



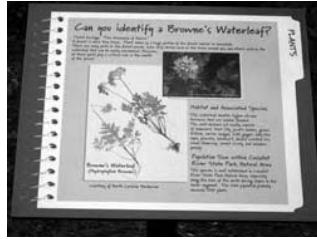
A Teacher's Guide to Cossatot River State Park-Natural Area





A Teacher's Guide to Cossatot River State Park- Natural Area





Arkansas State Parks • #1 Capitol Mall • Little Rock, AR 72201 • 1-888-AT-PARKS • www.ArkansasStateParks.com

Cossatot River State Park • 1980 Hwy 278 W • Wickes, AR 71973 • Telephone: 870-385-2201 • Fax: 870-385-7858 • Email: cossatotriver@arkansas.com

Notice: To preserve scenic beauty and the ecology, fences and warning signs have not been installed in some park locations. Caution and supervision of your children are required while visiting these areas.

As a part of our conservation mission, Arkansas State Parks has printed this publication with soy ink on recycled paper.

April, 2007

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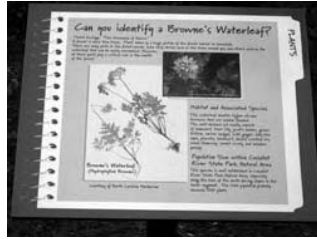
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Schedule a Visit to Cossatot River State Park-Natural Area

The Cossatot River State Park staff invites you and your students to visit the park. Teachers love Arkansas's state parks because the parks are places where students can apply what the teacher has taught in the classroom. Many of our programs support the state curriculum standards, and we are happy to work with you to develop customized programs to meet your curriculum needs or the special needs of your students. Some, but not all, of our program locations are ADA accessible. Arkansas State Parks takes pride in its varied programs for school groups and its support and services for teachers. With advance notice and curriculum guidelines from the teacher, our staff will plan educational experiences that are exciting, memorable and reinforce your classroom goals.

Planning Your Visit

Please schedule your visit to the park a minimum of two weeks in advance by calling the park visitor center at 870-385-2201 between the hours of 8 a.m. and 5 p.m. Allow 30 to 60 minutes for each program. Upon arrival at the park, check in at the visitor center, and allow time for restroom breaks and visits to the gift shop when students disembark from the bus.

When you call to schedule your visit, please have the following information ready:

- Your name
- The school name and address
- Address, phone number and email of contact person and teacher
- The number of students and the grade level
- Your preferred and alternate trip dates
- Your time of arrival
- The time available for the program
- Your educational objectives for the visit
- Accommodations needed for students with disabilities

Preview Visit

We recommend that the teacher make a preview visit to the park. This will provide contact with the park personnel and allow you to become familiar with locations of restrooms, water fountains, exhibits, classrooms, audiovisual services, trails, and the accessibility of the site.

Ideas for preparing yourself before the field trip:

- Visit the park before your trip with colleagues and chaperones.
- Identify parking, lunch area, playground area, and restroom locations.
- Explore the outdoor areas you plan to visit. Consider designing activities with the park staff that relate to your classroom studies.



Student Preparation

Studies have shown that students learn more when they know the plan for the day: where they will be, what will be expected of them and when they will return. Lack of this basic information often causes worry about “what happens next,” to the point they cannot concentrate on your educational mission.

Prepare Your Students

Once you have explained the mechanics of the trip, prepare your students for field trip learning with classroom activities related to what they will be doing at the park. The park staff can help you design appropriate pre and post visit activities. Some of these pre and post activities may already be available at the park, depending on the program topic you have chosen.

BE SURE YOUR STUDENTS KNOW:

- The time and date of departure
- Point of departure
- Educational objective of the field trip
- Necessary expenses
- Lunch
- Appropriate dress
- Rules (of teacher and the park)

- Available free time
- Parental permission forms as required by the school
- Field trip supplies (camera, notebook, pencils, etc.)
- Special assignments/worksheets
- Time they will return to school

Chaperones

It is important that students, whether working as a class or in small groups, have proper supervision. Arkansas law requires one chaperone for every ten students (bus drivers qualify). All chaperones should clearly understand their disciplinary duties and stay with the students during the field trip.

Discipline

Class discipline is the teacher’s responsibility. Please explain to all students that appropriate, orderly behavior is expected during their visit. Use simple rules of respect for park resources and courtesy toward each other, keeping in mind that other visitors may be at the park at the same time. All plants, minerals, animals, fossils, and artifacts are protected by state law and should not be disturbed or removed.



Inclement Weather

Inclement weather may require rescheduling or changes in activity plans. Check with the park before visiting in such weather. Notify the park immediately if circumstances require you to cancel your visit.

Lunch and Other Services

Your school group can bring lunches and eat at the visitor center. Soda machines are conveniently located and chips, candy, and bagged ice are for sale at the visitor center.

Location

Cossatot River State Park visitor center is located 9 miles east of Wickes on U.S. Highway 278.

Cossatot River State Park
1980 Hwy 278 W
Wickes, AR 71973

Telephone: 870-385-2201

Fax: 870-385-7858

Email: cossatotriver@arkansas.com

Web: www.ArkansasStateParks.com



School Programs and Activities

Specialized programs can be developed specifically for your topic of study with a minimum of two weeks advance notice. Park staff are trained in Project WILD, Project WET and Project Learning Tree activities. The programs listed below have been correlated to the Arkansas Science Curriculum Frameworks.

Programs

Exhibit Tour

Objective: Explore our visitor center exhibits, wildlife viewing area, and watch our 15 minute park video. Learn about the natural history of the area. Topics illustrated include: geology of the Ouachitas, the Cossatot watershed, stream ecology, rare and endemic plants and animals, cultural history, and the impacts of people on the environment.

Grades: K–12

Length: 30–45 minutes

K–4 frameworks:

- LS.2.k.1 Classify living and non-living things;
- LS.2.k.2 Differentiate between plants and animals;
- LS.2.k.3 Match parents and offspring;
- LS.2.k.4 Identify basic needs of plants and animals.
- LS.4.k.1 Recognize what it means for a species to be extinct.
- LS.2.1.1 Classify animals according to common characteristics.
- LS.2.1.2 Differentiate between herbivore and carnivore.
- LS.2.1.4 Locate plant parts: leaves, stems, flowers, roots.
- LS.4.1.1 Identify some endangered species in Arkansas.
- LS.2.2.2 Differentiate among herbivores, carnivores, and omnivores;
- LS.2.2.3 Identify basic needs of most plants;
- LS.2.2.4 Compare different types of flowering plants and conifers;
- LS.2.2.6 Describe the function of leaves, stems, flowers, and roots.
- LS.4.2.1 Compare and contrast living and extinct species.
- LS.4.2.2 Describe characteristics of various habitats.
- LS.2.3.1 Classify animals as vertebrates and invertebrates according to their structure.



- LS.2.4.1 Classify vertebrates into major subgroups: mammals, birds, fish, amphibians, and reptiles.
- LS.2.4.2 Classify some invertebrates according to their structure: mollusks, segmented worms, arthropods.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- ESS.8.4.1 Locate the natural divisions of Arkansas.

5–8 frameworks:

- LS.3.6.5 Describe behavioral adaptations of organisms to the environment.
- LS.3.8.16 Identify genetic traits that make organisms more likely to survive and reproduce in a particular environment.
- LS.4.5.14 Categorize organisms by the function they serve in the ecosystems and food webs.
- ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth.
- ESS.8.8.6 Research local, regional, and state landforms created by external forces on the earth.

9–12 frameworks:

- CDL.7.B.4 Classify and name organisms based on their similarities and differences applying taxonomic nomenclature using dichotomous keys.
- CDL.7.B.5 Investigate Arkansas’s biodiversity using appropriate tools and technology.
- CDL.7.B.8 Compare and contrast life cycles of familiar organisms.
- EBR.8.B.1 Cite examples of abiotic and biotic factors of ecosystems.
- NS.13.B.1 Collect and analyze scientific data using appropriate mathematical calculations, figures, and tables.

What color are underground flowers? Are flowers nature’s innocent beauties, or is there something more devious at work?

(A Look at the Natural History of Plants)

Objective: Students will learn about the adaptations of plants, including flowers and pollinators, habitats, and communities.



Grades: K–12

Length: 30–60 minutes

K–4 frameworks:

- LS.2.k.4 Identify basic needs of plants and animals.
- LS.3.k.1 Describe plant development and growth.
- LS.2.1.4 Locate plant parts: leaves, stems, flowers, roots.
- LS.2.2.3 Identify basic needs of most plants;
- LS.2.2.4 Compare different types of flowering plants and conifers;
- LS.2.2.6 Describe the function of leaves, stems, flowers, and roots.
- LS.4.2.2 Describe characteristics of various habitats.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- LS.4.4.2 Illustrate the interdependence of organisms in an ecosystem.

5–8 frameworks:

- LS.2.6.5 Model and explain the function of plant organs
- LS.3.7.6 Dissect a flower to analyze the reproductive system of angiosperms.
- LS.3.7.7 Differentiate between sexual and asexual reproduction in plants.
- LS.3.8.13 Identify basic ideas related to biological evolution: adaptations, diversity, natural selection, and variations within species.

9–12 frameworks:

- CDL.7.B.4 Classify and name organisms based on their similarities and differences applying taxonomic nomenclature using dichotomous keys.
- CDL.7.B.17 Describe the structure and function of the major parts of a plant: roots, stems, leaves, flowers.

Soil Ecology

Objective: Students will examine soil, locate and identify soil organisms, and construct a food web from the organisms identified.

Grades: K–12

Length: 30–60 minutes

K–4 frameworks:

- LS.2.4.2 Classify some invertebrates according to their structure: mollusks, segmented worms, arthropods.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.



LS.4.4.2 Illustrate the interdependence of organisms in an ecosystem.

5–8 frameworks:

LS.4.5.3 Design food webs in specific habitats to show the flow of energy within communities.

LS.4.5.14 Categorize organisms by the function they serve in the ecosystems and food webs.

ESS.8.5.11 Investigate the formation of soil.

ESS.8.8.13 Illustrate soil profiles.

ESS.8.8.16 Identify components of soil as inorganic or organic through investigations.

9–12 frameworks:

EBR.8.B.1 Cite examples of abiotic and biotic factors of ecosystems.

BD.2.ES.5 Construct a food chain.

BD.2.ES.6 Diagram a food web.

BD.2.ES.7 Compare and contrast food webs and food chains.

Ecology of a Rotting Log

Objective: Students will examine a rotting log, locate and identify organisms in the rotting log, and construct a food web from the organisms identified.

Grades: K–12

Length: 30–60 minutes

K–4 frameworks:

LS.2.4.2 Classify some invertebrates according to their structure: mollusks, segmented worms, arthropods.

LS.4.4.1 Recognize environmental adaptations of plants and animals.

LS.4.4.2 Illustrate the interdependence of organisms in an ecosystem.

5–8 frameworks:

LS.4.5.3 Design food webs in specific habitats to show the flow of energy within communities.

LS.4.5.14 Categorize organisms by the function they serve in the ecosystems and food webs.

ESS.8.5.11 Investigate the formation of soil.



9–12 frameworks:

- EBR.8.B.1 Cite examples of abiotic and biotic factors of ecosystems.
- BD.2.ES.5 Construct a food chain.
- BD.2.ES.6 Diagram a food web.
- BD.2.ES.7 Compare and contrast food webs and food chains.

Tree ID

Objective: Students will identify trees by using leaves, buds, and wood density.

Grades: K–12

Length: 30–60 minutes

K–4 frameworks:

- LS.2.2.4 Compare different types of flowering plants and conifers;

5–8 frameworks:

- NS.1.5.1 Make accurate observations.
- NS.1.6.1 Verify accuracy of observations.
- NS.1.7.1 Interpret evidence based on observations.
- NS.1.8.1 Justify conclusions based on appropriate and unbiased observations.

9–12 frameworks:

- CDL.7.B.4 Classify and name organisms based on their similarities and differences applying taxonomic nomenclature using dichotomous keys.

Aquatic Ecology

Objective: Students will identify aquatic organisms and understand their role in streams.

Grades: K–12

Length: 30–60 minutes

K–4 frameworks:

- LS.2.k.1 Classify living and non-living things;
- LS.2.1.1 Classify animals according to common characteristics.
- LS.2.1.2 Differentiate between herbivore and carnivore.
- LS.2.2.2 Differentiate among herbivores, carnivores, and omnivores;
- LS.4.2.2 Describe characteristics of various habitats.



- LS.2.3.1 Classify animals as vertebrates and invertebrates according to their structure.
- LS.2.4.2 Classify some invertebrates according to their structure: mollusks, segmented worms, arthropods.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- LS.4.4.2 Illustrate the interdependence of organisms in an ecosystem.

5–8 frameworks:

- LS.4.5.3 Design food webs in specific habitats to show the flow of energy within communities.
- LS.4.5.14 Categorize organisms by the function they serve in the ecosystems and food webs.
- LS.4.5.15 Conduct field studies identifying and categorizing organisms in a given area of an ecosystem.

9–12 frameworks:

- EBR.8.B.1 Cite examples of abiotic and biotic factors of ecosystems.
- EBR.8.B.4 Analyze an ecosystem’s energy flow through food chains, food webs, and energy pyramids
- BD.2.ES.5 Construct a food chain.
- BD.2.ES.6 Diagram a food web.
- BD.2.ES.7 Compare and contrast food webs and food chains.

Watersheds/Riparian Zones

Objective: Students will learn what watersheds and riparian zones are, how they affect you, and why they should be protected.

Grades: 2–12

Length: 30–60 minutes

K–4 frameworks:

- LS.4.2.2 Describe characteristics of various habitats.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- LS.4.4.2 Illustrate the interdependence of organisms in an ecosystem.

5–8 frameworks:

- LS.3.8.13 Identify basic ideas related to biological evolution: adaptations, diver-



- sity, natural selection, and variations within species.
- LS.3.8.16 Identify genetic traits that make organisms more likely to survive and reproduce in a particular environment.
 - LS.4.6.1 Identify environmental conditions that can affect the survival of individual organisms and entire species.
 - LS.4.8.1 Analyze the effect of changes in the environmental conditions on the survival of individual organisms and the entire species.

9–12 frameworks:

- SP.3.ES.3 Explain common problems related to water quality: conservation, usage, supply, treatment, pollutants (point and non-point sources).

Fish Adaptations (classroom)

Objective: Students will learn about adaptations of fish to their environments, and how these adaptations help the fish to survive.

Grades: 4–12

Length: 60 minutes

K–4 frameworks:

- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- LS.4.4.2 Illustrate the interdependence of organisms in an ecosystem.

5–8 frameworks:

- NS.1.5.1 Make accurate observations.
- NS.1.6.1 Verify accuracy of observations.
- NS.1.7.1 Interpret evidence based on observations.
- NS.1.8.1 Justify conclusions based on appropriate and unbiased observations.
- LS.3.6.7 Describe structural adaptations for survival in the environment.
- LS.3.8.16 Identify genetic traits that make organisms more likely to survive and reproduce in a particular environment.

Fish Communities

Objective: Students will examine and learn about the different kinds of fish in the Cossatot River and their role in the river ecosystem.

Grades: 4–12



Length: 60 minutes

K–4 frameworks:

- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- LS.4.4.2 Illustrate the interdependence of organisms in an ecosystem.

5–8 frameworks:

- NS.1.5.1 Make accurate observations.
- NS.1.6.1 Verify accuracy of observations.
- NS.1.7.1 Interpret evidence based on observations.
- NS.1.8.1 Justify conclusions based on appropriate and unbiased observations.
- LS.3.6.7 Describe structural adaptations for survival in the environment.
- LS.3.8.16 Identify genetic traits that make organisms more likely to survive and reproduce in a particular environment.

Predator/Prey

Objective: Students will learn about predator/prey relationships, adaptations of animals to their environments, and how these adaptations help the animals to survive. With actual examples, students observe that the shape of an animal’s body, skull, teeth, feet, color, and behavior are specifically adapted, so the animal can survive in its particular habitat.

Grades: K–12

Length: 30–60 minutes

K–4 frameworks:

- LS.2.1.1 Classify animals according to common characteristics.
- LS.2.1.2 Differentiate between herbivore and carnivore.
- LS.2.2.2 Differentiate among herbivores, carnivores, and omnivores;
- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- LS.4.4.2 Illustrate the interdependence of organisms in an ecosystem.

5–8 frameworks:

- LS.3.6.7 Describe structural adaptations for survival in the environment.
- LS.3.8.16 Identify genetic traits that make organisms more likely to survive and reproduce in a particular environment.
- LS.4.5.14 Categorize organisms by the function they serve in the ecosystems and food webs.



Dendrochronology

Objective: We can look at tree rings to not only determine the age of a tree, but look at past environmental conditions.

Grades: 5–12

Length: 30–60 minutes

5–8 frameworks:

- NS.1.5.1 Make accurate observations.
- NS.1.6.1 Verify accuracy of observations.
- NS.1.7.1 Interpret evidence based on observations.
- NS.1.8.1 Justify conclusions based on appropriate and unbiased observations.
- NS.1.5.4 Interpret scientific data using data tables/charts, bar graphs, and line graphs.
- NS.1.6.4 Construct and interpret scientific data using data tables/charts, bar graphs, and line graphs.

9–12 frameworks:

- EBR.8.B.1 Cite examples of abiotic and biotic factors of ecosystems.
- NS.13.B.1 Collect and analyze scientific data using appropriate mathematical calculations, figures, and tables.
- NS.4.ES.1 Collect and analyze scientific data using appropriate math calculations, figures, and tables.

Nature Mapping

Objective: Plant and animal identification, learning different habitats, locating points on a map, and using GPS.

Grades: 2–12

Length: 30–60 minutes

K–4 frameworks:

- LS.4.2.2 Describe characteristics of various habitats.

5–8 frameworks:

- NS.1.5.1 Make accurate observations.
- NS.1.6.1 Verify accuracy of observations.
- NS.1.7.1 Interpret evidence based on observations.
- NS.1.8.1 Justify conclusions based on appropriate and unbiased observations.



9–12 frameworks:

- NS.13.B.1 Collect and analyze scientific data using appropriate mathematical calculations, figures, and tables.
- NS.4.ES.1 Collect and analyze scientific data using appropriate math calculations, figures, and tables.

Nature Hike: Exploring Trees

Objective: Students will learn about trees by observing: (1) how leaves of different species are similar and different; (2) how leaves are attached to twigs; (3) how to age a twig; and (4) what lives on a tree.

Grades: 4–8

Length: 45 minutes

K–4 frameworks:

- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- LS.4.4.2 Illustrate the interdependence of organisms in an ecosystem.

5–8 frameworks:

- NS.1.5.1 Make accurate observations.
- NS.1.6.1 Verify accuracy of observations.
- NS.1.7.1 Interpret evidence based on observations.
- NS.1.8.1 Justify conclusions based on appropriate and unbiased observations.

Birds of Prey

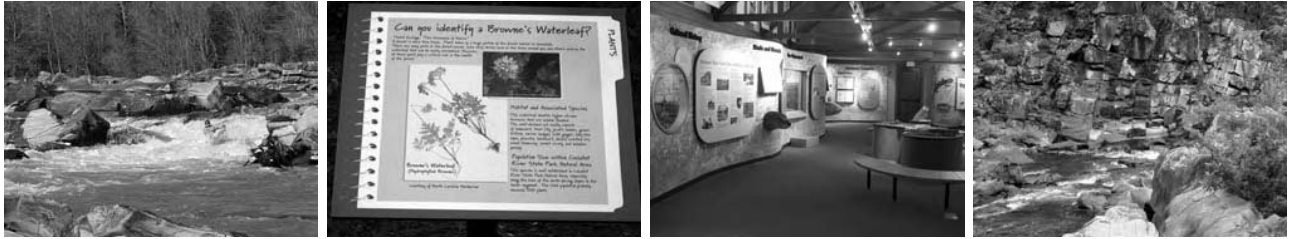
Objective: Come to Cossatot River State Park and enjoy watching and learning about some of nature’s most fascinating creatures—birds of prey! See experts handle and speak about such birds of prey as: owls, hawks, vultures, and Bald eagles.

Grades: 6

Length: 60 minutes

5–8 frameworks:

- LS.3.6.5 Describe behavioral adaptations of organisms to the environment.
- LS.3.6.6 Differentiate between innate behaviors: migration, defensive posture, communication, and imprinting.
- LS.3.6.7 Describe structural adaptations for survival in the environment.



SOCIAL STUDIES

Life on the Edge

Objective: Students will understand the habitat components that organisms need to survive. Students will research the endangered, threatened, or rare species and give a persuasive media presentation on preserving that organism's needs.

Skills: Researching, Analyzing, Synthesizing and Creating.

Grades: 4-8

Length: 45-50 minutes

4-8 Frameworks:

LS.4.k.1 Recognize what it means for a species to be extinct.

LS.4.1.1 Identify some endangered species in Arkansas.

Trees for Many Reasons

Objective: Students will discuss and analyze fictional stories related to natural resources. Students will determine whether the main ideas of the stories build a case for the conservation and wise use of natural resources.

Skills: Discussing, Forming Concepts, Evaluating, Comparing and Contrasting, Identifying Main Ideas.

Grades: 2-8

Length: 45-50 minutes

2-8 Frameworks:

LS.4.k.1 Recognize what it means for a species to be extinct.

LS.2.2.3 Identify basic needs of most plants.

LS.4.2.2 Describe characteristics of various habitats.

LS.4.4.1 Recognize environmental adaptations of plants and animals.

ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth.

ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.

Native Ways

Objective: Students will explore some traditional American Indian attitudes with respect to the land and its resources.



Skills: Identifying Relationships and Patterns, Identifying Attributes and Components, Interpreting, Evaluating.

Grades: 4-8

Length: 45-50 minutes

4-8 Frameworks:

LS.4.2.2 Describe characteristics of various habitats.

ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth.

ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.

In the Good Old Days

Objective: Students will learn how people's personal experiences and place in history affect their attitudes toward the environment. Students will become familiar with authors who have helped shape the way Americans think about the environment.

Skills: Researching, Interpreting, Identifying Main Ideas, Composing.

Grades: 6-8

Length: 45-50 minutes

6-8 Framework:

LS.4.2.2 Describe characteristics of various habitats.

ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth.

ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.

A Look at Lifestyles

Objective: Students will understand that the items and resources we use meet our basic needs, maintain our way of life, and provide us with luxuries. Students will compare their own lifestyle with those of traditional American Indians and early pioneers.

Skills: Researching, Organizing Information, Reasoning, Analyzing, Comparing and Contrasting, Evaluating.

Grades: 5-8



Length: 45-50 minutes

5-8 Frameworks:

- LS.4.2.2 Describe characteristics of various habitats.
- ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth.
- ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.

A Drop in the Bucket

Objective: Students will calculate the percentage of fresh water available for human use. Students will explain why water is a limited resource.

Skills: Gathering information (observing, calculating); Organizing; Interpreting (drawing conclusions)

Grades: 6-8

Length: 50 minutes

6-8 Frameworks:

- LS.4.2.2 Describe characteristics of various habitats.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth.
- ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.
- NS.13.B.1 Collect and analyze scientific data using appropriate mathematical calculations, figures, and tables.

Birds and Worms

Objective: Students will demonstrate their knowledge of how camouflage is used for protection and survival.

Skills: Determining Causes and Effects, Analyzing, Identifying Relationships and Patterns, Predicting.

Grades: K-6

Length: 50 minutes



K-6 Frameworks:

- LS.2.k.4 Identify basic needs of plants and animals.
- LS.4.2.1 Compare and contrast living and extinct species.
- LS.4.2.2 Describe characteristics of various habitats.
- LS.2.4.1 Classify vertebrates into major subgroups: mammals, birds, fish, amphibians and reptiles.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.

Every Tree For Itself

Objective: Students will simulate how trees compete for their essential needs. Students will describe how varying amounts of light, water and nutrients affect a tree's growth.

Skills: Determining Cause and Effects, Identifying Relationships and Patterns Predicting, Interpreting.

Grades: K-8

Length: 50 minutes

K-8 Framework:

- LS.2.k.4 Identify basic needs of plants and animals.
- LS.2.2.3 Identify basic needs of most plants.
- LS.2.2.4 Compare different types of flowering plants and conifers.
- LS.2.2.6 Describe the function of leaves, stems, flowers and roots.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- LS.4.5.14 Categorize organisms by the function they serve in the ecosystems and food webs.
- ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.

Survival of the Bears

Objective: Students will define a limiting factor. Students will describe how limiting factors affect animal populations.

Skills: Analysis, Evaluation, Generalization, and Observation.

Grades: 5-8



Length: 45-50 minutes

5-8 Framework:

- LS. 2.k.2 Differentiate between plants and animals.
- LS.2.k.4 Identify basic needs of plants and animals.
- LS.2.1.2 Differentiate between herbivore and carnivore.
- LS.2.2.2 Differentiate among herbivores, carnivores and omnivores.
- LS.4.2.2 Describe characteristics of various habitats.
- LS.2.4.1 Classify vertebrates into major subgroups: mammals, birds, fish, amphibians and reptiles.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- LS.4.5.14 Categorize organisms by the function they serve in the ecosystems and food webs.
- ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.

Oh Deer!

Objective: Students will identify and describe food, water, shelter as three essential components of habitat. Students will describe factors that influence carrying capacity. Students will define “limiting factors” and give examples. Students will recognize that some fluctuations in wildlife populations are natural as ecological systems undergo constant change.

Skills: Application, Comparison, Description, Observation, Problem Solving.

Grades: 5-8

Length: 30-45 minutes

5-8 Framework:

- LS. 2.k.2 Differentiate between plants and animals.
- LS.2.k.4 Identify basic needs of plants and animals.
- LS.4.2.2 Describe characteristics of various habitats.
- LS.2.4.1 Classify vertebrates into major subgroups: mammals, birds, fish, amphibians and reptiles.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.



SCIENCE

A Drop in the Bucket

Objective: Students will calculate the percentage of fresh water available for human use. Students will explain why water is a limited resource.

Skills: Gathering information (observing, calculating); Organizing; Interpreting (drawing conclusions)

Grades: 6-8

Length: 50 minutes

6-8 Frameworks:

- LS.4.2.2 Describe characteristics of various habitats.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth.
- ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.
- NS.13.B.1 Collect and analyze scientific data using appropriate mathematical calculations, figures, and tables.

The Incredible Journey

Objective: Students will describe the movement of water within the water cycle. Students will identify the states of water as it moves through the water cycle.

Skills: Organizing (mapping); Analyzing (identifying components and relationships); Interpreting (describing)

Grades: Upper Elementary, Middle School

Length: 50 minutes

Upper Elementary, Middle School Frameworks:

- ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth.
- ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.
- EBR.8.B.1 Cite examples of abiotic and biotic factors of ecosystems.



Trees for Many Reasons

Objective: Students will discuss and analyze fictional stories related to natural resources. Students will determine whether the main ideas of the stories build a case for the conservation and wise use of natural resources.

Skills: Discussing, Forming Concepts, Evaluating, Comparing and Contrasting, Identifying Main Ideas.

Grades: 2-8

Length: 45-50 minutes

2-8 Frameworks:

- LS.4.k.1 Recognize what it means for a species to be extinct.
- LS.2.2.3 Identify basic needs of most plants.
- LS.4.2.2 Describe characteristics of various habitats.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth.
- ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.

In the Good Old Days

Objective: Students will learn how people's personal experiences and place in history affect their attitudes toward the environment. Students will become familiar with authors who have helped shape the way Americans think about the environment.

Skills: Researching, Interpreting, Identifying Main Ideas, Composing.

Grades: 6-8

Length: 45-50 minutes

6-8 Framework:

- LS.4.2.2 Describe characteristics of various habitats.
- ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth.
- ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.



A Look at Lifestyles

Objective: Students will understand that the items and resources we use meet our basic needs, maintain our way of life, and provide us with luxuries. Students will compare their own lifestyle with those of traditional American Indians and early pioneers.

Skills: Researching, Organizing Information, Reasoning, Analyzing, Comparing and Contrasting, Evaluating.

Grades: 5-8

Length: 45-50 minutes

5-8 Frameworks:

- LS.4.2.2 Describe characteristics of various habitats.
- ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth.
- ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.

Life on the Edge

Objective: Students will understand the habitat components that organisms need to survive. Students will research the endangered, threatened, or rare species and give a persuasive media presentation on preserving that organism's needs.

Skills: Researching, Analyzing, Synthesizing and Creating.

Grades: 4-8

Length: 45-50 minutes

4-8 Frameworks:

- LS.4.k.1 Recognize what it means for a species to be extinct.
- LS.4.l.1 Identify some endangered species in Arkansas.
- LS.4.2.2 Describe characteristics of various habitats.
- LS.4.5.14 Categorize organisms by the function they serve in the ecosystems and food webs.

Native Ways

Objective: Students will explore some traditional American Indian attitudes with respect to the land and its resources.



Skills: Identifying Relationships and Patterns, Identifying Attributes and Components, Interpreting, Evaluating.

Grades: 4-8

Length: 45-50 minutes

4-8 Frameworks:

- LS.4.2.2 Describe characteristics of various habitats.
- ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth.
- ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.

Improve Your Place

Objective: Students will identify ways they can improve their local area. Students will create and carry out a plan to improve the area.

Skills: Defining Problems, Solving Problems, Evaluating.

Grades: 5-8

Length: 45-50 minutes

5-8 Frameworks:

- LS.2.k.1 Classify living and non-living things.
- LS. 2.k.2 Differentiate between plants and animals.
- LS.2.k.4 Identify basic needs of plants and animals.
- LS.4.k.1 Recognize what it means for a species to be extinct.
- LS.2.1.1 Classify animals according to common characteristics.
- LS.2.1.4 Locate plant parts: leaves, stems, flower and roots.
- LS.4.1.1 Identify some endangered species in Arkansas.
- LS.2.2.3 Identify basic needs of most plants.
- LS.2.2.4 Compare different types of flowering plants and conifers.
- LS.4.2.2 Describe characteristics of various habitats.
- LS.2.3.1 Classify animals as vertebrates and invertebrates according to their structure.
- LS.2.4.1 Classify vertebrates into major subgroups: mammals, birds, fish, amphibians and reptiles.



- LS.2.4.2 Classify some invertebrates according to their structure: mollusks, segmented worms and arthropods.
- LS 4.4.1 Recognize environmental adaptations of plants and animals.
- LS.3.6.5 Describe behavioral adaptations of organisms to the environment.
- LS.3.8.16 Identify genetic traits that make organisms more likely to survive and reproduce in a particular environment.
- LS.4.5.14 Categorize organisms by the function they serve in the ecosystems and food webs.
- ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth.
- ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.

Birds and Worms

Objective: Students will demonstrate their knowledge of how camouflage is used for protection and survival.

Skills: Determining Causes and Effects, Analyzing, Identifying Relationships and Patterns, Predicting.

Grades: K-6

Length: 50 minutes

K-6 Frameworks:

- LS.2.k.4 Identify basic needs of plants and animals.
- LS.4.2.1 Compare and contrast living and extinct species.
- LS.4.2.2 Describe characteristics of various habitats.
- LS.2.4.1 Classify vertebrates into major subgroups: mammals, birds, fish, amphibians and reptiles.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.

Every Tree For Itself

Objective: Students will simulate how trees compete for their essential needs. Students will describe how varying amounts of light, water and nutrients affect a tree's growth.



Skills: Determining Cause and Effects, Identifying Relationships and Patterns Predicting, Interpreting.

Grades: K-8

Length: 50 minutes

K-8 Framework:

- LS.2.k.4 Identify basic needs of plants and animals.
- LS.2.2.3 Identify basic needs of most plants.
- LS.2.2.4 Compare different types of flowering plants and conifers.
- LS.2.2.6 Describe the function of leaves, stems, flowers and roots.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- LS.4.5.14 Categorize organisms by the function they serve in the ecosystems and food webs.
- ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.

Survival of the Bears

Objective: Students will define a limiting factor. Students will describe how limiting factors affect animal populations.

Skills: Analysis, Evaluation, Generalization, and Observation.

Grades: 5-8

Length: 45-50 minutes

5-8 Framework:

- LS. 2.k.2 Differentiate between plants and animals.
- LS.2.k.4 Identify basic needs of plants and animals.
- LS.2.1.2 Differentiate between herbivore and carnivore.
- LS.2.2.2 Differentiate among herbivores, carnivores and omnivores.
- LS.4.2.2 Describe characteristics of various habitats.
- LS.2.4.1 Classify vertebrates into major subgroups: mammals, birds, fish, amphibians and reptiles.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.
- LS.4.5.14 Categorize organisms by the function they serve in the ecosystems and food webs.



ESS.8.8.6 Research local, regional, and state landforms created by external forces in the earth.

Oh Deer!

Objective: Students will identify and describe food, water, shelter as three essential components of habitat. Students will describe factors that influence carrying capacity. Students will define “limiting factors” and give examples. Students will recognize that some fluctuations in wildlife populations are natural as ecological systems undergo constant change.

Skills: Application, Comparison, Description, Observation, Problem Solving.

Grades: 5-8

Length: 30-45 minutes

5-8 Framework:

- LS. 2.k.2 Differentiate between plants and animals.
- LS.2.k.4 Identify basic needs of plants and animals.
- LS.4.2.2 Describe characteristics of various habitats.
- LS.2.4.1 Classify vertebrates into major subgroups: mammals, birds, fish, amphibians and reptiles.
- LS.4.4.1 Recognize environmental adaptations of plants and animals.

Quick-Frozen Critters

Objective: Students will describe adaptations related to predator and prey relationships. Students will explain the importance of adaptations in predator and prey relationships. Students will describe how predator and prey relationships limit wildlife populations.

Skills: Analysis, Description, Evaluation, Generalization, Observation.

Grades: 5-8

Length: 30-45 minutes

5-8 Framework:

- LS.2.1.1 Classify animals according to common characteristics.
- LS.2.1.2 Differentiate between herbivore and carnivore.
- LS.2.2.2 Differentiate among herbivores, carnivores and omnivores.
- LS.4.2.2 Describe characteristics of various habitats.



- LS.2.4.1 Classify vertebrates into major subgroups: mammals, birds, fish, amphibians and reptiles.
- LS 4.4.1 Recognize environmental adaptations of plants and animals.
- LS.3.6.5 Describe behavioral adaptations of organisms to the environment.
- LS.4.5.14 Categorize organisms by the function they serve in the ecosystems and food webs.

Animal Charades

Objective: Students will define wildlife. Students will be able to distinguish between domesticated and wild animals.

Skills: Analysis, Application and Observation.

Grades: K-4

Length: 30-40 minutes

5-8 Framework:

- LS.2.1.1 Classify animals according to common characteristics.
- LS.2.1.2 Differentiate between herbivore and carnivore.
- LS.2.2.2 Differentiate among herbivores, carnivores and omnivores.
- LS.4.2.2 Describe characteristics of various habitats.
- LS.2.4.1 Classify vertebrates into major subgroups: mammals, birds, fish, amphibians and reptiles.
- LS 4.4.1 Recognize environmental adaptations of plants and animals.

Migration Barriers

Objective: Students will define migration as it relates to wildlife. Students will describe possible impacts on wildlife migration patterns as a result of human activities. Students will give an example of the importance of land-use planning as it affects people, wildlife and the environment.

Skills: Analysis, Application, Comparison, Construction, Description, Evaluation, Generalization, Observation, Synthesis

Grades: 5-8

Length: 30-45 minutes



5-8 Framework:

- LS.2.k.1 Classify living and non-living things.
- LS. 2.k.2 Differentiate between plants and animals.
- LS.2.k.4 Identify basic needs of plants and animals.
- LS.4.2.2 Describe characteristics of various habitats.
- LS 4.4.1 Recognize environmental adaptations of plants and animals.



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