

Listed below are LEAF lessons in the 7-8 grade lesson guide. They have been correlated to various formats of student learning standards. Included are: Wisconsin Model Academic Standards in Agriculture Education, Environmental Education, Social Studies, and Visual Arts; Common Core Standards for Mathematics and English Language Arts; Next Generation Science Standards. On the following pages, you will find the standards listed by lesson along with an explanation of how they are addressed by each lesson. Both current and previous versions of standards can be found on the LEAF website either in the original Lesson Guide pdfs or as addendums with the more recent standard formats.

## **LESSON 1: DISCOVERING WISCONSIN'S FORESTS**

### **ENGLISH LANGUAGE ARTS W.7.2A-F & W.8.2A-F**

#### **Writing**

**Standard is:** Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

### **ENGLISH LANGUAGE ARTS W.7.4 & W.8.4**

#### **Writing**

**Standard is:** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

### **ENGLISH LANGUAGE ARTS W.7.5 & W.8.5**

#### **Writing**

**Standard is:** Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

### **ENGLISH LANGUAGE ARTS W.7.6**

#### **Writing**

**Standard is:** Use technology, including the Internet, to produce and publish and update individual or shared writing products, in response to ongoing feedback, including new arguments or information.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

### **ENGLISH LANGUAGE ARTS W.8.6**

#### **Writing**

**Standard is:** Use technology, including the Internet, to produce and publish and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

## ENGLISH LANGUAGE ARTS W.7.7 & W.8.7

### Writing

**Standard is:** Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

## ENGLISH LANGUAGE ARTS W.7.8

### Writing

**Standard is:** Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

## ENGLISH LANGUAGE ARTS W.8.8

### Writing

**Standard is:** Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

## ENGLISH LANGUAGE ARTS W.7.9A-B & W.8.9A-B

### Writing

**Standard is:** Draw evidence from literary or informational texts to support analysis, reflection, and research.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

## ENGLISH LANGUAGE ARTS W.8.6

### Writing

**Standard is:** Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

## ENGLISH LANGUAGE ARTS WHST.6-8.2A-F

### Writing for Literacy in History/Social Studies, Science, and Technical Subjects

**Standard is:** Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

## ENGLISH LANGUAGE ARTS WHST.6-8.4

### Writing for Literacy in History/Social Studies, Science, and Technical Subjects

**Standard is:** Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

### ENGLISH LANGUAGE ARTS WHST.6-8.5

#### Writing for Literacy in History/Social Studies, Science, and Technical Subjects

**Standard is:** With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

### ENGLISH LANGUAGE ARTS WHST.6-8.6

#### Writing for Literacy in History/Social Studies, Science, and Technical Subjects

**Standard is:** Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

### ENGLISH LANGUAGE ARTS WHST.6-8.7

#### Writing for Literacy in History/Social Studies, Science, and Technical Subjects

**Standard is:** Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

### ENGLISH LANGUAGE ARTS WHST.6-8.8

#### Writing for Literacy in History/Social Studies, Science, and Technical Subjects

**Standard is:** Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

### ENGLISH LANGUAGE ARTS WHST.6-8.9

#### Writing for Literacy in History/Social Studies, Science, and Technical Subjects

**Standard is:** Draw evidence from informational texts to support analysis reflection, and research.

Students develop a travel brochure to provide information on a particular Wisconsin forest.

### ENGLISH LANGUAGE ARTS SL.7.1A-D &SL8.1A-D

#### Speaking and Listening

**Standard is:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 or 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.

Student presentations and discussions in Activities 1 and 2 require students to work to this standard.

## ENGLISH LANGUAGE ARTS SL.7.2

### Speaking and Listening

**Standard is:** Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.

Student presentations and discussions in Activities 1 and 2 require students to work to this standard.

## ENGLISH LANGUAGE ARTS SL.8.2

### Speaking and Listening

**Standard is:** Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.

Student presentations and discussions in Activities 1 and 2 require students to work to this standard.

## ENGLISH LANGUAGE ARTS SL.7.4

### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

Student presentations and discussions in Activities 1 and 2 require students to work to this standard.

## ENGLISH LANGUAGE ARTS SL.8.4

### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume and clear pronunciation.

Student presentations and discussions in Activities 1 and 2 require students to work to this standard.

## ENGLISH LANGUAGE ARTS SL.7.6 &SL8.6

### Speaking and Listening

**Standard is:** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

Student presentations and discussions in Activities 1 and 2 require students to work to this standard.

## ENGLISH LANGUAGE ARTS RST.6-8.2

### Reading for Literacy in Science and Technical Subjects

**Standard is:** Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

Students do additional research for their biome brochure to work toward this standard.

## ENGLISH LANGUAGE ARTS RST.6-8.4

### Reading for Literacy in Science and Technical Subjects

**Standard is:** Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

Students do additional research for their biome brochure to work toward this standard.

## ENGLISH LANGUAGE ARTS RST.6-8.7

### Reading for Literacy in Science and Technical Subjects

**Standard is:** Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

Students do additional research for their biome brochure to work toward this standard.

## ENGLISH LANGUAGE ARTS RST.6-8.8

### Reading for Literacy in Science and Technical Subjects

**Standard is:** Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.

Students do additional research for their biome brochure to work toward this standard.

## ENGLISH LANGUAGE ARTS L.7.1A-D &L.8.1A-D

### Language

**Standard is:** Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Students present and discuss while creating a forest community brochure.

## ENGLISH LANGUAGE ARTS L.7.2A-B &L.8.2A-B

### Language

**Standard is:** Demonstrate command of the conventions of standard English capitalization, punctuation and spelling when writing.

Students create a forest community brochure and address these standards.

## ENVIRONMENTAL EDUCATION A.8.4

### Questioning and Analysis

**Standard is:** Use critical thinking strategies to interpret and analyze gathered information.

Students draw conclusions about the location of different types of forests and climatic, soil, and topographic factors using notes taken while watching a video and by doing a mapping exercise.

## ENVIRONMENTAL EDUCATION A.8.6

### Questioning and Analysis

**Standard is:** Communicate the results of investigations by using a variety of media and logically defend their answers.

Students create a travel brochure on a type of forest found in Wisconsin based on gathered information, a mapping exercise, and discussion.

## ENVIRONMENTAL EDUCATION B.8.6

### Energy and Ecosystems

**Standard is:** Describe major ecosystems of Wisconsin.

Students gather data on types of forests in Wisconsin and create a travel brochure on one type, including factors contributing to location and plants and animals present.

## MATHEMATICS 7.RP.2

### Ratios and Proportional Relationships

**Standard is:** Analyze proportional relationships and use them to solve real-world and mathematical problems.

Students graph precipitation and temperature data for different biomes.

## SCIENCE MS-ESS2-2

### Earth's Systems

**Standard is:** Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

Students explore how Wisconsin glaciation has affected soil and topography creating different forest communities of varying biodiversity.

## SOCIAL STUDIES A.8.1

### Geography: People, Places, and Environments

**Standard is:** Use a variety of geographic representations, such as political, physical, and topographic maps, a globe, aerial photographs, and satellite images, to gather and compare information about a place.

Students superimpose data from maps showing Wisconsin glaciation and climatic zones on a map of Wisconsin landforms as a way of determining the factors that affect where different types of forest are located.

## VISUAL ARTS E.8.3

### Visual Communication and Expression

**Standard is:** Communicate complex ideas by producing popular images and objects, such as folk art, traditional arts and crafts, popular arts, mass media, and consumer products.

Students create a travel brochure with images or graphics describing one of the types of forests in Wisconsin, including factors contributing to its location and plants and animals present.

## VISUAL ARTS H.8.5

### Visual Communication and Expression

**Standard is:** Be able to read complex maps, charts, plans.

Students superimpose data from maps showing Wisconsin glaciation and climatic zones on a map of Wisconsin landforms as a way of determining the factors that affect where different types of forests are located.

## LESSON 2: BIODIVERSITY AND THE FOREST CONNECTION

### ENGLISH LANGUAGE ARTS SL.7.1A-D &SL8.1A-D

#### Speaking and Listening

**Standard is:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 or 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.

Student presentations and discussions in the conclusion activity require students to work to this standard.

### ENGLISH LANGUAGE ARTS SL.7.2

#### Speaking and Listening

**Standard is:** Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.

Student presentations and discussions in the conclusion activity require students to work to this standard.

### ENGLISH LANGUAGE ARTS SL.8.2

#### Speaking and Listening

**Standard is:** Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.

Student presentations and discussions in the conclusion activity require students to work to this standard.

### ENGLISH LANGUAGE ARTS SL.7.4

#### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

Student presentations and discussions in the conclusion activity require students to work to this standard.

### ENGLISH LANGUAGE ARTS SL.8.4

#### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume and clear pronunciation.

Student presentations and discussions in the conclusion activity require students to work to this standard.

### ENGLISH LANGUAGE ARTS SL.7.6 &SL8.6

#### Speaking and Listening

**Standard is:** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

Student presentations and discussions in the conclusion activity require students to work to this standard.

## ENVIRONMENTAL EDUCATION A.8.5

### Questioning and Analysis

**Standard is:** Use the results of their investigations to develop answers, draw conclusions, and revise their personal understanding.

Students gain a deeper understanding of biodiversity, the role of forests and biodiversity, and how Wisconsin's forests contribute to world biodiversity by studying pictures, identifying species, and participating in discussion.

## ENVIRONMENTAL EDUCATION B.8.3

### Energy and Ecosystems

**Standard is:** Explain the importance of biodiversity.

Students discover that diversity contributes to the stability of systems on a large scale through a simulation using jigsaw puzzle pieces. They also determine that lack of biodiversity makes a species more susceptible to natural and human caused disturbances.

## ENVIRONMENTAL EDUCATION B.8.8

### Energy and Ecosystems

**Standard is:** Explain interactions among organisms or populations of organisms.

Students investigate how different ecosystems are interconnected by making a Venn diagram.

## SCIENCE MS-LS2-2

### Ecosystems: Interactions, Energy, and Dynamics

**Standard is:** Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

Students investigate how forest ecosystems interconnect with other terrestrial and aquatic ecosystems.

## SCIENCE MS-LS4-4

### Ecosystems: Interactions, Energy, and Dynamics

**Standard is:** Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.

Students recognize the importance of genetic diversity in maintaining healthy populations when faced with various natural selection pressures such as disease.

## VISUAL ARTS E.8.4

### Visual Communication and Expression

**Standard is:** Communicate complex ideas by producing visual communication forms useful in everyday life, such as sketches, diagrams, graphs, plans, and models.

Students compare ecosystems by making a Venn diagram.

## LESSON 3: HOW FORESTS ARE MANAGED

### ENGLISH LANGUAGE ARTS SL.7.1A-D &SL8.1A-D

#### Speaking and Listening

**Standard is:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 or 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.

Throughout this lesson, discussion is used to make comparisons and draw conclusions, especially during the newspaper simulation and from the video discussion.

### ENGLISH LANGUAGE ARTS SL.7.2

#### Speaking and Listening

**Standard is:** Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.

Throughout this lesson, discussion is used to make comparisons and draw conclusions, especially during the newspaper simulation and from the video discussion.

### ENGLISH LANGUAGE ARTS SL.8.2

#### Speaking and Listening

**Standard is:** Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.

Throughout this lesson, discussion is used to make comparisons and draw conclusions, especially during the newspaper simulation and from the video discussion.

### ENGLISH LANGUAGE ARTS SL.7.4

#### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

Throughout this lesson, discussion is used to make comparisons and draw conclusions, especially during the newspaper simulation and from the video discussion.

### ENGLISH LANGUAGE ARTS SL.8.4

#### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume and clear pronunciation.

Throughout this lesson, discussion is used to make comparisons and draw conclusions, especially during the newspaper simulation and from the video discussion.

### ENGLISH LANGUAGE ARTS SL.7.6 &SL8.6

#### Speaking and Listening

**Standard is:** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

Throughout this lesson, discussion is used to make comparisons and draw conclusions, especially during the newspaper simulation and from the video discussion.

## ENVIRONMENTAL EDUCATION A.8.5

### Questioning and Analysis

**Standard is:** Use the results of their investigations to develop answers, draw conclusions, and revise their personal understanding.

Through discussion based on experimentation with common objects, students draw conclusions about multiple use and sustainability.

## SCIENCE MS-ESS3-4

### Earth and Human Activity

**Standard is:** Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

Students learn how an increase in human population increases the challenge of using our forests in a sustainable manner.

## LESSON 4: FOREST MANAGEMENT ISSUES

## AGRICULTURE EDUCATION B.8.3

### Technology/Information

**Standard is:** Access and apply information in the evaluation of natural resource use.

Students evaluate the effects (economic, environmental, social) of several forest management techniques and use scenarios.

## ENGLISH LANGUAGE ARTS SL.7.1A-D & SL.8.1A-D

### Comprehension and Collaboration

**Standard is:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 (8) topics, texts, and issues, building on others' ideas and expressing their own clearly.

Students participate in discussion to evaluate the role of knowledge, beliefs, and values in people's perceptions of forest management techniques and decisions.

## ENGLISH LANGUAGE ARTS SL.7.2

### Speaking and Listening

**Standard is:** Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.

Students participate in discussion to evaluate the role of knowledge, beliefs, and values in people's perceptions of forest management techniques and decisions.

## ENGLISH LANGUAGE ARTS SL.8.2

### Speaking and Listening

**Standard is:** Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.

Students participate in discussion to evaluate the role of knowledge, beliefs, and values in people's perceptions of forest management techniques and decisions.

## ENGLISH LANGUAGE ARTS SL.7.4

### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

Students participate in discussion to evaluate the role of knowledge, beliefs, and values in people's perceptions of forest management techniques and decisions.

## ENGLISH LANGUAGE ARTS SL.8.4

### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume and clear pronunciation.

Students participate in discussion to evaluate the role of knowledge, beliefs, and values in people's perceptions of forest management techniques and decisions.

## ENGLISH LANGUAGE ARTS SL.7.6 &SL8.6

### Speaking and Listening

**Standard is:** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

Students participate in discussion to evaluate the role of knowledge, beliefs, and values in people's perceptions of forest management techniques and decisions.

## ENGLISH LANGUAGE ARTS RI.7.1

### Reading Informational Text

**Standard is:** Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

Students read an article and participate in discussion to evaluate the role of knowledge, beliefs, and values in people's perceptions of forest management techniques and decisions.

## ENGLISH LANGUAGE ARTS RI.8.1

### Reading Informational Text

**Standard is:** Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.

Students identify the controversial statements in an article about a forest related issue and analyze the values and knowledge held by the people or groups making those statements.

## ENGLISH LANGUAGE ARTS RI.7.3

### Reading Informational Text

**Standard is:** Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).

Students identify the controversial statements in an article about a forest related issue and analyze the values and knowledge held by the people or groups making those statements.

## ENGLISH LANGUAGE ARTS RI.8.3

### Reading Informational Text

**Standard is:** Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).

Students identify the controversial statements in an article about a forest related issue and analyze the values and knowledge held by the people or groups making those statements.

## ENGLISH LANGUAGE ARTS W.7.10 & W.8.10

### Writing

**Standard is:** Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes and audiences.

Students use reflective writing in the conclusion to summarize how and why conflicts arise regarding forest issues.

## ENVIRONMENTAL EDUCATION A.8.5

### Questioning and Analysis

**Standard is:** Use the results of investigations to develop answers, draw conclusions, and revise their personal understanding.

Students read an article about a controversial forestry issue, identify the positions of the players involved, and explore their associated beliefs and values. Through discussion, students draw conclusions about which player is more correct and are then asked to explore their own position on a forest management situation.

## ENVIRONMENTAL EDUCATION C.8.1

### Environmental Issue Investigation Skills

**Standard is:** Define and provide examples of environmental issues, explaining the role of beliefs, attitudes, and values.

Students read an article about a controversial issue related to forestry, identify the positions of the players involved, and evaluate the ways that those issues arise from differing beliefs, values, and knowledge. Students gain an understanding of how perceptions are influenced by many factors.

## ENVIRONMENTAL EDUCATION C.8.3

### Environmental Issue Investigation Skills

**Standard is:** Use questioning and analysis skills to determine beliefs, attitudes, and values held by people in an environmental issue.

Students read an article about a controversial issue related to forestry, identify the positions of the players involved, and determine the players' associated beliefs and values.

## ENVIRONMENTAL EDUCATION D.8.7

### Decision and Action Skills

**Standard is:** Identify examples of how personal beliefs can influence environmental decisions.

In a simulation, students make forest management decisions about a piece of property based on various landowner profiles. The discussion centers on how beliefs and values influence the types of decisions that were made.

## SCIENCE MS-LS2-5

### Science Applications

**Standard is:** Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

Students evaluate and discuss a case study to illustrate competing points of view regarding management options for a forest to maintain biodiversity.

## SOCIAL STUDIES B.8.4 & B.8.10

### History: Time, Continuity, and Change

**Standard is:** Explain how and why events may be interpreted differently depending upon the perspective of participants, witnesses, reporters, and historians.

**Standard is:** Analyze examples of conflict, cooperation, and interdependence among groups, societies, or nations.

Students read an article about a controversial issue related to forestry to identify and evaluate the ways that those issues arise from differing beliefs, values, and knowledge.

## SOCIAL STUDIES C.8.7

### Political Science and Citizenship: Power, Authority, Governance, and Responsibility

**Standard is:** Locate, organize, and use relevant information to understand an issue of public concern, take a position, and advocate the position in a debate.

Students read an article about a controversial issue related to forestry to identify and evaluate the ways that those issues arise from differing beliefs, values, and knowledge.

# LESSON 5: MANY FORESTS, MANY VALUES, MANY REASONS

## AGRICULTURE EDUCATION F.8.2

### Business Management and Marketing

**Standard is:** Recognize that agricultural businesses produce, process, transport, and sell food, fiber, and natural resources to make a profit.

Students analyze factors, including economic, that affect why forests are valued. They make a list of jobs associated with harvesting, transporting, processing and selling forest products.

## ENGLISH LANGUAGE ARTS SL.7.1A-D & SL.8.1A-D

### Comprehension and Collaboration

**Standard is:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 (8) topics, texts, and issues, building on others' ideas and expressing their own clearly.

Students participate in discussion about the way they value forests.

## ENGLISH LANGUAGE ARTS SL.7.2

### Speaking and Listening

**Standard is:** Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.

Students participate in discussion about the way they value forests.

## ENGLISH LANGUAGE ARTS SL.8.2

### Speaking and Listening

**Standard is:** Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.

Students participate in discussion about the way they value forests.

## ENGLISH LANGUAGE ARTS SL.7.4

### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

Students participate in discussion about the way they value forests.

## ENGLISH LANGUAGE ARTS SL.8.4

### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume and clear pronunciation.

Students participate in discussion about the way they value forests.

## ENGLISH LANGUAGE ARTS SL.7.6 & SL.8.6

### Speaking and Listening

**Standard is:** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

Students participate in discussion about the way they value forests.

## ENGLISH LANGUAGE ARTS W.7.10 & W.8.10

### Writing

**Standard is:** Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes and audiences.

Students use reflective writing in the conclusion to summarize how and why they value forest products.

## ENVIRONMENTAL EDUCATION B.8.10

### Energy and Ecosystems

**Standard is:** Explain and cite examples of how humans shape the environment.

As students complete the *Wisconsin Forests and Communities Then & Now* Student Page, they look at how forests have impacted and continue to impact society and conversely how human activities have impacted and continue to impact forests.

## ENVIRONMENTAL EDUCATION B.8.15

### Natural Resources and Environmental Quality

**Standard is:** Analyze how people impact their environment through resource use.

As students complete the *Wisconsin Forests and Communities Then & Now* Student Page, they look at how forests have impacted and continue to impact society and conversely how human activities have impacted and continue to impact forests.

## ENVIRONMENTAL EDUCATION D.8.3 & D.8.7

### Decision and Action Skills

**Standard is:** List reasons why an individual or group chooses to participate or not participate in an environmental activity in the home, school, or community.

**Standard is:** Identify examples of how personal beliefs can influence environmental decisions.

Through reading, categorizing, and discussing, students learn about factors that affect the way people value and use forests.

## SOCIAL STUDIES A.8.4

### Geography: People, Places, and Environments

**Standard is:** Conduct a historical study to analyze the use of the local environment in a Wisconsin community and to explain the effect of this use on the environment.

Students take a historical look at how forests impact society and how human activities impact forests by completing the *Wisconsin Forests and Communities Then & Now* Student Page.

## VISUAL ARTS C.8.9

### Visual Design and Production

**Standard is:** Come up with ideas and carry them through to completion of an original work of art.

Students creatively express what they've learned. Among the options are making a collage, making a mobile, writing a poem or reflective prose that includes an illustration, creating a slide show presentation, or performing a rap, song, play, puppet show, mock TV talk show interview, etc.

## VISUAL ARTS E.8.1, E.8.2, & E.8.3

### Visual Communication and Expression

**Standard is:** Communicate complex ideas by producing studio art forms, such as drawings, paintings, prints, sculpture, jewelry, fibers, and ceramics.

**Standard is:** Communicate complex ideas by producing design art forms, such as graphic design, product design, architecture, landscape, and media arts, such as film, photography, and multimedia.

**Standard is:** Communicate complex ideas by producing popular images and objects, such as folk art, traditional arts and crafts, popular arts, mass media, and consumer products.

Students creatively express what they've learned. Among the options are making a collage, making a mobile, writing a poem or reflective prose that includes an illustration, creating a slide show presentation, or performing a rap, song, play, puppet show, mock TV talk show interview, etc.

## LESSON 6: MAKING BROADER CONNECTIONS

### AGRICULTURE EDUCATION F.8.1

#### Business Management and Marketing

**Standard is:** Explain how food, fiber, and natural resources are part of a global economy.

Students draw conclusions about how the use of Wisconsin forests affect forests worldwide through a simulation activity and discussion.

## ENGLISH LANGUAGE ARTS SL.7.1A-D & SL.8.1A-D

### Comprehension and Collaboration

**Standard is:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 (8) topics, texts, and issues, building on others' ideas and expressing their own clearly.

The introduction and parts of all activities rely heavily on discussion and student participation.

## ENGLISH LANGUAGE ARTS SL.7.2

### Speaking and Listening

**Standard is:** Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.

The introduction and parts of all activities rely heavily on discussion and student participation.

## ENGLISH LANGUAGE ARTS SL.8.2

### Speaking and Listening

**Standard is:** Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.

The introduction and parts of all activities rely heavily on discussion and student participation.

## ENGLISH LANGUAGE ARTS SL.7.4

### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

The introduction and parts of all activities rely heavily on discussion and student participation.

## ENGLISH LANGUAGE ARTS SL.8.4

### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume and clear pronunciation.

The introduction and parts of all activities rely heavily on discussion and student participation.

## ENGLISH LANGUAGE ARTS SL.7.6 & SL.8.6

### Speaking and Listening

**Standard is:** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

The introduction and parts of all activities rely heavily on discussion and student participation.

## ENGLISH LANGUAGE ARTS W.7.10 & W.8.10

### Writing

**Standard is:** Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes and audiences.

Students use reflective writing in the conclusion to summarize their views of forest issues in Wisconsin and elsewhere.

## ENVIRONMENTAL EDUCATION A.8.4

### Questioning and Analysis

**Standard is:** Use critical-thinking strategies to interpret and analyze gathered information.

By interpreting information presented in collages, students gain insight that they apply in *Forestry Jeopardy* about the connection between forestry and Wisconsin's economy, society, and environment.

## ENVIRONMENTAL EDUCATION B.8.16

### Natural Resources and Environmental Quality

**Standard is:** Recognize the economic, environmental, and other factors that impact resource availability and explain why certain resources are becoming depleted.

Students evaluate the steps involved in making a wood product and the resources, jobs, costs and social, economic, and environmental impacts associated with those steps.

## SCIENCE MS-ESS3-4

### Human Impacts

**Standard is:** Construct an argument supported by evidence for how increases in human population and per capita consumption of natural resources impact Earth's systems.

Students examine how an increase in population increases the challenge of sustainable forest management.

## SOCIAL STUDIES D.8.3

### Economics: Production, Distribution, Exchange, and Consumption

**Standard is:** Describe Wisconsin's role in national and global economies and give examples of local economic activity in national and global markets.

Students evaluate future demand for forest resources and suggest ways that these changes will affect forests and the economy of Wisconsin and the world through a simulation activity.

## LESSON 7: KEY STRATEGIES FOR OUR FUTURE

## AGRICULTURE EDUCATION B.8.3

### Technology/Information

**Standard is:** Access and apply information in the evaluation of natural resource use.

- Technology applications in wildlife/natural resource management

Students read stories and extrapolate information about science and technology use in forestry. They then make predictions about the future of Wisconsin's forests in the absence of science and technology.

## ENGLISH LANGUAGE ARTS SL.7.1A-D & SL.8.1A-D

### Comprehension and Collaboration

**Standard is:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 (8) topics, texts, and issues, building on others' ideas and expressing their own clearly.

The conclusion requires students to discuss their ideas for the future of Wisconsin's forests.

## ENGLISH LANGUAGE ARTS SL.7.2

### Speaking and Listening

**Standard is:** Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.

The conclusion requires students to discussion their ideas for the future of Wisconsin's forests.

## ENGLISH LANGUAGE ARTS SL.8.2

### Speaking and Listening

**Standard is:** Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.

The conclusion requires students to discussion their ideas for the future of Wisconsin's forests.

## ENGLISH LANGUAGE ARTS SL.7.4

### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

The conclusion requires students to discussion their ideas for the future of Wisconsin's forests.

## ENGLISH LANGUAGE ARTS SL.8.4

### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume and clear pronunciation.

The conclusion requires students to discussion their ideas for the future of Wisconsin's forests.

## ENGLISH LANGUAGE ARTS SL.7.6 &SL.8.6

### Speaking and Listening

**Standard is:** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

The conclusion requires students to discussion their ideas for the future of Wisconsin's forests.

## ENVIRONMENTAL EDUCATION A.8.4

### Questioning and Analysis

**Standard is:** Use critical-thinking strategies to interpret and analyze gathered information.

Students answer questions and make predictions based on readings and a list of trends.

## ENVIRONMENTAL EDUCATION B.8.23

### Natural Resources and Environmental Quality

**Standard is:** Identify governmental and private agencies responsible for environmental protection and natural resource management.

Students identify the collaborative partners that make the science and technology possible after reading two stories highlighting science and technology used in forestry.

## SCIENCE MS-LS2-1

### Matter and Energy in Organisms and Ecosystems

**Standard is:** Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

Students discuss land use effects on fish habitat and the potential impact on fish populations.

## SCIENCE MS-LS2-4

### Matter and Energy in Organisms and Ecosystems

**Standard is:** Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

Students examine fish habitat in terms of decaying trees, sunlight, and soil and the potential effects on fish populations.

## LESSON 8: SUSTAINING OUR FORESTS – CITIZENS’ ROLES

### ENGLISH LANGUAGE ARTS SL.7.1A-D & SL.8.1A-D

#### Comprehension and Collaboration

**Standard is:** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 (8) topics, texts, and issues, building on others’ ideas and expressing their own clearly.

Students participate in discussion in a variety of ways throughout the lesson.

### ENGLISH LANGUAGE ARTS SL.7.2

#### Speaking and Listening

**Standard is:** Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.

Students participate in discussion in a variety of ways throughout the lesson.

### ENGLISH LANGUAGE ARTS SL.8.2

#### Speaking and Listening

**Standard is:** Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.

Students participate in discussion in a variety of ways throughout the lesson.

### ENGLISH LANGUAGE ARTS SL.7.4

#### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.

Students participate in discussion in a variety of ways throughout the lesson.

## ENGLISH LANGUAGE ARTS SL.8.4

### Speaking and Listening

**Standard is:** Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume and clear pronunciation.

Students participate in discussion in a variety of ways throughout the lesson.

## ENGLISH LANGUAGE ARTS SL.7.6 & SL.8.6

### Speaking and Listening

**Standard is:** Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

Students participate in discussion in a variety of ways throughout the lesson.

## ENGLISH LANGUAGE ARTS W.7.10 & W.8.10

### Writing

**Standard is:** Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes and audiences.

In the summative assessment, or optionally in the conclusion, students use reflective writing to describe a forest they've visited.

## ENVIRONMENTAL EDUCATION A.8.4

### Questioning and Analysis

**Standard is:** Use critical thinking strategies to interpret and analyze gathered information.

Students analyze the situations presented in the dilemma cards in order to make choices and defend them.

## ENVIRONMENTAL EDUCATION B.8.15

### Natural Resources and Environmental Quality

**Standard is:** Analyze how people impact their environment through resource use.

Students learn what it means to be a steward (a positive way humans can impact the environment while still using its resources).

## SOCIAL STUDIES E.8.4

### The Behavioral Sciences: Individuals, Institutions, and Society

**Standard is:** Describe and explain the means by which individuals, groups, and institutions may contribute to social continuity and change within a community.

Students read about and discuss what individuals and groups do to be forest stewards on their land and promote sustainable use of Wisconsin's forests. Students also examine lifestyle choices that impact the forests and community around them.

## **CAREERS EXPLORATION**

### **ENVIRONMENTAL EDUCATION B.8.22**

#### **Natural Resources and Environmental Quality**

**Standard is:** Identify careers related to natural resources and environmental concerns.

Students read career profiles and play a game involving professionals in forestry-related careers.

## **FIELD ENHANCEMENT 1: TREE IDENTIFICATION**

### **ENGLISH LANGUAGE ARTS RST.6-8.3**

#### **Reading in Science, and Technical Subjects**

**Standard is:** Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

Students read and navigate a dichotomous tree key.

### **ENVIRONMENTAL EDUCATION A.8.4**

#### **Questioning and Analysis**

**Standard is:** Use critical-thinking strategies to interpret and analyze gathered information.

Students collect information about tree species and apply this to a dichotomous key to determine what kind of tree they are examining.

## **FIELD ENHANCEMENT 2: FOREST MAPPING**

### **ENGLISH LANGUAGE ARTS RST.6-8.3**

#### **Reading in Science, and Technical Subjects**

**Standard is:** Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

Students find the diameter measurements of trees.

### **ENVIRONMENTAL EDUCATION A.8.4**

#### **Questioning and Analysis**

**Standard is:** Use critical-thinking strategies to interpret and analyze gathered information.

Students collect data on tree size, species, and age to create a map of a forest plot. From the class maps, students examine tree abundance, age, and presence of wildlife.

### **ENVIRONMENTAL EDUCATION A.8.6**

#### **Questioning and Analysis**

**Standard is:** Communicate the results of investigations by using a variety of media and logically defend their answers.

Students gather data from a forest plot to create a map of the area and share their results with other groups.

## MATHEMATICS 7.G.4

### Geometry

**Standard is:** Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

Students measure a tree to determine its diameter.

## SOCIAL STUDIES A.8.1

### Geography: People, Places, and Environments

**Standard is:** Use a variety of geographic representations, such as political, physical, and topographic maps, a globe, aerial photographs, and satellite images, to gather and compare information about a place.

Students study various kinds of maps to determine the types of information they are conveying and then gather data to create their own maps. From maps they have created, the class answers questions about the forest area they are in.

## FIELD ENHANCEMENT 3: FOREST DIVERSITY

### ENVIRONMENTAL EDUCATION A.8.4

#### Questioning and Analysis

**Standard is:** Use critical-thinking strategies to interpret and analyze gathered information.

Students draw conclusions about levels of forest diversity based on gathered data and discussion.

### ENVIRONMENTAL EDUCATION A.8.5

#### Questioning and Analysis

**Standard is:** Use the results of their investigations to develop answers, draw conclusions, and revise their personal understanding.

Students discuss the implications of different levels of forest diversity based on gathered data and discussion.

## MATHEMATICS 7.SP.1

### Statistics and Probability

**Standard is:** Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.

Students evaluate levels of diversity in forest plots and draw conclusions about the implications of different levels of diversity after gathering and comparing data.