

LIVING IN THE OAK WOODLANDS: EARLY PEOPLE OF THE JEWETT MINE AREA

A curriculum for social studies and science for 4th and 7th grades



Prepared by

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The University of Texas at Austin

for

Prewitt and Associates, Inc.
Austin, Texas

and

Northwestern Resources Co.
Jewett, Texas

January 2003

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Living in the Oak Woodlands: Early People of the Jewett Mine Area

Lesson Overview: This lesson introduces the archeology and early people of the Jewett Mine area in East Central Texas.

TEKS Objectives:

- to identify Native American groups and describe the regions where they lived
- to understand how people adapt to and modify their environment
- to explain the economic patterns of Native American groups
- to explain how geographic factors influence the location of economic activities
- to explain how people in different regions of Texas earn their living, past and present
- to compare types and uses of technology, past and present
- to use primary source visual material
- to transfer information from one medium to another, such as visual to written
- to make inferences from primary source evidence

Materials: Overhead transparencies, Living in the Oak Woodlands Student Handouts, pens, colored markers

Activity:

Step 1: The teacher reads the following script while displaying the appropriate overhead transparencies. Students create symbols and captions about each transparency on the Student Handout.

Script:

Transparency # 1: This picture shows the Jewett Mine, operated by Northwestern Resources Company. The surface mine provides coal for Reliant Energy, Inc.'s, Limestone Electric Generating Station. Since 1980, coal production has greatly increased in Texas. Jewett Mine currently employs about 385 people.

Transparency # 2: Numerous archeological projects have investigated the materials left behind by early people who lived in the Jewett Mine area as long as 5,000 years ago. The people we will learn most about in this unit, however, lived in this area from about 1260 to 1410 A.D. What we know about these people comes from excavations that archeologists did at a place called the McGuire's Garden site. Unfortunately, we do not know the name these people called themselves; nor do we know what happened to them. All we do know is that their lifestyle seems to have disappeared from this area long before other settlers came to Texas. This picture shows archeologists testing the area around the mine for clues to life here long ago.

Transparency # 3: The people who lived here in the past millennium also mined the area, but for stone, not coal. They made many types of knives, dart points, arrow points, grinding stones, and other tools from stone. Archeologists learn a lot about how people lived by studying the technology required to make stone tools. By studying the tools that they find at archeological sites, archeologists learn about the kinds of things people did when they lived there.

Transparency # 4: Archeologists also found many bits of broken ceramic. This means the people used clay pots for cooking, for storage, and for carrying water. Archeologists also learn about the food people ate, such as deer and other small animals, wild plants, and some garden crops such as corn and squash. The pots were decorated in various ways that give important clues to archeologists about the artistic side of these people. The fact that remains of corn and squash were found means these people must have had small gardens, probably near their houses. Because they had gardens to tend, they probably lived at this site for much of the year. This sets the people who lived at the McGuire's Garden site apart from the Native Americans who lived in the Jewett Mine earlier and later in prehistory. These earlier and later peoples did not grow crops for food. Instead, they relied on hunting and gathering wild plant foods, such as nuts and berries, and they probably moved their campsites often in search of food.

Closure: Teacher asks various students to share their symbols and captions about the four pictures. Teacher then asks students to discuss the following questions :

1. Do we still use stone tools today?
2. Do we still use ceramic bowls and dishes today?
3. In what ways are modern ceramic dishes the same or different from ancient ceramics?
4. Clay, or a certain kind of "dirt", is the basic ingredient in ceramic. Look at the transparencies again. From what you see in the pictures, how have human beings use "dirt" as a resource? What do human beings get from it?

**Living in the Oak Woodlands: Early People
of the Jewett Mine Area
Student Handout**

Listen carefully to the descriptions as your teacher shows pictures of archeology in the Jewett Mine area. Use colored markers to draw a symbol in each square to explain each picture. Make your symbol represent something important about each transparency. Then write a short sentence at the bottom of each box as a caption that explains your symbol.

#1	#2
#3	#4

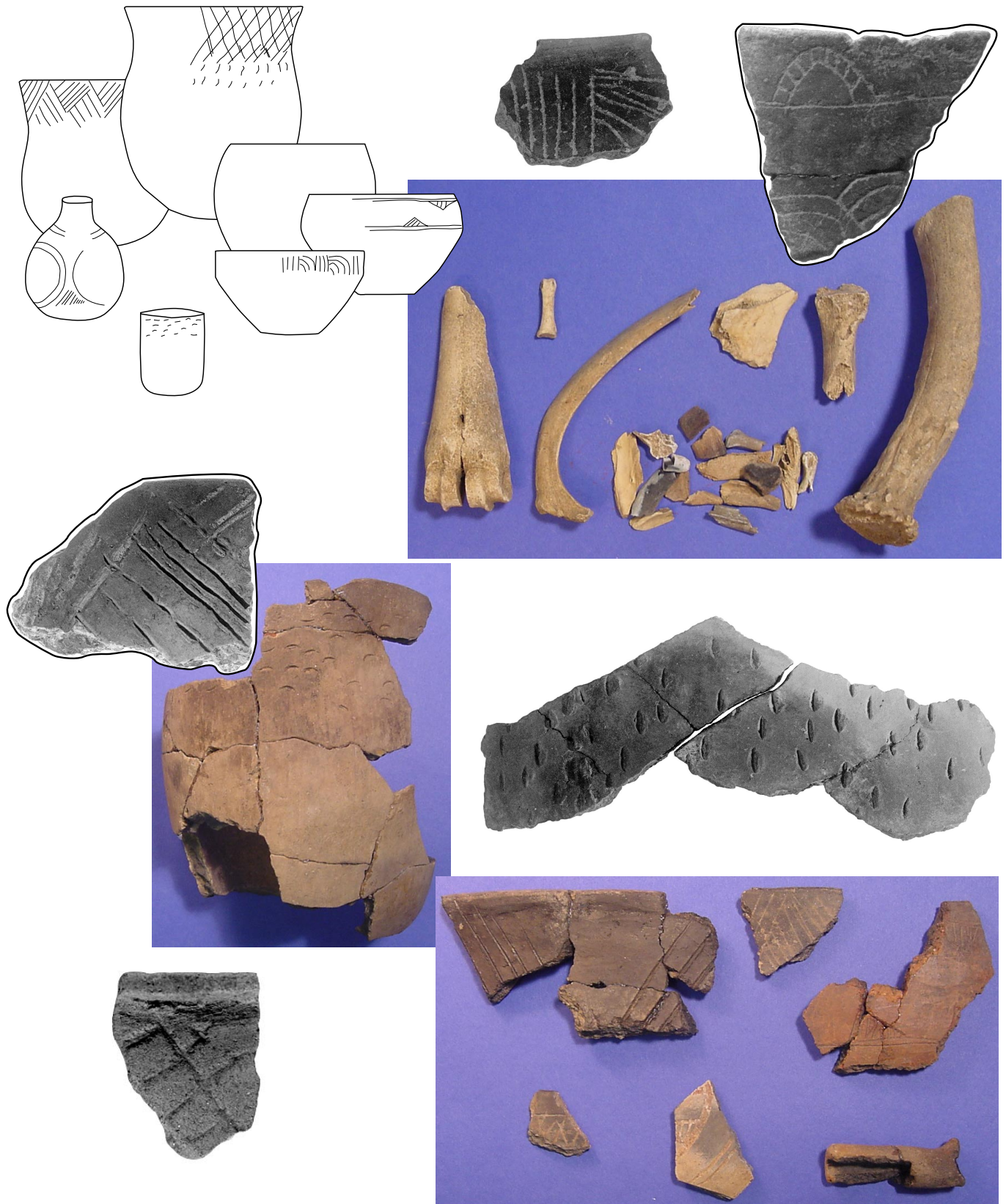
Transparency 1



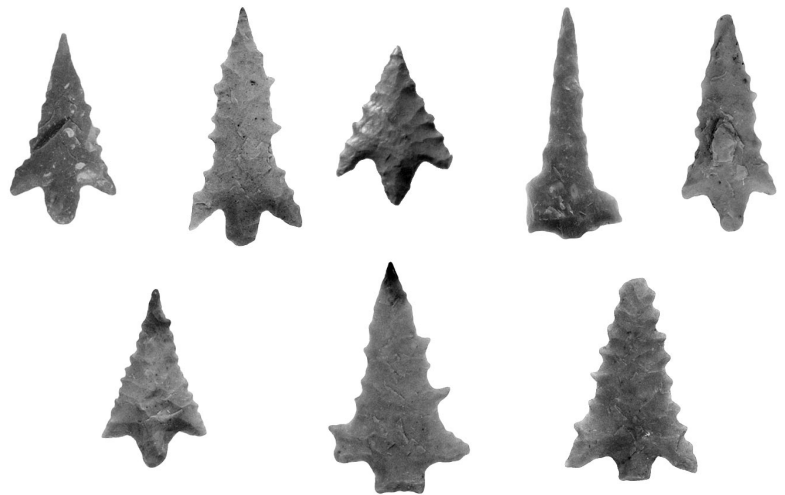
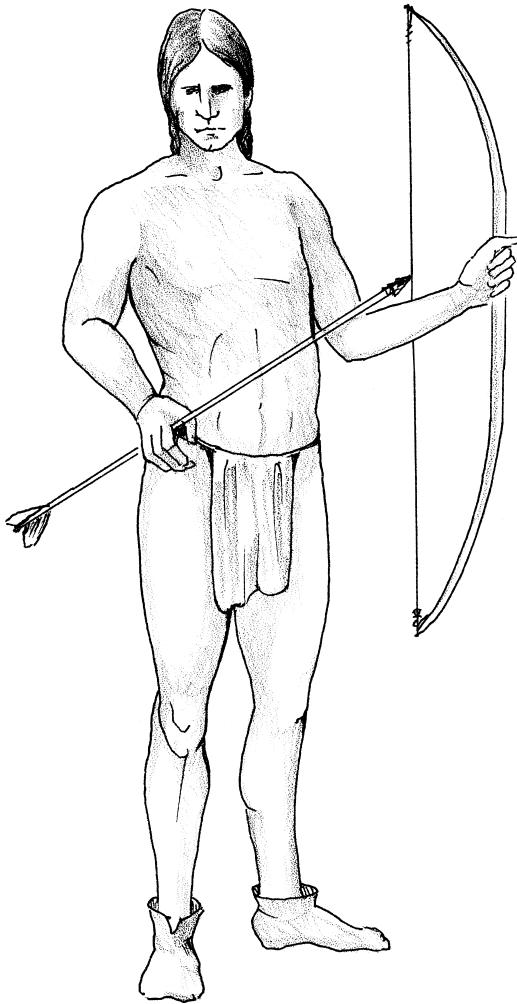
Transparency 2



Transparency 3



Transparency 4



Ecoregions Map

Lesson Overview: Students read and interpret a map of ecoregions of Central and East Texas.

TEKS Objectives:

- to apply geographic tools to interpret maps
- to describe regions of Texas in terms of landforms, climate, etc.
- to describe regions of Texas in terms of population and economic activity
- to explain geographic factors influencing the distribution of population
- to explain how geographic factors influence economic activities
- to use a primary source map

Materials: One Ecoregions Map Student Handout for each student, pen or pencil, colored map pencils (optional), Texas rainfall map in textbook (optional)

Activity:

Step 1: Students read the map and answer questions on the student handout.

Step 2: Students color each region a different color (optional).

Closure: Students put a dot on the map to mark the approximate location of their town. What ecoregion is the town in?

Extension: Teacher asks student to compare the ecoregion map to the rainfall map of Texas. Teacher asks the following questions to be answered out loud:

1. What is the average annual rainfall in the Oak Woodlands where Jewett Mine is located?
2. What is the average rainfall in the Long Leaf Pine Ecoregion?
3. Which area is the wettest? Which is the driest?
4. Which region has more forests?
5. Which region is desert?

Ecoregions Map Student Handout

Texas has many different ecological regions, or ecoregions, due to its location. An ecological region has certain kinds of soil and a certain amount of rain that allows particular plants and animals to live there. For instance, oak trees predominate in the Oak Woodlands, while a few miles away in the Piney Woods, pine trees are common. Use the ecoregions map to answer the following questions:

1. What is the ecoregion where Jewett Mine is located? _____
2. In what ecoregion is Dallas located? _____
3. In what ecoregion is Houston located? _____
4. What direction are the Piney Woods from Jewett Mine? _____
5. In what direction is the Edwards Plateau from Jewett Mine? _____
6. There are two areas of Oak Woodlands. The Jewett Mine is located in one of them. What direction is the other Oak Woodlands area from the Jewett Mine? _____
7. What direction is the Red River from Jewett Mine? _____
8. What direction is Louisiana from Jewett Mine? _____
9. Draw a straight line directly from Houston to the Jewett Mine to Dallas to Austin and back to Houston. What shape did you make? _____
10. List all the ecoregions you would travel through, in order, on a trip from Houston to the Jewett Mine to Dallas to Austin and back to Houston.

Houston to Jewett Mine:

1. _____
2. _____
3. _____
4. _____

Jewett Mine to Dallas:

5. _____
6. _____

Dallas to Austin:

7. _____

Austin to Houston:

8. _____
9. _____
10. _____
11. _____

Ecoregions Map Answer Guide

Texas has many different ecological regions, or ecoregions, due to its location. An ecological region has certain kinds of soil and a certain amount of rain that allows particular plants and animals to live there. For instance, oak trees predominate in the Oak Woodlands, while a few miles away in the Piney Woods, pine trees are common. Use the ecoregions map to answer the following questions:

1. What is the ecoregion where Jewett Mine is located? ***Oak Woodlands***
2. In what ecoregion is Dallas located? ***Blackland Prairies***
3. In what ecoregion is Houston located? ***Gulf Coast Prairies & Marshes***
4. What direction are the Piney Woods from Jewett Mine? ***east***
5. In what direction is the Edwards Plateau from Jewett Mine? ***southwest***
6. There are two areas of Oak Woodlands. The Jewett Mine is located in one of them. What direction is the other Oak Woodlands area from the Jewett Mine? ***west***
7. What direction is the Red River from Jewett Mine? ***north***
8. What direction is Louisiana from Jewett Mine? ***east***
9. Draw a straight line directly from Houston to the Jewett Mine to Dallas to Austin and back to Houston. What shape did you make? ***a triangle***
10. List all the ecoregions you would travel through, in order, on a trip from Houston to the Jewett Mine to Dallas to Austin and back to Houston.

Houston to Jewett Mine:

1. ***Gulf Coast Prairies & Marshes***
2. ***Mixed Pine-Hardwood Forest***
3. ***Blackland Prairies***
4. ***Oak Woodlands***

Jewett Mine to Dallas:

5. ***Oak Woodlands***
6. ***Blackland Prairies***

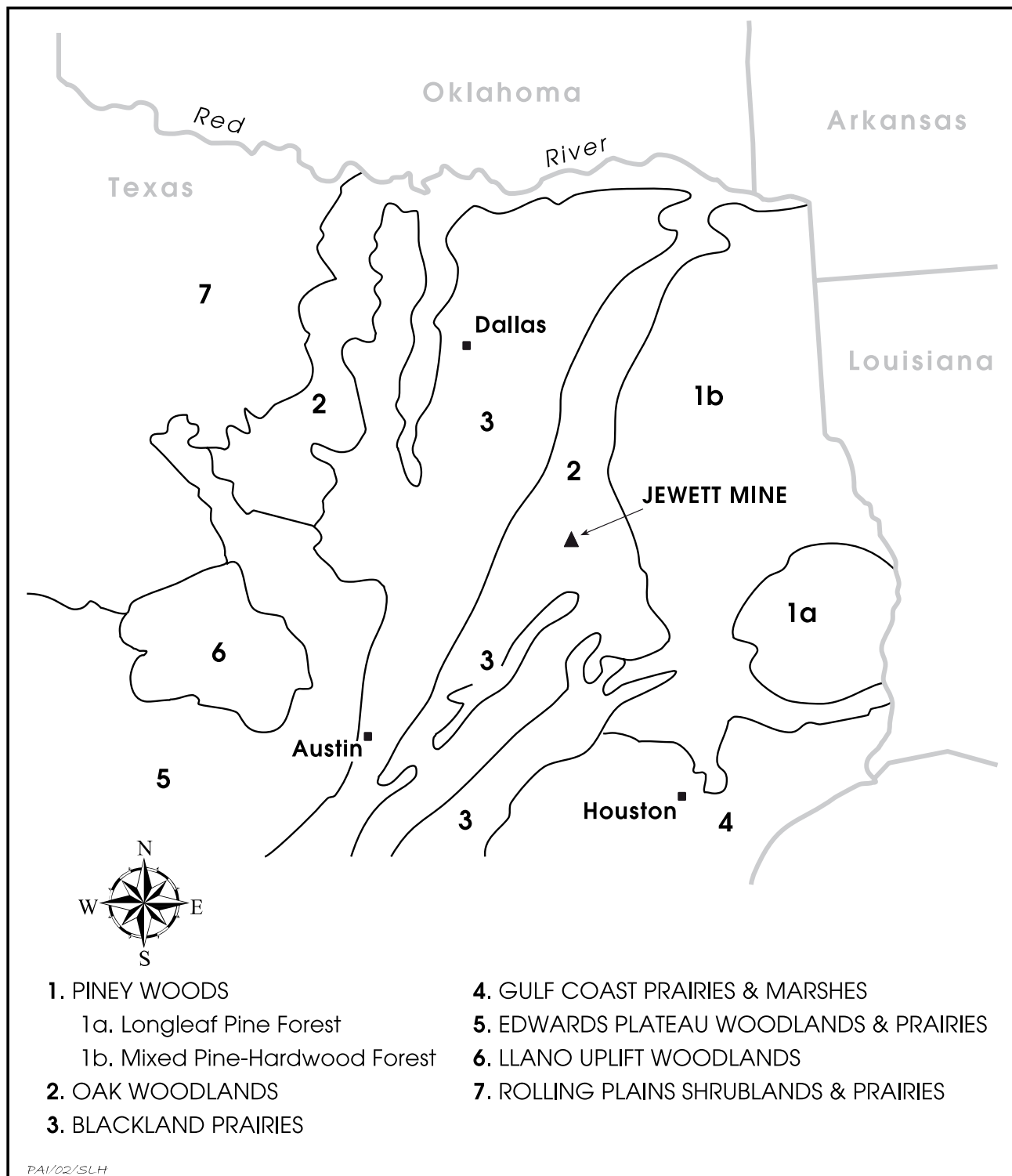
Dallas to Austin:

7. ***Blackland Prairies***

Austin to Houston:

8. ***Blackland Prairies***
9. ***Oak Woodlands***
10. ***Blackland Prairies***
11. ***Gulf Coast Prairies & Marshes***

Ecoregions Map



Climbing up the Hill: Understanding Elevation Maps

Lesson Overview: Students interpret a contour elevation map by measuring and drawing a chart that illustrates meters of elevation above sea level and distance in meters horizontally from the small oak tree.

TEKS Objectives:

- to translate geographic data into various formats
- to describe how people have adapted and modified the environment
- to identify reasons for people to adapt or modify the environment
- to use a primary source map
- to organize information by making a chart
- to use appropriate math skills to interpret maps and charts

Materials: Graph paper for each student, fine-line markers or sharp pencils, fine-line colored pens or pencils, rulers, Understanding Elevation Map Student Handouts, transparency of Elevation Map, transparency of blank graph paper

Activity:

Step 1: On the transparency of the blank graph paper, the teacher demonstrates how to measure and mark the graph paper as described in the student handout, labeling meters above sea level on the vertical scale and from 0 to 70 meters on the horizontal scale.

Step 2: Students follow along, marking their own graph paper, as teacher continues to demonstrate.

Step 3: Teacher marks a green dot where the lines of the vertical and horizontal scales meet at 98.4 and 0. This dot marks the spot where the small oak tree in the lower left of the Elevation Map is. Teacher continues in this fashion, with students following along, until all the elements are marked.

Closure: Teacher asks the following questions to be answered out loud:

1. Do you think this hill would be hard to climb? Why or why not?
2. Where would you put your tent, if you were camping here? Why?
3. Why do you think archeologists dug test units and backhoe trenches near the top of this small hill? (Indians wanted their camp to stay out of the water in case the water level in the creek increased because of rain. Therefore, the archeologists dug near the top since they know that no one wants to sleep in a wet sleeping bag (or mat!))

Climbing up the Hill: Understanding Elevation Maps Student Handout

Step 1: Setting up the chart—follow these directions carefully

1. Turn your graph paper so that the **long** sides are to the top and bottom. At the top, label it Cross Section Chart.
2. Use a ruler and pencil to draw a straight line down the paper about 5 centimeters (2 inches) from the **left** edge following one of the lines on the paper. This will be the **vertical scale**.
3. Use the ruler and measure up to a line on the paper about 2.5 centimeters (1 inch) from the **bottom** of the page along your vertical line. Make a small dot and label it “97.8 meters above sea level” on the **left** side of the vertical pencil line.
4. Move up your vertical pencil line and label the next line on your graph paper “98.0” meters. Label the next higher line on your graph paper “98.2” meters. Keep doing this until you have labeled a line near the middle of the page “100.0” meters (include 98.4, 98.6, 98.8, 99, 99.2, 99.4, 99.6, 99.8, and 100.0).
5. At the 97.8 meter mark, draw a straight horizontal line with your pencil all the way across the paper. This will be the **horizontal scale**.
6. Moving to the right one space along this horizontal line, put a dot at the first line on the graph paper and label it “0” meters.
7. Move two lines to the right of the 0 meter mark and label that line “5” meters. Move two more lines to the right and label it “10” meters. Keep doing this until you have labeled a line near the right edge of the paper “70” meters.

Step 2: Finding the trees

1. At the 0 meter mark on the horizontal scale, follow the line up until you meet the line for 98.4 meters on the vertical scale. Make a dot where these lines meet and draw a small tree just above the dot with green. This is the oak tree that is in the lower left part of the Elevation Map. We know it is at 98.4 meters above sea level because the 98.4 meter line on the Elevation Map passes through the tree.
2. Now look at the **Elevation Map**. Use your pencil to draw a straight line from the small oak tree in the lower left part of the map (starting at the “o” in “oak”) to the large oak tree (ending at the “o” in “oak”) near the top of the map. Put a small mark every 1.25 centimeters (0.5 inch) along this line. Label the mark at the small oak tree “0 meters”. Moving northeast (upper right) from the small oak tree, label the next mark “5 meters” and the mark after that “10 meters.” Keep doing this until the last mark, southwest (or below, to the left) of the large oak tree, is labeled “65 meters.”
3. Now that you have found the trees, you will use this line to determine information for the **Cross Section Chart** to show how land elevation changes in this area.

Step 3: Plotting elevations at an ancient camp near Jewett Mine

1. Looking at your Elevation Map, you can see that your pencil line crosses the 98.2 meter elevation line about 5 meters from the small oak tree. Now look at your **Cross Section Chart** and put a dot on the 98.2 meter line at 5 meters on your horizontal scale.
2. Looking northeast along the pencil line on the Elevation Map, note that you reach the 98.0 meter elevation line about 7 meters from the small oak tree and you reach Linn Creek about 11 meters from the tree. On your **Cross Section Chart**, put a dot on the 98.0 meter line at about 7 meters on the horizontal scale. At 11 meters, put a blue mark for Linn Creek and label it. This mark should be on you 98.0 meter line.
3. Moving farther northeast along the pencil line on your elevation map, you will see that the line crosses the 98.0 meter contour line again at 15 meters from the oak tree. It crosses the following contour lines at the following distances from the oak tree:
 - 98.2 meter line at 18 meters
 - 98.4 meter line at 22 meters
 - 98.6 meter line at 25 meters
 - 98.8 meter line at 28 meters
 - 99.0 meter line at 30 meters
 - 99.2 meter line at 33 meters
 - 99.4 meter line at 36 meters
 - 99.6 meter line at 40 meters
 - 99.8 meter line at 43 meters
 - 100.0 meter line at 47 meters

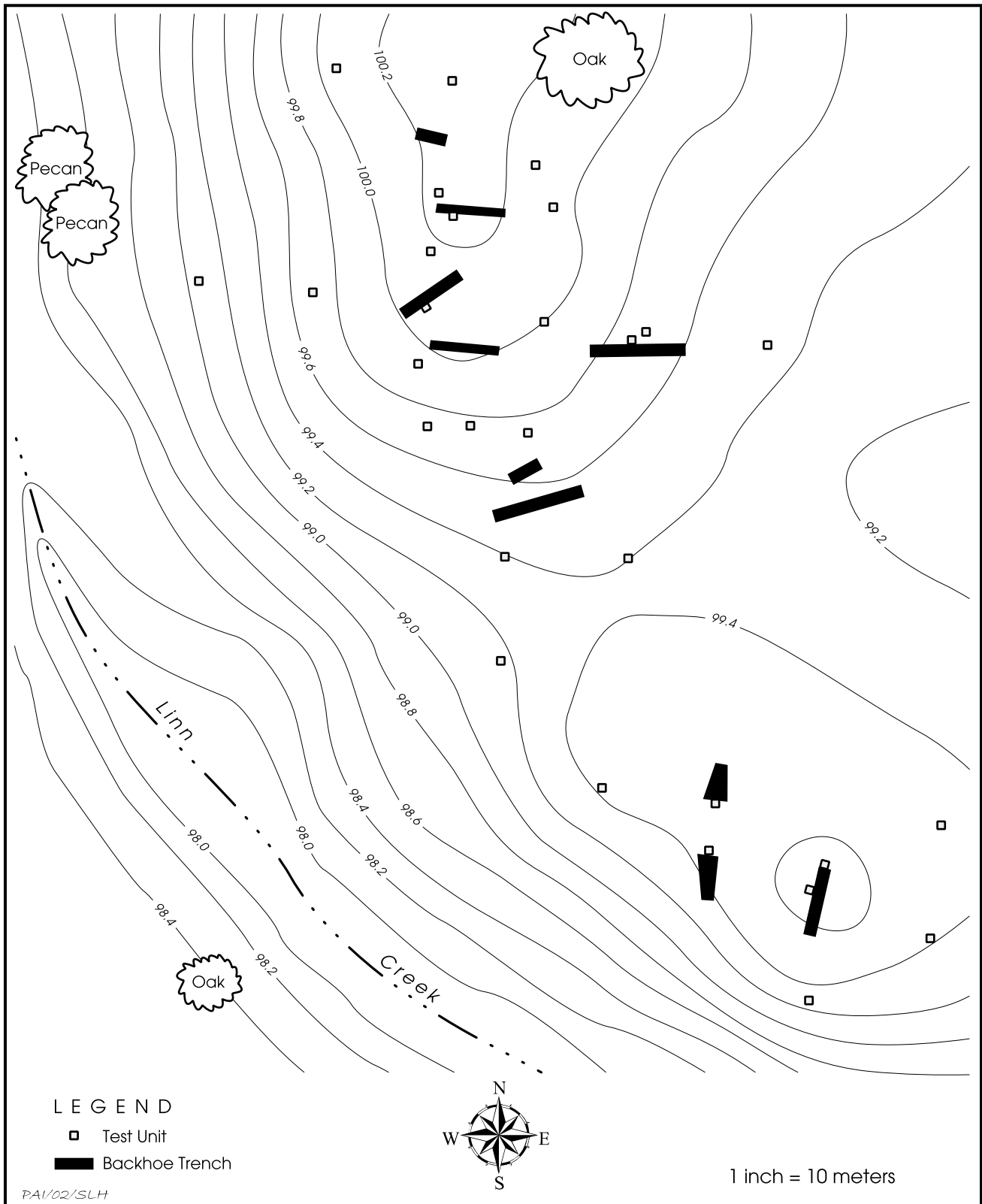
Put dots on your **Cross Section Chart** for all of these. (Cross off each one of the following from this instruction page as you mark it on your chart to keep from getting confused.)

4. After 47 meters, the pencil line on the Elevation Map does not cross any more elevation lines. This means that the elevation stays the same (100.0 meters) to the end of the line. To show this on the Cross Section Chart, put dots on the 100.0 meter line at 50, 55, 60, and 65 meters. **Now connect the dots on the Cross Section Chart to see how elevations change.**

Step 4: Adding more elements

1. Draw in the large oak tree at 100.0 meters about 69 meters from the small tree.
2. Draw a brown rectangle for the backhoe trench dug by archeologists at an elevation of 100.0 meters about 48 meters from the small oak tree.
3. Draw a yellow square for the archeological test unit at 99.6 meters above sea level about 42 meters from the small oak tree.
4. Make another test unit at 100.0 meters about 61 meters from the small oak tree.

Elevation Map



Prehistoric Puzzle

Lesson Overview: Students pretend they are archeologists reassembling an ancient pot. They try to learn about ancient people who made the pot based on incomplete information, simulating the real experience of archeologists in the laboratory. As they get more puzzle pieces, they learn more about the people. Without all the pieces, it is impossible to learn everything, however. This is often what archeologists face when ancient artifacts such as potsherds or stone tools have been taken from the land where they belonged.

TEKS Objectives:

- to explain and identify reasons why and how people have adapted to and modified the environment
- to use primary source artifact pictures
- to draw inferences and conclusions from evidence
- to organize information in writing
- to incorporate main and supporting ideas in written communication
- to use standard grammar, spelling, punctuation and sentence structure

Materials: Prehistoric Puzzle Student Handouts, scissors for each student, paper, pen

Activity:

Step 1: Students work in pairs. Students cut all the pieces apart on the Student Handout puzzle sheet, following the solid lines. Partner places each piece face down on the table as pieces are cut. When all the pieces are cut apart, one student mixes up the pieces, keeping them all face down.

Step 2: One student in each pair draws five pieces from the pile. Partners try to assemble the puzzle with only five pieces. Obviously, there will be gaps that cannot be filled yet.

Step 3: Partners list what they know about the people who made the pot, based on just these five pieces.

Step 4: One partner draws three more pieces face-down from the pile. Partners try to assemble the puzzle with the eight pieces. The puzzle will still be incomplete.

Step 5: Partners continue to list what they know about the people who made the pot, using the new information from three new puzzle pieces.

Step 6: Students draw three more pieces and repeat the steps until the pot is reassembled.

Step 7: Partners finish listing what they know about the people who made the pot.

Step 8: Partners use their list and work together to write a well-constructed paragraph about the people who made the pot. The topic sentence should contain the main idea, followed by several sentences of supporting details, then a concluding sentence.

Step 9: Teacher selects three pairs of students to share their paragraphs aloud with the whole class. Other paragraphs will be somewhat similar.

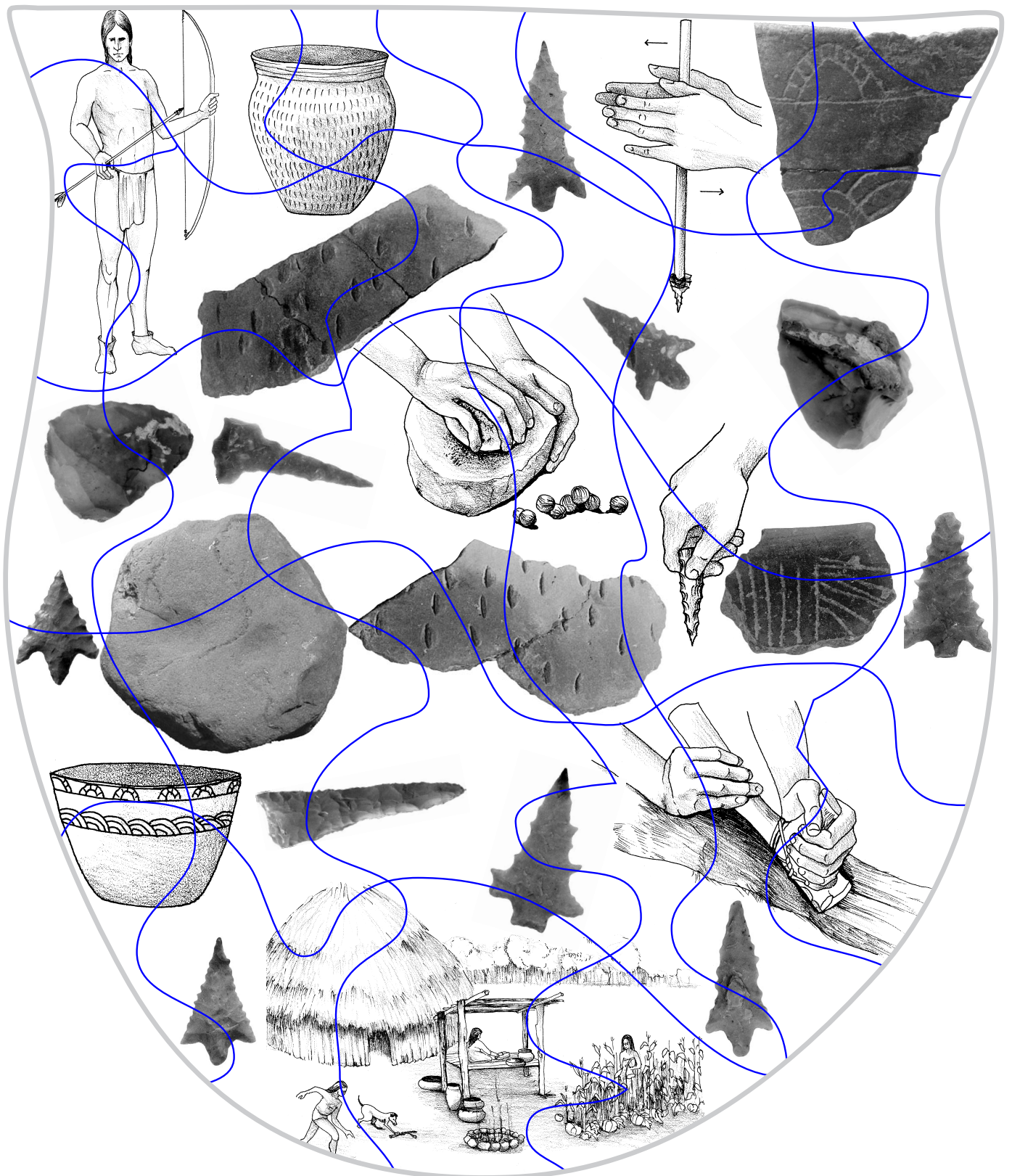
Closure: Teacher asks students the following questions to be answered out loud:

1. What happened when you only had five pieces of the puzzle?
2. How much did you know about the people who made the pot?
3. What happened when you got more pieces?

Teacher explains that archeologists face the same problem when they try to learn about ancient people without all the information. That's one reason it's important to respect ancient artifacts and leave them where they are found.

Extension: Draw a picture of the ancient people who made the pot, using all the information you know about them from the puzzle pieces.

Prehistoric Puzzle



Timeline for the Jewett Mine People

Lesson Overview: Students construct an illustrated timeline showing when people lived at the McGuire's Garden site at Jewett Mine (1260–1410 A.D.), as well as other world events during the time period from 1000 to 1603 A.D.

TEKS Objectives:

- to compare ways of life of Native Americans and other groups
- to organize and sequence information in a timeline
- to use appropriate math skills to interpret social studies information

Materials: Timeline for the Jewett Mine People Student Handouts, Internet access, library books, colored markers, long mural paper for timeline

Activity:

Step 1: Divide students into pairs. Each pair selects one event listed on the student handout to research. It's OK if some events are left out. Partners who select "1260- people first live at the McGuire's Garden site" help the teacher prepare this timeline. This activity can take place over several days as time allows.

Step 2: Partners work together using the Internet or library books to research one of the events listed on the student handout. Here are some good web sites to use:

<http://www.historycentral.com>

<http://www.hyperhistory.com>

<http://historychannel.com>

Step 3: Teacher draws a thick black line the length of the mural paper while students conduct research. Teacher marks off and labels the timeline beginning at the year 1000, then every 50 years thereafter to 1600 A.D. The McGuire's Garden site partners can help with this.

Step 4: One McGuire's Garden site partner draws a red line underneath the black one from 1260 to 1410 A.D. to indicate the time period when people lived at the McGuire's Garden site. The other labels the dates and writes "McGuire's Garden Site People" underneath the red line. They both add two pictures representing ways of life at the Jewett Mine site above the black line.

Step 5: One student from each pair locates the correct place on the black timeline and labels the date of the event. He or she then draws a picture to illustrate the event above the black line.

Step 6: The other partner writes in the name of the event below the black line (or below the black and the red lines, as applicable).

Closure: One student from each pair briefly shares information about the event he or she researched with the group. Teacher asks students for the following questions to be answered out loud:

1. Name one event that happened after the McGuire's Garden site at the Jewett Mine was abandoned (in 1410).
2. Name one event that happened before the McGuire's Garden site was occupied.
3. What other world events were simultaneous with the occupation of the McGuire's Garden site (1260–1410)?

Extension: Partners can write paragraphs about the events they research, which can be posted near the timeline.

Timeline for the Jewett Mine People Student Handout

People lived at the McGuire's Garden site in the Jewett Mine area from 1260 to 1410 A.D. What were other people doing in the world doing during this same period?

Work with a partner to research one of the following events in order to make a timeline. Each pair chooses only one event. Write a date for your event in the right place on the timeline. Write the name of your event underneath the timeline. Draw a picture of your event above the timeline. If you have time, write a paragraph about the event you research with your partner.

Use library books or the Internet to find information. Here's some good web sites to use:

<http://www.historycentral.com>

<http://www.hyperhistory.com>

<http://historychannel.com>

List of World Events, 1000 to 1603 A.D.

- 1000 Maya empire in the Yucatan, Mexico
- 1066 Battle of Hastings in England
- 1184 Some streets in Paris, France are paved
- 1200 Beginning of Aztec Empire in Mexico
- 1215 Magna Carta signed in England
- *1260 People first live at the McGuire's Garden site in Jewett Mine area
- 1260 Marco Polo leaves Italy to go to China
- 1271 Mansa Musa is King in Timbuktu, Mali
- 1300 Mesa Verde Cliff Dwellings abandoned
- 1347 Black Plague kills thousands in England
- 1350 Beginning of the Ming Dynasty in China
- 1429 Joan of Arc leads Battle of Orleans in France
- 1438 Inca Empire begins in South America
- 1450 Gutenberg invents the printing press in Germany
- 1492 Christopher Columbus reaches land in the Caribbean
- 1493 Polish astronomer Copernicus claims the earth revolves around the sun
- 1550 Reign of Queen Elizabeth I in England
- 1603 English colonists arrive in Jamestown, Virginia