

Pennsylvania Academic Standards for Science and Technology
Curriculum: *Trees + Me = Forestry*

Lesson	Academic Standards	Grade Level	Activities
Trees + Me = Forestry	3.1.4.E. Recognize change in natural and physical systems.	4	Learn that there are many different types of forests and what they have in common. Identify whether a forest is a renewable or nonrenewable resource, as well as give examples of resources derived from forests.
	3.3.4.A. Know the similarities and differences of living things.	4	
	3.3.4.D. Identify changes in living things over time.	4	
Name That Tree!	3.1.4.A. Know that natural and human-made objects are made up of parts.	4	Learn to use taxonomy to categorize trees. Identify trees using a key and by observing their various traits.
	3.2.4.B. Describe objects in the world using the five senses.	4	
	3.3.4.A. Know the similarities and differences of living things.	4	
	3.3.7.A. Describe the similarities and differences that characterize diverse living things.	7	

The Life of a Tree	3.1.4.A. Know that natural and human-made objects are made up of parts.	4	Identify ways a tree reproduces, including by seed, suckers, and stump sprouts. Learn how seeds spread and that some need special conditions before sprouting and producing a tree. Understand how trees grow, including a basic knowledge of photosynthesis. Identify different layers of a tree and learn how weather and seasons affect tree growth.
	3.1.4.C. Illustrate patterns that regularly occur and reoccur in nature.	4	
	3.1.7.C. Identify patterns as repeated processes or recurring elements in science and technology.	7	
	3.1.4.D. Know that scale is an important attribute of natural and human made objects, events, and phenomena.	4	
	3.1.4.E. Recognize change in natural and physical systems.	4	
	3.2.4.A. Identify and use the nature of scientific and technological knowledge.	4	
	3.2.4.B. Describe objects in the world using the five senses.	4	
	3.3.4.A. Know the similarities and differences of living things.	4	

<p>The Life of a Tree (continued)</p>	<p>3.3.7.A. Describe the similarities and differences that characterize diverse living things.</p> <p>3.3.4.B. Know that living things are made up of parts that have specific functions.</p> <p>3.3.4.D. Identify changes in living things over time.</p> <p>3.5.4.C. Know basic weather elements.</p>	<p>7</p> <p>4</p> <p>4</p> <p>4</p>	
<p>Change in the Forest: Forest Succession</p>	<p>3.1.4.C. Illustrate patterns that regularly occur and reoccur in nature.</p> <p>3.1.7.C. Identify patterns as repeated processes or recurring elements in science and technology.</p> <p>3.1.4.E. Recognize change in natural and physical systems.</p> <p>3.3.4.A. Know the similarities and differences of living things.</p>	<p>4</p> <p>7</p> <p>4</p> <p>4</p>	<p>Define succession and give examples of how it might start. Categorize shade tolerant and intolerant tree species. Understand that when forests change, animal habitats also change. Identify products that come from trees.</p>

<p>Change in the Forest: Forest Succession (continued)</p>	<p>3.3.7.A. Describe the similarities and differences that characterize diverse living things.</p> <p>3.3.7.D. Explain basic concepts of natural selection.</p> <p>3.5.4.B. Know types and uses of earth materials.</p> <p>3.5.7.B. Recognize earth resources and how they affect everyday life.</p>	<p>7</p> <p>7</p> <p>4</p> <p>7</p>	
<p>Finding Your Way</p>	<p>3.1.4.D. Know that scale is an important attribute of natural and human made objects, events, and phenomena.</p> <p>3.1.7.D. Explain scale as a way of relating concepts and ideas to one another by some measure.</p> <p>3.4.4.C. Observe and describe different types of force and motion.</p> <p>3.5.4.A. Know basic landforms and Earth history.</p>	<p>4</p> <p>7</p> <p>4</p> <p>4</p>	<p>Learn about common types of maps and how to use them. Learn the parts of a compass and how to read one. Use pace, maps, and compasses to get from one place to another.</p>

<p>Finding Your Way (continued)</p>	<p>3.7.4.A. Explore the use of basic tools, simple materials and techniques to safely solve problems.</p>	<p>4</p>	
<p>Measuring the Forest</p>	<p>3.1.4.D. Know that scale is an important attribute of natural and human made objects, events, and phenomena.</p> <p>3.1.7.D. Explain scale as a way of relating concepts and ideas to one another by some measure.</p> <p>3.4.4.A. Recognize basic concepts about the structure and properties of matter.</p> <p>3.7.4.A. Explore the use of basic tools, simple materials and techniques to safely solve problems.</p> <p>3.7.7.A. Describe the safe and appropriate use of tools, materials and techniques to answer questions and solve problems.</p>	<p>4</p> <p>7</p> <p>4</p> <p>4</p> <p>7</p>	<p>Learn how to use an increment borer to determine a tree's age. Identify ways to measure trees and how to use the appropriate instruments. Use measurements to determine a tree's volume and usable wood.</p>

Measuring the Forest (continued)	3.7.4.B. Select appropriate instruments to study materials.	4	
	3.7.7.B. Use appropriate instruments and apparatus to study materials.	7	

Pennsylvania Academic Standards for Environment and Ecology
Curriculum: *Trees + Me = Forestry*

Lesson	Academic Standards	Grade Level	Activities
<p align="center">Trees + Me = Forestry</p>	<p>4.1.4.E. Recognize the impact of watersheds and wetlands on animals and plants.</p>	<p align="center">4</p>	<p>Learn that there are many different types of forests and what they have in common. Identify whether a forest is a renewable or nonrenewable resource, as well as give examples of resources derived from forests.</p>
	<p>4.1.7.E. Describe the impact of watersheds and wetlands on people.</p>	<p align="center">7</p>	
	<p>4.2.4.A. Identify needs of people.</p>	<p align="center">4</p>	
	<p>4.2.7.A. Know that raw materials come from natural resources.</p>	<p align="center">7</p>	
	<p>4.2.4.B. Identify products derived from natural resources.</p>	<p align="center">4</p>	
	<p>4.2.7.B. Examine the renewability of the resources.</p>	<p align="center">7</p>	
	<p>4.2.4.C. Know that some natural resources have limited life spans.</p>	<p align="center">4</p>	
	<p>4.6.4.A. Understand that living things are dependent on non-living things in the environment for survival.</p>	<p align="center">4</p>	

<p>Trees + Me = Forestry (continued)</p>	<p>4.6.7.A. Explain the flows of energy and matter from organism to organism within an ecosystem.</p> <p>4.7.4.A. Identify differences in living things.</p> <p>4.7.7.A. Describe diversity of plants and animals in ecosystems.</p> <p>4.8.4.D. Know the importance of natural resources in daily life.</p>	<p>7</p> <p>4</p> <p>7</p> <p>4</p>	
<p>Name That Tree!</p>	<p>4.7.4.A. Identify differences in living things.</p> <p>4.7.7.A. Describe diversity of plants and animals in ecosystems.</p>	<p>4</p> <p>7</p>	<p>Learn to use taxonomy to categorize trees. Identify trees using a key and by observing their various traits.</p>
<p>The Life of a Tree</p>	<p>4.1.4.E. Recognize the impact of watersheds and wetlands on animals and plants.</p> <p>4.3.4.C. Understand that the elements of natural systems are interdependent.</p>	<p>4</p> <p>4</p>	<p>Identify ways a tree reproduces, including by seed, suckers, and stump sprouts. Learn how seeds spread and that some need special conditions before sprouting and producing a tree. Understand how trees grow, including a basic knowledge of photosynthesis.</p>

<p>The Life of a Tree (continued)</p>	<p>4.6.4.A. Understand that living things are dependent on non-living things in the environment for survival.</p> <p>4.6.7.A. Explain the flows of energy and matter from organism to organism within an ecosystem.</p> <p>4.6.4.B. Understand the concept of cycles.</p> <p>4.6.4.C. Identify how ecosystems change over time.</p> <p>4.6.7.C. Explain how ecosystems change over time.</p>	<p>4</p> <p>7</p> <p>4</p> <p>4</p> <p>7</p>	<p>Identify different layers of a tree and learn how weather and seasons affect tree growth.</p>
<p>Change in the Forest: Forest Succession</p>	<p>4.2.4.B. Identify products derived from natural resources.</p> <p>4.3.4.C. Understand that the elements of natural systems are interdependent.</p> <p>4.6.4.C. Identify how ecosystems change over time.</p>	<p>4</p> <p>4</p> <p>4</p>	<p>Define succession and give examples of how it might start. Categorize shade tolerant and intolerant tree species. Understand that when forests change, animal habitats also change. Identify products that come from trees.</p>

<p>Change in the Forest: Forest Succession (continued)</p>	<p>4.6.7.C. Explain how ecosystems change over time.</p>	7	
	<p>4.7.4.A. Identify differences in living things.</p>	4	
	<p>4.7.7.A. Describe diversity of plants and animals in ecosystems.</p>	7	
	<p>4.8.4.D. Know the importance of natural resources in daily life.</p>	4	