

10. Forestry and Conservation Careers (4 hours)

Purpose/Abstract: To introduce students to the different careers in forestry and conservation			
NCCCS Adult Education Standards: R.3.1.5, R.3.3.5, W.1.2.4, W.5.1.1.,M.2.2.5			
Learning Objective: <i>By the end of the session, students will be able to:</i> <ul style="list-style-type: none"> ● Describe the typical day of a forester. ● Identify and describe invasive species in North Carolina ● Develop a plan to inform the public about invasive species in North Carolina 			
Soft Skills	Problem-solving and critical thinking	Resources	<p>Invasive Species: How Exotic Plants, Animals and Insects Impact North Carolina College of Natural Resources News (direct students to this webpage for the group activity)</p> <p>Summary - Forest and Conservation Workers 45-4011.00 - Forest and Conservation Workers</p> <p>OneStop Career Clusters (for instructor reference)</p> <p>Handouts:</p> <ul style="list-style-type: none"> ● Vocabulary handout- 1 for each student ● Reading Comprehension handout - 1 for each student ● A day in the life of a forest conservation worker - 1 for each student
Additional Materials <ul style="list-style-type: none"> ● Reading Comprehension handout, one for each student (print scaffolded version as required) ● Vocabulary handout, one for each student ● A day in the life of a forest conservation worker, one for each student (print scaffolded version as required) ● Art supplies (glue, glitter, markers, etc.) ● OPTIONAL but encouraged: Place value unit manipulatives ● Pencils, paper ● Computers for student use 			
Icons	Activity	Check-In	Review

PREPARATION

- Ahead of the lesson, download/print the following worksheets from [Education.com](#)
 - [Everyday Area | Worksheet | Education.com](#)
 - [Areas Around a Room](#)
- Familiarize yourself with [Invasive Species: How Exotic Plants, Animals and Insects Impact North Carolina | College of Natural Resources News](#)



- Research other common invasive species found in North Carolina, download images of these species, and have them ready to share with students.
- Review the [Instructional Support Guide](#) and print/prepare referenced scaffolds.
- Print handouts.
- Familiarize yourself with the [OneStop Career Clusters](#).
- Familiarize yourself with [O*NET](#)
- Familiarize yourself with [Skills to Pay the Bills](#), though it won't be used directly in this lesson.

INTRODUCTION (20)

Welcome students to the class!

Conduct a quick icebreaker activity such as 'Name and Gesture' to help students get comfortable in the classroom. Have students stand in a circle. The first student starts by saying their name and performing a simple gesture. The next student in the circle, repeats the first student's name and gesture and adds their own name and gesture. This continues around the circle until all students have had a chance to participate.

Tell students that in this lesson they will continue exploring careers within the agriculture, food, and natural resources cluster.

Introduce the topic of forestry and conservation careers by highlighting that these careers focus on preserving and managing forests, ensuring their sustainability, and protecting the diverse plant and animal species that call them home. Tell participants that in these careers, they will have the chance to work in diverse outdoor environments, including forests, national parks, and wildlife reserves. Emphasize that forest conservation careers offer a chance to connect with nature, work outdoors, and make a positive impact on the world around us.

Explain that today's lesson will explore different jobs related to forestry and conservation and the skills and abilities required for these jobs.

Review the objectives and briefly explain what will be covered during the lesson.

Instructor notes:

Be sensitive to students' needs and willingness/reluctance to share at any point, and verbalize that your classroom is a safe space.

VOCABULARY, READING, and WRITING (60 minutes)

Remind students that throughout your time together, every lesson will focus on soft skills.

READING COMPREHENSION (25 minutes)

Pair students up.

Provide each student with a copy of the comprehension passage and questions.

Instruct the pairs to take turns reading the passage aloud to each other. Encourage them to stop and ask questions or clarify information as needed.

After each partner has had a chance to read the passage, ask them to individually write the answers to the comprehension questions in the handout.

Once the students have finished filling in the answers, have them share their answers with their partner and discuss any differences or similarities in their interpretation of the passage.

Allow 20 minutes for this activity.

VOCABULARY (25 minutes)

Instruct students to identify the words in bold in the passage.

Ask them to look up the definitions of these words in a dictionary with their partner.

Once students have written down the definitions, encourage them to use the words in new sentences.

REFLECTION (10 minutes)

✓ Facilitate a short discussion about the passage and encourage students to share their responses to the comprehension questions.

Have 1-2 pairs share their sentences with the words they found definitions for.

Instructor notes: Not all students might be willing/able to write, so allow them to draw their responses or share them verbally.

Lower Level

Provide sentence starters to help them write the answers as specified in the handout. Allow students to draw their responses or share the answers verbally with their partner.

Higher Level

Encourage students to add another paragraph to the passage about what challenges they might face in different seasons as a forest and conservation worker.

MATHEMATICS (30 min)

Review the concept of area of plane figures and share a few examples from the previous lesson. Have 1-2 volunteers solve a few problems on the board.

Explain how knowledge of calculating areas will also help in forestry and conservation careers. Highlight that these careers often involve conducting ecological assessments to evaluate the health and diversity of ecosystems. Area calculations help monitor biodiversity within forests and conservation areas. Calculating area is also essential in land-use planning, especially when it comes to determining protected areas, nature reserves, or wildlife corridors. Professionals working in forest and conservation careers use this knowledge to designate specific zones for different purposes, such as wildlife habitats, recreational areas, or sustainable forestry.

Assign the following worksheets to students to solve by themselves, and once they are finished, review the answers with the whole class.

- [Everyday Area](#)
- [Areas Around a Room](#)

 REFLECTION (10 minutes)

Have 2-3 volunteers share what they found easy about calculating areas and where they require more support.

Lower Level

Consider pairing students up if required.

Higher Level

Encourage students to research how areas large land areas such as forest reserves or wildlife conservation parks might be calculated and share their findings with the class.

GROUP PROJECT (60 min)

 RESEARCH and PRESENTATION

Highlight that forest and conservation workers play an important role in finding and getting rid of invasive plants and animals in forests.

Explain that invasive species are plants or animals that come from other places and can hurt the environment, economy, or people's health.

Introduce the concept of invasive species and their impact on North Carolina's ecosystems using the information in [Invasive Species: How Exotic Plants, Animals and Insects Impact North Carolina | College of Natural Resources News](#) to explain the basics of invasive species and provide examples.

Show pictures of invasive species found in North Carolina by sharing the website with students or images from the internet, and have the students identify and describe each species. You can either project these images or print them out for students.

Ask the questions listed below to guide a discussion:

- What does the invasive species look like?
- Where did it come from?
- What are its negative effects on the ecosystem?

Divide the class into groups of 4.

Instruct groups to create a poster or brochure that educates the public about the invasive species found in North Carolina. They can use the pictures of the invasive species they identified and described earlier, along with their own drawings and descriptions. Encourage students to use the internet to find more information if required.

Tell students that the poster or brochure should include the following information:

- What are invasive species?
- Examples of invasive species found in North Carolina
- Negative impacts of invasive species on the ecosystem

- How to identify and report invasive species
- What people can do to prevent the spread of invasive species

Once the posters or brochures are complete, have the students present their work to the class, explaining what they have learned about invasive species and why it is important to inform the public about them.

 REFLECTION (20 minutes)

With the whole class, discuss ways to share the posters or brochures with the public, such as posting them at local parks, schools, or community centers, or distributing them at local events or farmers markets. Encourage the students to take ownership of their campaign and come up with creative ways to spread awareness about invasive species in North Carolina.

Lower Level

Help assign roles within the groups to enable equal participation from all students.

Higher Level

Encourage students to research other invasive species using different resources. Have a few students share their findings with the class if there is time.

INDEPENDENT WORK TIME (60 min)

Tell students that they will work on a short activity to imagine the day in the life of a forest and conservation worker and think about the challenges they might face and how they can use problem solving and critical thinking skills to deal with the challenges.

Share the following links with students and encourage them to read the information about the skills, tasks, and interests required for this role to get a clear understanding before writing. As they read, ask students to think about whether this job matches their interests and personalities.

- [Summary - Forest and Conservation Workers](#)
- [45-4011.00 - Forest and Conservation Workers](#)

Distribute the A Day in the Life of a Forest Conservation Worker handout and ask students to read the instructions and write a short summary for the given prompt.

Allow 30 minutes for this activity, and have 1-2 volunteers read out their write-ups.

After a few students have shared, ask students to turn to a student next to them and discuss whether these jobs match their interests and personalities, and provide examples to support their answers.

Have 1-2 interested volunteers to share.

Lower Level

Higher Level

Provide sentence starters as suggested in the handout.

Encourage students to write an additional paragraph on why they will be a good fit for this job and provide examples to support their answer.

WRAP-UP & REFLECTION (10 min)

◉REVIEW

Ask students who are interested in this pathway to share how they might prepare for this role. Encourage them to share what they would like more information on and how they can learn more about these jobs.

Distribute exit slips to students.
Ask for a few volunteers to share their reflections.
Collect and review the answers.

Instructor notes:

Inform students that the reflection slip will be the same after every lesson. Take some time to review each question on the slip and pause for student questions. Provide any assistance completing the slips for this and the next few classes until students are comfortable with the process.

Reading Comprehension

Name: _____

Date: _____

Directions:

- Read the passage out loud to your partner.
- Write down the answers to the questions in the space provided, independently.
- After writing all the answers, discuss them with your partner.
- Ask your instructor for help if you need it.

The Role of a Forester

Foresters are professionals who work to manage forests and natural resources. They use their skills, abilities, and personalities to ensure that forests are healthy and productive for generations to come. Foresters need to have strong observation skills, be able to collect and analyze data, and communicate effectively with others. They also need to be knowledgeable about forest **ecology** and management practices.

Foresters need to be physically fit and able to work in a variety of outdoor environments, such as forests, parks, and wildlife **habitats**. They also need to have good problem-solving skills and be able to work independently. Foresters should have a love of nature and a desire to protect and conserve forests and natural resources. They should also be patient and have a strong work ethic.

Foresters work with a variety of **stakeholders**, including landowners, government agencies, and industry professionals. They provide advice and guidance on forest management practices and help develop plans that balance **conservation** and economic goals. Foresters also play an important role in protecting forests from threats such as invasive species, wildfire, and disease. They may use tools such as prescribed burning, tree planting, and wildlife habitat improvement to maintain healthy forest **ecosystems**. Foresters work to ensure that forests are sustainable and continue to provide important benefits such as clean air and water, wildlife habitat, and recreational opportunities for future generations.

Questions:

<p>1. What skills do foresters need to have?</p> <ul style="list-style-type: none"> a. a) Strong observation skills, the ability to collect and analyze data, and effective communication skills b. b) The ability to cook, paint, and dance c. c) The ability to sing, play an instrument, and write poetry 	
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<p>2. What personality traits are important for foresters to have?</p> <ul style="list-style-type: none">a. a) A love of nature, a desire to protect and conserve forests and natural resources, and patienceb. b) A love of technology, a desire to work in an office, and impatiencec. c) A love of fast-paced environments, a desire to make lots of money, and a lack of interest in nature	
<p>3. Who do foresters work with?</p>	
<p>4. What tools do foresters use to maintain healthy forest ecosystems?</p>	
<p>5. Why is it important for foresters to be physically fit?</p>	

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<p>3. Who do foresters work with?</p>	<p>Foresters work with ...</p>
<p>4. What tools do foresters use to maintain healthy forest ecosystems?</p>	<p>Some of the tools used by foresters to maintain a healthy forest ecosystem are ...</p>
<p>5. Why is it important for foresters to be physically fit?</p>	<p>It is important for foresters to be physically fit because...</p>

Vocabulary

Directions:

- Find definitions for the words in bold in the passage.
- Use the words in a new sentence.

Word	Definition

Sentences:

A Day in the Life of a Forest Conservation Worker

Directions:

- Imagine that you are a forester and today you spent the day hiking through a forest to check on the health of the trees and plants. During your hike, you noticed that some of the trees were looking sickly and there were strange plants growing on the forest floor. You realize that these plants might be invasive species and could harm the forest ecosystem.
- In a short write-up, summarize your day as a forester and explain why problem-solving and critical thinking skills are important in this role. Consider how you identified the potential invasive species and what steps you might take to address the issue.
- Remember to use simple sentences and describe your thoughts and feelings as a forester. Try to write at least five sentences.
- Use the following links to help you understand the role better:
 - [Summary - Forest and Conservation Workers](#)
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- Use these sentence starters to help you frame your write-up:
 - When I went for a walk in the forest, I saw...
 - When I saw the plants I did not recognize, I felt...
 - When I saw the plants I did not recognize, I knew I had to use problem solving and critical thinking skills to...
 - It is important to take care of the forest because...
 - If I let the bad plants grow in the forest, then...
 - To help the forest stay healthy and safe, I can...

Reflection Exit Slip

In one sentence, describe what you learned in this lesson.

Today, I learned _____.

Is there anything you still need help understanding?

One question I have is...

Circle the emoji that shows how you feel about your mastery of content in this lesson.



Happy



Smart



Confused



Sad



Angry