



GREAT SMOKY  
MOUNTAINS  
INSTITUTE AT  
TREMONT

# Lesson Plan: Exploring the Creation of Great Smoky Mountains National Park Using STEM and Humanities

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## Key Lesson Characteristics

### What Learners Do

- Explore the nature of the location and record their observations
- Compare environments
- See and learn about the impact of the national park
- Analyze primary and secondary source documents and maps

### Skills and Knowledge

- Collect data and information from primary and secondary sources
- Use maps to analyze location, connections, and draw inferences
- Use field guides to identify flora and fauna
- Explore the relationships between humans, natural resources, and biodiversity

### Social and Emotional Abilities

- Social Awareness
- Have empathy for different perspectives
- Develop empathy for animals who live in the national park
- Recognize the impact of humans on the environment

### Relationship Skills

- Collaborate with peers to analyze documents and to study the environment through a bioblitz
- Communicate with peers during small group and whole group discussions

## Lesson Summary

*Students will investigate the ecology of the area and make connections to the history of the Great Smoky Mountains National Park.*

### Guiding Questions:

- How did the park come to be?
- Who and what was here before the park?
- How did the park/people change what was here?

### Components

- Grade Level: 9th - 12th
- Time Frame: 2 - 3 hours
- Location: Field and Wooded area
- Ideal Season: Spring - Fall
- Cross-cutting Concepts: Cause and Effect, Stability and Change
- Materials: Set of 6 maps, Set of primary and secondary source documents, various colors counting bears, field guides, ribbon, cones, journal, writing utensil

## Lesson Flow

- **Maps:** Students will study various maps and organize them chronologically to discuss change over time
- **Bear Resources:** Students will discuss natural resources, ecosystems, and human impact on natural resources
- **Bioblitz and Camouflage:** Students will identify flora and fauna in a given space and discuss the importance of ecosystems
- **People of the Park:** Students will dissect primary and secondary sources about the creation of the national park and share these with the group. The group will discuss the impact of the park.



## Bear Resources: 25-30 Minutes

- Students will find a space to sit away from others and reflect on the following questions in their journals:
  - What natural resources are available in the United States? Who relies on these resources?
  - What is an ecosystem? How are ecosystems impacted by humans' need for natural resources?
  - Students will come back and share their answers with those next to them. Once the discussion has died down, the teacher will ask for students to share their answers

### Reminders!

- Define ecosystem
- Define natural resources and give examples

## Maps: 15 Minutes

- Students will divide up into 6 groups and each group will be given a map. Have each group discuss:
  - What does the map show us?
  - Who is present on the map?
  - What time period could the map be from?
- Students will come back to the whole group and share who is present on their map
- Students will work together to layout the maps in chronological order
- Students will discuss the following questions as a whole group:
  - What do we notice about the spread of people over time? How does this vary for each group of people represented?
  - What happened to the natural landscape over time? To public land over time?
  - How do you think this impacted the biodiversity of what would become the United States?

### Reminders!

- Define biodiversity
- Define natural versus built environment
- Discuss how Native Americans were impacted by early European settlers and traders, and then later by the spread of European settlement

- Students will play bear resources
  - Have students stand in a circle, arm-length apart
  - Tell students they are not allowed to move their feet during the game. They must stay in place.
  - Explain to students that they represent the settlers in the Smoky Mountains, and that their goal is to gather resources to survive in the mountains.
  - Show students the various bear colors and tell them what resources each represents:
    - Blue - water
    - Green - land
    - Purple - shelter
    - Red - livestock
    - Orange - wild game
    - Yellow - sun
  - Scatter the bears randomly. Have some that are out of reach of any students.
  - Tell students that once you say go, they have three minutes to gather resources they can reach. Say go.
  - After the 3 minutes, students that have a combination of shelter, water, and food survive. Food possibilities include green and red, yellow and green, or orange
- Students will discuss the game
  - How many settlers were able to survive?
  - What was their impact on resources available?
  - What resources are left for future generations?
  - What resources are left for other animals?

## Bioblitz and Camouflage: 90-120 Minutes

- Students will conduct a bioblitz
  - Describe a bioblitz to the students, and explain that they are going to try and find how many different species are in a given area
  - Measure out three 6ft x 6ft plots and mark them with cones. Each plot should have a different environment. (field, forest, stream bank, flower bed, etc.)
  - Divide the students into three groups, assign them a plot, and give them field guides.
  - Have them describe the environment of their plot in their journals
  - Give the students 30 minutes to write down as many species as they can find within their plot, utilizing their field guides
  - Once time is up, have students share their findings with the whole group
- Students will discuss the following questions:
  - How would the settlement of humans impact the type and number of species found in a given area?
  - How would humans changing the environment affect the pre-established ecosystem?
  - What would be the positive impacts settlers could have had?

### Reminders!

- Point out how many species exist within such a small space. Compare this to how many species exist throughout the national park. Students can use iNaturalist to log their findings and to explore the species that have been logged in the national park.
- Discuss the ways Native Americans interacted with the environment

### Reminders!

- Define richness versus diversity

- Students will play Camouflage
  - Move to an area that is surrounded with trees, rocks, logs, etc. that are large enough for students to hide behind
  - Ask students to define camouflage, and ask why camouflage is important
  - Explain the rules and then play the game, camouflage:
    - The teacher stands in the center with their eyes closed and yells “camouflage,” which is the signal that students have 30 seconds to run and hide
    - After the 30 seconds, the teacher opens their eyes and holds a number up on their hand which the students need to see at some point during the round. The teacher has to keep one foot planted, but can pivot from this foot
    - During the round, the teacher calls out the students that they can see without moving from their spot. These students are out, and go sit by the teacher
    - After a few minutes, the teacher closes their eyes and yells “migrate”. Students will have 15 seconds to find a new place to hide that is closer to the teacher
    - The teacher opens their eyes, holds up a new number on their hand, and again tries to get students out
    - For the next round, students have 10 seconds to migrate
    - Once the teacher cannot find anyone else, they yell “pounce” and students walk to the teacher and tell them the three numbers that were held up during the game to win
    - Once the game is over, the teacher will have the three students who were out first, tie a ribbon around 3 trees, rocks, logs, etc.
    - Explain to students that as humans settle in an area and begin to develop it, the environment is impacted, and sometimes species can lose parts of their habitat
    - Students will play camouflage again, but they are not allowed to hide behind anything that has a ribbon tied around it
- Students will discuss the game:
  - How was the game impacted by having fewer places to hide the second time?
  - How does this relate to humans impacting the area where they live?
  - What can people do to lessen their impact on the environment and ecosystems?
  - How would having less habitat impact species richness and diversity?

## People of the Park: 40-60 Minutes

- Students will divide up into 7 groups and each group will be given a document or set of documents
- Students will read their document(s) and discuss the following questions in their group:
  - Do we have a primary or secondary source?
  - Who wrote the document and for what purpose?
  - What is the bias of the document?
  - How does our author feel about the creation of the national park?
- Students will come back to the whole group and share their document, the purpose, background of their author(s), and how their author(s) felt about the creation of the national park.
- The students will group their documents together based on who supported or opposed the national park. The students will discuss why they think these groups were aligned
- The students will discuss as a whole group why they think the national park was created despite opposition
- The students will discuss as a whole group the pros and cons of the national park being created



### Reminders!

- Information to include in the discussion, if students do not discuss it themselves:
  - Native Americans: presence, treatment, and removal
  - Civilian Conservation Corps: the Great Depression, President Franklin D. Roosevelt's New Deal Program
  - President Woodrow Wilson's creation of the National Park Service

## Background Information and Materials

### Creation of the Great Smoky Mountains National Park Timeline

- 1923 - Movement begins in earnest to create a national park in the Great Smoky Mountains.
- 1924 - North Carolina Park Commission is established with the authority to acquire land for a national park.
- 1926 - Congress, with support from President Calvin Coolidge, passes a bill which allowed surveyors to establish park borders.
- 1927 - North Carolina and Tennessee governments begin to gather funds to purchase land for the park. Private foundations and individuals also begin to donate money.
- 1930 - North Carolina and Tennessee provide land deeds to their Departments of the Interior for creation of the national park.
- 1931 - J. Ross Eakin is hired as the first superintendent of the Great Smoky Mountains National Park.
- 1934 - The majority of the land constituting the Great Smoky Mountains National Park has been purchased and the land deeds have been given to the United States government.
- 1934 - Congress authorizes full development of the national park.
- 1934 - Recruits from the Civilian Conservation Corps are assigned to the development of the Great Smoky Mountains National Park. They will build many trails, campgrounds, buildings, and stone bridges that exist within the national park.
- September 2, 1940 - The Great Smoky Mountains National Park is formally dedicated by President Franklin D. Roosevelt.

*Resources continued on next page.*

## Links to People of the Park Documents

- [Primary Source] Dedication of the National Park by President Franklin D. Roosevelt <https://www.presidency.ucsb.edu/node/209936>
- [Primary Source] “The Great Smoky Mountains National Park” is a 32-page booklet produced by the Great Smoky Mountains Publishing Company, Inc. and edited by R. R. Stripling. The booklet contains many photographs by the Thompson Brothers of Knoxville, Tennessee. Published in 1930, the booklet was written before the establishment of the national park and promotes both the park and the city of Knoxville as “The Great Smoky Mountains City.” While many brochures feature photographs by James E. (Jim) Thompson (1880-1976), this booklet also includes images by his brother, Robin Thompson (1895-1977). Essays describe the geography, trees, and wildflowers of the Smokies. While the park lies almost equally in North Carolina and Tennessee, this brochure refers only to the Tennessee side of the park. <https://southernappalachiandigitalcollections.org/browse/search/great-smoky-mountains-national-park-18363/search/ac-collection:great-smoky-mountains-a-park-for-america/page/2/search-object/great-smoky-mountains-national-park-18394>
- [Primary and Secondary Source] View of Native Americans - Paul Fink, one of founders of the national park <https://southernappalachiandigitalcollections.org/browse/search/indian-fair-in-the-high-road-25153/search/ac-collection:great-smoky-mountains-a-park-for-america/page/3/search-object/indian-fair-in-the-high-road-25156>
- [Primary Source] Appalachian National Park Association - includes reasons they think congress will approve the creation <https://southernappalachiandigitalcollections.org/browse/search/history-of-the-appalachian-national-park-association-28325/search/ac-collection:great-smoky-mountains-a-park-for-america/page/3/search-object/history-of-the-appalachian-national-park-association-28326>
- [Secondary Source] Tsali, Cherokee <https://www.ncdcr.gov/blog/2016/11/01/cherokee-indian-tsali-was-captured#:~:text=On%20November%201%2C%201838%2C%20the,lands%20to%20the%20United%20States>
- [Secondary Source] CCC <https://www.jstor.org/stable/1022150>
- [Secondary Sources] People and Companies who were removed from the park
  - <https://foresthstory.org/wp-content/uploads/2017/11/MountaineersAndRangers-chap5-11.pdf>
  - [https://www.jstor.org/stable/42625770?read-now=1&seq=13#page\\_scan\\_tab\\_contents](https://www.jstor.org/stable/42625770?read-now=1&seq=13#page_scan_tab_contents)
  - <https://foresthstory.org/wp-content/uploads/2017/11/MountaineersAndRangers-chap5-11.pdf>
  - <https://southernappalachiandigitalcollections.org/browse/search/champion-owns-the-trees/search/ac-collection:great-smoky-mountains-a-park-for-america/page/12/search-object/champion-owns-the-trees-22839>

## Science Standards Covered

BIO1.LS4: Biological Change: Unity and Diversity

- Identify ecosystem services and assess the role of biodiversity in support of these services. Analyze the role human activities have on disruption of these services.

ESS.ESS2: Earth's Systems

- Obtain, evaluate, and communicate information about human or natural threats to Tennessee.

ESS.ESS3: Earth and Human Activity

- Obtain, evaluate, and communicate information on how natural resource availability, natural hazard occurrences, and climatic changes impact individuals and society.

ECO.LS2: Ecosystems, Energy, and Dynamics

- Plan and carry out an investigation measuring species diversity (richness and evenness) and density in a local ecosystem.
- Based on information obtained from research, construct explanations regarding mechanisms by which prey protect themselves from predation (including herbivory).

ECO.LS4: Biological Change: Unity and Diversity

- Compare resource needs of specialists versus generalists. Construct an explanation regarding the vulnerability of specialists when faced with ecosystem disturbances.

ECO.ESS3: Earth and Human Activity

- Research and evaluate the effectiveness of public lands (state parks, national parks, wildlife refuges, wilderness areas) in sustaining biodiversity.

EVSC.LS4: Biological Change: Unity and Diversity

- Evaluate the impact of habitat fragmentation and destruction, invasive species, overharvesting, pollution, and climate change on biodiversity (genetic, species, and ecosystems)

EVSC.ESS3: Earth and Human Activity

- Research Earth's natural resources (renewable and nonrenewable resources). Construct an argument from evidence supporting the claim that a particular type of resource is important for humans.
- Evaluate ecosystem services provided by forest ecosystems. Construct an explanation for human impact on these services.
- Using scientific data, analyze effectiveness of conservation versus preservation efforts. Obtain and communicate information on organizations involved in protecting natural resources.



## Social Studies Standards Covered

- 5.48 - Describe the effects of the Great Depression on Tennessee and the impact of New Deal policies in the state (i.e. Tennessee Valley Authority and Civilian Conservation Corps)
- TN.05 - Describe the influx of British and French settlers and fur traders in the Tennessee region and their impact on American Indian tribes
- TN.11 - Analyze the conflicts between early Tennessee settlers and American Indians
- US.02 - Examine federal policies toward American Indians, including: the movement to reservations, assimilation, boarding schools, and the Dawes Act
- US.17 - Analyze the significant progressive achievements during President Woodrow Wilson's administration, including: the New Freedom, the Federal Reserve Act, and the creation of the National Park Service
- US.43 - Analyze the impact of the relief, recovery, and reform efforts of President Franklin D. Roosevelt's New Deal programs, including: Civilian Conservation Corps, Works Progress Administration, etc.
- SSP.01 - Collect data and information from a variety of primary and secondary sources, including:
  - Printed materials (e.g., literary texts, newspapers, autobiographies, speeches, interviews, letters, personal journals)
  - Graphic representations (e.g. maps, timelines, charts, political cartoons, photographs, artwork)
  - Field observations/landscape analysis
  - Artifacts
  - Media and technology sources
- SSP.02 - Critically examine a primary or secondary source in order to:
  - Extract and paraphrase significant ideas
  - Discern differences between evidence and assertion
  - Draw inferences and conclusions
  - Recognize author's purpose, point of view, and potential bias
  - Assess the strengths and limitations of arguments
- SSP.06 - Develop geographic awareness by:
  - Using the geographic perspective to analyze relationships, patterns, and diffusion across space at multiple scales (e.g. local, national, global)
  - Analyzing and determining the use of diverse types of maps based on the origin, authority, structure, context, and validity
  - Analyzing locations, conditions, and connections of places and using maps to investigate spatial associations among phenomena
  - Examining how geographers use regions and how perceptions of regions are fluid across time and space
  - Analyzing interactions between humans and the physical environment
- WG.15 - Describe how societies modify and adapt to the environment, and explain how technology impacts the ability to do so
- WG.16 - Analyze how people interact with and modify the environment to satisfy basic needs and solve challenges (e.g. access to fresh water, energy resources, irrigation, transportation, type of housing)
- WG.17 - Explain how humans are affected by and depend on the physical environment and its resources