

# Making Forest Connections — Grades 6-8



## Making Forest Connections: A Correlation of the Washington Forest Education K-12 Learning Framework with Other Educational Resources

### Grades 6-8

The Washington Forest Education K-12 Learning Framework gives educators in our forest-rich state a strong foundation for incorporating forest and natural resources in their classrooms and programs and provides a conceptual framework for teaching about Washington's forests. This correlation document helps them further by identifying connections between each of the Washington Forest Framework's 62 concepts and:

- [Next Generation Science Standards \(NGSS\)](#) performance expectations
- [Project Learning Tree \(PLT\)](#) activities
- [Pacific Education Institute Resources](#)
- [Project WILD](#) activities
- Other resources

#### Forest Education Grades 6-8

Middle school students are gaining a deeper sense of themselves as members of communities – both human communities and natural communities. They are becoming aware of how people's actions impact others, and friends and relationships consume a lot of their thought and energy.

Students this age understand that problems have multiple solutions and are able to see different perspectives on an issue. They should also be able to back up personal opinions with evidence and to distinguish between opinion and fact.

Forest education activities at the middle school level may focus on:

- What social, economic, and environmental benefits do forests provide?
- How do human activities affect forests?
- What can we do to protect Washington's forests?

Forests can become a meaningful context for middle schoolers to design and conduct investigations, use evidence to analyze results, and examine issues from various perspectives. Activities such as these will help students gain a deeper appreciation of the interconnected relationships between people and the environment.

For more information about the forest learning framework by grade level, see the Washington Forest Education K-12 Learning Framework, available at <https://pacifieducationinstitute.org>.

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## About the Resources

This document identifies connections between the Washington Forest Education Framework and the following resources for Grades 6-8.

**NGSS Performance Expectations** – NGSS standards identify expectations for what students should be able to do by the end of the year or grade band. These performance expectations also incorporate three dimensions of science: disciplinary core ideas, science and engineering practices, and cross-cutting concepts. For more information, see [www.nextgenscience.org](http://www.nextgenscience.org).

**Pacific Education Institute (PEI) Resources** – A variety of guides, lessons, and videos from PEI help to strengthen the Forest Education Framework. They provide information and learning activities to support K-12 teachers and their students in learning about forests. These include:

- PEI Guides activities
- ELA Performance Tasks
- Forest of Washington Lessons
- Healthy Forests Healthy Waters Curriculum
- Project Learning Tree (PLT) extension
- Schoolyard Field Investigations
- Career Cards
- Solution Oriented Storylines

Resources available for download at <https://pacifieducationinstitute.org/>.

**Project Learning Tree Activities** – Relevant activities are identified from PLT's *PreK-8 Environmental Education Activity Guide* and from the *Tremendous Science!* e-unit and *Environmental Experiences for Early Childhood* for Grades K-2. **Bolded** activities are the most relevant. Educators can receive these curriculum guides by attending a PLT professional development. For more details, contact the Pacific Education Institute.

**Project WILD Activities** – Relevant activities are identified from the *Project WILD K-12 Curriculum and Activity Guide*. Educators can receive this guide by attending a Project WILD workshop. For more details, contact the Pacific Education Institute.

**Oregon Forest Resources Institute (OFRI) Materials** – A variety of publications and videos from OFRI help to strengthen forest literacy. They provide information and learning activities to support K-12 teachers and their students in learning about the environment.

For more information on receiving these free resources go to: [learnforests.org](http://learnforests.org).

## Acknowledgements

This correlation was supported by a Project Learning Tree Model Program Initiative grant from the Sustainable Forestry Initiative. We appreciate the hard work of the Oregon Forest Resources Institute (OFRI) to create such valuable forest education resources and their generosity in sharing them with others to adapt and use. Thank you to Pat Otto, former PLT WA State Coordinator and PEI Education Manager for adapting these correlations for use by Washington educators. Her forest education expertise and work to create locally relevant materials is an invaluable resource and we are grateful.

# Making Forest Connections — Grades 6-8

Theme 1: What is a Forest?					
Washington Forest Education Framework	NGSS Performance Expectations	Project Learning Tree Activities	PEI Resources	Project WILD Activities	Additional Resources
<p style="text-align: center;"><b>Definition of a Forest</b></p> <p>1. Forests are ecosystems characterized by a dominance of tree cover and the presence of a wide variety of other organisms (e.g., other plants and animals).</p> <p>2. Forests are comprised of trees that may differ in species, age and size, and are affected by biotic factors (e.g., plants, animals and humans) and abiotic factors (e.g., soils, nutrients, moisture, sunlight and climate).</p> <p>3. Urban forests include all the publicly and privately owned trees within a city, town, or suburb working together as an ecosystem.</p>	<p>3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.</p>	<p>4: Sounds Around 10: Charting Diversity 12: Invasive Species 20: Environmental Exchange Box 22: Trees as Habitat 23: The Fallen Log 29: Rain Reasons 41: How Plants Grow 48: Field, Forest, and Stream 49: Tropical Treehouse 56: We Can Work It Out 67: How Big Is Your Tree? 68: Name That Tree 70: Soil Stories 77: Trees in Trouble 78: Signs of Fall</p>	<p><b>Forests of Washington Ecosystems</b></p> <p>1. There’s no Place Like Home 2. Getting to know the Trees of Washington 3. Here’s Looking at Yew 4. Forest Homes</p> <p><b>ELA Performance Tasks</b> Bioblitz Invasive Plants</p> <p><b>Guides</b> Field Investigations Schoolyard Biodiversity FieldDesign: Engineering Design for Field-Based Applications 6-12</p> <p><b>Curriculum</b> Healthy Forests, Healthy Waters</p> <p><b>PLT Extensions</b> <a href="http://www.pltwa.com">www.pltwa.com</a> Fallen Log Student Page Tree Abundance Field Investigation Trees as Habitats journal</p>	<p>What’s That Habitat?</p> <p>Map that Habitat</p> <p>Forest in a Jar</p> <p>Time Lapse</p> <p>Raindrops and Ranges</p>	<p><b>OFRI</b> Explore the Forest Into the Forest Sounds of the Forest <b>Forest Fact Breaks:</b> Ecosystems Tree Biology</p> <p><b>Other</b> PLT Carbon &amp; Climate (E-Unit for Grades 6-8)</p>

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Washington Forest Education Framework	NGSS Performance Expectations	Project Learning Tree Activities	PEI Resources	Project WILD Activities	Additional Resources
<p style="text-align: center;"><b>Trees as Part of the Forest</b></p> <p>1. A tree is a woody perennial plant usually 12 feet or more (4 meters or more) tall, with a single main stem and a more or less distinct crown of leaves or needles.</p> <p>2. Trees have life stages that include germination, growth, maturity, reproduction, decline and death.</p> <p>3. As part of the forest ecosystem, trees have various roles (e.g., supplying oxygen, providing habitat, holding soil, moderating temperature, capturing, and storing carbon, and cycling water and nutrients).</p> <p>4. Trees compete with each other and with other plants growing near them for nutrients, sunlight, space and water.</p> <p>5. The health and wellness of trees in a forest ecosystem depend on and are affected by many factors.</p>	<p>MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.</p>	<p>4: Sounds Around            21: Adopt a Tree            23: The Fallen Log            26: Dynamic Duos            27: Every Tree for Itself            28: Air Plants            29: Rain Reasons            31: Plant a Tree            36: Pollution Search 41            40: Then and Now            41: How Plants Grow            44: Water Wonders            45: Web of Life            50: 400- Acre Wood            63: Tree Factory            64: Looking at Leaves            65: Bursting Buds            66: Germinating Giants            67: How Big Is Your Tree?            70: Soil Stories            76: Tree Cookies            77: Trees in Trouble            79: Tree Lifecycle            88: Life on the Edge</p>	<p><b>Forests of Washington Ecosystems</b></p> <p>1. There’s no Place Like Home            2. Getting to know the Trees of Washington            4. Forest Homes</p> <p><b>ELA Performance Tasks</b>            Climate Change, Carbon, and Trees            Bioblitz!            Forest Benefits-5</p> <p><b>Guides</b>            Field Investigations            FieldDesign            Fostering Outdoor Observation Skills</p> <p><b>Curriculum</b>            Healthy Forests, Healthy Waters</p> <p><b>Solutions-Oriented Learning Storyline MS- Forests: Carbon Sequestration</b></p> <p><b>PLT Extensions</b>  <a href="http://www.pltwa.com">www.pltwa.com</a>            Every Tree for Itself Cards            Tree Cookies            Tree Bingo            Fallen Log student page            Forest Benefits student page            Trees as Habitat and Tree Benefits            Leaf as a System            Tree Abundance Field Investigation</p>	<p>What’s That Habitat?            Which Niche?            Environmental Barometer</p>	<p><b>OFRI</b>            Into the Forest            Forest Essays, Grade 6            Forest Essays, Grades 7-12  <b>Forest Fact Breaks:</b>            Tree Biology            Carbon Capture Ecosystems            Sustainability            Water            Woody Biomass            Carbon &amp; Climate            Drinking Water  <b>Inquiry</b> at Hinkle Creek</p> <p><b>Other</b>            I-Tree: Tree Benefits  <a href="http://www.treebenefits.com">www.treebenefits.com</a></p>

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<p style="text-align: center;"><b>Forests as Ecosystems</b></p> <p>1. Forest ecosystems consist of different types of organisms (e.g. producers, consumers, and decomposers) and nonliving components (e.g. sunlight, soil, minerals, and water) interacting within a given environment, space, and time.</p> <p>2. Humans depend on and influence forest ecosystems and are themselves influenced by forest ecosystems.</p> <p>3. Forest ecosystems include processes such as photosynthesis, energy flow and the cycling of nutrients, water, carbon, and other matter.</p> <p>4. Forest ecosystems are complex and dynamic, and continuously undergo change or adaptation, ranging from gradual change (e.g., succession and climate) to abrupt change (e.g., fire and disease).</p> <p>5. Natural and human-caused disturbance events are a part of forest ecosystems. Examples of natural events are wind and volcanic activity, and examples of human-caused events are logging, road construction and development. Wildfire is a disturbance that can be both natural and human-caused.</p> <p>6. Forests are interconnected with other terrestrial (e.g., rangeland) and aquatic (e.g., estuary) ecosystems, forming a larger system.</p> <p>7. Washington's regions vary in soil types, elevation, temperature, wind, and rainfall patterns. These variations create the different forest types and residents (plants and animals) that, together with disturbance histories, contribute to that region's biodiversity.</p>	<p>MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.</p> <p>MS-LS2-3. Develop a model to describe the cycle of matter and flow of energy among living and non-living parts of an ecosystem.</p> <p>MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical and biological components of an ecosystem affect populations.</p>	<p>10: Charting Diversity 11: Can It Be Real? 12: Invasive Species 16: Pass the Plants, Please 18: Tale of the Sun 20: Environmental Exchange Box 21: Adopt a Tree 22: Trees as Habitat 23: The Fallen Log 24: Nature's Recyclers 26: Dynamic Duos 27: Every Tree for Itself 28: Air Plants 29: Rain Reasons 31: Plant a Tree 39: Energy Sleuths 42: Sunlight and Shades of Green 44: Water Wonders 45: Web of Life 48: Field, Forest, and Stream 47: Are Vacant Lots Vacant? 48: Field, Forest, and Stream 63: Tree Factory 65: Bursting Buds 68: Name that Tree 69: Forest for the Trees 70: Soil Stories 71: Watch on Wetlands 76: Tree Cookies 77: Trees in Trouble 78: Signs of Fall 79: Tree Lifecycle 80: Nothing Succeeds Like Succession 81: Living with Fire 84: The Global Climate 86: Our Changing World 88: Life on the Edge</p>	<p><b>Forests of Washington Ecosystems</b></p> <p>1. There's no Place Like Home 2. Getting to know the Trees of Washington 3. Here's Looking at Yew 4. Forest Homes 5. Come Grow with Us 6. Washington Forest Eco-Connections 7. Fire: Friend or Foe 8: The Forest Flu 9: Weather Waltzes with the Forest</p> <p><b>ELA Performance Tasks</b></p> <p>Bioblitz! -5 Forest Benefits 4-5 Forest Management-6-8 Climate Change, Carbon, and Trees</p> <p><b>Guides</b></p> <p>Fostering Outdoor Observation Skills FieldDesign: Engineering Design for Field-Based Applications 6-12 Field Investigations Schoolyard Biodiversity Photo Point Monitoring</p> <p><b>Solutions-Oriented Learning Storyline</b> MS- Forests: Carbon Sequestration <b>Curriculum</b> Healthy Forests, Healthy Waters</p> <p><b>PLT Extensions</b> <a href="http://www.pltwa.com">www.pltwa.com</a> Forest Benefits student page Trees as Habitat and Tree Benefits Leaf as a System Tree Abundance Field Investigation Temperature investigation journal Rainfall investigation Habitat diversity field investigation</p>	<p>Limiting Factors</p> <p>How Many Bears?</p> <p>Tracks!</p> <p>Oh Deer!</p> <p>Graphanimal</p> <p>What's that Habitat?</p> <p>Which Niche?</p> <p>Urban Nature Search</p> <p>Raindrops and Ranges</p> <p>Busy Bees, Busy Blooms</p> <p>Surprise Terrarium</p> <p>What Bear Goes Where?</p> <p>Seed Need</p> <p>Good Buddies</p> <p>Trophic Transfer</p> <p>Environmental Barometer</p> <p>Eco-enrichers</p>	<p><b>OFRI</b></p> <p>Forest Essays, Grade 6 Forest Essays, Grades 7-12 Into the Forest Inquiry at Hinkle Creek (video)</p> <p><b>Forest Fact Breaks:</b> Tree Biology Carbon &amp; Climate Carbon Capture Photosynthesis Water Fire Forest Types Drinking Water</p> <p><b>Forest Fact Sheet:</b> Photosynthesis <b>Where's All the Carbon?</b> (carbon cycle poster) Oregon's Forests (poster)</p> <p><b>Other</b> <u><i>The Truth about Science: A Curriculum for Developing Young Scientists</i></u>, by Kathryn Kelsey and Ashley Steel. NSTA Press</p> <p><u><i>Citizen Science: 15 Lesson that Bring Biology to Life</i></u>, 6-12 -NSTA Press</p> <p><u><i>Rainforest Alliance Carbon Curriculum</i></u> <a href="https://www.rainforest-alliance.org/curricula/climate">https://www.rainforest-alliance.org/curricula/climate</a></p>

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Washington Forest Education Framework	NGSS Performance Expectations	Project Learning Tree Activities	PEI Resources	Project WILD Activities	Additional Resources
<p style="text-align: center;"><b>Forest Classification</b></p> <p>1. Trees can be identified by their leaves, seeds, cones, flowers, fruits, and other characteristics. Trees can be classified into family, genus and species groups based on their reproductive parts and/or genetics.</p> <p>2. Different forest biomes exist around the world. Examples include tropical forests, temperate forests, and boreal forests. Washington is in the temperate forest biome.</p> <p>3. Many different forest types exist within a biome, typically named by their dominant tree species. Common forest types in Washington include spruce-hemlock, Douglas-fir, ponderosa pine, mixed conifer, and hardwood.</p>	<p>MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.</p>	<p>11: Can It Be Real?            12: Invasive Species            16: Pass the Plants, Please            20: Environmental Exchange Box            29: Rain Reasons            43: Have Seeds, Will Travel            61: The Closer You Look            63: Tree Factory            64: Looking at Leaves            65: Bursting Buds            66: Germinating Giants            67: How Big Is Your Tree?            68: Name That Tree            49: Tropical Treehouse            70: Soil Stories</p>	<p><b>Forests of Washington Ecosystems</b></p> <p>1. There's no Place Like Home            2. Getting to know the Trees of Washington            4. Forest Homes            5. Come Grow with Us            6. Washington Forest Eco-connections</p> <p><b>PLT Extensions</b> <a href="http://www.pltwa.com">www.pltwa.com</a>            Habitat diversity field investigation            Tree abundance field investigation</p>	<p>Raindrops and Ranges             Time Lapse</p>	<p><b>OFRI</b>            Into the Forest  <b>Forest Fact Break:</b>            Forest Types  <b>Oregon's Forests</b> (poster)</p>

### Theme 2: Why are Forests Important?

<p style="text-align: center;"><b>Historical Importance</b></p> <p>1. Today, as in the past, forest continue to play a significant cultural, spiritual, and economic role in Native American Societies.</p> <p>2. In Washington's development toward becoming a state, forests provided basic resources for Native Americans and settlers, jobs for a growing workforce, resources for building the nation and dollars for a new state economy.</p> <p>3. As multiple demands on forests increased, the practice of forest management evolved to conserve and preserve natural resources and to improve society's use of forestlands. It incorporated scientific principles and an understanding of competing interests.</p> <p>4. Historical perspectives, which may include aesthetic, cultural, spiritual, economic, and educational factors, form our understanding of forests and our personal connections to forests, and guide decisions to ensure forests for future generations.</p>		<p>40: Then and Now            75: Tipi Talk            80: Nothing Succeeds Like Succession            90: Native Ways            91: In the Good Old Days            92: A Look at Lifestyles            93: Paper Civilizations            94: By the Rivers of Babylon            95: Did You Notice?</p>	<p><b>Forests of Washington Ecosystems</b></p> <p>13. Who Manages Washington's Forests?            14. Where There's a Will There's a Way            21. A Forest Full of Views</p>		<p><b>OFRI</b>            Forest Essays, Grade 6            Forest Essays, Grades 7-12</p>
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Washington Forest Education Framework	NGSS Performance Expectations	Project Learning Tree Activities	PEI Resources	Project WILD Activities	Additional Resources
<p style="text-align: center;"><b>Environmental Importance</b></p> <ol style="list-style-type: none"> <li>Forests affect air, water, and soil quality.</li> <li>Forests provide habitat for fish and wildlife.</li> <li>Forests provide the opportunity to study ecosystems, conservation, and natural resource management.</li> <li>Forests sequester carbon from the atmosphere and are an essential component of the global carbon cycle. Forest products made from wood also store carbon.</li> <li>Washington 's forests are important ecological systems, interconnected with other systems not only environmentally, but socially and economically. Changes in the conditions and uses of Washington 's forests may affect the conditions and uses of forests worldwide.</li> </ol>	<p>MS-LS2-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.</p> <p>(Somewhat relevant) MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical and biological components of an ecosystem affect populations</p> <p>MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.</p> <p>MS-LS2-3. Develop a model to describe the cycle of matter and flow of energy among living and non-living parts of an ecosystem.</p>	<p>4: Sounds Around 13: We All Need Trees 28: Air Plants 29: Rain Reasons 44: Water Wonders 22: Trees as Habitats 24: Nature's Recyclers 26: Dynamic Duos 29: Rain Reasons 45: Web of Life 47: Are Vacant Lots Vacant? 48: Field, Forest, and Stream 49: Tropical Treehouse 67: How Big Is Your Tree? 84: The Global Climate 86: Our Changing World 89: Trees for Many Reasons 95: Did You Notice?</p>	<p><b>Forests of Washington Ecosystems</b></p> <ol style="list-style-type: none"> <li>Here's Looking at Yew</li> <li>Forest Homes</li> <li>Come Grow with Us</li> <li>Washington Forest Eco-connections</li> <li>Town Trees</li> </ol> <p><b>ELA Performance Tasks</b></p> <p>Forest Benefits 3-5 Forest Management Renewable Energy: Biomass Climate Change, Carbon, and Trees Summer in the City: Urban Heat Islands Invasive Species</p> <p><b>Guides</b></p> <p>Field Investigations FieldDesign: Engineering Design for Field-Based Applications 6-12 Fostering Outdoor Observation Skills Landscape Investigations</p> <p><b>Career Profile Cards</b></p> <p><b>Solutions-Oriented Learning Storyline MS-</b> Forests: Carbon Sequestration</p> <p><b>Curriculum</b> Heathy Forests, Healthy Waters Drain Rangers</p>	<p>Habitat Circles</p> <p>My Kingdom for a Shelter</p> <p>Map that Habitat</p> <p>Tracks!</p> <p>Graphanimal</p> <p>Habicache</p> <p>Seed Need</p> <p>Eco-Enrichers</p> <p>Environmental Barometer</p> <p>Nature in Art</p>	<p><b>OFRI</b></p> <p>Into the Forest Forest Essays, Grades 6 Forest Essays, Grades 7-12</p> <p><b>Forest Fact Breaks:</b> Water Wildlife Carbon Capture <b>Inquiry at Hinkle Creek</b> (video) <b>Forest Fact Sheets:</b> Drinking Water Woody Biomass Carbon &amp; Climate <b>Where's All the Carbon?</b> (carbon cycle poster) <b>Oregon Forest Facts &amp; Figures</b></p> <p><b>Other</b> <u><i>The Truth about Science: A Curriculum for Developing Young Scientists</i></u>, by Kathryn Kelsey and Ashley Steel. NSTA Press <u><i>Citizen Science: 15 Lesson that Bring Biology to Life</i></u>, 6-12 -NSTA Press <u><i>Rainforest Alliance Carbon Curriculum</i></u> <a href="https://www.rainforest-alliance.org/curricula/climate">https://www.rainforest-alliance.org/curricula/climate</a>  I-Tree: Tree Benefits <a href="http://www.treebenefits.com">www.treebenefits.com</a>  PLT Carbon &amp; Climate (E-Unit for Grades 6-8)</p>
<p style="text-align: center;"><b>Social Importance</b></p> <ol style="list-style-type: none"> <li>Washington 's forests provide basic resources that people use every day.</li> <li>Individuals hold different values concerning forests and their use, based on their experience and connection with the forest.</li> <li>Forests influence the economic, social and cultural composition of both urban and rural communities</li> </ol>		<p>13: We All Need Trees 16: Pass the Plants, Please 17: People of the Forest 18: Tale of the Sun 19: Viewpoints on the Line 21: Adopt a Tree 55: Planning the Ideal Community 56: We Can Work It Out 59: Power of Print 90: Native Ways 82: Resource-Go-Round</p>	<p><b>Forests of Washington Ecosystems</b></p> <ol style="list-style-type: none"> <li>Watershed Benefits</li> <li>Town Trees</li> </ol> <p><b>ELA Performance Tasks</b></p> <p>Forest Benefits 4-5 Forest Management 6-8 Climate, Carbon, and Trees</p>	<p>Habicache</p> <p>Natural Dilemmas</p>	<p><b>OFRI</b></p> <p>Into the Forest Forest Essays, Grade 6 Forest Essays, Grades 7-12 Oregon Forest Facts &amp; Figures</p>

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<p><b>Economic Importance</b></p> <p>1. Forests provide multiple economic benefits, including jobs and forest products; renewable energy and minerals; financial returns to owners and investors; and ecosystem service benefits such as carbon storage, clean water, recreation, and tourism.</p> <p>2. Forests provide income for local, state, national, and international economies. Washington’s forest sector is one of the state’s largest economic sectors and provides critical resources and products to the global marketplace, including softwood lumber, plywood, and engineered wood products.</p> <p>3. Forest products are an important component of Washington’s “green” economy. They come from a renewable resource and store carbon, and most are also reusable and recyclable.</p> <p>4. Economic returns to forest landowners are important in preventing the loss of forests to other non-forest land uses.</p>	<p>MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.</p>	<p>91: In the Good Old Days 92: A Look at Lifestyles 93: Paper Civilizations 95: Did You Notice?</p> <p>13: We All Need Trees 14: Renewable or Not? 15: A Few of My Favorite Things 20: Environmental Exchange Box 32: A Forest of Many Uses 34: Who Works in this Forest? 39: Energy Sleuths 50: 400-Acre Wood 51: Make Your Own Paper 71: Watch on Wetlands 75: Tipi Talk 82: Resource-Go-Round 83: A Peek at Packaging</p>	<p><b>Forests of Washington Ecosystems</b></p> <p>11. Watershed Benefits 13. Who Manages Washington’s Forests? 14. Where There’s a Will There’s a Way 16. Tree Uses 17. Wood You Make a Difference? 21. A Forest Full of Views</p> <p><b>ELA Performance Tasks</b></p> <p>Forest Benefits Forest Management 6-8 Stormwater Pollution Renewable and Non-Renewable Energy Renewable Energy: Biomass Climate Change, Carbon, and Trees</p> <p><b>Career Profile Cards</b></p> <p><b>Solutions Oriented Storyline MS</b> Forests: Carbon Sequestration</p> <p><b>Curriculum</b> Healthy Forests, Healthy Waters</p>	<p>Natural Dilemmas</p>	<p><b>OFRI</b></p> <p>Into the Forest Find Your Path videos Forest Essays, Grade 6 Forest Essays, Grades 7-12</p> <p><b>Forest Fact Breaks:</b> Carbon Capture Green Building Wood Products</p> <p><b>Inquiry at Hinkle Creek (video)</b> Oregon Forest Facts &amp; Figures</p> <p><b>Forest Fact Sheets:</b> Forests Carbon &amp; Climate Drinking Water</p> <p><b>Where’s All the Carbon?</b> (carbon cycle poster)</p> <p><b>Other</b> <i>Rainforest Alliance Carbon Curriculum</i> <a href="https://www.rainforest-alliance.org/curricula/climate">https://www.rainforest-alliance.org/curricula/climate</a></p> <p>I-Tree: Tree Benefits <a href="http://www.treebenefits.com">www.treebenefits.com</a></p> <p>PLT Carbon &amp; Climate (E-Unit for Grades 6-8)</p>



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Theme 3: How Do We Sustain Our Forests?					
Washington Forest Education Framework	NGSS Performance Expectations	Project Learning Tree Activities	PEI Resources	Project WILD Activities	Additional Resources
<p style="text-align: center;"><b>Forest Ownership</b></p> <p>1. The size and scale of forest ownership can vary from hundreds of thousands of acres in a national forest to an individual patch of trees in an urban forest.</p> <p>2. Washington’s forests are managed under private (e.g., family and industrial) and public (e.g., state and federal) ownership. Each type of ownership may have different management objectives and may be subject to different laws and policies.</p> <p>3. Forestlands— as well as fire and other disturbances that affect them – cross natural boundaries, such as watersheds, and administrative boundaries, such as city limits and private property lines.</p> <p>4. Many forest landscapes are made up of a variety of ownerships, a mix of management objectives, and a blend of forest ecosystems.</p>		<p>35: Loving It Too Much 69: Forest for the Trees 71: Watch on Wetlands 81: Living with Fire</p>	<p><b>Forests of Washington Ecosystems</b></p> <p>7. Fire: Friend or Foe? 13. Who Manages Washington’s Forests? 14. Where There’s a Will There’s a Way 18. Let’s Make a Deal 19. Town Trees 21. A Forest Full of Views</p> <p><b>Career Profile Cards</b></p>	<p>Smokey Bear Said What?</p>	<p><b>OFRI</b></p> <p><b>Forest Fact Sheet:</b> Ownership Oregon Forest Facts &amp; Figures <b>Forest Fact Breaks:</b> Fire Safety <b>Inquiry at Hinkle Creek</b> (video)</p> <p><b>Other</b> PLT Carbon &amp; Climate (E-Unit for Grades 6-8)</p>
<p style="text-align: center;"><b>Forest Management</b></p> <p>1. Forest management is a long- term process that can lead to changes in tree species composition, size, and age, as well as in forest health and resilience.</p> <p>2. Forest management ranges from active management (e.g., planting, thinning, and harvesting) to passive management (e.g., set- asides and wilderness areas) to grow, restore, maintain, conserve, or alter forests.</p> <p>3. Forest management includes the use of natural processes and goal-oriented decisions and actions to achieve a variety of desired outcomes, including ecological (e.g., improving wildlife habitat), economic (e.g., timber production), and social (e.g., recreation) outcomes. Many of these outcomes are interrelated and can be managed for simultaneously, while others may be incompatible.</p>	<p>MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical and biological components of an ecosystem affect populations.</p> <p>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.</p>	<p>14: Renewable or Not? 15: A Few of My Favorite Things 31: Plant a Tree 32: A Forest of Many Uses 33: Forest Consequences 35: Loving It Too Much 50: 400-Acre Wood 69: Forest for the Trees 80: Nothing Succeeds Like Succession 93: Paper Civilizations 94: By the Rivers of Babylon</p>	<p><b>Forests of Washington Ecosystems</b></p> <p>7. Fire: Friend or Foe? 8. The Forest Flu 9. Weather Waltzes with the Forest 13. Who Manages Washington’s Forests? 14. Where There’s a Will There’s a Way 18. Let’s Make a New Deal 19. Town Trees 21. A Forest Full of Views</p> <p><b>ELA Performance Tasks</b></p> <p>Forest Benefits Forest Management Stormwater Pollution Summer in the City: Urban Heat Islands Invasive Plants</p>	<p>Bat Blitz</p> <p>Time Lapse</p> <p>Ecosystem Architects</p> <p>Natural Dilemmas</p> <p>Sustainability: Then. Now. Later.</p>	<p><b>OFRI</b></p> <p>Into the Forest Forest Essays, Grade 6 Forest Essays, Grades 7-12 <b>Forest Fact Breaks:</b> Forest Management Clearcutting Reforestation Sustainability Water <b>Inquiry at Hinkle Creek</b> (video) <b>Forest Fact Sheets:</b> Clearcutting Forests Reforestation Drinking Water Protection Laws <b>Oregon Forest Facts &amp; Figures</b></p> <p><b>Other</b> PLT Carbon &amp; Climate (E-Unit for Grades 6-8)</p>

## Making Forest Connections — Grades 6-8

<p>4. In Washington, forest management in private and state forests is regulated by the Washington Forest Practices Act, which aims to sustain forest land for timber production and the other benefits forests provide, including clean water, wildlife habitat, and recreation.</p> <p>5. As human populations and global demand for forest resources increase, forest management and advances in research and technological systems can help to ensure forest resources are maintained or improved to produce the desired values and products.</p>			<p>Climate Change, Carbon, and Trees</p> <p><b>Guides</b> Field Investigations Schoolyard Biodiversity</p> <p><b>Curriculum</b> Healthy Forests, Healthy Waters</p> <p><b>Career Profile Cards</b></p>		
Washington Forest Education Framework	NGSS Performance Expectations	Project Learning Tree Activities	PEI Resources	Project WILD Activities	Additional Resources
<p><b>Forest Management Decisions</b></p> <p>1. A variety of individuals, companies, organizations, and government agencies manage forests. Forest management decisions may involve some or all of these working collaboratively to ensure mutually beneficial outcomes.</p> <p>2. Forest resource professionals aim to meet individual, societal and environmental needs.</p> <p>3. The type and intensity of forest management is dependent on the purposes for which the forest is managed, as well as forest type, ownership, size, and location.</p> <p>4. Washington foresters and forest managers prepare forest management plans based on landowner goals and objectives, capabilities of the forest site, laws, and available tools (e.g., planting, harvesting, and using prescribed fire).</p> <p>5. The public empowers governments to conserve, maintain and sustain forest resources by enacting laws, creating policies, establishing agencies, creating public lands and providing management guidelines and continuing education for forest landowners.</p>	<p>MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services</p>	<p>12: Invasive Species 17: People of the Forest 34: Who Works in this Forest? 32: A Forest of Many Uses 33: Forest Consequences 31: Plant a Tree 32: A Forest of Many Uses 33: Forest Consequences 35: Loving It Too Much 50: 400-Acre Wood 54: I'd Like to Visit a Place Where... 58: There Ought to Be a Law 57: Democracy in Action 58: There Ought to Be a Law</p>	<p><b>Forests of Washington Ecosystems</b></p> <p>7. Fire: Friend or Foe? 8. The Forest Flu 9. Weather Waltzes with the Forest 13. Who Manages Washington's Forests? 14. Where There's a Will There's a Way 18. Let's Make a New Deal 19. Town Trees 21. A Forest Full of Views</p> <p><b>ELA Performance Tasks</b></p> <p>Forest Benefits Forest Management Stormwater Pollution Summer in the City: Urban Heat Islands Invasive Plants Climate Change, Carbon, and Trees</p> <p><b>Career Profile Cards</b></p> <p><b>Solutions-Oriented Learning Storyline MS:</b> Forests: Carbon Sequestration</p> <p><b>Curriculum</b> Healthy Forests, Healthy Waters</p>	<p>Keeping Cool</p> <p>Ecosystem Architects</p> <p>Natural Dilemmas</p> <p>Sustainability: Then. Now. Later.</p>	<p><b>OFRI</b></p> <p>Into the Forest Find Your Path Find Your Path videos</p> <p><b>Forest Fact Breaks:</b> Clearcutting Fire</p> <p><b>Forest Fact Sheets:</b> Clearcutting Fire Protection Laws Sustainability</p> <p><b>Inquiry at Hinkle Creek</b> (video)</p> <p><b>Other</b> <u><a href="https://www.rainforest-alliance.org/curricula/carbon">Rainforest Alliance Carbon Curriculum</a></u> <u><a href="https://www.rainforest-alliance.org/curricula/climate">https://www.rainforest-alliance.org/curricula/climate</a></u></p>

## Making Forest Connections — Grades 6-8

<p>6. Government has a role in actively engaging organizations, businesses, communities and individuals in forest management and policy decisions, especially for publicly owned forests.</p> <p>7. Sustainable management of forests takes into account social, economic and ecological dimensions of sustainability. It includes maintaining forest health, productivity and diversity, and conserving a forested land base for the needs of present and future generations.</p> <p>8. Changing public demands and expectations for the forest, as well as unanticipated events, affect decisions about forest resource use. Sound management based on scientific research, economic analysis and public involvement is required.</p>					
Washington Forest Education Framework	NGSS Performance Expectations	Project Learning Tree Activities	PEI Resources	Project WILD Activities	Additional Resources
<p><b>Forest Management Perspectives</b></p> <p>1. People have differing perspectives about forest management, which can be affected by politics, science, economics, values, perception, and experience.</p> <p>2. Forest management can be controversial because of diverse perspectives as well as the complex nature of forest ecosystems.</p> <p>3. Issues related to forest management include the effects of timber harvest, carbon sequestration and climate change, forest land uses, wildfire, and others.</p> <p>4. Involving multiple perspectives in decision-making, especially with regard to Washington’s public forests, can lead to more effective problem-solving and result in more sustainable outcomes for Washington’s forests.</p>	<p>MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.</p>	<p>19: Viewpoints on the Line            32: A Forest of Many Uses            33: Forest Consequences            35: Loving It Too Much            50: 400-Acre Wood            58: There Ought to Be a Law            59: Power of Print            60: Publicize It!            81: Living with Fire            84: The Global Climate            86: Our Changing World            88: Life on the Edge            90: Native Ways            91: In the Good Old Days</p>	<p><b>Forests of Washington Ecosystems</b></p> <p>7. Fire: Friend or Foe?            8. The Forest Flu            9. Weather Waltzes with the Forest            13. Who Manages Washington’s Forests?            14. Where There’s a Will There’s a Way            18. Let’s Make a New Deal            19. Town Trees            21. A Forest Full of Views</p> <p><b>ELA Performance Tasks</b></p> <p>Forest Benefits            Forest Management            Stormwater Pollution            Summer in the City: Urban Heat Islands            Invasive Plants            Climate Change, Carbon, and Trees</p> <p><b>Career Profile Cards</b></p> <p><b>Guides:</b>            FieldDesign: Engineering Design for Field-Based Applications 6-12</p>	<p>Wildlife and the Environment:            Community Survey</p> <p>Changing the Land</p> <p>Phenology at Play</p> <p>To Zone or Not to Zone</p> <p>Natural Dilemmas (adapt)</p> <p>Sustainability:            Then. Now. Later.</p> <p>Changing the Land</p>	<p><b>OFRI</b></p> <p><b>Forest Fact Breaks:</b>            Clearcutting</p> <p><b>Forest Fact Sheets:</b>            Carbon &amp; Climate            Clearcutting</p> <p><b>Inside Oregon's Forests: A High School Forestry Curriculum</b></p> <p><b>Other</b>  <a href="https://www.rainforest-alliance.org/curricula/climate">Rainforest Alliance Carbon Curriculum</a>  <a href="https://www.rainforest-alliance.org/curricula/climate">https://www.rainforest-alliance.org/curricula/climate</a></p> <p>PLT Carbon &amp; Climate (E-Unit for Grades 6-8)</p>

## Making Forest Connections — Grades 6-8

Theme 4: What is Our Responsibility to Washington Forests?					
Washington Forest Education Framework	NGSS Performance Expectations	Project Learning Tree Activities	PEI Resources	Project WILD Activities	Additional Resources
<p><b>Our Connection to Washington's Forests</b></p> <p>1. Everyone should have the opportunity to identify and explore their personal connection with forests.</p> <p>2. Resources we use and consume every day are connected to Washington's forests.</p> <p>3. There are many ways that individuals can connect with forests in Washington, including hiking and picnicking in forests, volunteering for projects in and around forests, becoming informed and active voters, attending public meetings, and making wise consumer choices.</p>		<p>2: Get in Touch with Trees 4: Sounds Around 5: Poet-Tree 13: We All Need Trees 15: A Few of My Favorite Things 18: Tale of the Sun 21: Adopt a Tree 31: Plant a Tree 32: A Forest of Many Uses 37: Reduce, Reuse, Recycle 38: Every Drop Counts 54: I'd Like to Visit a Place Where... 61: The Closer You Look 83: A Peek at Packaging 89: Trees for Many Reasons 92: A Look at Lifestyles 96: Improve Your Place</p>	<p><b>Forests of Washington Ecosystems</b></p> <p>1. There's no Place Like Home 2. Getting to know the Trees of Washington 3. Here's Looking at Yew 4. Forest Homes 5. Come Grow with Us 6. Washington Forest Eco-Connections 11. Watershed Benefits 15. Less is More 16. Tree Uses 17. Wood You Make a Difference?</p> <p><b>ELA Performance Tasks</b></p> <p>Forest Benefits 3-5 Summer in the City: Urban Heat Islands</p> <p><b>Guides</b></p> <p>Field Investigations Project Based Learning Model Fostering Outdoor Observation Skills Photo Point Monitoring FieldDesign: Engineering Design for Field-Based Applications 6-12</p> <p><b>PLT Extensions</b></p> <p><a href="http://www.pltwa.com">www.pltwa.com</a> Trees as Habitat and Tree Benefits</p> <p><b>Curriculum</b></p> <p>Healthy Forests, Healthy Waters</p>	<p>Animal Poetry</p> <p>Learning to Look, Looking to See</p> <p>Nature in Art</p> <p>Tracks!</p> <p>Graphanimal</p> <p>Urban Nature Search (adapt to forests)</p> <p>Seed Need</p> <p>Eco-Enrichers</p>	<p><b>OFRI</b></p> <p>Forest Essays, Grade 6 Forest Essays, Grades 7-12</p> <p><b>Other</b></p> <p><i><u><a href="#">The Truth about Science: A Curriculum for Developing Young Scientists</a></u></i>, by Kathryn Kelsey and Ashley Steel. NSTA Press</p> <p><i><u><a href="#">Citizen Science: 15 Lesson that Bring Biology to Life</a></u></i>, 6-12 -NSTA Press</p> <p>Ellie's Log and Teacher's Guide <a href="http://ellieslog.osupress.oregonstate.edu/ellies-log">http://ellieslog.osupress.oregonstate.edu/ellies-log</a></p> <p><i><u><a href="https://www.rainforest-alliance.org/curricula/climate">Rainforest Alliance Carbon Curriculum</a></u></i> <a href="https://www.rainforest-alliance.org/curricula/climate">https://www.rainforest-alliance.org/curricula/climate</a></p>

## Making Forest Connections — Grades 6-8

Washington Forest Education Framework	NGSS Performance Expectations	Project Learning Tree Activities	PEI Resources	Project WILD Activities	Additional Resources
<p style="text-align: center;"><b>Working for the Future of Washington's Forests</b></p> <p>1. Everyone has a responsibility to treat forests with respect and to become a conscientious steward of Washington's forests and forest resources.</p> <p>2. Personal behaviors directly impact the health and resiliency of our forests. For example, the products we buy, how we treat trails and campgrounds, and how we hunt or use fire can either harm or help forests.</p> <p>3. Choices we make regarding the use of forest resources affect our ability to sustain forest ecosystems into the future.</p> <p>4. A variety of professionals and skilled trade workers are needed to sustain our forests, including foresters, biologists, soil scientists, engineers, lawyers, information technology professionals, land managers, investors, environmental educators, communications specialists, logging operators, mechanics, and wood products manufacturers.</p> <p>5. As individuals or as members of groups, we can influence laws and policies about Washington's forests.</p>	<p>MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.</p> <p>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.</p>	<p>14: Renewable or Not?            15: A Few of My Favorite Things            31: Plant a Tree            32: A Forest of Many Uses            34: Who Works in this Forest?            35: Loving It Too Much            36: Pollution Search            37: Reduce, Reuse, Recycle            38: Every Drop Counts            37: Reduce, Reuse, Recycle            38: Every Drop Counts            51: Make Your Own Paper            54: I'd Like to Visit a Place Where...            57: Democracy in Action            58: There Ought to Be a Law            81: Living with Fire            82: Resource-Go-Round            83: A Peek at Packaging            89: Trees for Many Reasons            96: Improve Your Place</p>	<p><b>Forests of Washington Ecosystems</b>            15. Less is More            17. Wood You Make a Difference?            19. Town Trees            20. Earthkeepers: From Schoolyard to Planet            22: A Washington Forest Fair.</p> <p><b>ELA Performance Tasks</b>            Forest Benefits            Forest Management            Stormwater Pollution            Summer in the City: Urban Heat Islands            Invasive Plants            Climate Change, Carbon, and Trees</p> <p><b>Guides</b>            Project Based Learning Model</p> <p>FieldDesign: Engineering Design for Field-Based Applications 6-12</p> <p><b>Curriculum</b>            Healthy Forests, Healthy Waters</p> <p>Drain Rangers Secondary Curriculum</p> <p><b>Career Profile Cards</b></p> <p><b>Solutions-Oriented Learning Storyline MS</b>            Forests: Carbon Sequestration</p>	<p>Deer Dilemma</p> <p>Habitat Heroes</p> <p>Ecosystem Architects</p>	<p><b>OFRI</b>            Forest Essays, Grade 6            Forest Essays, Grades 7-12            Into the Forest            Find Your Path            Find Your Path videos</p> <p>PLT Carbon &amp; Climate (E-Unit for Grades 6-8)</p>