How Geography Can Shape History

Grade Level: 4th

Content Areas: Social Studies, English Language Arts

Time Required:
The basic lesson can be completed in 1-2 class periods, depending on whether you are introducing or reviewing the concepts and vocabulary. Optional extensions 1, 2, or 3 can be done in one class period.

Overview: Using class discussion and a power point presentation, students will explore how geography influences history through a case study of Harrods Creek, a community on the Ohio River north of Lexington. They will use analytical skills in analyzing maps and primary resources including artwork and a document.

Optional extension 1 allow students to apply the essential questions to their own community and includes the opportunity to explore maps and map reading in more detail, conduct short research projects, write informational pieces, and/or report on a topic to present information. Optional extension 2 reinforces the concept that advances in technology can modify the way that humans interact with their physical environment and connects to STEM curricular concepts. Optional extension 3 introduces careers in Transportation Planning (Practical Living/Career Awareness).

This lesson plan can be used alone or as part of a unit including *Kentucky Government at Work*. You could also include the power point from the fifth grade lesson, *An Education for Our Children*.   As a unit, the lessons provide a case study of a rural, African American community in Kentucky and provide a springboard for exploring your local community through the lens of the Big Ideas in Social Studies. As an individual lesson, this can be used to provide an example of how geography impacted the early settlement and history of Kentucky and continues to influence development today.

The lesson can be enhanced by inviting a presenter from the Kentucky Cabinet for Transportation's Kentucky Engineering Exposure Network (K.E.E.N.) to make a presentation to your class. Please see attached description (KEEN Bridge Building Description). See below for a list of district offices.

Background for Teacher
In 2010 an average of 136,000 vehicles crossed the Jefferson Memorial Bridge between Louisville and southern Indiana every day. The resulting congestion caused both traffic delays and an increase in accident incidents. The Kentucky Transportation Cabinet, Indiana Department of Transportation and the Federal Highways Administration began exploring options to alleviate the situation. With public, political, and technical input, a plan was

developed to build two bridges, one in downtown Louisville and one at Louisville's East End near the small, semi-rural community of Harrods Creek. In compliance with state and federal mandates the routes for the bridges and the approaching roadways were designed to minimize adverse effects on residents, businesses, and the natural and manmade environment in the impacted areas.

In the East End project, transportation engineers were able to design a roadway that minimized impacts to residences, businesses, and sites of historic significance. The project is neighboring Harrods Creek, a pastoral suburban community with a significant African American history. An interpretive educational plan was developed to document and preserve the significant and rich heritage of the African American community in the area. The Harrods Creek Lesson Plans were developed as part of this overarching interpretive plan

Essential Questions:
What information do different types of maps provide?
How does the physical environment restrict or promote human activities?
How do humans modify the environment to meet their needs?
How can primary sources help us understand the past?

Learning Targets:
I can identify two types of maps and the information they provide.
I can explain how the Falls of the Ohio helped make Louisville an important transportation center.
I can identify two ways that humans modified the Ohio River at Louisville to meet their transportation needs.
I can identify four different types of primary sources.

Standards Addressed

Social Studies
Big Idea: Geography

Program of Studies: Understandings	Program of Studies: Skills and Concepts
SS-4-G-U-1 Students will understand that the use of geographic tools (e.g., maps, globes, charts, graphs) and mental maps help interpret information, understand and analyze patterns, spatial data and geographic issues. **SS-4-G-U-2**	**SS-4-G-S-1** Students will demonstrate an understanding of patterns on the Earth's surface, using a variety of geographic tools (e.g., maps, globes, charts, graphs): **a)** locate and describe major landforms, bodies of water and natural resources located in regions of

Students will understand that patterns emerge as humans move, settle and interact on Earth's surface and can be identified by examining the location of physical and human characteristics, how they are arranged and why they are in particular locations. Economic, political, cultural and social processes interact to shape patterns of human populations, interdependence, cooperation and conflict.	Kentucky and the United States **b)** locate, in absolute and relative terms, major landforms and bodies of water in regions of Kentucky and the United States **c)** analyze and compare patterns of movement and settlement in Kentucky **d)** explain and give examples of how physical factors (e.g., rivers, mountains) impacted human activities during the early settlement of Kentucky
SS-4-G-U-4 Students will understand that people depend on, adapt to, or modify the environment to meet basic needs. Human actions modified the physical environment and in turn, the physical environment limited and/or promoted human activities in the settlement of Kentucky.	**SS-4-G-S-2** Students will use information from print and non-print sources (e.g., documents, informational passages/texts, interviews, digital and environmental) to investigate regions of Kentucky: **d)** analyze how advances in technology (e.g., dams, roads, irrigation) have allowed people to settle in places previously inaccessible (Kentucky) **SS-4-G-S-3** Students will investigate interactions among human activities and the physical environment in regions of Kentucky: **a)** explain how people modified the physical environment (e.g., dams, roads, bridges) to meet their needs **b)** describe how the physical environment (e.g., mountains as barriers or protection, rivers as barriers or transportation) promoted and/or restricted human activities (e.g., exploration, migration, trade, settlement, development) and land use in Kentucky
SS-4-HP-U-1 Students will understand that history is an account of human activities that is interpretive in nature and a variety of tools	**SS-4-HP-S-1** Students will demonstrate an understanding of the nature of history using a variety of tools (e.g., primary and secondary sources):

(e.g., primary and secondary sources) are needed to analyze and understand historical events.	**a)** investigate and chronologically describe (e.g., timelines, charts) significant events in Kentucky history, from early development as a territory to development as a state **b)** interpret and describe events in Kentucky's history in terms of their importance

English Language Arts
Reading Standards for Informational Text K–5
Grade 4

1. Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

3. Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

4. Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a *grade 4 topic or subject area*.

7. Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

10. By the end of year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

Speaking and Listening Standards K–5
Grade 4

Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 4 topics and texts*, building on others' ideas and expressing their own clearly.

a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

b. Follow agreed-upon rules for discussions and carry out assigned roles.

c. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others.

d. Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.

2. Paraphrase portions of a text read aloud or information presented in diverse media and

formats, including visually, quantitatively, and orally.

4. Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

5. Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

Relevant Dimensions, Subsections, and Indicators from the C3 Framework for Social Studies State Standards, National Council for the Social Studies

DIMENSION 1: DEVELOPING QUESTIONS AND PLANNING INQUIRIES
- **D1.2.3-5**. Identify disciplinary concepts and ideas associated with a compelling question that are open to different interpretations.
- **D1.5.3-5**. Determine the kinds of sources that will be helpful in answering compelling and supporting questions, taking into consideration the different opinions people have about how to answer the questions.

DIMENSION 2: APPLYING DISCIPLINARY TOOLS AND CONCEPTS

CIVICS
- **D2.Civ.13.3-5.** Explain how policies are developed to address public problems.
- **D2.Civ.14.3-5.** Illustrate historical and contemporary means of changing society.

GEOGRAPHY
- Geographic Representations: Spatial Views of the World
  - **D2.Geo.3.3-5.** Use maps of different scales to describe the locations of cultural and environmental characteristics.

- Human-Environment Interaction: Place, Regions, and Culture
  - **D2.Geo.4.3-5.** Explain how culture influences the way people modify and adapt to their environments.
  - **D2.Geo.5.3-5.** Explain how the cultural and environmental characteristics of places change over time.
- Human Population: Spatial Patterns and Movements
  - **D2.Geo.7.3-5.** Explain how cultural and environmental characteristics affect the distribution and movement of people, goods, and ideas.

HISTORY
- Change, Continuity, and Context
  - **D2.His.1.3-5.** Create and use a chronological sequence of related events to compare developments that happened at the same time.
  - **D2.His.2.3-5.** Compare life in specific historical time periods to life today.

DIMENSION 3: EVALUATING SOURCES AND USING EVIDENCE
- **D3.1.3-5.** Gather relevant information from multiple sources while using the origin, structure, and context to guide the selection.

o **D3.3.3-5.** Identify evidence that draws information from multiple sources in response to compelling questions.

Preparation:
Review the power point and determine if you will use one of the follow-up activities. If you plan to use a follow-up activity, you can begin to lay the foundation as you lead students through the power point. You will need to do some preliminary research into your community's geography and history for Optional Activity 1.

Materials:
To project
- How Geography Can Shape History powerpoint
- "written_doc_analysis-NARA"

Make copies of these handouts as needed.
For each student:
- Geography and History Word Bank
- Looking at Maps
- Analyze Art to Understand History
- *Geography and History* Word Match
- *Geography and History* Writing Prompt

Optional Follow-up
Materials for Extension 1: Download or order Geologic County Map from the Kentucky. They are available [here](#).

Handout for Extension 1
- Geography and History in Our Community

Introduction: Uncover Prior Knowledge
- Ask students how Native Americans might have traveled in Kentucky before the settlers came.
- Ask students how the early settlers traveled into Kentucky.
- Ask students what factors might have been important to settlers when they were deciding where to build their homes.
- What were their basic needs and what in the physical environment could help them meet those needs?

Distribute copies of the Geography and History Word Bank and complete the first entry as a group.

Power Point and Discussion: Discover New Knowledge
Use these suggestions for discussion as suitable for your class and the time available

- **Slide 3 –** Have students find Pennsylvania, West Virginia, Kentucky, Ohio, Indiana, and Illinois. Show them the confluence of the Ohio and Mississippi Rivers. Ask if they know where the Mississippi River goes.
- **Slide 4 –** Have students find the Gulf of Mexico. Ask students why it would be important for there to be a way to travel down the Ohio River to the confluence with the Mississippi.
- **Slide 5 -** Word Bank definition for "tributary"
- **Slide 6 -** Word Bank definition for "barrier"
- **Slide 9 -** Word Bank definition for "commerce" and "harbor"
- **Slide 10 -** Word Bank definition "topography"
- **Slide 11 –** Distribute "Analyzing Art to Understand History" and complete it together. Explain that one way to understand the past is to look at artwork that was actually produced during the time period you are studying. Give students this background information as you complete the Description section of the worksheet:
    - o The artist, Alfred Waud, created detailed sketches from real life. His artwork is considered a "primary source. He was actually there and accurately recorded what he observed.
    - o The "medium" is wood-engraving. During the mid-1850's, wood engraving was a popular technique used to create illustrations for publications. Photography existed but not the technology to make multiple prints from a photograph so when a magazine wanted to include illustrations, they hired artists to make detailed sketches. Wood engravers would then carve the image into a block of wood that could be used to create thousands of images.
    - o The **purpose** of this art work is "narrative" (it tells a story).
    - o As you "read the details," lead a discussion and have students point out the various people engaged in activities: paddling a canoe, steering the flatboat, fishing,
    - o (For more background information on this woodcut, see the **Broadhorn or Kentucky Boat on Ohio** article at the end of this lesson plan.)
- **Slide 12 –** Ask students to compare and contrast the flatboat and the steamboat. Help them understand that a flatboat was propelled by the current, the "sweeps" and oars being used for steering. Flatboats could only go in one direction – downstream. Steamboats were propelled by steam powered wheels and could go upstream as well as downstream.
- **Slide 13 –** Explain what a canal is. Ask students how a canal would make it easier for boats to travel on the Ohio River. Point out that this is one way that people modified their physical environment to meet their needs.
- **Slide 14 -** Word Bank definition for "agricultural"
- **Slide 14 -** Word Bank definition for "urban"
- **Slide 16 -** Word Bank definition for "bluffs"
- **Slide 17 –** Project "written_doc_analysis-NARA" and complete it together
- **Slide 20 -** Word Bank definition for "Underground Railroad"

- **Slide 21 –** Have student identify the various buildings in this aerial site plan. Word Bank definition for "segregation," "rural," and "tenant"
- **Slide 22 -** Word Bank definition for "bottomlands"
- **Slide 24 -** Word Bank definition for "commute"
- **Slide 29 –** A bridge is one way that people modify their environment to meet their transportation needs. What other example have we seen of a way that people might modify a river? (the canal)
- **Slide 30 –** Ask students if they have been across a big bridge. Ask if they can describe it.
- **Slide 31 and 32 –** Allow time for students to reflect on/apply their new knowledge to their local community. Use this as an opportunity for **reflection/formative assessment** of the class as a whole. You may elect to keep notes on the participation of individual students. If you plan to do one of the optional follow-up activities, introduce it at this time, distributing the appropriate handout.

Assessment:
- As noted, use the reflection discussion on slide 31 as formative assessment for the class or for individual.
- Use the *Geography and History* Word Match to assess vocabulary comprehension.
- Use the *Geography and History* Writing Prompts to assess concept comprehension. These can be used as exit slips or as prompts for short essays.

Optional Follow-up Activities: Applying Knowledge, Local Connections
Optional Activity 1
A quick way to assess if there are suitable resources on your community or county for this activity, do a web search for resources on county or community history. You could also ask your local tourism commission or local historical society. Emphasize that you are not looking for genealogy information but for any links between the local landscape and natural resources and history. Gather your resources together.

Download or order Geologic County Map from the Kentucky Geologic Survey. The Kentucky Geological Survey provides free resources to teachers. It has produced a variety of maps to help students learn about Kentucky's land and water and to better understand the place where they live, play, and may someday work and have a home.   Generalized Geologic County Maps

You may also contact Dan Carey for free, laminated copies of the county maps. carey@uky.edu

The maps illustrate the rock types that form the foundation of the county and how the rocks may affect home, road, and commercial development, the building of ponds, recreation, etc. Photos taken in the county, diagrams, and text illustrate local issues, such as sinkholes in karst regions, or landslides in Eastern Kentucky. Some good questions to ask as you introduce students to the county map are:

Topographic Maps

Questions for the Classroom
What is GIS?
What is the scale of your map?
Can you find your neighborhood and school on the map?
How far is your neighborhood from your school?
If you were a bird, how far would you fly from your house to your school?
What is the elevation of your school?
What is a contour line?
What does it mean if contour lines are close together? Far apart?
Is the land steep or level near your neighborhood?
How far is the nearest stream, wetlands, sinkhole, spring, or well from your school?
Are there sinkholes in your county? Are there wetlands? Are there mined areas? Are
there oil and gas wells? Are there water wells? Are there springs?
What are some things you might want to put on a map?
Other maps that might be useful are Kentucky Terrain (shows the regions of Kentucky) and
River Basin Maps (large-scale maps of the 7 major Kentucky river basins).

Use Slide 31 as the springboard for this activity. Review the questions on the slide to allow
students to share any information they may have. Share the resources that you have found or
direct students to website where they can discover information themselves.

Explain that each team of students is going to identify a topic that links together history and
geography of your community or county. They do not have to do a complete history or cover
all the geographical aspects of the community, just select one aspect and focus on that.

Divide the class into teams and distribute Geography and History in Our Community. Go over
the assignment with them.

Helpful websites for Optional Activity 1 are:

- Kentucky Digital Library has a database of primary sources that can be searched by
  county, publication date, and format.
  http://kdl.kyvl.org/

- The Kentuckiana Digital Library **http://athena.uky.edu/**

Optional Activity 2: Cross-Curricular/STEM connections

Use slides 29 and 30 as a springboard for this extension.

Ask students to define a bridge. Guide them toward a definition like *Bridges are structures
which carry people, goods, and and vehicles across natural or man-made obstacles.*

Explain that there are many different types of bridges. Ask students what bridges they have seen. Ask them to describe what the bridge looked like.

Ask students to recall what the people in Harrods Creek hoped the new bridge would be like (that it would allow an open view of the river and fit well into the community).

Use the interactive *Bridge Basics* from the PBS program *Building Big* to introduce different bridge types and explore the forces that act upon each bridge type. http://www.pbs.org/wgbh/buildingbig/bridge/basics.html
Be sure to include the cable-stayed bridge.

Help them consider how different types of bridges fit into different environments by using the interactive Bridge Challenge. Now your students are thinking like transportation planners!

Optional Activity 3: Practical Living/Career Awareness

Pre-viewing discussion questions:
- What jobs are related to transportation?
- What do you think a Transportation Engineer does?
- What skills would a Transportation Engineer need?

Lead a discussion as students view *KEEN Transportation Eng Process* 2013 and/or *Careers in Transportation*.

Post-viewing discussion questions:
- How many of you think you might like to have a career in transportation?
- How many are glad that there is someone out there doing these jobs?

Supplemental Materials for Teacher

Kentucky Highway Districts

The Kentucky Transportation Cabinet divides the state into 12 highway districts to optimize building, accountability, & maintenance of the transportation systems within.

District 1
Ballard, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon,

District 2
Caldwell, Christian, Daviess, Hancock, Henderson, Hopkins, McLean, Muhlenberg,

McCracken, Marshall, and Trigg Email District 1
Phone: (270) 898-2431

Ohio, Union and Webster Email District 2
Phone: (270) 824-7080

District 3
Allen, Barren, Butler, Edmonson, Logan, Metcalfe, Monroe, Simpson, Todd, and Warren Email District 3
Phone: (270) 746-7898

District 4
Breckinridge, Grayson, Green, Hardin, Hart, Larue, Marion, Meade, Nelson, Taylor, and Washington Email District 4
Phone: (270) 766-5066

District 5
Bullitt, Franklin, Henry, Jefferson, Oldham, Shelby, Spencer, and Trimble Email District 5
Phone: (270) 766-5066

District 6
Boone, Kenton, Campbell, Bracken, Pendleton, Grant, Owen, Gallatin, Carroll, Harrison and Robertson Email District 6
Phone: (859) 341-2700

District 7
Anderson, Bourbon, Boyle, Clark, Fayette, Garrard, Jessamine, Madison, Montgomery, Mercer, Scott, and Woodford Email District 7
Phone: (859) 246-2355

District 8
Adair, Casey, Clinton, Cumberland, Lincoln, McCreary, Pulaski, Rockcastle, Russell, and Wayne Email District 8
Phone: (606) 677-4017

District 9
Bath, Boyd, Carter, Elliott, Fleming, Greenup, Lewis, Mason, Nicholas, and Rowan Email District 9
Phone: (606) 677-4017

District 10
Breathitt, Estill, Lee, Magoffin, Menifee, Morgan, Owsley, Perry, Powell, and Wolfe Email District 10
Phone: (606) 677-4017

District 11
Bell, Clay, Harlan, Jackson, Knox, Laurel, Leslie, and Whitley Email District 11
Phone: (606) 598-2145

District 12
Floyd, Johnson, Knott, Lawrence, Letcher, Martin, and Pike Email District 12
Phone: (606) 433-7791

Broadhorn or Kentucky Boat on Ohio ~

In May, 1782, Pennsylvania farmer, Jacob Yoder, became the first person to successfully navigate a flatboat from Brownsville to New Orleans, delivering flour, and effectively demonstrating how the waterways could be used to reach distant markets and to settle the West.

Flatboats or Flats were rectangular, flat-bottomed boats without keels. This meant that they were relatively easy to build, but this simple and affordable design also destined them to be awkward one-way craft. They were built in various sizes and layouts depending on the load they would carry and the distance to be traveled.

Small flatboats were used on short trips and might only be 16ft long by 4ft wide. They either had no covering or a simple shelter with a cooking area. Long and narrow, they could navigate creeks and small rivers on the way to market.

Typical mid-range flatboats were about 55ft long by 16ft wide and were called Broadhorns, Kentucky Boats, or Natchez Boats. Built for an extended river journey, they were used by farmers and traders seeking profitable markets for produce and goods, and also by families moving West. They had a shed or a pen in the rear for horses and cattle, and a cabin forward for the owners.
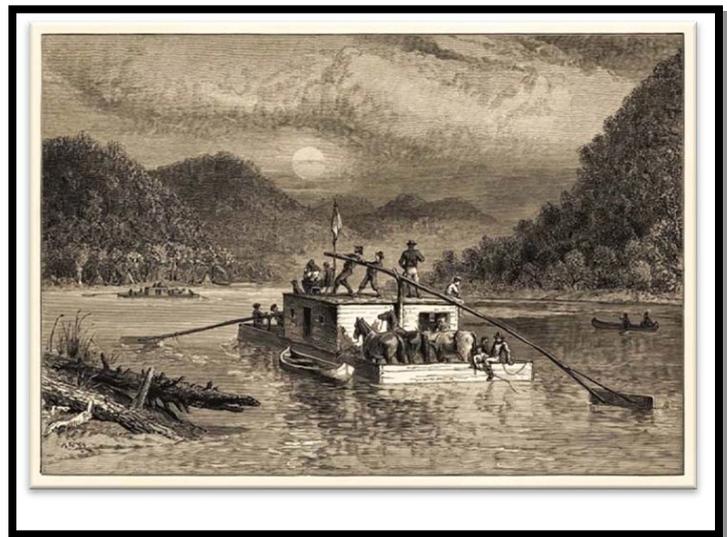
Travel by Flatboat - Artist, Alfred R. Waud (1828-1891)
Source: SteamboatTimes.com

The largest, long-range flatboats were called Mississippi Broadhorns, New Orleans Boats, Barges, Scows, or Arks (a humorous reference to the many animals often carried by farming families). These transported larger cargos, could be 100ft long by 20ft wide or more, and were normally covered throughout their entire length. Built for navigating big rivers, particularly the Ohio and the Mississippi, they were used by freighters, traders, and sometimes by two or more families traveling West with their farm animals. A large flatboat required four crew and a pilot, who were contracted for a four-to-six week period; some professional flatboatmen made three or four trips yearly.

Flatboats could serve almost any purpose, and were used as storeboats by storekeepers, showboats by entertainers, chapel-boats by ministers, as galleries by photographers, as printshops by printers, as floating brothels called gunboats, as wanigans (cook shanty, bunkhouse, supply boat), and also as shantyboats on which families would live permanently.

Early flatboat travellers were subject to Indian attack, so the boats were built like floating forts, with only one door, heavily barred. Windows, if any, were small and had sliding shutters. The walls were pierced with loopholes through which guns could be fired. Gradually, flatboats became more comfortable. The cabins were divided into chambers, and many had brick fireplaces and chimneys for heating and cooking, though a basic flatboat only had a sandbox fireplace.

When steamboats became prevalent, some flatboats were built with raked bows to be used on return trips alongside steamboats, serving as Wood Flats, Coal Flats, or Lighters. After the Civil War it became common for purpose-built Barges to be 'towed' by steamboats upriver *and* downriver.

For navigation, flatboats were rigged with 30-55 ft sweeps on the sides, a rudder or steering-oar, and a short front sweep called a "gouger". The great side sweeps, resembling horns from a distance, gave rise to the name Broadhorn. The side sweeps were used for directing the flatboat into the current, or for pulling into slack water when landing, rather than for propulsion. Some flatboats also had hawsers mounted to reels; the hawser (rope) would be attached to a tree or stump and wound in to "warp" the boat off a sandbar, or to assist landing.

An average of 3,000 flatboats descended the Ohio River each year between 1810 and 1820. Abraham Lincoln twice piloted a flatboat carrying produce from Illinois to New Orleans (1828, 1831).

Although the flatboat preceded the steamboat, it was in regular use for many years after steamboats had become prevalent. Flatboat numbers actually increased until about the mid-1850s, carrying ever more goods and settlers West, while the steamboats provided a quick and easy passage upriver for those involved in downriver trading. Huck Finn refers to a flatboat as a 'trading scow' in Chapter 3 of *Life on the Mississippi*, by Mark Twain.