. It touches on archaeology as a career and how the law affects archaeological work and contains a bibliography of related readings and other materials available. It contains links and lists of other great sources of archaeological information, and suggestions for those who would like to volunteer on projects or who are thinking about a career in archaeology. The address is <http://www.saa.org/whatis/arch&you/cover.html>

You can get a copy of **Intrigue of the Past: A Teacher's Activity Guide for Fourth Through Seventh Grade**, the curriculum guide for *Project Archaeology* and the unit from which **Pollen Analysis** in this Companion Guide was adapted, from the Megg Heath, Imagination Team, BLM Heritage Education Program, Anasazi Heritage Center, P.O. Box 758, Dolores, CO, 81323. Phone: 970-882-4811. It is an excellent curriculum guide that may be used in its entirety or as supplemental material. Consists of 28 classroom-tested lessons supporting social studies, science, art, language arts, and math curricula using archaeology as the focus. The Guide is divided into three parts (Fundamental Concepts, the Process of Archaeology, and Issues in Archaeology) and includes appendices and vocabulary. Their web address is <http://www.co.bim.gov/ahc/projectarch.htm>

Kentucky Before Boone Poster by Jimmy A. Railey. Detailed black and white line drawings on this poster (used in **Charting the Past** in this Companion Guide) illustrate all aspects of Kentucky prehistory from the very earliest hunter-gatherers to the most recent native farmers. It includes time-specific scenes, activity scenes, and technology scenes. An accompanying fact sheet summarizes Kentucky prehistory. Available from the Kentucky Heritage Council, 300 Washington Street, Frankfort, KY, 40601.

Oyate Catalog. Oyate, an American Indian organization whose goal is to ensure that native people's lives and histories are portrayed accurately, produces an annual catalog of books, audio cassettes, videos, and CDs by American Indians about American Indians. Books are divided by grade levels (preschool & up; Grade 4 & up; Grade 7 & up; high school), and a section of guides and curriculum materials for teachers is included. Contact them for information or for a free catalogue at Oyate, 2702 Mathews Street, Berkeley, CA, 94702. Phone 510/848-6700; fax 510/848-4815; email **Oyate@idt.net**; or on the web **<http://www.oyate.org>**

The ***Path to Becoming an Archaeologist*** is a brochure that succinctly outlines for students the diverse employment settings within which archaeologists work; the tasks they commonly carry out at these jobs; the kind of education required to become an archaeologist; how to obtain employment; and a listing of groups to contact for more information. Available free from the Society for American Archaeology, 900 Second Street, N.E. Suite #12, Washington, D.C. 20002.

Fire Management Websites

The website of the Temperate Forest Foundation includes an article entitled "Fire Ecology." They also have a video entitled *Two Sides of Fire*, which can be previewed on their website:
<http://www.forestinfo.org/products/ecolinks.htm>

The Daniel Boone National Forest website includes a summary of public comments on fire management. Page down to "Fire Management." Additional comments are in the section on "Old Growth." Their web address is **<http://www.r8web.com/boone/sigissue.htm>**

The Forest Resource Environmental Education Network has a variety of information on its website: **<http://www.freenetwork.org>**

The Nature Conservancy maintains a Fire Management homepage that includes a prescribed burn assessment and manual and links to many fire management resources. The address is **<http://www.tncfire.org>**

Archaeology Websites

ArchNet: The World Wide Web Virtual Library for Archaeology is a server that provides access to archaeological resources available on the Internet categorized by region of the world (i.e., North America, Near East) and subject (botanics, ceramics, educational and instructional material, archaeological software). Also includes site tours and site descriptions. The address is

<http://archnet.uconn.edu/>

The Kentucky Archaeological Survey's Web Page includes news; upcoming events; information about the four periods of Kentucky prehistory, along with pictures of artifacts and sites; information about on-going projects; a list of publications; and a Resource Guide. *Myths About Archaeology* lists common myths about archaeology and archaeologists, while *Test Your Knowledge of Kentucky Prehistory* is an interactive quiz that challenges misconceptions about Kentucky prehistory. The address is

<http://www.state.ky.us/agencies/khc/kas.htm>

The National Park Service has a home page on the Worldwide Web called Links to the Past. Topics include history, archaeology, preservation programs, national parks, and historic places. It features specific and focused information on a variety of topics, using images, photographs, maps, and essays. It also has a web site exclusively for teachers: Tools for Teaching. The address is

<http://www.cr.nps.gov>

A variety of resources is available from the Smithsonian's Anthropology Outreach Office: **<http://www.nmnh.si.edu/anthro/outreach/outreach1.html>**

Check it out for downloadable resource lists and activities about archaeology (recommended books, magazines and journals, guidelines to classroom resources); American Indians (languages, games/dances/crafts, religion, medicine); erasing stereotypes; guidelines for researching American Indian ancestry; and more.

The University of Kentucky's William S. Webb Museum of Anthropology web page contains information, images, and activities about Kentucky's prehistoric and historic past as told through archaeology. The address is case sensitive:

<http://www.uky.edu/AS/Anthropology/Museum/museum.htm>

Archaeology Books for Kids

Archaeologists Dig For Clues by Kate Duke discusses the purposes, techniques, and findings of archaeology. The story is about kids (and their pets) participating in an archaeologist-led excavation at a 6,000 year old Archaic village in the Midwest. Easy to use as a focal point of classroom activities, the

reader experiences everything about what it is like to be an archaeologist. The perfect book for introducing archaeology to children. Harper-Collins Children's Books, New York, NY.

I Can Be An Archaeologist by Robert B. Pickering introduces, in simple text, archaeological terms and concepts with lots of good color pictures. Includes a short glossary of archaeological terms. Chicago Press, Chicago, IL.

Itse Selu: Cherokee Harvest Festival by Daniel Pennington. Cherokee, archaeologists, and historians worked together to prepare this richly illustrated story of daily life of Little Wolfe and his sister, Skye. The focus is on the Cherokee's Green Corn (harvest) Festival ceremonies and stories. Eastern Band of Cherokee vocabulary words used throughout and a Cherokee syllabary are included, as well as drawings of native technology, dress, and houses that are faithful to historical and archaeological research. Charlesbridge, Watertown, MA.

Kentuckians Before Boone by A. Gwynn Henderson. Kentucky Humanities Council's New Books for New Readers Series. Based on archaeological, ethnohistoric, and historic information about central and eastern Kentucky's village farming peoples known as the Fort Ancient people, this book follows one Indian family's life during late summer and early fall of 1585 in central Kentucky. The University Press of Kentucky, Lexington, KY.

Archaeology Publications

Kentucky Archaeology, edited by R. Barry Lewis, presents the prehistoric and historic archaeology of Kentucky for the general public with scores of drawings and photographs. The University Press of Kentucky, Lexington, KY.

Rock Art of Kentucky, by Fred E. Coy, Jr., Thomas C. Fuller, Larry G. Meadows, and James L. Swauger, describes in words, line drawings, and in black and white photographs 72 of Kentucky's petroglyphs (pictures pecked into stone) and pictographs (pictures painted on stone) from rock art sites located all across Kentucky. The University Press of Kentucky, Lexington, KY.

Archaeology: Boy Scouts of America Merit Badge Series is a complete, yet concise, source of information about archaeology. Chapters define archaeology, describe the history of archaeology, discuss the step-by-step process of how archaeology is done from initial research through sharing findings with others, and discuss careers in archaeology. Available from your local Boy Scout Council Office or from Boy Scouts of America, Direct Mail Center, P.O. Box 909 Pineville, NC, 28134-0909, or call 1-800-323-0732.

KENTUCKY HERITAGE COUNCIL

The Heritage Council is in the Education, Arts, and Humanities Cabinet. The mandate of the Kentucky Heritage Council is to identify, preserve, and protect the cultural resources of Kentucky. The Council also maintains continually-updated inventories of historic structures and archaeological sites and nominates properties to the National Register of Historic Places. By working with other state and federal agencies, local communities, and interested citizens, the Council seeks to build a greater awareness of Kentucky's past and to encourage the long-term preservation of Kentucky's significant cultural resources. Through its various programs (e.g., Main Street, Grants, Publications, Rural Preservation, Civil War Initiative, Conferences), the Council strives to show how historic resources contribute to the heritage, economy, and quality of life of all Kentuckians. For more information, write/call the Kentucky Heritage Council, 300 Washington Street, Frankfort, Kentucky, 40601, 502/564-6661.

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