

## **CAHC MURF Lesson Plan 4**

### **World Geography**

### **US History – Since 1929**

**Period: ~1920-1970**

#### **Essential Questions**

How can the environment impact a city?

How can cities impact the environment?

#### **Applicable Arkansas Social Studies Standards:**

##### **World Geography**

G.3.WG.7 Analyze changes in the environment and cultural characteristics of a place or region that influence spatial patterns of trade and land use over time

G.4.WG.1 Analyze human changes' effects on the physical environment (e.g., industrialization, agricultural, rural land use, urban land use, mining, forestry).

G.4.WG.2 Analyze ways people have used technology to adapt to and modify the physical environment. G.4.WG.3 Research the consequences of human-made and natural catastrophes on global trade, politics, and human migration using various primary and secondary sources.

##### **Arkansas History**

H.5.ARH.5 Examine responses to natural disasters in Arkansas, including the Flu Pandemic of 1918, the Flood of 1927, and the Drought of 1930-31

##### **Standards for US History – Since 1929**

H.5.USH.20 Examine domestic policies and outcomes of the federal government between 1945 and 1970 (i.e., River and Harbor Act of 1945)

H.5.USH.28 Analyze the effectiveness of citizens, institutions, and the government in addressing environmental and social issues at the local, state, and national levels since 1968:

- Environmental issues: (e.g., creation of the Environmental Protection Agency (EPA), Earth Day movement, National Environmental Policy Act of 1970, push towards alternative forms of energy)
- Social issues: (e.g., increased government involvement in housing and healthcare, expansion of civil rights, Reagan Revolution, welfare and unemployment reform, AIDS crisis, coronavirus pandemic)

##### **Prior learning** (overview and link to resources)

National Geographic's Human Impacts on the Environment

<https://education.nationalgeographic.org/resource/resource-library-human-impacts-environment/>

## Learning objectives

*What is a flood, and how can the risk of a flood be reduced?*

Guiding question: How can the environment impact a city?

*What is an urban heat island, and what contributes to this phenomenon?*

Guiding question: How can cities impact the environment?

## Key terms

*Flood*

<https://education.nationalgeographic.org/resource/flood/>

*Urban heat island*

<https://education.nationalgeographic.org/resource/urban-heat-island/>

## Materials

*Flood*

Encyclopedia of Arkansas entry on Flood of 1927

<https://encyclopediaofarkansas.net/entries/flood-of-1927-2202/>

Encyclopedia of Arkansas entry on McClellan-Kerr Arkansas River Navigation System (MKARNS)

<https://encyclopediaofarkansas.net/entries/mcclellan-kerr-arkansas-river-navigation-system-2309/>

NWS Little Rock, AR - Historic Flooding in 2019 (Arkansas River/Tropical Storm Barry)

<https://www.weather.gov/lzk/flood2019.htm>

*Urban heat island*

Reducing Urban Heat Island: Compendium of Strategies (additional resource, as needed)

[https://www.epa.gov/sites/default/files/2017-05/documents/reducing\\_urban\\_heat\\_islands\\_ch\\_1.pdf](https://www.epa.gov/sites/default/files/2017-05/documents/reducing_urban_heat_islands_ch_1.pdf)

Google Maps street view of 308 Main Street, Little Rock, Arkansas

<https://maps.app.goo.gl/bQadmkoEQBionZCdA>

## Photos

*Flood*

The Flood of 1927 in Little Rock's 9th street:

ualr-ph-0100\_na\_na\_pho629

ualr-ph-0100\_na\_na\_pho629

*Urban heat island*

Parking decks from the Parking Garages images folder:

ualr-ms-0294\_08\_01\_79\_13\_pho009\_dm

ualr-ms-0294\_08\_01\_79\_13\_pho014\_dm

1980s Downtown Little Rock roofs representation:  
Broadway, 8th, and Scott (Little Rock) - 1980s

2014-2023 Downtown Little Rock roofs

<https://livingatlas.arcgis.com/wayback/#active=46399&mapCenter=-92.27353%2C34.74427%2C17&selected=46399%2C10&swipeWidget=46399%2C10>

## Procedures

### 1. *Flood* starter

- a. Students answer, "How can the environment impact a city?" Answers can be shared in class to gauge background knowledge.
- b. The teacher may ask the students if they know what a flood is.
- c. Students read the National Geographic article on Flood
  - i. <https://education.nationalgeographic.org/resource/flood/>
- d. The teacher may ask the students if they have heard of the 1927 flood in Arkansas.
- e. Students read the Encyclopedia of Arkansas entry on the Flood of 1927
  - i. <https://encyclopediaofarkansas.net/entries/flood-of-1927-2202/>
- f. Students view two photos of the Flood of 1927 in Little Rock's 9<sup>th</sup> street:
  - i. ualr-ph-0100\_na\_na\_pho629
  - ii. ualr-ph-0100\_na\_na\_pho630
- g. Students answer (on their own paper or electronic devices):
  - i. Describe a human and a natural cause of the 1927 flood.
  - ii. Provide two examples of problems with the flood relief efforts.
- h. The teacher may discuss the students' responses and reinforce the human role in the severity of the Flood of 1927.

### 2. *Flood* activity

- a. Students read the Encyclopedia of Arkansas entry on the McClellan-Kerr Arkansas River Navigation System (MKARNS)
  - i. <https://encyclopediaofarkansas.net/entries/mcclellan-kerr-arkansas-river-navigation-system-2309/>
- b. The teacher discusses the benefits of the McClellan-Kerr Arkansas River Navigation System for commerce and flood control efforts.
- c. Students read NWS Little Rock, AR - Historic Flooding in 2019 (Arkansas River/Tropical Storm Barry)
  - i. <https://www.weather.gov/lzk/flood2019.htm>
- d. This is a writing assignment to compare/contrast the effects of the 1927 flood and the 2019 Arkansas River floods. Write a 3-4 paragraph response that includes at least two similarities and two differences.

### 1. *Urban heat island* activity

- a. Students read Urban Heat Island
  - i. <https://education.nationalgeographic.org/resource/urban-heat-island/>
- b. Students view image of Broadway, 8th, and Scott (Little Rock) - 1980s.

- i. The teacher notes the built structures and how they contribute to the urban heat island effect. This includes the black roofs, parking lots, parking decks, concrete construction, and general lack of plants.
- c. Students view images of parking decks from the Parking Garages images folder:
  - i. ualr-ms-0294\_08\_01\_79\_13\_pho009\_dm.
  - ii. ualr-ms-0294\_08\_01\_79\_13\_pho014\_dm.
- d. Students view 2014-2023 Downtown Little Rock roofs and 1980s representation
  - i. <https://livingatlas.arcgis.com/wayback/#active=46399&mapCenter=-92.27353%2C34.74427%2C17&selected=46399%2C10&swipeWidget=46399%2C10>.
  - ii. The teacher emphasizes the change to some of the roofs on buildings, which are now painted a lighter color. The teacher may discuss how this might affect temperatures.
- e. Students view the Google Map link of 308 Main Street, Little Rock, Arkansas.
  - i. <https://maps.app.goo.gl/bQadmkoEQBionZCdA>
  - ii. The teacher points out the plants and permeable paving that help to mitigate the urban heat island effect and control water runoff.
- f. The teacher may choose to have students work on the second suggested activity: How have humans impacted the environment/been impacted by the environment? Use the sources from today's lesson to write a 2-3 paragraph response.

**Flood Activity Rubric**

<b>Compare/contrast the effects of the Flood of 1927 and 2019 Arkansas River floods writing assignment. Write a 3-4 paragraph response and include at least two similarities and two differences.</b>		
<b>Criteria</b>	<b>Ratings</b>	<b>Pts</b>
<b>Includes at least two similarities between the Flood of 1927 and the 2019 Arkansas River floods</b>		10 / 10 pts
<b>Includes at least two differences between the Flood of 1927 and the 2019 Arkansas River floods</b>		10 / 10 pts
Total Points: 20		



### Urban Heat Island Activity Rubric

<b>How have humans impacted the environment/been impacted by the environment? Use the sources from today's lesson to write a 3-4 paragraph response.</b>		
<b>Criteria</b>	<b>Ratings</b>	<b>Pts</b>
<b>Includes at least one detailed example of how humans have impacted the environment</b>		10 / 10 pts
<b>Includes at least one detailed example of how the environment has impacted humans. Examples might include flood damage</b>		10 / 10 pts
Total Points: 20		

### Additional Activities

1. Higher level: written response on either a comparison of the Flood of 1927 and 2019 Arkansas River floods or a written response on human impact on the environment and environmental impact on humans.
2. Exit ticket: How have cities attempted to minimize the urban heat island effect?
3. Homework: Research the three dams built by the Civilian Conservation Corps in Vermont in the 1930s in response to flooding in 1927.

### Reflection ("How has your thinking changed or has it stayed consistent, why?")

1. Journal entry [learner reflection]: write a short reflection on a weather event that affected you or your family.