



GEORGIA MIDDLE SCHOOL

Instructional Resources

CAREER, TECHNICAL, & AGRICULTURAL EDUCATION

AGRICULTURE

COURSE: Exploring Agriculture Education

UNIT 4: Forest Fun



INTRODUCTION

Annotation:

Students will learn how to identify native trees and the parts of the tree. Students will be able to successfully apply compass skills for use in forestry and natural resources careers.

Grade(s):

<input type="checkbox"/>	6 th
<input checked="" type="checkbox"/>	7 th
<input type="checkbox"/>	8 th

Time:

Ten 50 minute class periods

Author:

Rhonda Stone

Students with Disabilities:

For students with disabilities, the instructor should refer to the student's IEP to be sure that the accommodations specified are being provided appropriately. Instructors should also familiarize themselves with the provisions of Behavior Intervention Plans that may be part of a student's IEP. Frequent consultation with a student's special education instructor will be beneficial in providing appropriate differentiation. Many students (both with and without disabilities) who struggle with reading may benefit from the use of text reading software or other technological aids to provide access to printed materials. Many of these are available at little or no cost on the internet.

FOCUS STANDARDS

GPS Focus Standards:

MSAGED7-5

Build an understanding of the area of forestry & natural resources.

- a) Identify and explain the careers in forestry and natural resources.
- b) Identify and explain the function of wildlife and tree species in Georgia.
- c) Explain the interrelationship between animals and plants.
- d) Explain Georgia's renewable and nonrenewable natural resources.

GPS Academic Standards:

S7CS4

Students will use tools and instruments for observing, measuring, and manipulating equipment and materials in scientific activities.

S7L1

Students will investigate the diversity of living organisms and how they can be compared scientifically.

S7L4

Students will examine the dependence of organisms on one another and their environments.

UNDERSTANDING & GOALS

Enduring Understandings:

Forestry is one of the largest segments of Georgia agriculture. Without clean air, fertile soil, and pure water, plants and animals could not grow. Everyone should use practices that protect our environment. We should not take natural resources for granted. We should use our resources wisely.

Essential Questions:

- How do you describe an evergreen or conifer?
- What are some ways to identify trees?
- What are some products provided by the forest?
- What are some parts of the tree?
- What are some forest enemies?
- What are some types of trees?
- What is the difference between renewable and nonrenewable resources?
- How do animals help plants?
- What are some of the responsibilities of a forester?
- What are some tools used in the forestry and natural resources division?
- What does a compass rose look like?
- How do you use a compass?
- How do you navigate using a compass?
- How do you navigate using the sun?

Knowledge from this Unit:

Students will be able to:

- Explain career opportunities in forestry and natural resources
- Identify wildlife of Georgia
- Identify species of Georgia trees.
- Explain how plants and animals are interrelated.
- State some of Georgia's renewable and nonrenewable resources.
- Identify trees and wildlife in Georgia.
- Identify renewable and nonrenewable resources.

Skills from this Unit:

Students will be able to:

- Plot a course using the sun
- Assess the student's position and chart a course of direction using a compass

ASSESSMENTS

Assessment Method Type:

- | | |
|-------------------------------------|--|
| <input type="checkbox"/> | Pre-test |
| <input checked="" type="checkbox"/> | Objective assessment - multiple-choice, true- false, etc. |
| <input type="checkbox"/> | ___ Quizzes/Tests |
| <input type="checkbox"/> | ___ Unit test |
| <input type="checkbox"/> | Group project |
| <input type="checkbox"/> | Individual project |
| <input checked="" type="checkbox"/> | Self-assessment - May include practice quizzes, games, simulations, checklists, etc. |
| <input type="checkbox"/> | Subjective assessment/Informal observations |
| <input type="checkbox"/> | ___ Essay tests |
| <input type="checkbox"/> | ___ Observe students working with partners |
| <input type="checkbox"/> | ___ Observe students role playing |
| <input type="checkbox"/> | Peer-assessment |
| <input type="checkbox"/> | ___ Peer editing and commentary of products/projects/presentations using rubrics |
| <input type="checkbox"/> | ___ Peer editing and/or critiquing |
| <input checked="" type="checkbox"/> | Dialogue and Discussion |
| <input type="checkbox"/> | ___ Student/teacher conferences |
| <input checked="" type="checkbox"/> | ___ Partner and small group discussions |
| <input type="checkbox"/> | ___ Whole group discussions |
| <input type="checkbox"/> | ___ Interaction with/feedback from community members/speakers and business partners |
| <input type="checkbox"/> | Constructed Responses |
| <input type="checkbox"/> | ___ Chart good reading/writing/listening/speaking habits |
| <input type="checkbox"/> | ___ Application of skills to real-life situations/scenarios |
| <input type="checkbox"/> | Post-test |

LESSON PLANS

• LESSON 1: EVERGREENS AND CONIFERS

1. Identify the Standards: Standards should be posted in the classroom for each lesson.

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2. Review Essential Questions. Post Essential Questions in the classroom.

- How do you describe an evergreen or conifer?

3. Identify and review Vocabulary:

Aspen	Compost	Harvest	Sapwood
Biodegradable	Cruising Vest	Harvesting	Soil Sampler
Bristlecone Pine	Data Recorder	Increment Borer	Tally Book
Cambium	Decay	Landfill	Tape Measure
Cedar	Decompose	Navigate	Thinning
Cellulose	Dibble	Organic	Timber Cruise
Clinometers	Disperse	Recycled	Tree Rings
Conifer	Dogwood	Regeneration	
Controlled Burn	Evergreen	Renewable	
Compass	Forest	Responsibility	
Compass Rose	Ginkgo	Reused	

4. Lead a brief discussion about evergreens and conifers.

- Ask students, "What are the main differences between evergreens and conifers?"
 - Explain that all conifers are not evergreen, and all evergreens are not conifers
- What are some examples of evergreens and conifers?
 - **Examples:** Pine trees, Christmas trees
- How would you describe an evergreen or a conifer?

5. Have students complete the **Conifer Crossword** activity.

- See attached supplementary files.
- After students are finished, review the crossword as a class.

• LESSON 2: TREE IDENTIFICATION

1. Review Essential Questions. Post Essential Questions in the classroom.

- What are some ways to identify trees?

2. Not All Trees are Alike

- Explain to students that just like there are different breeds of dogs and cats, there are different types of trees.
- Ask students, "What are some ways trees can be identified?"
 - **Examples:** Leaves, color, tree trunk
- Show the students leaves in different fall colors, using real leaves or photographs depending on the season.

3. Leaf Identification Activities

- Have students access <http://www.mdc.mo.gov/nathis/seasons/fall/fleaves/> to complete the **Common Fall Leaves** worksheet.
 - See attached supplementary files
 - **Note:** If the internet is not accessible, the Web page can be printed out for students to use to complete the worksheet.
- Exploring Trees Quiz Game
 - From <http://arborday.org/trees/wtit>
- Identifying Leaves Practice
 - From <http://www.arborday.org/kids/carly/leafminer/>
- Have students access <http://www.freenetwork.umn.edu/kids/matching.html> to help complete the **Match a Leaf Tree Game**.
 - See attached supplementary files
- **Parts of a Tree Crossword** and the **Pick a Leaf** worksheet
 - See attached supplementary files

4. Leaf Scavenger Hunt

- Post pictures of the following trees around the classroom. Give each picture a number.

Aspen	Hickory	Poplar
Cedar	Juniper	Redbud
Dogwood	Maple	Sassafras
Ginkgo	Oak	Willow

- Have students go around the room, writing the number of the picture with the corresponding leaf on the **Common Fall Leaves** worksheet.

• LESSON 3: FOREST PRODUCTS

1. Review Essential Questions. Post Essential Questions in the classroom.

- What are some products provided by the forest?

2. Products from the Forest

- Show the **Products and Benefits of the Forest** PowerPoint presentation.
 - See attached supplementary files
- During the PowerPoint, students should complete the corresponding **Forestry Products** worksheet.
 - See attached supplementary files

3. Tree Products Activities

- More Products from Trees
 - From http://www.freenetwork.umn.edu/kids/comes_from_trees.html
- Virtual Forest, Squeeze Play, and The Planting Game
 - From <http://www.canfor.com/treeschool/games/>

• LESSON 4: FUN IN THE FOREST

1. Review Essential Questions. Post Essential Questions in the classroom.
 - What are some parts of the tree?
 - What are some forest enemies?
 - What are some types of trees?
2. Online Activities
 - Leaf Identification Quiz
 - From <http://www.northwoodsguides.com/Quiz/Quiz.asp?QuizID=2>
 - Design Your Own Tree
 - From <http://www.units.muohio.edu/dragonfly/itd/game.html>
3. Enemies of the Forest
 - Have students fill out the Enemies of the Forest worksheet.
 - See attached supplementary files
 - After students have finished the worksheet, review the answers with the class using the Enemies of the Forest Answer Key.
 - See attached supplementary files
4. Forest Card Game
 - Split the class into small groups.
 - Give each group a copy of the Forest Families Game to play. Set a time limit, and at the end, the person in each group with the most complete “families” is announced as the winner.
 - See attached supplementary files

• LESSON 5: ENVIRONMENTAL CONCERNS

1. Review Essential Questions. Post Essential Questions in the classroom.
 - What is the difference between a renewable and a nonrenewable natural resource?
2. Have students take turns reading paragraphs aloud from the Waste Not Want Not worksheet.
 - See attached supplementary files
3. Lead a brief discussion about environmental awareness.
 - Ask students, “Do any of you recycle?”
 - Where are places in the community where we can recycle?
 - What are some items we use at school that can be recycled?
4. Give each student a copy of the Environmental Anagram worksheet to complete.
 - See attached supplementary files

• LESSON 6: ANIMALS AND THE FOREST

1. Review Essential Questions. Post Essential Questions in the classroom.
 - How do animals help plants?
2. Lead a discussion about animals' function in the forest.
 - Ask students, "How do animals help plants reseed the forest?"
 - What animals in the forest help to spread seeds?
 - **Examples:** Deer, fox, bears, rabbits, bobcats
 - Are forest animals the only animals that help spread seeds?
 - **Examples:** Humans, dogs, cats
 - What are some other ways plants reseed themselves and spread to other parts of the forest?
 - What types of plants in the forest have seeds?
 - How do animals spread seeds?
3. Forest Flow Chart
 - Hand out the **Forest Flow Chart** worksheet.
 - See attached supplementary files
 - Write the answers from the **Forest Flow Chart Answer Key** on the board, in random order.
 - See attached supplementary files
 - Have students match the answers from the board on the correct circles on the flow chart.
4. Seed Dispersal Activity
 - Have students access <http://dnr.wi.gov/org/caer/ce/eeek/cool/seedy.htm>.
 - Students should complete the quiz on the different types of seed dispersal.

LESSON 7: THE FORESTER'S JOB

1. Review Essential Questions. Post Essential Questions in the classroom.
 - What are some of the responsibilities of a forester?
 - What are some tools used in the forestry and natural resources division?
2. What Does a Forester Do?
 - Give each student a copy of **The Forester's Job Brochure** to read over.
 - See attached supplementary files
 - Discuss the brochure as a class.
 - Have students complete the **Tools of the Trade Forestry Quiz** for a grade. Answers to the quiz can be found on the **Tools of the Trade Answers** document.
 - See attached supplementary files
3. Forestry Presentation
 - Show students the **Forestry Equipment Identification** PowerPoint presentation.
 - See attached supplementary files
 - During the presentation, have students point out which tools are part of their unit vocabulary.
 - If possible, arrange for a local forester from your county to come and talk to the class about his profession. He or she can review the PowerPoint with the class.

LESSON 8: USING THE COMPASS

1. Review Essential Questions. Post Essential Questions in the classroom.
 - What does a compass rose look like?
 - How do you use a compass?
 - How do you navigate using a compass?
 - How do you navigate using the sun?
2. Compass Facts
 - Ask students, “Why do you think we use compasses?”
 - Read the following facts to students:
 - A compass needle always points to magnetic north, but from place to place and year to year, magnetic north is in a slightly different direction.
 - The difference between magnetic north and geographic north, which is north on a map, is called magnetic variation.
3. The Compass Rose
 - Have students complete the Compass Rose worksheet.
 - See attached supplementary files
 - Review the answers with students before continuing.
4. Learning about the Compass
 - Hand out compasses to students.
 - Describe the different parts of a compass to the students.
 - Show students the proper way to calibrate a compass, and ask them to do so along with you.
 - Review the history of the compass, including the use of sun dials and other early forms of determining direction.
 - Illustrate the proper use of a compass.
5. Using a Compass
 - Have students complete the Parts of a Compass worksheet using the information they have just learned.
 - See attached supplementary files
 - After completing this worksheet, students should complete the Get Your Bearings activity to practice using a compass.
 - See attached supplementary files
 - Once students have practiced using a compass, they should do The Compass Activity Page quiz. The answers to the quiz are attached to the document.
 - See attached supplementary files
6. Have students access <http://www.pbs.org/wgbh/nova/everest/earth/lost.html> and play the Get Lost game.
7. Students can practice another form of navigation by doing the Navigate Using the Sun and Navigate Using a Compass worksheets.
 - See attached supplementary files

LESSON 9: WEB RANGERS

1. National Park Service Activity

- Have students access www.nps.gov/webrangers.
- Students should enter and sign up to have their own account.
- Instruct students to choose an **activity list** instead of a level. Students should focus on activities that deal with nature and National Parks.
- **Note:** This lesson may be incorporated as an activity for students that finish other lessons early.



CULMINATING PERFORMANCE TASK

Culminating Unit Performance Task Title:

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

Attachments for Culminating Performance Task:



UNIT RESOURCES

Web Resources:

<http://www.pbs.org/wgbh/nova/everest/earth/lost.html>
www.nps.gov/webrangers
<http://dnr.wi.gov/org/caer/ce/eeek/cool/seedy.htm>
<http://www.units.muohio.edu/dragonfly/itd/game.html>
<http://www.northwoodsguides.com/Quiz/Quiz.asp?QuizID=2>
<http://www.canfor.com/treeschool/games/>
http://www.freenetwork.umn.edu/kids/comes_from_trees.html
<http://www.arboday.org/kids/carly/leafminer/>
<http://arboday.org/trees/wtit/>
<http://www.mdc.mo.gov/nathis/seasons/fall/fleaves/>
<http://www.freenetwork.umn.edu/kids/matching.html>

Materials & Equipment:

- | | |
|-------------------------|-----------------------------------|
| • Compass | • Handouts |
| • Power point projector | • Variety of different tree seeds |
| • Computer access | • Various forestry equipment |

What 21st Century Technology was used in this unit:

<input checked="" type="checkbox"/>	Slide Show Software
<input type="checkbox"/>	Interactive Whiteboard
<input type="checkbox"/>	Student Response System
<input type="checkbox"/>	Web Design Software
<input type="checkbox"/>	Animation Software
<input type="checkbox"/>	Email

<input type="checkbox"/>	Graphing Software
<input type="checkbox"/>	Calculator
<input type="checkbox"/>	Desktop Publishing
<input type="checkbox"/>	Blog
<input type="checkbox"/>	Wiki
<input checked="" type="checkbox"/>	Website

<input type="checkbox"/>	Audio File(s)
<input checked="" type="checkbox"/>	Graphic Organizer
<input type="checkbox"/>	Image File(s)
<input type="checkbox"/>	Video
<input type="checkbox"/>	Electronic Game or Puzzle Maker