



Level 4 Grades 6 and up

Booklet Objectives

Students will:

- Recognize the relationship between the forest ecosystem and human life.
- Connect forest management to healthy habitats, improved water quality and biodiversity.
- Discover the role of urban forests in cities.
- Acknowledge steps that can be taken to improve forests.
- Identify the parts of a leaf that make up its structure.
- Classify trees based on bark, leaves, and wood type.



Next Generation Science Standards

MS.Interdependent Relationships in Ecosystems

MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

LS2.C: Ecosystem Dynamics, Functioning, and Resilience, LS4.D: Biodiversity and Humans

MS.Human Impacts

MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Vocabulary Words

biodiversity: the variety of life in the world or in a particular habitat or ecosystem.

broadleaf: A tree or plant with wide flat leaves.

compound leaf: a leaf of a plant consisting of several distinct parts joined to a single stem.

conifer: a tree that bears cones and evergreen needlelike or scalelike leaves.

cuticle : the outer layer of living tissue.

ecosystem: a biological community of interacting organisms and their physical environment.

food web: a system of interlocking and interdependent food chains.

invasive species: Non-native species disrupting and replacing native species.

lobe: any of the parts, not entirely separate from each other, into which a flattened plant part, such as a leaf, is divided.

mesophyll: the inner tissue (parenchyma) of a leaf, containing many chloroplasts.

palisade : cells found within the mesophyll in leaves, right below the upper epidermis and cuticle.

stoma: any of the minute pores in the epidermis of the leaf or stem of a plant, forming a slit of variable width that allows movement of gases in and out of the intercellular spaces.

stormwater: surface water in abnormal quantity resulting from heavy falls of rain or snow.

watershed: an area or ridge of land that separates waters flowing to different rivers, basins, etc.



We All Need Trees-Trees Need Us: Careers in Forestry

Level 4 Grades 6 and up

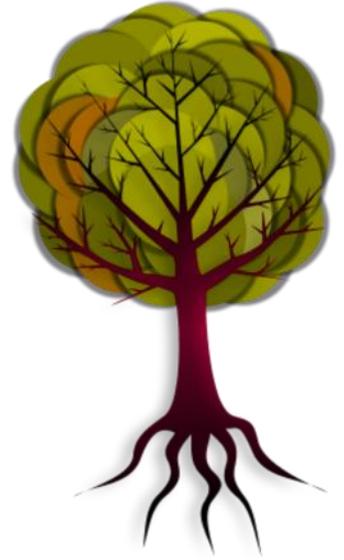
Objectives:

Students will evaluate the role of technological systems, political systems and population needs on forest management.

Students will explore the many career in forestry and resource utilization.

Students will prepare resumes highlighting skills and interests.

Students will research and role play government and industry representatives as well as potential employees.



Materials:

Working in the Woods: Careers in Forestry student worksheet

Paper for printing resumes

Area in which to hold a career fair

Internet access for research

Instructions:

1. As a class discuss the role of America's forests in our daily lives.
2. As a class compose a list of possible careers in forestry.
3. Divide the class into groups of 3-5 and assign each group one or more careers to investigate.
4. Hold a "Career Fair".
 - a. Divide the class in half. 50% of the class will represent employers, 50% will represent job seekers.
 - b. Employers (groups of 2-4 students) should create a display promoting their company. Encourage "employers" to contact actual companies/organizations for brochures, handouts and freebies. Many are more than willing to donate materials for educational projects. Employers should be prepared to interview job seekers on the spot.
 - c. Job Seekers (groups of 2-3 students) should prepare a resume and be prepared to be interviewed on the spot for employment.

Optional Extension: Assign each group the task of interviewing one individual with a career in forestry- either in person or on-line. Share interview results with the class or invite individuals into the classroom as a guest speaker.

Discussion:

Discuss a wide variety of forestry related careers in terms of their environmental impact, societal impact, private/public/government organization, skills, interests and required education.





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Examples;

Botanist: If you love spending time in the woods and the laboratory you should consider a career in botany. We can be grateful to botanists for many of the medicines we depend on, foods we eat, fibers in the clothes we wear and building materials we sleep under.

Forester: If you have strong organizational skills and you enjoy spending time in the woods you would probably enjoy a career as a forester. Foresters supervise the forests of the United States by directing forest activities related to economic, recreational, conservational, and environmental functions. Foresters provide expert guidance to individual landowners, the general public, and industry in an effort to keep the forests healthy and sustainable. We depend on foresters to come up with ways to make forests profitable but still protect them for future generations.

Urban Foresters manage urban trees. They are vital to our quality of life by dealing with issues such as air quality, storm water runoff, and property values.



Rangeland Management Specialist:

If you have good leadership skills, love the outdoors, like to work with people, have an interest in ecology and how both wild and domestic grazing animals affect ecosystems a career as a rangeland management specialist with the Forest Service may be for you. These specialists play an important role in all our lives as they manage public resources.

Resource Conservationist: If you love all things outdoors then a career in natural resource management and conservation could provide you with a paycheck just for enjoying yourself! Resource managers help balance the needs of their community with the health and sustainability of local ecosystems in relationship to soil, water, forests, wildlife, fish, and recreational resources. We depend upon conservationists to develop programs that make the most productive use of our natural resources without damaging them.

Wildland Fire Investigator: If you notice details that others miss and have a talent for solving puzzles a career in fire investigation may be for you. Determining the cause of a fire is essential for many reasons; identifying who/what is responsible for the fire, who may be responsible for suppression costs and property damage, documenting evidence if criminal acts are involved, and finally for the success of future fire prevention programs.



We All Need Trees-Trees Need Us: Careers in Forestry



1. Career being researched:

2. Write a job description for this position:

3. What skills are necessary to succeed in this career?

4. What environmental concerns would this career address?

5. What political/social issues would this career address?

6. If you are interested in or enjoy _____

_____this would be a good career choice for you.

7. What type of education is required to pursue this career?

8. What areas of the country would you most likely find employment?

9. What are some positive aspects of this career?

10. Are there any negative aspects to this career?

