

Rebirth of the Longleaf Pine Forests

Kisatchie National Forest Quarter Grades Four through Six



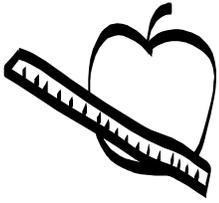
OBJECTIVES

Students will explore the history of Longleaf pine forests. Students will investigate methods of conservation used in forest ecosystems.



MATERIALS

- 1 overhead projector or equivalent technology
- 1 overhead transparency (or equivalent) of the “Kisatchie National Forest Quarter” page
- 1 class map of the United States
- Information and images about the Longleaf pine.
- Map of Longleaf pine forests in the United States
- Copies of the following:
 - “Pine Forest Happenings” worksheet.
 - “Pine Forest Happenings Answer key”
 - ”Conservation in the Forest Readings” worksheet
 - ”Conservation in the Forest Readings Answer Key”
 - “Conservation Presentation Rubric”
- Age-appropriate websites that give information about Longleaf pine forests and forest conservation, such as:
 - www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/initiatives/?cid=nrdev11_023913
 - <http://www.fs.usda.gov/kisatchie/>
- Chart paper
- Markers
- Crayons
- Colored pencils
- Computers with Internet access, presentation software, and printer access



Rebirth of the Longleaf Pine Forests



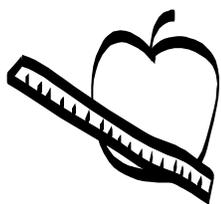
PREPARATIONS

- Make an overhead transparency (or equivalent) of the “Kisatchie National Forest Quarter” page
- Make a chart divided into two columns labeled “What I Know” and “What I Learned”
- Locate information and images about the Longleaf pine.
- Locate a map of Longleaf pine forests in the United States.
- Make copies of the following:
 - “Conservation in the Forest Readings”
 - “Pine Forest Happenings” worksheet. (1 per student).
 - “Conservation Presentation Rubric” (1 per student)
- Arrange to use the computer lab or class set of portable technology for Session 2.
- Locate forest ranger contact information for the Kisatchie National Forest and other local or state forest associations and parks. Locate a forest ranger to interact and correspond with students. Determine whether they would prefer questions from students to be emailed, print mailed with a self-addressed, stamped return envelope, or if they are interested in using live feed technology to communicate with the students in your classroom.
- Bookmark websites that give information about Longleaf pine forests conservation methods.
- Bookmark Internet sites for the Kisatchie National Forest and other local or state forest associations and parks.
- For Session 2, divide the class into pairs and assign sections of the websites for each pair to read.



GROUPINGS

- Whole group
- Small groups
- Pairs

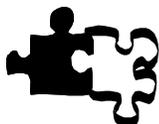


Rebirth of the Longleaf Pine Forests



CLASS TIME

Six 45- to 60-minute sessions, total 270 to 360 minutes



CONNECTIONS

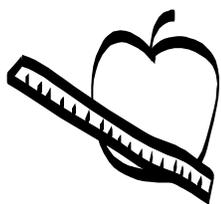
- Science
- Language Arts
- Technology



STANDARDS (NATIONAL/Common Core)

National Standards for ELA

1. Students read a wide range of print and non-print texts to build an understanding of texts, of themselves, and of the cultures of the United States and the world; to acquire new information; to respond to the needs and demands of society and the workplace; and for personal fulfillment. Among these texts are fiction and nonfiction, classic and contemporary works.
3. Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).
4. Students adjust their use of spoken, written, and visual language (e.g., conventions, style, vocabulary) to communicate effectively with a variety of audiences and for different purposes.
5. Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.
7. Students conduct research on issues and interests by generating ideas and questions, and by posing problems. They gather, evaluate, and synthesize data from a variety of sources (e.g., print and non-print texts, artifacts, people) to communicate their discoveries in ways that suit their purpose and audience.
8. Students use a variety of technological and information resources (e.g., libraries, databases, computer networks, video) to gather and synthesize information and to create and communicate knowledge.
12. Students use spoken, written, and visual language to accomplish their own purposes.



Rebirth of the Longleaf Pine Forests

ISTE Technology Standards

2. Communication and collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
 - a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media
3. Research and information fluency: Students apply digital tools to gather, evaluate, and use information.
 - b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media
 - c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks
6. Technology operations and concepts: Students demonstrate a sound understanding of technology concepts, systems, and operations.
 - a. Understand and use technology systems
 - b. Select and use applications effectively and productively
 - c. Troubleshoot systems and applications
 - d. Transfer current knowledge to learning of new technologies

Common Core State Standards English/Language Arts

RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.

RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.

SL.5.3 Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.

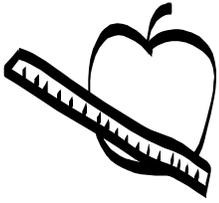
SL.5.4 Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

SL.5.5 Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.

W.5.7 Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.

Next Generation Science Standards

LS1-5: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.



Rebirth of the Longleaf Pine Forests

LS2-5: Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

ES3-2: Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.



TERMS AND CONCEPTS

- Quarter
- Reverse (back)
- Obverse (front)
- Longleaf pine forest
- Restoration
- Undergrowth
- Forest residue



BACKGROUND KNOWLEDGE

Students should have a basic knowledge of:

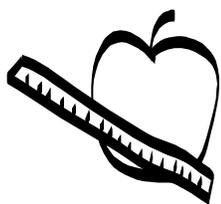
- Forest ecosystems
- Wildlife interaction
- Human interaction
- Presentation software



STEPS

SESSION 1

1. Display and examine the “Kisatchie National Forest Quarter” page. Locate this site on a class map. Note its position in relation to your school’s location. As background information, explain to the students that the United States Mint began to issue the quarters in the America the Beautiful Quarters® Program in 2010. By the time the program ends in 2021, there will be a total of 56 designs. Each design will focus on a different national site—one from each state, territory and the District of Columbia.
2. Tell the students that the front of a coin is called the “obverse” and the back is called the “reverse.” Ask the students to tell you what they see in the image on the quarter’s reverse. Explain that the coin image depicts a wild turkey in flight over blue stem



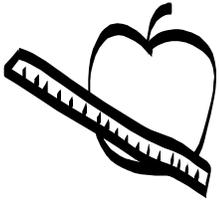
Rebirth of the Longleaf Pine Forests

grass with Longleaf pine in the background. Tell the students that they are going to be learning about one special feature of Kisatchie National Forest, the Longleaf pine tree.

3. Display images of the Longleaf pine and provide background information. Include a map of where Longleaf pine forests are located and how the number of Longleaf pine forests has decreased.
4. Explain that they will be learning about Longleaf pine forests.
5. Using a chart, guide the students to list ideas related to ecosystem conservation in the “What I Know” section.
6. Distribute and review the “Pine Forest Happenings” worksheet. Introduce the students to the selected websites about conservation. Explain that they will be making notes on the worksheet about conservation based on what they learn from the selected websites.
7. Define (and write on chart paper) “undergrowth” as a dense growth of shrubs and other plants, especially under trees in a woodland. Define “forest residue” as the accumulation in the forest of living or mostly woody dead material.
8. Read the selected website text aloud. During the reading, discuss with the students ways they see wildlife, plants, and humans interacting with forests and how the forests may be affected. Record observations on the chart.
9. Collect the “Pine Forest Happenings” worksheet.
10. Explain to the students that in the next sessions they will be creating a presentation on conservation efforts that affect and the Longleaf pine.

SESSION 2

1. Display and review content from the previous session. Take students to the computer lab or use the class set of portable technology to read the information found in bookmarked websites related to conservation, like those listed under “Materials.”
2. Distribute the “Conservation in the Forest Readings” worksheet. Explain that they will be making observations and recording interview questions while they read information from websites. Allow time for the students to record questions or observations on their worksheet.
3. Have the students use the websites to define unfamiliar words from their assigned readings and record them on their worksheets.
4. Collect the worksheets.
5. Tell the students that in the next session they will create a class list of interview questions for a ranger.



Rebirth of the Longleaf Pine Forests

SESSIONS 3 AND 4

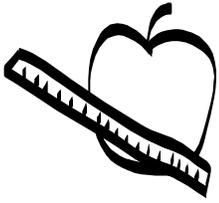
1. Display and review materials from the previous sessions.
2. Allow students to work in pairs to generate interview questions related to conservation efforts for the rangers at the Kisatchie National Forest.
3. As a class, generate a manageable list of interview questions to ask the Kisatchie National Forest rangers.
4. Divide the class into small groups to present the questions in the manner chosen from the Preparation section.

SESSIONS 4 AND 5

1. Conduct the interview.
2. After the interview, guide the students to discuss information that surprised them or changed any misconceptions or preconceived notions related to forest conservation. Record this information in the “What I Learned” section of the chart.
3. With the class, brainstorm other ways people might work to conserve forests. List conservation strategies on chart paper.
4. Distribute and review the “Conservation Presentation Rubric” to each student.
5. Allow time for the students to create digital or print presentations sharing the different conservation efforts being used in the forests they have chosen to research.
6. Explain to the students that they will share their presentations in the next session.

SESSION 6

1. Allow time for the students to share digital or print presentations.
2. Allow time for the students to complete their rubrics.
3. Collect the rubrics.



Rebirth of the Longleaf Pine Forests



ASSESSMENT

- Take anecdotal notes about the students' participation in class discussions and group activity.
- Evaluate the students' worksheets for understanding of the lesson objectives.
- Use the "Conservation Presentation Rubric" to evaluate students' presentations.



ENRICHMENTS/EXTENSIONS

- Have students learn more about a different forest environment by visiting the "Rain, Rain, Everywhere" El Yunque National Forest quarter lesson plan for grades 4 through 6 at www.usmint.gov/kids/teachers/lessonPlans/viewLP.cfm?id=103.
- Arrange for students to contact other local, state, or national forests sites to interview or inquire about conservation methods used at those locations or allow them to use the computer lab or the class set of portable technology to research other conservation strategies/systems related to forest ecosystems.



DIFFERENTIATED LEARNING OPTIONS

- Allow students to work with a partner.
- Allow students extended time to complete work.
- Allow students to type interview questions and presentations on a computer.



Name _____

Pine Forest Happenings

Directions: List ways you observe wildlife and humans interacting with the Longleaf Pine Forest

Wildlife and Plants Observed	Interaction with the Longleaf Pine Forest
Humans Observed	Interaction with the Longleaf Pine Forest



ANSWER KEY

Pine Forest Happenings

Directions: List ways you observe wildlife and humans interacting with the Longleaf Pine Forest

Wildlife and Plants Observed	Interaction with the Longleaf Pine Forest
<ol style="list-style-type: none"> 1. Bird flying out of tree 2. Turtle 3. Flowers and shoots 4. New trees 5. Wild turkeys 6. Snakes/Amphibians 7. Woodpecker 8. Longleaf pine tree 	<ol style="list-style-type: none"> 1. Using the Longleaf Pine as its home 2. Eating the grass and walking on the forest floor 3. Growing from burnt wood 4. Growing from forest floor 5. Walking through the forest 6. Sunning 7. Sitting in a tree 8. Growing or sprouting
Humans Observed	Interaction with the Longleaf Pine Forest
<ol style="list-style-type: none"> 1. Ships sailing/people 2. People 3. Forest rangers 	<ol style="list-style-type: none"> 1. dragging a log-going to be used by the navy to make ships 2. chopping trees, loading barrels, factory, thousands of barrels-inferred that they are made with Longleaf pine, standing in what used to be a Longleaf pine forest, urban growth, houses, roads, hiking, army training, hunting 3. Enforcing conservation rules



ANSWER KEY

Conservation in the Forest Readings

Directions: Based on your assigned reading, answer the questions in the left column and record additional questions you have. Record observations or interesting facts in the right column.

Questions	Observations
<p>Why was the Longleaf pine considered endangered?</p> <ul style="list-style-type: none"> • Once considered the most commercially valuable species in its range • extensively harvested and replaced with faster growing species such as loblolly pine • considered endangered <p>How did Native Americans conserve the Longleaf Pine Forest?</p> <ul style="list-style-type: none"> • Native Americans maintained this habitat as an open savanna with a grassy forest floor that supported a great diversity of wildlife <p>What was the Longleaf Pine used for in the past?</p> <ul style="list-style-type: none"> • Used for masts for the shipping industry. Its resin was tapped to produce pitch, tar, and turpentine. <p>How is the Longleaf Pine being conserved today?</p> <ul style="list-style-type: none"> • controlled fires, alternative treatments. 	<p>Answers will vary</p>
<p style="text-align: center;">Vocabulary I learned</p> <p>Answers will vary</p>	



Name _____

Rebirth of the Longleaf Pine Forests Rubric

Directions: Your presentation should include eight to ten slides with a title, sources, and facts, details, and examples that demonstrate conservation efforts at your chosen forest.

Category	4	3	2	1	SELF	
Explanation of Ideas and Information	Uses relevant, facts, details, and examples to support findings or answer a question.	Uses appropriate and correct facts and details to support main idea.	Some facts and details support main idea.	Few details support main idea.		
Organization	Includes everything required in the presentation, has an effective introduction and conclusion, organizes time well.	Presents ideas in an orderly way	Mostly presents ideas in an orderly way	Seldom presents ideas in an orderly way		
Body Language	Kept eye contact with audience consistently	Mostly kept eye contact with audience.	Somewhat kept eye contact.	Seldom kept eye contact with audience.		
Voice	Spoke clearly, changed tone to maintain interest.	Spoke loudly, clearly.	Spoke loudly and clearly most of the time.	Sometimes spoke softly or indistinctly.		
Presentation Aids	Audio/visual aids clarified, emphasized, strengthened arguments, and added interest.	Audio/visual aids added to main ideas and themes.	Audio/visual aids sometimes distracted from the	Audio/visual aids did not match theme.		



Kisatchie National Forest Quarter



The United States of America

