

Sustainable Communities

By Malia Crowe from Cherokee High School
for the 2021-2022 World View Global Fellows Program

Overview of Lesson: Students will explore the types of natural resources available and how these resources were used by American Indians in North Carolina during the past 1,000 years. They will compare and contrast past and contemporary sustainability to evaluate whether or not Indigenous natural resource management practices are still in use today. Research will be based on the Ancient North Carolinians website with students comparing their findings to their own ecological footprints.

About the Project: American Indians lived in the area we now call North Carolina for at least 15,000 years. Archaeologists study the remnants of their communities to learn who these people were and how they lived and prospered for thousands of years. The lesson presented below was developed as part of the 2021-2022 UNC World View Fellows Program, [Exploring Indigenous Cultures: Ancient North Carolinians, Past and Present](#). It is one in a series of lessons that the Fellows created for K-12 schools and community colleges to help students learn about the ancient peoples that lived here and those who represent today's vibrant American Indian populations. Lessons connect past to present day by exploring multiple resources within the [Ancient North Carolinians: A Virtual Museum of North Carolina Archaeology website](#) to examine how communities changed over time and what influenced these changes. Understanding past Indigenous lifeways—their complexity, resiliency, and vitality—allows for a greater appreciation of the contributions American Indians made to the past and continue to make to the present and future of North Carolina.

Suggested Grade levels: 9th-12th grades

Subject: Earth & Environmental Science

Corresponding National and State of North Carolina Standards: [Earth/Environmental Science](#)

EEn.2.7.3 – Explain how human activities impact the biosphere.

EEn.2.8 – Evaluate human behaviors in terms of how likely they are to ensure the ability to live sustainably on Earth.

Essential Questions:

1. What types of natural resources were available to American Indians in North Carolina?
2. How did American Indians use these resources?
3. Are any of the natural resource management or sustainability practices used in the past still used today? Should they be?
4. How can we evaluate and analyze data to understand the relationships between American Indians and the land?

Lesson Objectives:

1. Students will be able to use critical thinking skills and past and present knowledge to theorize and understand how American Indians of North Carolina managed resources.
2. Students will be able to evaluate factors of sustainability and effective resource use.

Theme	Sustainability of Tribes in North Carolina	
Time	3 days of Block periods	
Scope and Sequence	<p>Student Prior Knowledge: Students should be familiar with human interactions on the earth and its natural resources. Students should have a good understanding of different natural resources and geography of North Carolina.</p>	
	Lesson Sequence	Time
	<p>Day 1:</p> <ul style="list-style-type: none"> Students calculate their own Ecological Footprint https://www.footprintcalculator.org/ Teacher led discussion comparing and contrasting past and present-day resource use (Create Venn diagram on board) Discuss differences between past material and present day. <ul style="list-style-type: none"> Explore Ancient North Carolinians website https://ancientnc.web.unc.edu/exhibits/first-peoples/ Essential question: What types of natural resources were available to American Indians in North Carolina? Have students select a North Carolina tribe on which they will focus their research. Exit Ticket - Would the natural resources identified during research contribute to sustainability? Choose one natural resource and expand answer. Homework: Continue researching. 	<p>Day 1:</p> <p>15 minutes</p> <p>10 minutes</p> <p>15 minutes</p> <p>20 minutes</p> <p>10 minutes</p>
	<p>Day 2:</p> <ul style="list-style-type: none"> Bell ringer to share any important findings. Use the Indian Heritage section of the Ancient North Carolinians website to lead student research on resource use by American Indians during the Woodland (1000 B.C. – A.D. 1100) or Mississippian (A.D. 1100 – c.1450) period . Use the discussion questions below to help guide students. Students may find the information “By Time” (https://ancientnc.web.unc.edu/indian-heritage/by-time/) or “By Region” (https://ancientnc.web.unc.edu/indian-heritage/by-region/). If researching “By Region”, then be sure to expand the “Detailed Overview” section of the chosen region to view information by time period. Remember to focus on either the Woodland or Mississippian time period. 	<p>Day 2:</p> <p>10 minutes</p> <p>30 minutes</p>

	<ul style="list-style-type: none"> • Have students fill out the ecological footprint calculator for the group or tribe they are researching. Time period will be the Woodland or Mississippian period. Class will decide how they are going to input values for the groups/tribes. <ul style="list-style-type: none"> ○ Reflection: Ecological Foot Print for each group/tribe. • Have students share the resulting ecological foot print ranking and if they think it is realistic and valid, or not, and why. <p>Day 3</p> <ul style="list-style-type: none"> • Students will start analyzing the information they have gathered over the past two days and begin to bring research together. • Student will use the choice board to select a form to present their findings of sustainability and the group/tribe they selected to study. • List if there are any practices that are still used today or what type of management practices would best serve their region and why. 	<p>20 minutes</p> <p>Day 3: 60 minutes</p>
Resources	<p>Ecological Footprint Calculator: https://www.footprintcalculator.org/</p> <p>Ancient North Carolinians</p> <p>https://ancientnc.web.unc.edu/indian-heritage/indian-heritage-overview/</p> <p>https://ancientnc.web.unc.edu/indian-heritage/by-region/</p> <p>https://ancientnc.web.unc.edu/indian-heritage/by-modern-tribe/</p>	

Discussion Questions:

1. What types of natural resources were available to American Indians Tribes in North Carolina? How did American Indians use these resources?
2. Are any of the natural resource management or sustainability practices used in the past still used today? Should they be?
3. How can we evaluate and analyze data to understand the relationships between American Indians and the land?

Tribes of North Carolina Natural Resources and Sustainability Research Project

Choose one item from the **CHOICE BOARD** below to demonstrate your knowledge.

Your work must have at least two of the following items: photographs (with descriptions), maps, video links, article links with information relevant to the project. Resources must be cited.

<p><u>PowerPoint</u> Create a PowerPoint to present information that you learned about the tribe you are studying.</p>	<p><u>Newspaper Article</u> Write a newspaper article to present the information that you learned about the tribe you are studying.</p>	<p><u>Scrapbook</u> Create a scrapbook that takes your audience through a year in the life of the tribe you are studying which includes pictures and narrations.</p>
<p><u>Poster</u> Create a poster with different text features and pictures to present the information you learned about the tribe you are studying.</p>	<p><u>Free Space</u> Student may choose how to present their information, must be approved by the teacher first.</p>	<p><u>Interview</u> Conduct an interview and the other partner will become a tribal representative of the tribe you studied to present the information you learned.</p>
<p><u>Brochure</u> Create a brochure using text features and pictures to present the information you learned about the tribe you are studying.</p>	<p><u>Video Presentation</u> Create a 4-5 minute video recording to present the information that you learned about the tribe you are studying. Include photos, maps, and relevant information and refer to sources.</p>	<p><u>Timeline</u> Crate a timeline that walks your audience through five years of time for the tribe you are studying and include pictures that go along with each date with a narration.</p>

Differentiation: Teachers can narrow the focus by choosing the group or tribe for the student to research and print materials from the Ancient North Carolinians website to guide student research. Teachers can assign aspects for students to research.

Literacy/text connection: Students will access the “Detailed Overview” section for Woodland or Mississippian periods to start their research.

Assessment: Student exit ticket presentation material grade will be based on the following rubric.

RESEARCH PRESENTATION	10 points Great Understanding	8 points Good Understanding	6 points Understands	4 points Needs Support
ACCURACY OF INFORMATION The research was accurate, concise, and clearly articulated				
PRESENTATION ETIQUETTE The presentation was prepared in advance and showed thoughtful consideration to both speaking <i>and</i> listening while presentations were taking place.				
ORAL PRESENTATION The research was verbally presented with clarity and professionalism.				
VISUAL PRESENTATION The presentation was neatly composed and visuals were used to help the audience make connections to the information.				
EFFORT				

Learning Extensions:

1. Students can interview a family (or community) member or ask students to reach out to the tribe(s) they are researching for a virtual interview. Students can do a presentation to their school or classmates to increase awareness of sustainability practices among North Carolina’s American Indian communities. Indigenous science and sustainability practices may also be consulted and discussed.
2. Students can utilize a resource comparing chart, like the one below, to help guide their research during Days 1-3 of the lesson above.

Comparing Resources			
Known resources for Tribal Area	Resources Used Modern Day	Resources Used in _____ period	Pro/Con

Explore Further:

Environmental Views of the Eastern Band of the Cherokee Indians:

<https://www.liebertpub.com/doi/pdf/10.1089/eco.2019.0051>

Native Land Digital: <https://native-land.ca/>

Materials:

computer with Internet to access sites and create slides

poster paper

markers

handouts in lesson plan - choice board, rubric, resource comparison chart

Bibliography:

Erin Hines, Brad Daniel, and Andrew J. Bobilya. Ecopsychology. Jun 2020.118-127.

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Native Land Digital 2021. (2021, January). Native. Land. Retrieved November 11, 2021, from

<https://native-land.ca/>.

Ecological Footprint Calculator. (2003). Retrieved November 11, 2021, from

<https://www.footprintcalculator.org/home/en>.

<https://www.footprintcalculator.org/en/results/0/summary>

<https://ancientnc.web.unc.edu/indian-heritage/by-region/appalachian/>

<https://ancientnc.web.unc.edu/indian-heritage/by-modern-tribe/>

This lesson plan was created by Malia Crowe of Cherokee High School as part of the 2021-2022 UNC World View Global Fellows Program. For more information about the program, please visit <http://worldview.unc.edu/>