

# Exploring the Adena and Hopewell Cultures in Ross County Teachers Guide

This unit has been designed for the 4th grade classroom. I am interested in you input on:

- grade level appropriateness
- subject matter you would like more information on.
- AND of course corrections!

PDFs downloaded from the Ross County History Depot site are of lesser quality due to size posting limitations. If you would like a higher quality PDF, please contact me. I will get one to you.

Thanks Julie Lambert, [coverlet@bright.net](mailto:coverlet@bright.net)

Please note:

This publication was created as an educational resource for the Ross County History Depot local history program. This is a nonprofit endeavor to enrich students understanding of the significance of local history. The pictures and illustrations included in this guide were provided as a courtesy for use in this educational publication only. Please direct any questions to Julie Lambert at [coverlet@bright.net](mailto:coverlet@bright.net)

## How to use this unit:

The unit is designed to be used as printed material and/or with Smartboard projector.

## Teachers Guide PDF:

Pages on the Teachers Guide PDF are in the order of usage.

1. Teachers Guide
2. Activity sheets which should be run off single sided.
3. The unit which includes pages which are not included in students copy.
  - \* are activity sheets. They are found in place in the teacher guide.
  - \*\* are meant to be used as overheads, not meant to be printed.

## Student Booklet PDF:

The student copy PDF is designed to be a double sided document.

Pg. 1      **The Moundbuilders** - *Early settlers arrive & discover the mounds*

Pg 2      **Taking the Lead - Ross County Pioneers in Archeology** - *Squier & Davis were early surveyors of earthworks throughout the Mississippi Valley*

Pg. 2A-2B      **\*Activity Sheet-Squier & Davis Timeline**

Pg. 3      **Ancient Works**-*1848 drawing by Squier & Davis of Mound City & Shriver Circle.*

Pg. 3A-3B      **\*\*Google Earth View of Ancient Works site**-*Although Shriver was plowed over and been farmed for more 100 years, an image can still be seen from Google Earth satellite. If this image is not clear, you may need to pull it up on Google Earth.*

- Pg. 4      **Squier & Davis 1847 Map of Chillicothe Area**-Shows earthworks that were present in 1848, in and around Chillicothe. Find the words "Second Terrace" to the west of Chillicothe. The trail just above it would be approximately where E. Main St. now runs. The horseshoe shaped earthworks just north of the words sits near where Mt. Logan Elementary now sits.
- Pg. 4A      **\*\*Activity Sheet-Map Detective**
- Pg. 5-10      **The Woodland Period**-The Adena & Hopewell cultures had a large presence Ross County. The cultures were both named after significant sites here.
- Pg. 5-6      **The Adena Culture**
- Pg. 7-8      **Adena Pipe's Place in History Secure**-Columbus School for Girls 4<sup>th</sup> grade classes go through the legislative process to designate the Adena Pipe, the official state artifact.
- Pg. 9-10      **The Hopewell Culture**
- Pg. 10A      Activity Sheet- **Name That Mound Builder Culture!**
- Pg. 11      **Hopewell Burial Mounds** - The Hopewell cremated their dead in ceremonial buildings. After a number of cremations, a mound was built to cover and protect them. Introduces the Intrusive culture who came along after the Hopewell. They would bury their dead in the upper part of the Hopewell mounds.
- Pg. 12      **Sizing Up Seip Earthworks**- Little is left of what was a massive earthwork just west of Paint Valley High School. Have students draw a rectangle shape the size of the football field (shown to the left of the drawing) over the burial mound to give them a feel for the size of the earthwork. See how little they can draw their people.
- Pg. 12A      **\*\*A snapshot of the Seip Mound State Memorial Park from Google Earth.**  
Using the actual Google Earth may provide a better picture. Make sure to point out PV High School and the football field to the east. Interpretive mowing is now used at many sites to show where earthworks once stood.
- Pg. 13      **Hopewell Earthwork Designs**- Through questioning students will learn that most major earthwork sites included at least one large circle, at least one small circle, one square, and often one octagon. The square is always 1,080 feet on each side. Discussion can be held on how the ancient people may have measured and also made such exact shapes.
- Pg. 14-15      **Mapping the Mounds**- Students will follow the directions to label the map on page 15. They should use color pencils for the neatest effect. The final map will show the greatest concentration of major earthwork site are near Chillicothe.

- Pg. 16A      **\*Draw Your Own Earthworks-** *Students will reflect on information given on the previous pages and use the checklist to create their own earthwork site.*
- Pg. 17-18    **Digging Into the Lives of the Mound Builders-** *In addition to what was left in their burial sites, digging through the Moundbuilders trash piles has also given archaeologists many clues into their daily lives. Mound Builders developed quite a trade system with distant cultures.*  
**Videos!** Visit the website: <http://earthworks.uc.edu>. Click on “Scenes”. Watch these short videos: 1. A Hopewell Settlement, 2. Inside a House
- Pg. 19-22    **\*\*The Mound Builders Depended on Natural Resources From Near and Far** *Description of the materials used to create tools etc. the Mound Builders used in their everyday living. Many resources and items came from distant locations.*
- Pg. 22A-22B **\*The Mound Builders Developed a System of Trade Across the Country -***Cut out material information boxes on page 22B and glue onto map.*
- Pg. 23        **How Do We Really Know How Long Ago The Mound Builders Lived in Ross County?** – *Explains carbon-14 dating.*
- Pg. 24A      **\*\*An enlarged version of the graphic on page 23.**
- Pg. 25        **The Junction Group Earthworks Are Rediscovered-***The archaeological spotlight is now on the Junction Earthworks which is being brought back to life. Through the use of magnetometry the exact location and shape of the earthworks which have been buried for years is now known.*  
*If the aerial photo does not show up clearly on the PDF, go to*  
<http://www.earthworksconservancy.org/what-is-the-junction-group/> *for a clearer photo.*  
*Use Google Earth to show students the location of the Junction Group site which sits at the intersection of Bellevue Avenue and Plyley’s Lane.*
- Pg. 26        **Magnetometry Gives Archaeologists a View Underground-** *Magnetometry has created a less invasive way to explore archaeological sites. Less destruction of sites occur when archaeologists can be directed the locations to study.*  
**Excellent video** *which covers pgs. 27-28*  
<https://www.youtube.com/watch?v=HUhSdZAeGKU>
- Pg. 27        **The Junction Group Earthworks Come Back to Life-** *Due to the effort of two preservation groups the Junction Group will now be enjoyed by the public.*
- Pg. 27A      **\*\*Enlarged picture of the Junction Group today. if not clear, it can be found at:**  
<https://www.facebook.com/HeartlandEarthworksConservancy/photos/a.338754589526391.69076.338736276194889/831310090270836/?type=3&theater>

Taking the Lead . . .

# Ross County Pioneers in Archeology

What important archaeological concern did Edwin Davis and Ephraim Squier share?

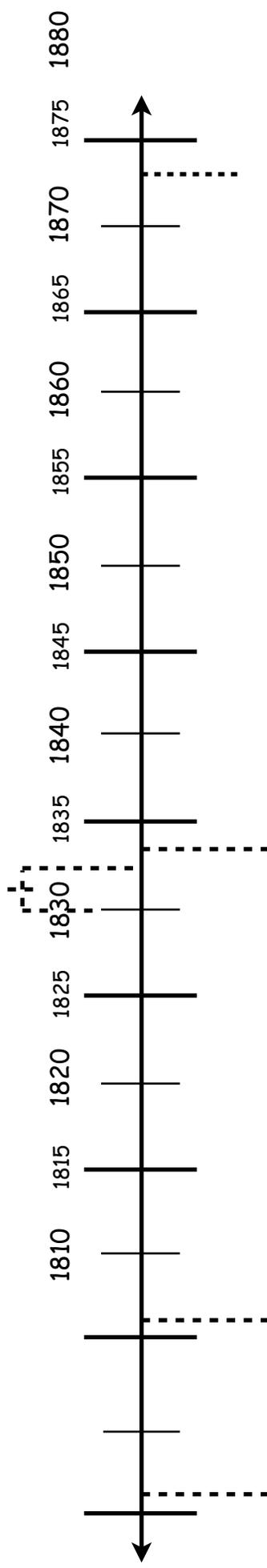
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What actions did they take?

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Create a timeline of Squier & Davis's lives. Cut out the information boxes on the next page and paste them at the correct date on the timeline.

## Squier & Davis Timeline



## Information boxes for Squier & Davis Timeline

1845 through 1847  
Squier & Davis document nearly 100 earthworks.

1821  
Ephraim G. Squier born in New York.

1888  
Edwin Davis and Ephraim Squier both die in New York.

1848  
Squier & Davis publish their findings in  
*"Ancient Monuments of the Mississippi Valley."*

1811  
Edwin Davis born in Ross County, Ohio

# Map Detective

1. What is the title of this map?

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2. Who drew this map? \_\_\_\_\_

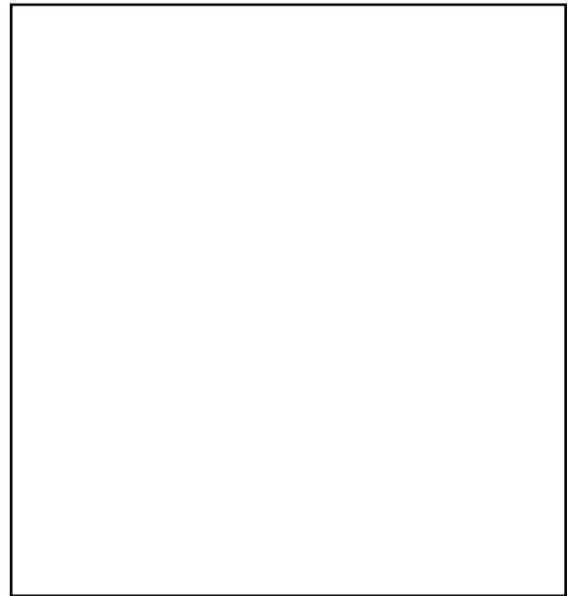
3. What is the date this map was drawn? \_\_\_\_\_

4. What is the symbol for a mound? \_\_\_\_\_ an enclosure? \_\_\_\_\_

5. Draw the earthworks from the map which are labeled with the letters below each box.



D.



H.

6. What town is featured on this map?

---

7. Name the creek and river that are marked on this map.

\_\_\_\_\_ River                      \_\_\_\_\_ Creek

# Name That Mound Builder Culture!

Write the name of the Mound Builder Culture described in each fact below.

Adena Culture      Hopewell Culture

1. This culture lived in Ross County from about 200 B.C to 500 A.D

\_\_\_\_\_

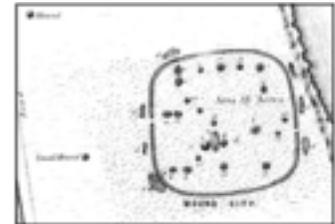
2. This culture was named after the estate owned by Thomas Worthington.

\_\_\_\_\_



3. This culture built the Great Serpent Mound in Adams County.

\_\_\_\_\_



4. This culture built the Mound City earthworks.

\_\_\_\_\_

5. A pipe artifact from this culture recently became Ohio's official state artifact.

\_\_\_\_\_

6. This culture lived in Ross County between 800 B.C. and 100 A.D.

\_\_\_\_\_



7. The human hand carved from mica was an artifact from this culture.

\_\_\_\_\_

8. This culture was named after a local farmer whose farm was home to a large earthwork site.

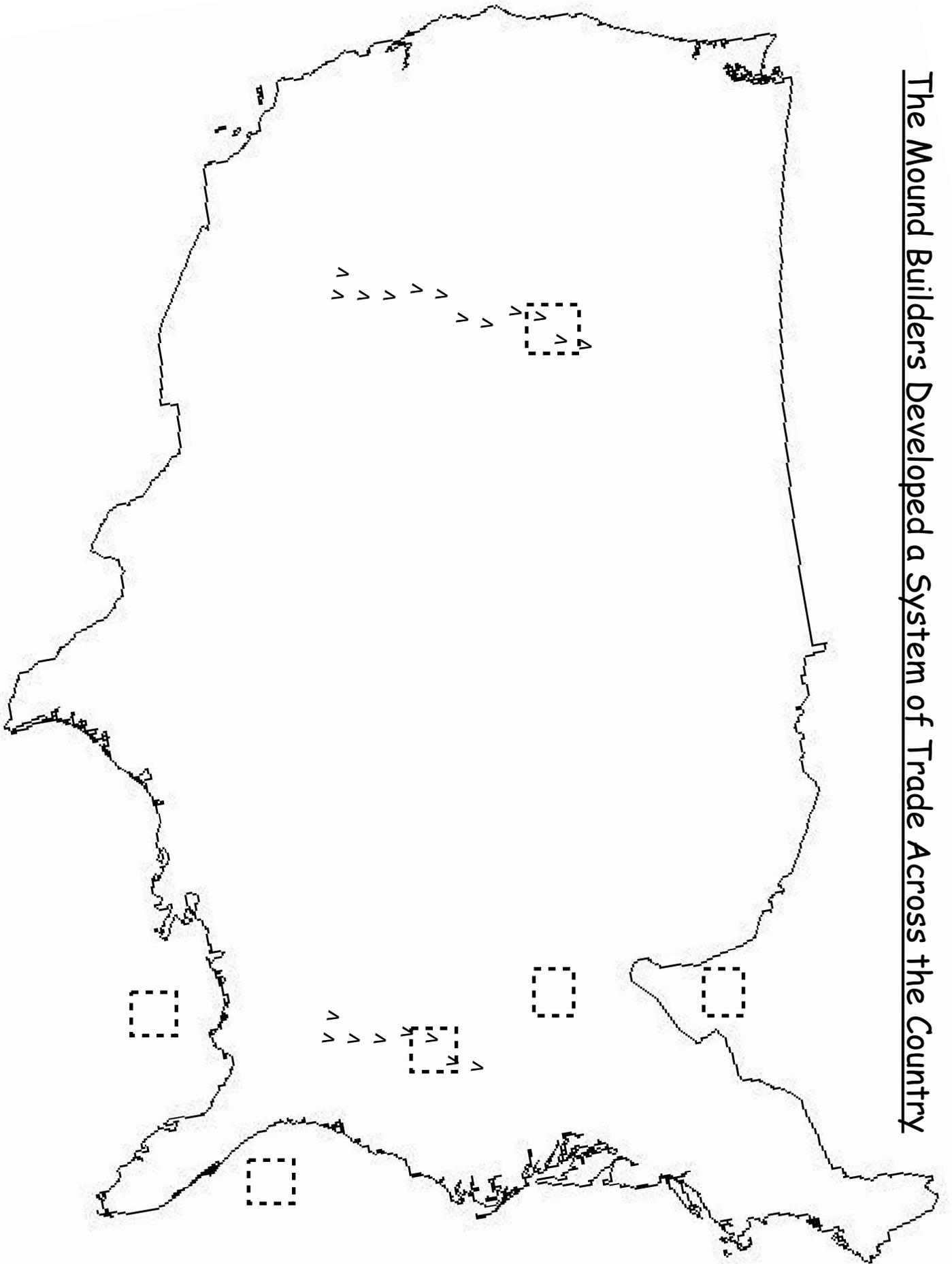
\_\_\_\_\_

# Draw Your Own Hopewell Earthwork Site

Use a pencil with a good eraser and your knowledge of geometry to build your own Hopewell earthwork on a separate piece of drawing paper. Check each box as you go. Read over the list before you start.

- Make your shapes connect by touching or by a path made of parallel lines
  
- Draw at least one circle.
  - Draw a large burial mound and several small burial mounds inside the largest circle.
  
- Draw at least one square.
  - Erase the corners of the square to create openings for people to walk through.
  
  - Create openings in the middle of each side and place a small gate mound in front of each opening.
  
- Draw at least one octagon.
  - Create an opening at each corner of the octagon for people to walk through.
  
  - Place a gate mound in front of each corner opening.
  
- Draw some little people in your earthworks. Remember the earthworks are really big!
  
- The Hopewell always built their earthworks near rivers, so draw a river nearby.
  
- Name your earthwork site at the top of the page.

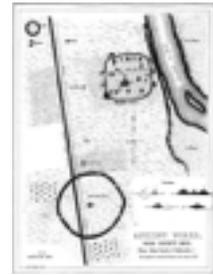
The Mound Builders Developed a System of Trade Across the Country



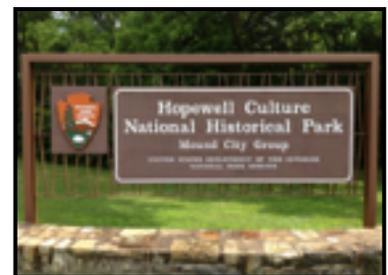
Name \_\_\_\_\_

Cut out the material information boxes below and place them on the map in the correct location





# Exploring the Adena and Hopewell Cultures in Ross County



Hopewell Culture National Historic Park \* Ross County History Depot

This publication was created as an educational resource for the Ross County History Depot local history program, <http://rosscountyhistorydepot.edublogs.org> This is a nonprofit endeavor to enrich students understanding of the significance of local history.

Many of the pictures, illustrations, and information included in this guide were provided as a courtesy by the Hopewell Culture National Historic Park for use in this educational publication only.

Please direct any questions to Julie Lambert at [coverlet@bright.net](mailto:coverlet@bright.net)

Sources of information:

<http://www.earthworksconservancy.org>

<http://www.nps.gov/hocu/index.htm>

[http://www.ohiohistorycentral.org/w/Hopewell\\_Culture](http://www.ohiohistorycentral.org/w/Hopewell_Culture)

[http://www.ohiohistorycentral.org/w/Adena\\_Culture](http://www.ohiohistorycentral.org/w/Adena_Culture)

Thanks to the following for providing assistance and guidance:

Hopewell Culture National Historic Park

Bruce Lombardi

Melinda Repko

Susan Knisley

Jarrold Burks, Heartland Earthworks Conservancy

# The Mound Builders

Over two hundred years ago, many people from Kentucky, Virginia, and other states in our new United States came to what is now Ross County to settle. When they arrived, they found thick woods full of bear, deer, turkeys, and other wild animals. Eager to settle, they quickly cleared the land to make room for their homes, and fields for planting. The uncovering of the land led to their discovery of unusual earthworks which



*The Hopewell Indians, National Park Service Publication*

became known as Indian mounds. Some of the earthworks were shaped like a cone, some like animals, others like geometric shapes. (squares and circles) The new Ross County settlers were not the first to find these Indian mounds. Early settlers in other parts of Ohio had also discovered earthworks just like these.

Many of the settlers assumed these earthworks had been built by ancestors of the Shawnee or another indian tribe. When the Shawnee were asked about the earthworks, they too could only guess about who built them.

As more settlers moved into Ross County, more of the prehistoric earthworks were destroyed. The settlers had no idea these mounds of soil were over 2,000 years old. They did not realize the treasure of information buried in these earthworks. Fortunately early archeologists, such as Ephraim Squier and Edwin Davis were able to record descriptions of the earthworks and their contents. Through their work and the efforts of others, archeologists began to discover that the earthworks seemed to have been created by two different cultures of people.

Taking the Lead . . .

## Ross County Pioneers in Archeology

In the 1800's, two Chillicothe men took a special interest in these earth- works and the people who created them. Their names were E.G. Squier and E.H. Davis.

Dr. Edwin H. Davis, had a medical practice in Chillicothe and Ephraim Squier was the editor of the Scioto Gazette newspaper. They shared an archaeological interest in the many earthworks found in Ross County. Earthworks just like these had been found throughout Ohio and in the states of Wisconsin, Louisiana, Mississippi, Alabama, Indiana, and South Carolina.

The many earthworks were quickly disappearing as more land was cleared for communities and farms. Both Squier and Davis felt it was important to document the earthwork sites before they all disappeared. From 1845 through 1847 they traveled to nearly 100 of these sites, drawing sketches of each earthwork and **excavating artifacts**. In 1848, they published their drawings in a book called "**Ancient Monuments of the Mississippi Valley.**"

We are fortunate Squier and Davis drew sketches and recorded their discoveries because very few of the early earthworks are left. Their early excavations of artifacts helped **archaeologists** discover that there were probably two groups of Mound Builders who lived in our area.



*Courtesy of the Ross Co. Historical Society*

Dr. Edwin H. Davis  
1811-1888



*Courtesy of the NPS*

Ephraim G. Squier  
1821-1888

Taking the Lead . . .

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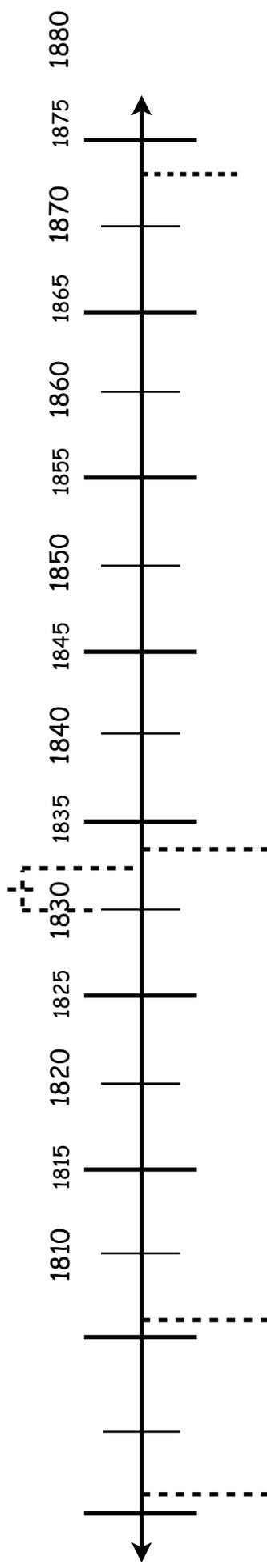
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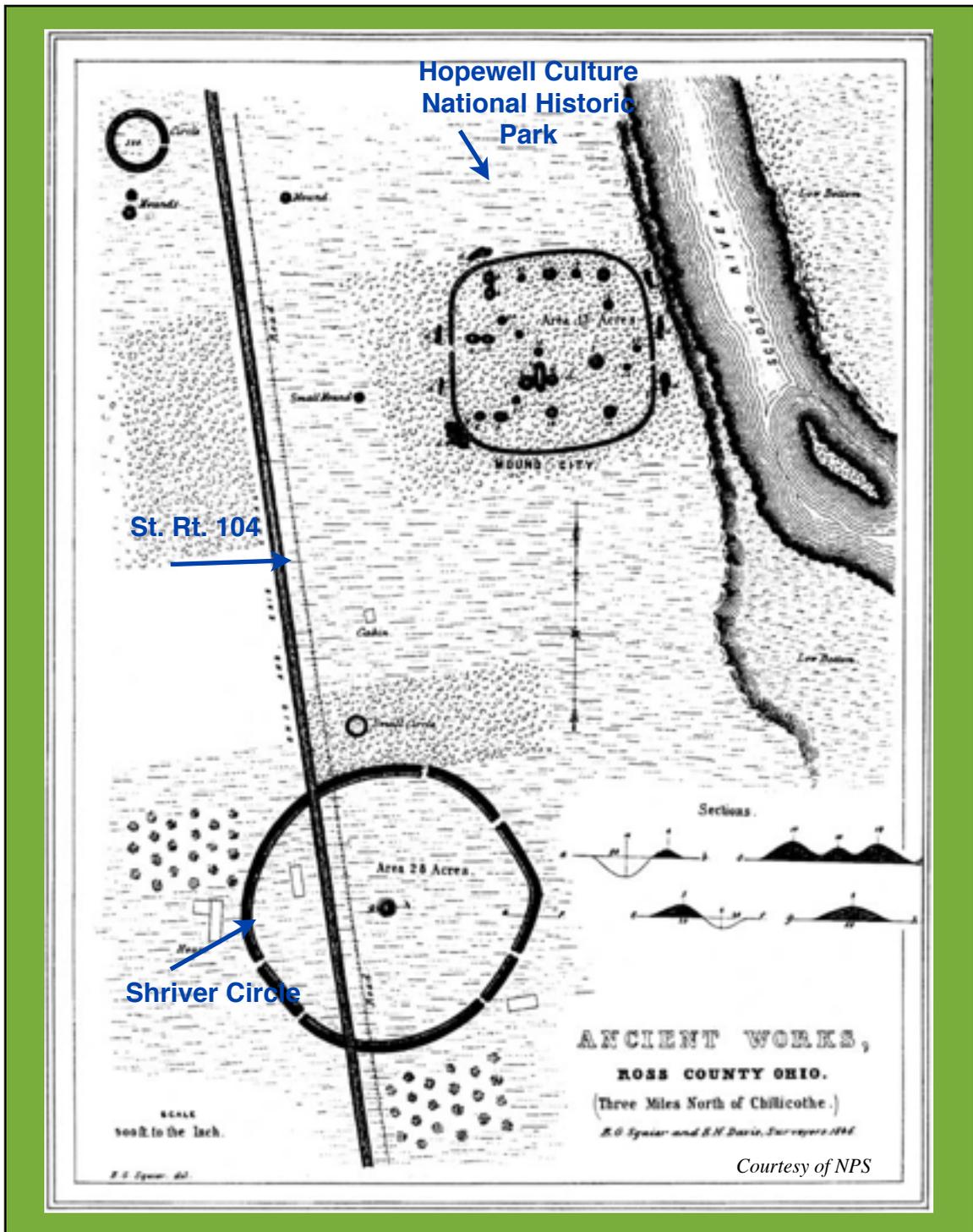
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1811  
Edwin Davis born in Ross County, Ohio



This is a 1846 drawing by Squier and Davis. The top square enclosure shows the mounds at Hopewell Culture National Monument just north of Chillicothe. This drawing shows St. Rt. 104, as it passes through the "Shriver Circle." The circle enclosure was named after the Shriver family who at one time owned the land.

# Shriver Circle

Although Shriver Circle was plowed over and has been farmed for more than 100 years, its image can still be seen from a Google Earth satellite photo. The picture below shows where the circle enclosure was located. The picture on the next page shows the Google Earth image.

Ross Correctional  
Institute

Mound City,  
Hopewell National Historic Park



Unioto High School

Shriver Circle.

Chillicothe  
Correctional Institute

# A Closer Look at Shriver Circle



*Photo from Google Earth*

Shriver Circle



# Map Detective

1. What is the title of this map?

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2. Who drew this map? \_\_\_\_\_

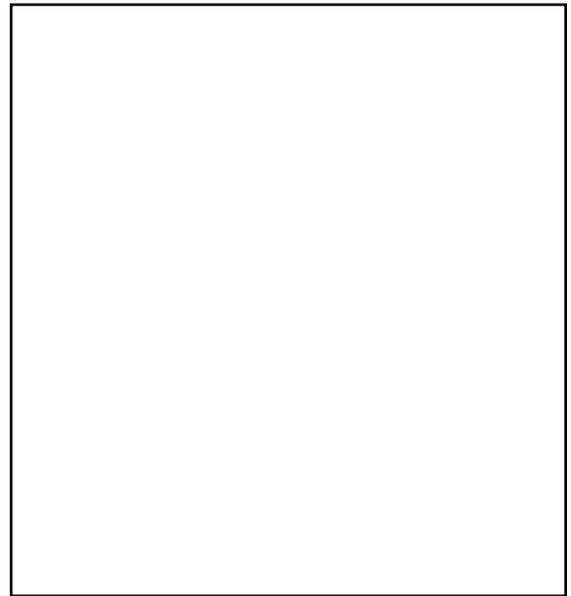
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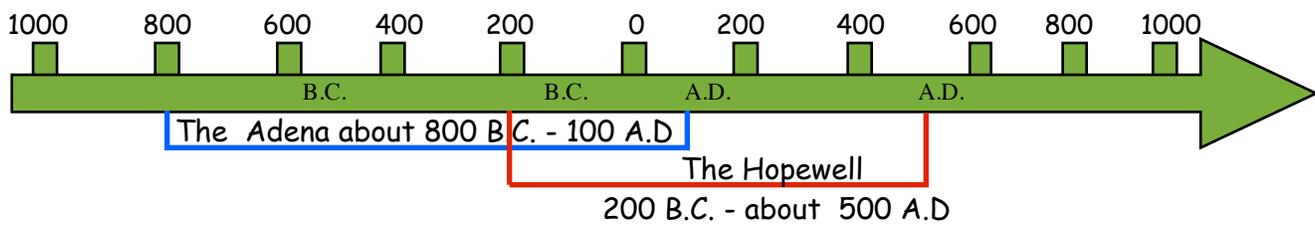
H.

6. What town is featured on this map?

---

7. Name the creek and river that are marked on this map.

\_\_\_\_\_ River                      \_\_\_\_\_ Creek



## The Woodland Period

1000 B.C to 1000 A.D.

The many mounds and earthworks found in an around Ross County were left by two groups of early people known as the Adena and Hopewell cultures. They lived here during a time archeologists refer to as the Woodland period.

### The Adena Culture \* 800 B.C. to 100 A.D.

The earliest of these two groups is known as the Adena culture. They lived in small villages. They left a trail of earthworks along the Ohio River Valley in what are now the states of Ohio, West Virginia, Kentucky, and Indiana. Their earthworks are mostly found near waterways that lead into the Ohio River.

The Adena earthworks were mostly conical shaped mounds which were often used as burial places for their honored dead. Sometimes these mounds would be enclosed within a circular earthwork. Story Mound at the corner of Allen and Delano Avenues (near Worthington School) is a good example of an Adena burial mound.



*Photo courtesy of the Ohio Historical Society*

The Adena people also built animal-shaped effigy mounds. The most famous of these is the Great Serpent Mound found in nearby Adams County. It is an amazing 1,348 feet long!



*Photo courtesy of the Ohio Historical Society*

### **Local Adena Mound Provides the Name for an Entire Culture**

The Adena culture was named after a large mound located on Thomas Worthington's Adena Estate. In 1901 archaeologist, Dr. William Mills headed a team in excavating the Adena mound. Their findings led to the discovery that the people who built this and similar mounds were a different group from the ancient people we now know as the Hopewell.

The Adena mound which was 24 feet in height, was actually a second mound had been built over an earlier mound. 21 skeletons were buried in the first mound, 12 skeletons in the later mound.



*From Records of the Past \* Prof. William C. Mills*



*Photo courtesy of the Ohio Historical Society*

Copper bracelets and rings, bone and shell beads, and spear points made from Flint Ridge in Licking County, Ohio were among the many finds inside the mound. The Adena man effigy pipe, which is now Ohio's official state artifact was discovered in this Adena mound.

The mound, which was located near Lake Ellensmere, was destroyed in the early 1900s to make way for more farmland.

## **Adena Pipe's Place in History Secure** **Ohio selects Ross County artifact for special recognition**

**CHILLICOTHE** — An idea born in Columbus and reinforced by a visit to Chillicothe is what led to a piece of Ross County prehistory becoming the official state artifact earlier this year.

The journey to that designation began more than three years ago when fourth-grade students at the Columbus School for Girls, who were studying Ohio's prehistory and government, took on a project to create an official state artifact along the same lines as designations for a state tree, a state insect and a state flower. Each of those official state objects was chosen because it had an important connection to Ohio's history and natural resources.



The new state artifact of Ohio, the Adena Pipe, was discovered in Ross County.  
*Ohio Historical Society Photo*

The idea came about as the girls took field trips to locations across the state. During one such trip to the Statehouse in fall 2009, they saw a connection between state government and Ohio's prehistory and decided it would be important to honor a culture often forgotten by Ohioans. The students thought becoming one of three states to name a state artifact would encourage others to learn more about Ohio's history and prehistory.

The students began the search for an appropriate artifact, which started with the girls meeting, interviewing and writing to different archaeologists across the state — among them Kathy Brady at Hopewell Culture National Historical Park in Chillicothe. The students also took field trips to various prehistoric sites and museums to view the artifacts. Several were considered before the students settled on one they felt stood apart from the rest — the Adena Pipe, which was discovered on the grounds of the Adena Mansion & Gardens.

The pipe made of pipestone portrays a full human body with decorative clothing. The material is commonly found in Portsmouth near the Ohio River.

Once the artifact was determined, the process of finding someone in the state Legislature to sponsor the legislation began. The students also wrote letters to Native American tribes to gain their consent for the project.

When the proposal originally was brought to legislators in 2010, the Legislature was tied up with state budget issues and was unable to take up the artifact legislation.

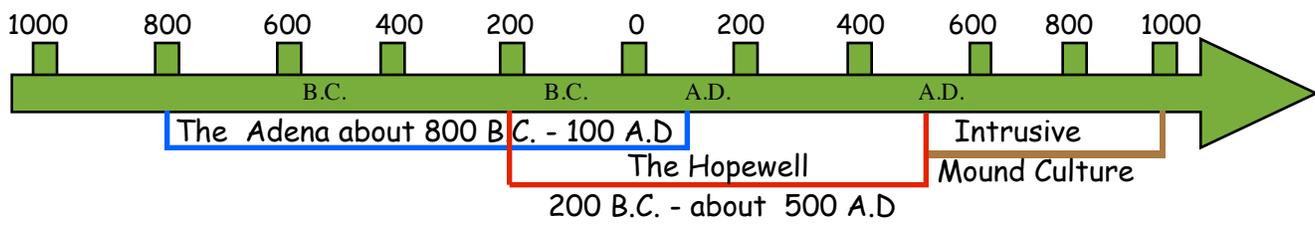
It was reintroduced as House Bill 501 in the spring of 2012, and students from the school continued to write letters to legislators and Gov. John Kasich to gather support, and testified before House committees during the process. At the end of November, the bill passed in the House, but because it was a lame duck session, the bill died again because of time constraints.

A new bill introduced in the Senate this year was placed before both houses of the General Assembly simultaneously and, with the help of lobbyists organized by a parent, met with quick approval. After more than three years, three classes from the school that were instrumental in the process watched Kasich sign the bill into law May 16.

“We hope that this project has inspired some of our young female students to someday become legislators, archaeologists, or lobbyists,” said teachers Tracy Kessler and Charlotte Stiverson in a written account of the process provided to the Gazette. “Through this experience, they have learned that, much like the Adena people, their voice can be heard whether they are a child or a long-lost prehistoric culture.”



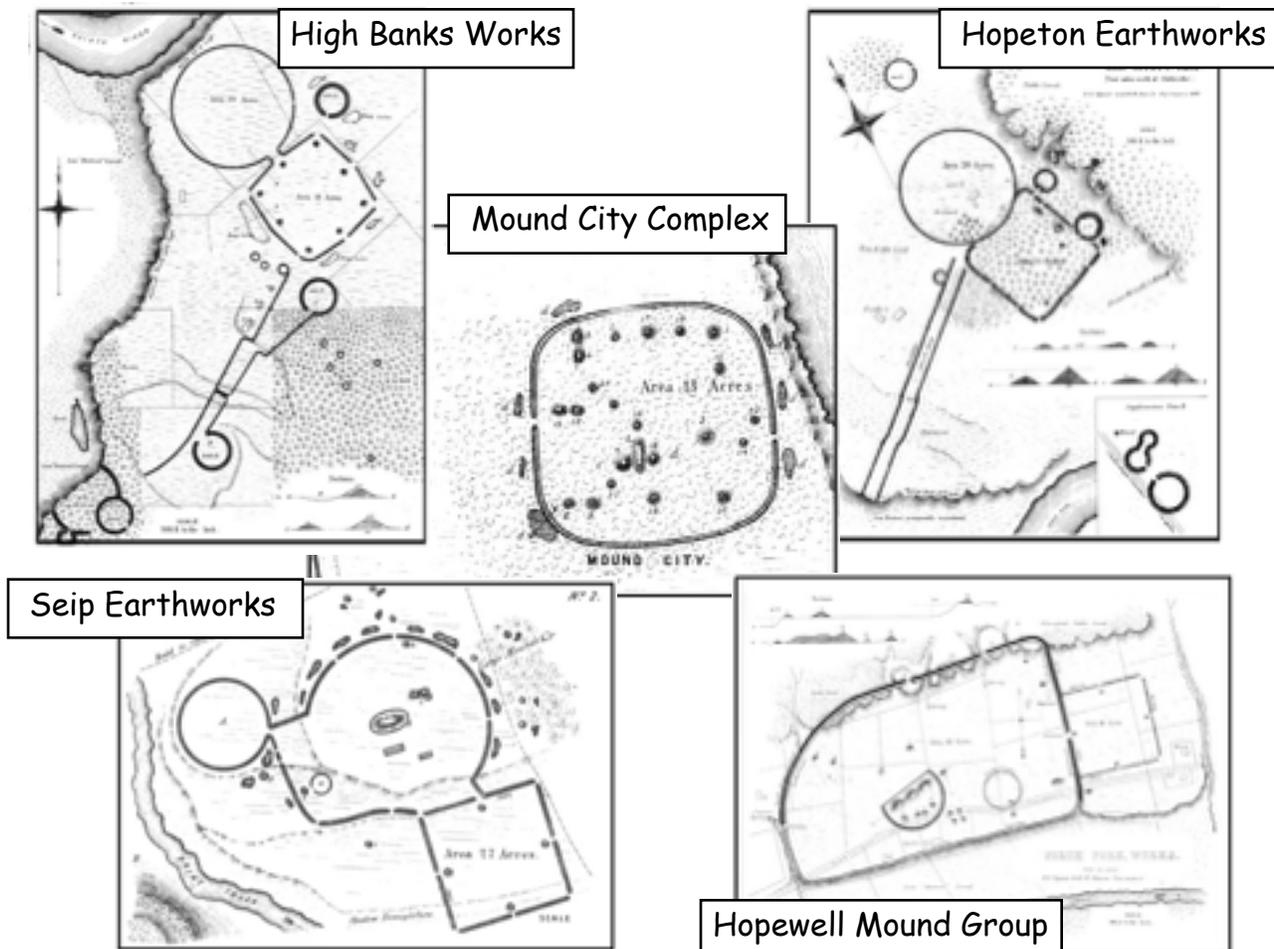
Gov. John Kasich signs a bill in May designating the Adena Pipe as the official artifact for the state of Ohio. The pipe is sitting in a display case to the left of Kasich. / Submitted photo



## The Hopewell Culture \* 200 B.C. to 500 A.D.

The Hopewell culture were also very common in our southern Ohio area. Their village and earthwork sites can be in the Ohio and Mississippi Valleys. Like the Adena people, the largest number of Hopewell sites have been found in southern Ohio.

Hopewell Culture National Historical Park, located on Rt. 104 north of Chillicothe is the most familiar Hopewell site to many local residents. It is one of five earthworks sites under the care of the Hopewell National Historic Park.



<http://www.nps.gov/hocu/historyculture/places.htm>

The Hopewell culture built earthworks which were a lot more complex than the Adena. They went beyond building a simple burial or effigy mound, using a lot of geometric shapes for their enclosures. These enclosures were used for special purposes and were not village sites.

### **Hopewell Farm Earthworks Inspire the Naming of the Hopewell Culture**

Mordecai Hopewell's farm on Sulphur Lick Rd. was the site of the large enclosures and mounds. In 1891 archaeologists excavated the site &



*Photo Courtesy NPS*

found what archaeologist. Dr. Nomi Greber, of the Cleveland Museum of Natural History described as:

"in quality and quantity, the most striking total set of Hopewellian cultural remains in Ohio."

The "dig" was so impressive that archaeologists named the Hopewell culture after the Hopewell farm site. This human hand effigy carved from mica was discovered at the Hopewell farm site. The site is now known as the Hopewell Mound Group and is open to the public.



# Name That Mound Builder Culture!

Write the name of the Mound Builder Culture described in each fact below.

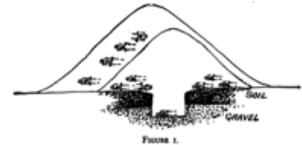
Adena Culture      Hopewell Culture

1. This culture lived in Ross County from about 200 B.C to 500 A.D

\_\_\_\_\_

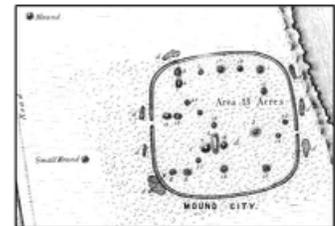
2. This culture was named after the estate owned by Thomas Worthington.

\_\_\_\_\_



3. This culture built the Great Serpent Mound in Adams County.

\_\_\_\_\_



4. This culture built the Mound City earthworks.

\_\_\_\_\_

5. A pipe artifact from this culture recently became Ohio's official state artifact.

\_\_\_\_\_

6. This culture lived in Ross County between 800 B.C. and 100 A.D.

\_\_\_\_\_



7. The human hand carved from mica was an artifact from this culture.

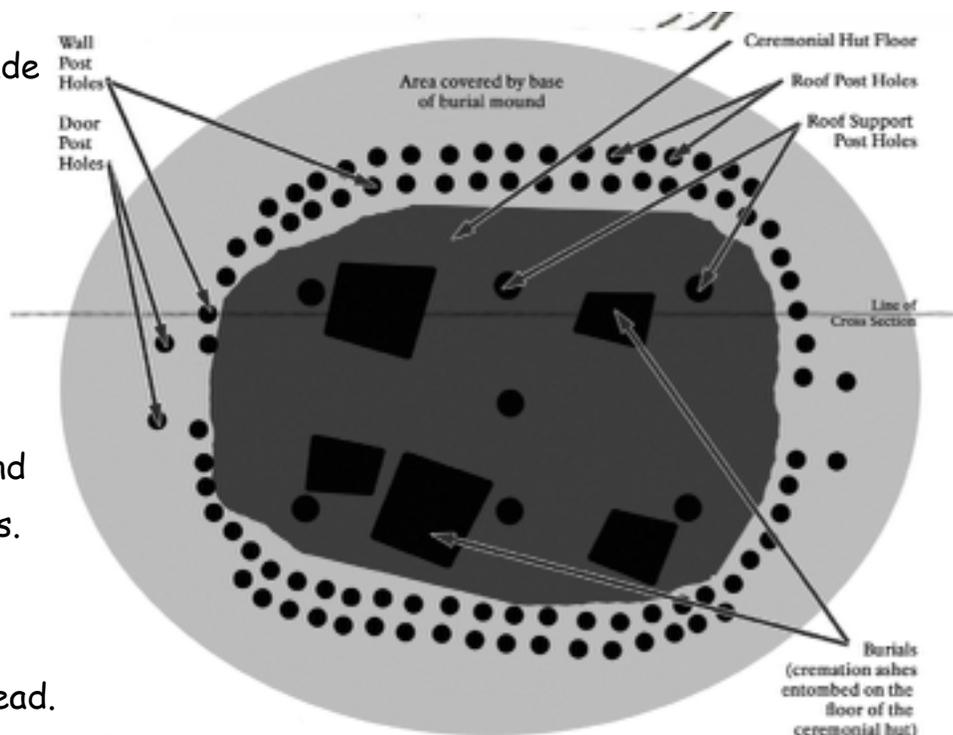
\_\_\_\_\_

8. This culture was named after a local farmer whose farm was home to a large earthwork site.

\_\_\_\_\_

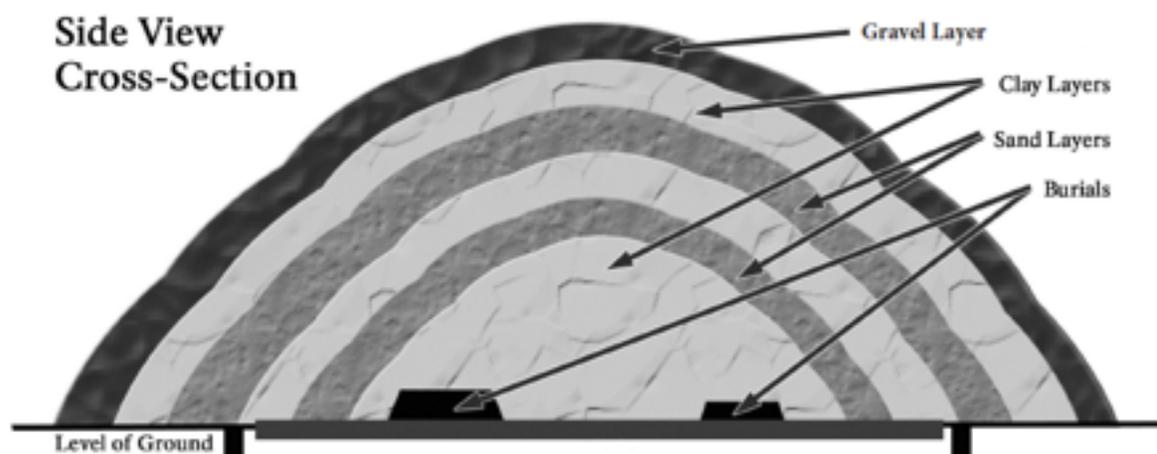
# Hopewell Burial Mounds

Ceremonial buildings made of wooden posts covered with bark were used to cremation of the dead. Once the cremation was complete, the ashes were swept up onto an earthen platform and a small mound was built over the remains. Special objects were left behind as an offering or sign of respect for the dead.

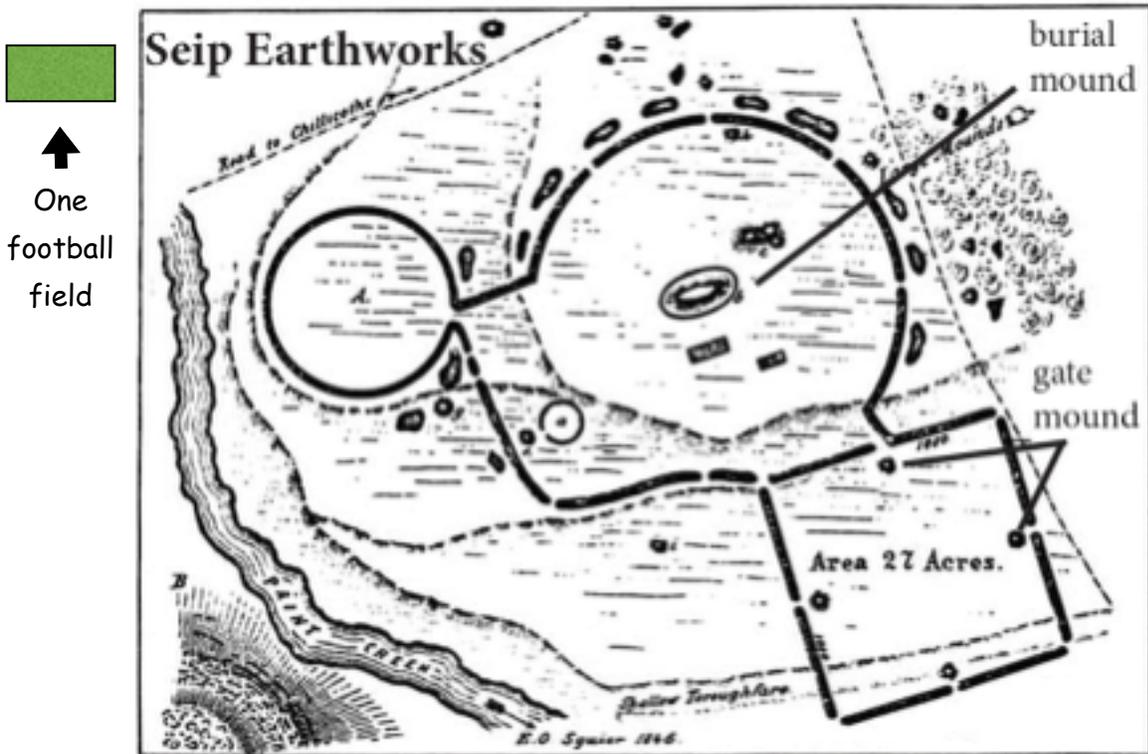


At some point, the Hopewell would all stop using these buildings. They would either burn or take apart the wooden structures and build a mound over the floor, burials and any other objects that were left behind. Rather than just piling up any earth, the Hopewell mounds were made of individual layers of sand, gravel and clay. These are the same materials found in cement today, suggesting that the Hopewell wanted these mounds to last a long time.

Indians of the Late Woodland period used existing Hopewell mounds to bury their dead. They became known as the **Intrusive Mound** culture.



## Sizing Up Seip Earthworks



The Seip Earthworks are Hopewell site located just west of Paint Valley High School in Bainbridge. They were named after Charle Seip, a Chillicothe business man, who at the time owned the farm on which the earthworks are located.

The earthen walls of Seip Earthworks were 10 feet high and went for about two miles! These walls enclosed over 120 acres to form one of the great Hopewell earthworks. A large burial mound can be seen in the center. Smaller mounds can be found inside the square enclosure in front of each opening. They are known as "gate mounds" as they seem to block the opening. Gate mounds are found frequently and do not contain burials.

Find "Seip Mound State Memorial" on Google Earth. Interpretive mowing has been used to show the location of the original earthworks. A reconstructed burial mound and a portion of the original wall can still be seen today at the park site which can be entered from U.S. Rt. 50.

\*Use the scale drawing of the football field above to draw a football field over the mound in the center of the big circle to imagine just how large the Hopewell built their earthworks.

\*Draw little people inside the circle.

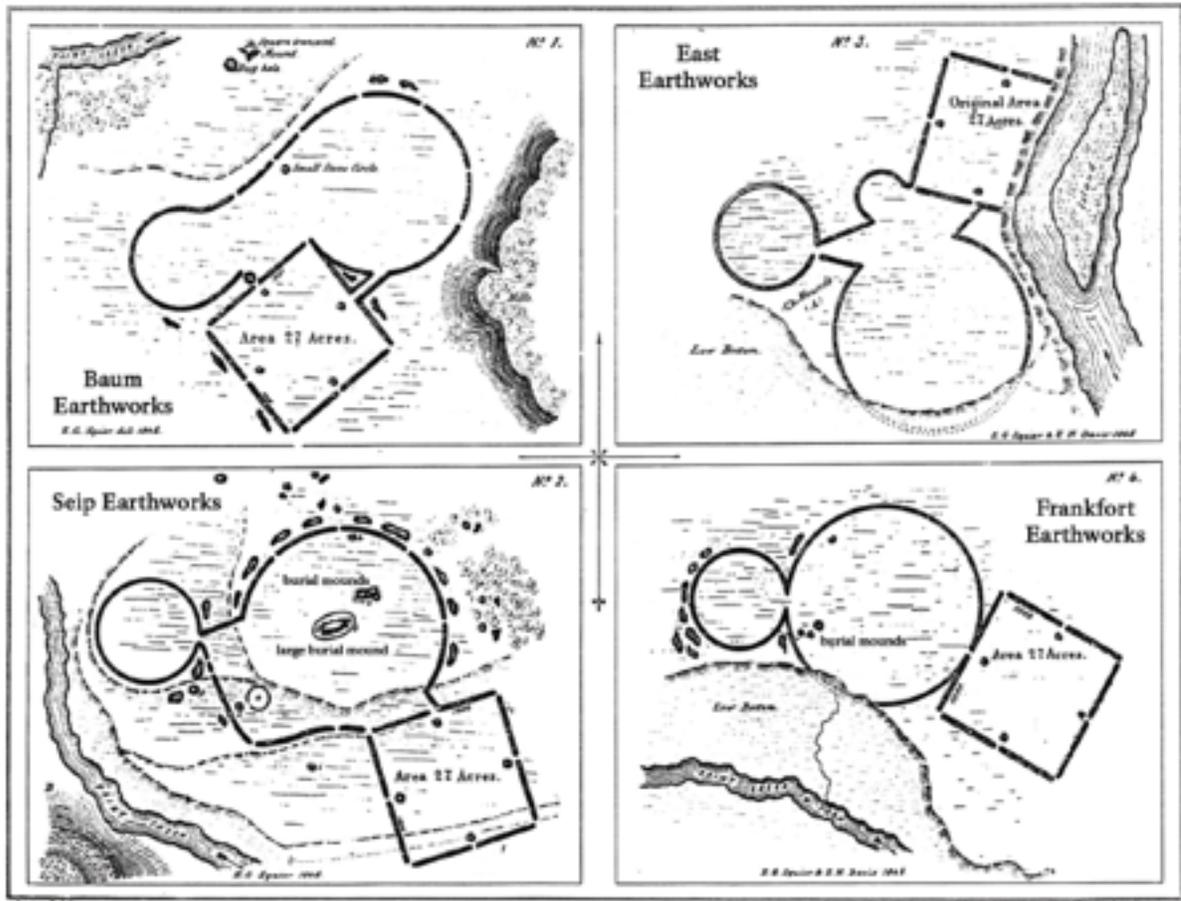
# Seip Earthworks Today



Interpretive mowing gives a clear view of where the Seip Earthworks were.

# Hopewell Earthwork Designs

The Squire & Davis drawings below show four different earthworks in the Chillicothe area. Even though they are miles apart from each other, they are similar.



1. Circle the shapes that all four earthworks had in common.

Big Circle    Small Circle    Square    Octagon

2. Circle the one shape that always contains the burial mounds.

Big Circle    Small Circle    Square    Octagon

3. Circle any of the ways that the squares of the four earthworks were the same.

Same    Eight    Gate mounds at    Gate mounds at  
size    openings    side openings    corner openings

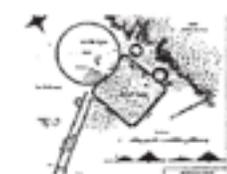
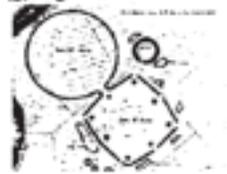
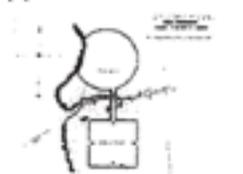
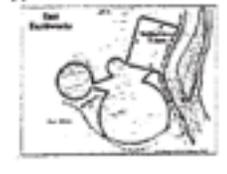
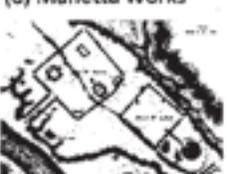
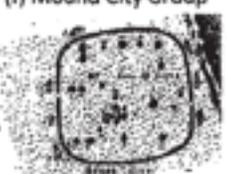
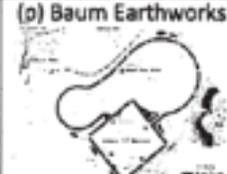
4. The squares are all 1,080 feet on each side, which is longer than three football fields end to end. How do you think the Hopewell people measures so exactly?

# Mapping the Mounds

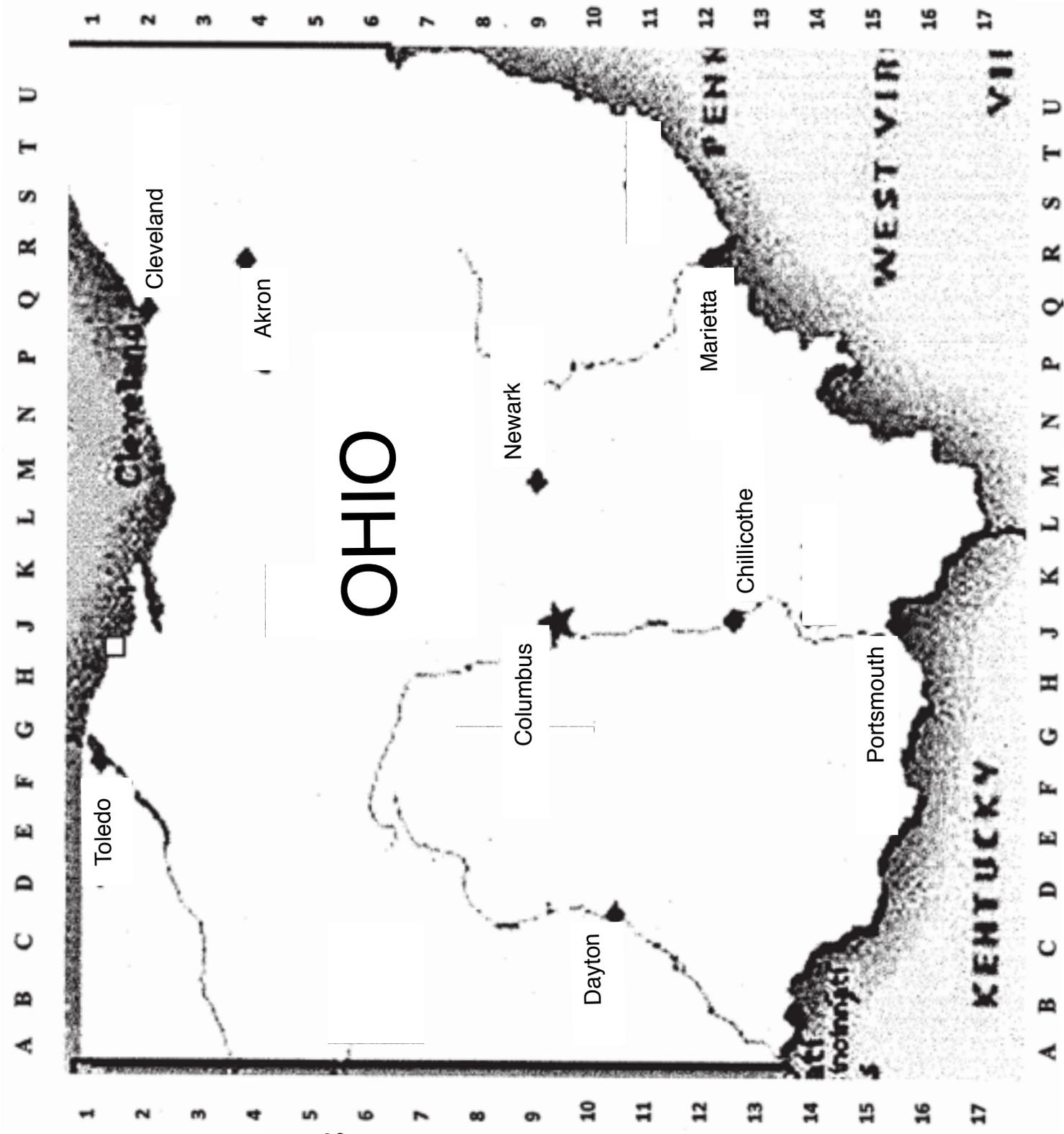
Follow the directions below to complete the "Ohio Hopewell Earthworks" map on page 15.

1. Using a blue color pencil trace and label the following rivers on the map:  

Great Miami River	Maumee River	Muskingum River	Ohio River	Scioto River
----------------------	-----------------	--------------------	---------------	-----------------
  
2. Using a red color pencil write the small letter on the map for each earthwork according to its location. (coordinate) Draw a small circle around each small letter that you write on the map. Check the box after you map each earthwork. Write Small, there are lots of earthworks!
  
3. What Ohio city has the most big Hopewell earthworks near by.

<p>(a) Seip Earthworks</p>  <p><input type="checkbox"/> H-13</p>	<p>(b) Newark Earthworks</p>  <p><input type="checkbox"/> M-9</p>	<p>(c) Hopeton Earthworks</p>  <p><input type="checkbox"/> J-13</p>	<p>(n) Liberty Earthworks</p>  <p><input type="checkbox"/> J-13</p>	<p>(r) Turner Earthworks</p>  <p><input type="checkbox"/> C-13</p>
<p>(g) High Bank Works</p>  <p><input type="checkbox"/> J-13</p>	<p>(h) Seal Earthworks</p>  <p><input type="checkbox"/> J-14</p>	<p>(i) East Earthworks</p>  <p><input type="checkbox"/> J-13</p>	<p>(o) Frankfort Earthworks</p>  <p><input type="checkbox"/> H-13</p>	
<p>(d) Marietta Works</p>  <p><input type="checkbox"/> R-12</p>	<p>(e) Hopewell M. Group</p>  <p><input type="checkbox"/> J-13</p>	<p>(f) Mound City Group</p>  <p><input type="checkbox"/> J-13</p>	<p>(p) Baum Earthworks</p>  <p><input type="checkbox"/> H-13</p>	
<p>(j) Portsmouth Works</p>  <p><input type="checkbox"/> J-15</p>	<p>(k) Dunlap Earthworks</p>  <p><input type="checkbox"/> J-12</p>	<p>(m) Cedar Bank Works</p>  <p><input type="checkbox"/> J-13</p>	<p>(q) Circleville Works</p>  <p><input type="checkbox"/> J-11</p>	

# Ohio Hopewell Earthworks





# Draw Your Own Hopewell Earthwork Site

Use a pencil with a good eraser and your knowledge of geometry to build your own Hopewell earthwork on a separate piece of drawing paper. Check each box as you go. Read over the list before you start.

- Make your shapes connect by touching or by a path made of parallel lines
  
- Draw at least one circle.
  - Draw a large burial mound and several small burial mounds inside the largest circle.
  
- Draw at least one square.
  - Erase the corners of the square to create openings for people to walk through.
  
  - Create openings in the middle of each side and place a small gate mound in front of each opening.
  
- Draw at least one octagon.
  - Create an opening at each corner of the octagon for people to walk through.
  
  - Place a gate mound in front of each corner opening.
  
- Draw some little people in your earthworks. Remember the earthworks are really big!
  
- The Hopewell always built their earthworks near rivers, so draw a river nearby.
  
- Name your earthwork site at the top of the page.

## Digging into the Lives of the Mound Builders

The Adena and Hopewell lived in prehistoric times, so we have no written history about how they lived. Archaeologists have spent years sifting through village and earthworks sites piecing together the many clues left behind by these ancient residents of Ross County.

### Trash Collectors

We know by looking in their trash piles, which archaeologists call **middens**, what foods were eaten. Seeds from corn, pumpkins, and other squash have been found. Remains such as bones and teeth from deer, bear, turkey, and rabbit also were found in these piles. Not only does this tell us what the Mound Builders ate, but it tells us what animals lived in our area at that time.

These middens also tell us that the Mound Builders made clay pottery for their everyday use. Pieces of pottery, some nicely decorated, have been found. Archaeologists have discovered they used arrowheads made of flint and clubs with stone heads for hunting and work. Their clothing was made of woven cloth and animal skins which were sewn together with needles made from animal bones.



What kind of trash do you leave behind? If future archaeologists were digging through the trash at your school, what would it tell them about what kids

1. ate? \_\_\_\_\_

\_\_\_\_\_

2. wore? \_\_\_\_\_

\_\_\_\_\_

3. studied? \_\_\_\_\_

\_\_\_\_\_

4. played? \_\_\_\_\_

\_\_\_\_\_

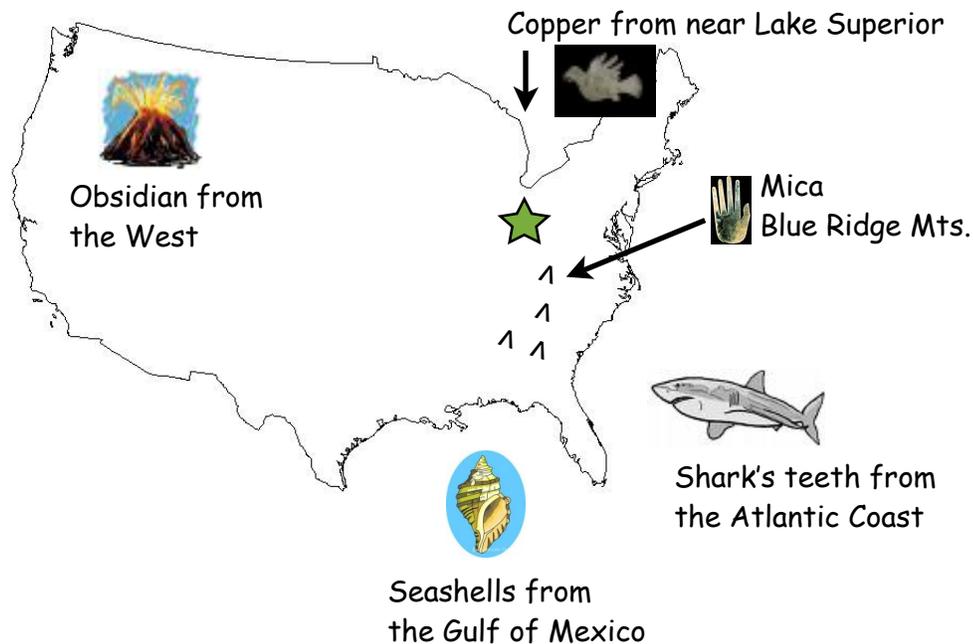


### **System of Trade was Developed**

Flint for arrowheads and pipestone for pipes were both found in Ohio, However the materials used to make many of the artifacts discovered were not from nearby. Jewelry made of sea shells from the Gulf of Mexico, copper from near Lake Superior, and shark's teeth from the Atlantic coast have been found in the burial mounds. Decorative pieces carved of mica from the Blue Ridge Mountains have also been found buried in the mounds. Volcanic obsidian rock from the Rocky Mountains was used to make ceremonial spear heads. This tells us that the Mound Builders had developed a system of trade with people from other parts of the country.

# The Mound Builders Depended On Natural Resources From Near & Far

The Adena and Hopewell people did not have the convenience of pre-made goods that we have today. They looked to their environment for their needs. What couldn't be found nearby, they acquired through a trading system with tribes from all over what is now the United States.



## Mica



*Photos Courtesy National Park Service*



*Photo Courtesy Ohio Historical Society*

Mica artifacts found were mined from the Blue Ridge Mountains of North Carolina. Both the Human Hand and Eagle Claw were excavated from Hopewell earthworks here in Ross County.

# Obsidian



Obsidian rock is a glasslike volcanic rock which was mined in the Rocky Mountains of the western United States.

Obsidian rock was carved into spearheads and knives. Today some surgeons prefer to use obsidian scalpels because they can be made sharper than steel surgical scalpels.



*Photo Courtesy TheGemDealer.com*

# Copper



Copper was mined from the Lake Superior area.



*Photo Courtesy NPS*

Copper was hammered into decorative pieces and jewelry. Copper develops a green coating called a patina when exposed to air.



*Field Museum*

# Flint



*Courtesy Gabriel VanderVort*

Arrowheads, knives and scrapers were carved from flint. The local Mound Builders did not have to travel far for their flint source. Flint Ridge in Licking County was a source of flint in Ohio. Flint from other parts of the country have also been excavated from local Hopewell sites.

# Animal Bone



*Courtesy Gabriel VanderVort*



*Courtesy Gabriel VanderVort*

Animals were killed for more than just the meat they provided. The skins were used for clothing and carved the bones into tools such as the sewing needles above and the fish hook to the left.

# Pipestone



Smoking pipes were made from pipestone. Ohio pipestone was a clay which could be easily carved when first brought out of the ground. Once exposed to air it would harden.

Pipestone outcroppings could be found throughout the midwest. The closest spot for pipestone was along the Ohio River near Portsmouth.

These pipes from the Hopewell Culture National Historic Park were found here in Ross County.



*Photos Courtesy National Park Service*



*Photos Courtesy National Park Service*

# Sea shells



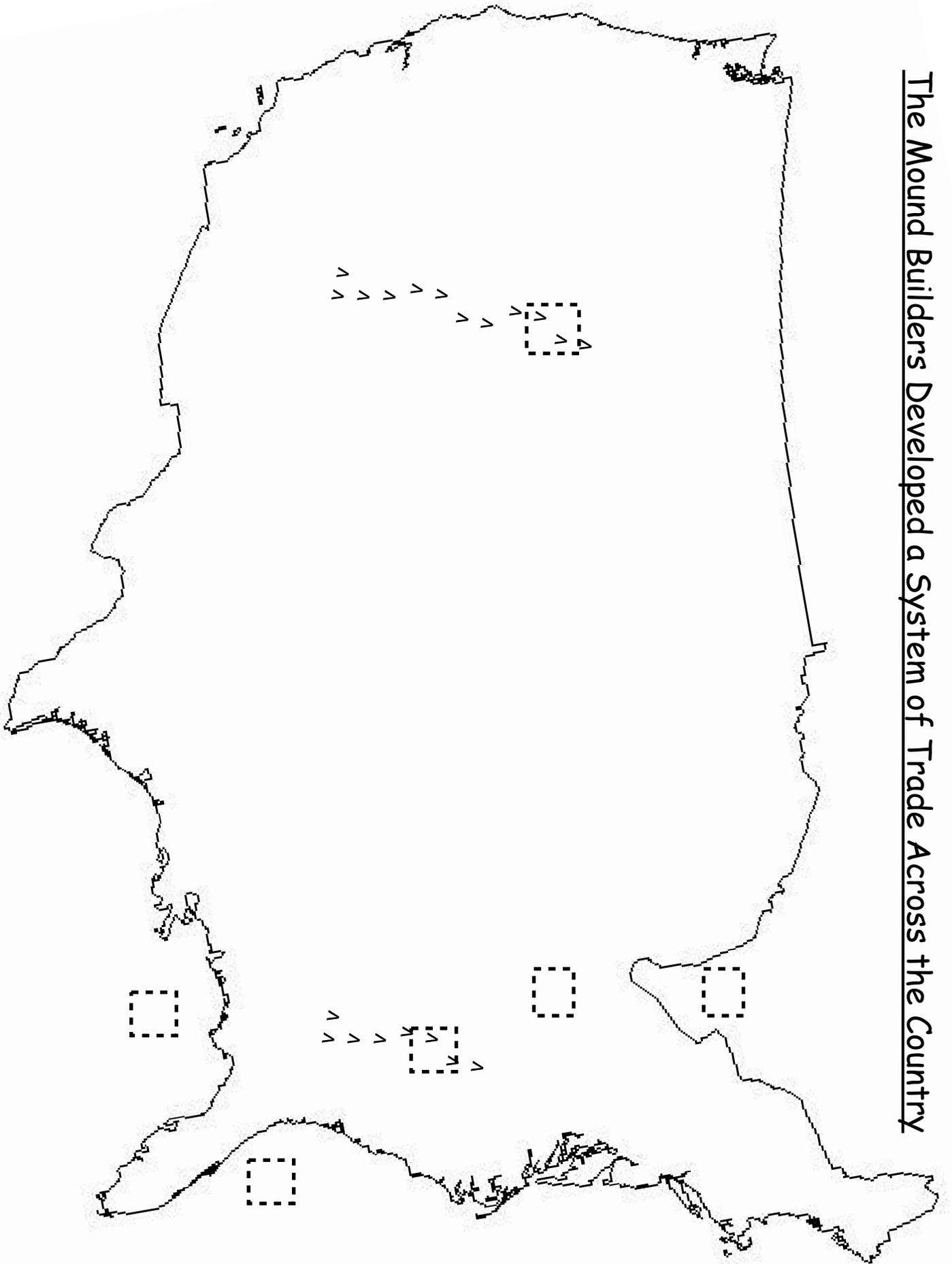
*Photo Courtesy Ohio Historical Society*



*Courtesy Gabriel VanderVort*

Shells from the Gulf of Mexico were carved into jewelry. Shell beads and pendants are shown above.

The Mound Builders Developed a System of Trade Across the Country



Name \_\_\_\_\_

Cut out the material information boxes below and place them on the map in the correct location

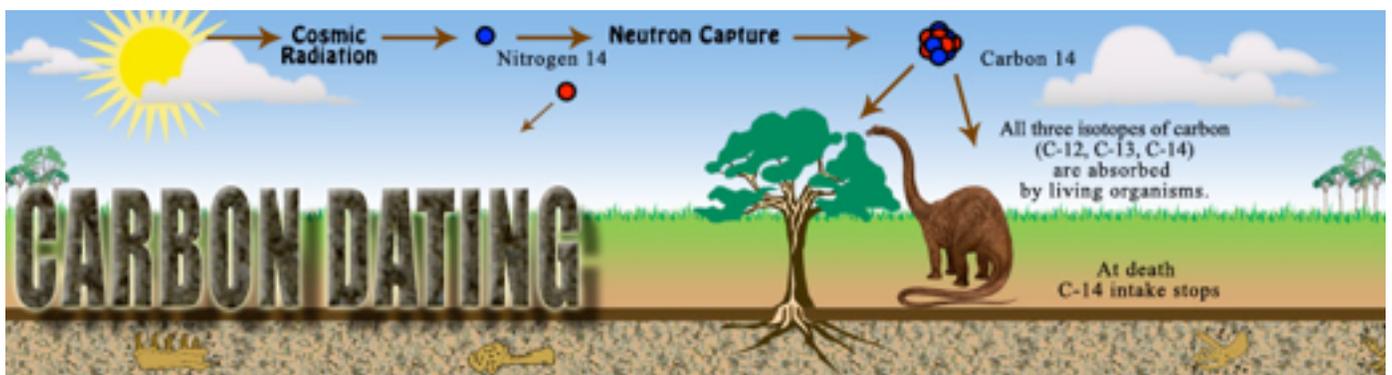


## How Do We Really Know How Long Ago the Mound Builders Lived in Ross County?

One clue is a test called Carbon-14 Dating (also known as radiocarbon dating). All living things, plants and animals, have a certain level of the element Carbon-14 while living. Once dead, the remains very slowly lose tiny bits of Carbon-14. A scientific test can be done to a bone that is found. The amount of Carbon-14 still remaining in the bone will clue the scientist into the approximate time that has passed since the living being stopped living.

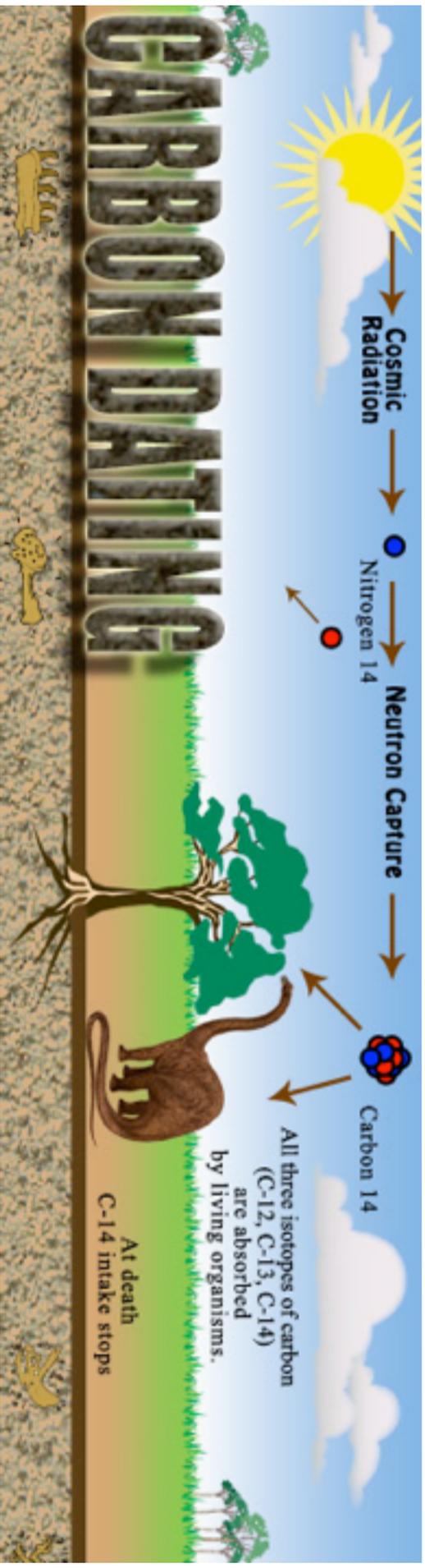
Carbon-14 dating is used in dating things such as bone, wood and plant fibers (cloth) that were alive in the past 50,000 years. Carbon-14 dating can be used to determine the age of rock such as sedimentary rock, which may contain plant or animal remains in its layers.

Carbon -14 dating was used to determine the age of the Mound City Group of mounds which are part of the Hopewell Culture National Historic Park on Rt. 104, just north of Chillicothe. Archaeologists tested charcoal from a cremation burial pit. The results of the test determined that the body had been cremated about A.D. 178. Carbon-14 dating was also recently used to determined that the Adena effigy pipe found in the Worthington Estate's Adena Mound dates to approximately 125 B.C.



[http://www.tokresource.org/tok\\_classes/biobiobio/biomenu/options\\_folder/D3\\_human\\_evolution/index.htm](http://www.tokresource.org/tok_classes/biobiobio/biomenu/options_folder/D3_human_evolution/index.htm)

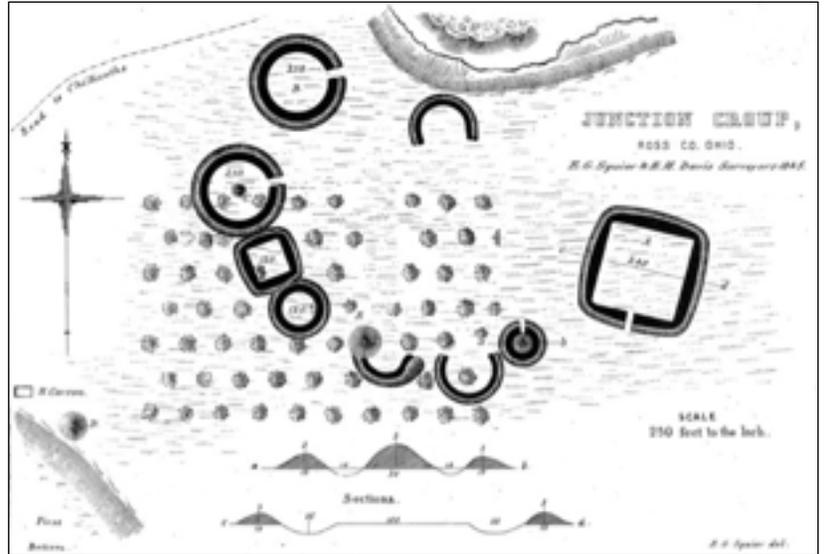




[http://www.tokresource.org/tok\\_classes/biobiobi/biomenu/options\\_folder/D3\\_human\\_evolution/index.htm](http://www.tokresource.org/tok_classes/biobiobi/biomenu/options_folder/D3_human_evolution/index.htm)

# The Junction Group Earthworks are Rediscovered!

What remains of a group of Native American earthworks built between 1800 and 2000 years ago are located in a farmer's field, just southwest of Chillicothe. It sits at the intersection of Plyley's Lane and Bellevue Avenue, just a mile from Allen Elementary. Squire and Davis named the site the Junction Group when they first mapped it in 1845



The Junction Group, was a ceremonial center, as were most of the earthwork sites which have been studied in Ohio. Several burials and what was believed to be an altar were

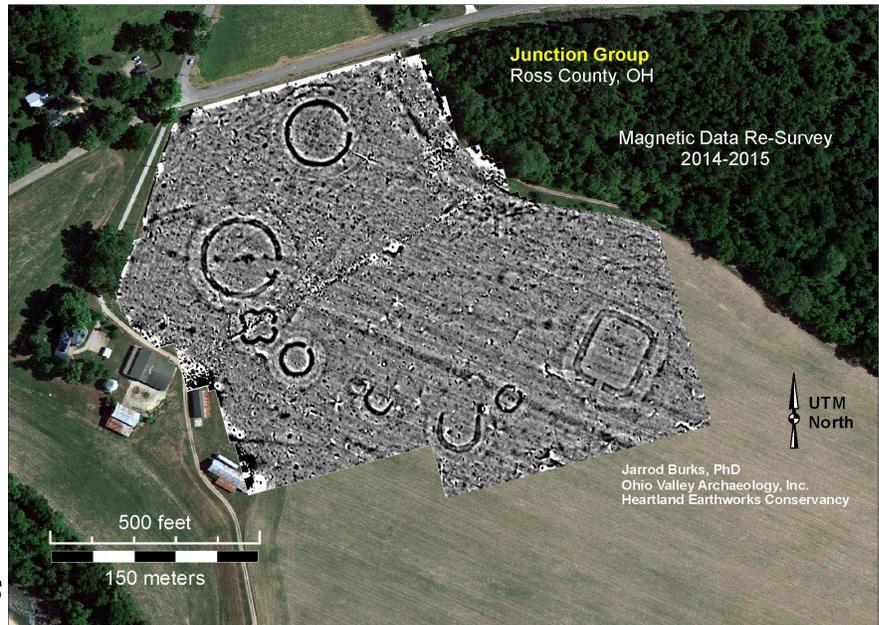
found during the Squire and Davis excavation. The arrangement and design of the earthworks also indicate the site was a gathering place and a sacred space.



Although the site has been farmed for many years, evidence of some of the earthworks could still be seen in aerial photographs such as the one seen in this 1943 photo. The recent use of magnetometry has given archaeologists an even more accurate picture of the original earthworks which once were present at this site.

# Magnetometry gives Archaeologists a View Underground

Use of a technology called Magnetometry has led archaeologists to the discovery of many pre-historic sites which cannot be seen above ground. A **magnetometer** measures patterns of magnetism in the soil. It will pick up evidence of soil below ground which has been changed as can be seen in the picture to the right. The dark circles



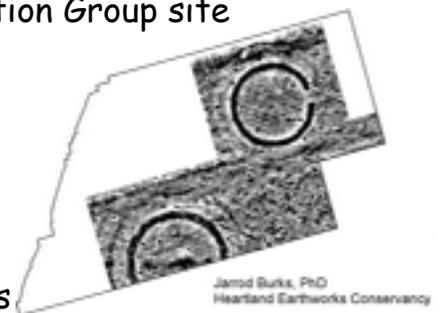
were ditches which were possibly three to five feet deep when they were dug by the Hopewell. **Embankments**, or walls of dirt were built around the ditches. They appear in the survey as a lighter color. Over the years, the ditches filled with top soil and the embankments were plowed over as the land was farmed. Burned soil as was found in pits, post holes, stone walls and other left overs of ancient times can also be detected.

Dr. Jarrod Burks, of Ohio Valley Archaeology is shown to the right using a 4-probe magnetometer to create the survey of the Junction Group site which is seen at the top of the page.



A magnetic survey is done by dividing the site into grid sections. Each section is surveyed, then the information is pieced together to create one big picture.

Archaeologists will do less destruction of ancient sites when magnetometers can show them where to dig.



**Survey Grid Sections**

## The Junction Group Earthworks Comes Back to Life



Interpretive mowing brings the Junction Group Earthworks back to life in this aerial photo taken by local Chillicothe resident, Tim Anderson,

The Junction Group long sat on private farmland under a large crop field. In 2015 the property became available for purchase. Through the efforts of The Arc of Appalachia and the Heartland Earthworks Conservancy funds were raised through grants and the generosity of almost 1,000 individual donations to purchase the land with the purpose of preserving the earthworks site.

Their goal is to now turn the site into a public park. The Junction Earthworks Archaeological Park and Nature Reserve is due to open in the Spring of 2016. Visitors can walk among the "grass" earthworks and hike on trails which will be available. Money is being raised to fund the maintenance of the park, so that it's use will be free.

To learn more about these two groups you can visit their websites :

Heartland Earthworks Conservancy:

<http://www.earthworksconservancy.org>

Arc of Appalachia:

<http://arcofappalachia.org>



The long lost Junction Group Earthworks come back to life thanks to "interpretive mowing" and the long labor of HEC president Jarrod Burks who painstakingly mapped the otherwise invisible ancient walls with his magnetometer. Mist rises from Paint Creek, the sacred river of the American Indians who built the ceremonial complex over two thousand years ago. Photo by Tim Anderson Jr. . Taken from the Heartland Earthworks Conservancy Facebook page