

Project Learning Tree

Exploring Environmental Issues:

Focus on Forests Secondary Module



Correlations to Florida State Standards

Understanding and Using the Correlations Tables



Focus:

The standards listed in the activity tables are Florida Next Generation Sunshine State Standards (NGSSS) for Science and Social Studies and Florida Standards (FS) for Language Arts and Mathematics.

Grades:

Targeted grade levels for each activity are listed in the table. Teachers will have to determine if a standard that serves multiple grade levels is or is not appropriate for their particular student audience. Many activities can be adapted for other grade levels.

Applicability of Standards to Activities:

Applicability of a standard to an activity is keyed to the *Doing the Activity* portion of the lesson. Enrichments, as well as in C-Palms connections, could result in the applicability of standards not listed in the table.

Level of Activity and Level of Complexity:

- The following key describes the **Level of Activity** correlation presented in the tables:
 - A “1” indicates that the activity presents or reinforces a primary concept and idea.
 - A “2” indicates that the activity includes some teaching of the concept and idea, and that the concept and idea are part of the focus of the activity.
 - A “3” indicates that the activity teaches both the concept and idea and requires demonstration of the practice; therefore, upon successful completion of the activity, students will have met the performance expectation.
- The **Level of Complexity** refers to the designation for that standard in C-Palms. Each standard listed in the table is hyperlinked to C-Palms where more information about levels of cognitive complexity can be found. If no level of complexity has been determined in C-Palms, the table uses a dash (-) to so denote it.

Note: Both the level of the activity and the level of complexity are important in determining the use and applicability of an activity to the teacher’s curriculum plan for the students.

C-Palms Links:

Each standard is hot linked to C-Palms. There are substantial resources to support the Module activities on C-Palms. Included are items such as, but are not limited to:

- **Access Points** – Expectations written for students with significant cognitive disabilities to access the general education curriculum, which reflect the core intent of the standards with reduced levels of complexity. Each standard is broken down into Independent, Supported, and Participatory elements.
- **Related Resources** – Numerous resources to facilitate teaching and learning are available for every standard/benchmark. Below are a few examples:
 - **Teaching Ideas and Lesson Plans** – Many of these facilitate extension of Module activities. For example, SC.912.L.17.20, that appears in several activities, provides a lesson plan entitled “Freshwater Humans.” It highlights the importance of freshwater, and makes the topic personal by challenging students to modify their behavior to protect freshwater supplies.
 - **Professional Development** – For those educators who want more information about incorporating specific content or skills development into their lessons, websites and other resources are offered. For example, LAFS.910.WHST.1.1 offers a professional development entitled “Branching Out: Growing Literacy Skills in Writing” that is designed to help teachers understand the anchor standards for writing, and assist their students in becoming college and career ready writers in history/social studies, science, and technical subjects.
 - **Video/Audio Animations, Images/Photographs, Educational Games, Presentations/Slide Shows, Worksheets, Center Ideas, and other Teaching Tools** – Numerous standards provide tools to support or expand Guide activities. For example: SC.912.L.17.15 offers a video entitled “Salvaging Timber from Riverbeds” that provides a unique perspective on the forest industry in Florida.
 - **STEM Lessons** – Many Standards offer STEM lessons, most of which require C-Palms membership to access (free and easy to sign up). The majority of the lessons are model-eliciting activities (MEAs), which encourage students to invent and test models.
 - **Student Resources** – Mini-lessons intended for student use. For example, LAFS.910.SL.1.1 offers students a mini-course called “Skillwise Speaking: Communication Guidelines.” The course includes a short video, multi-level tutorials, worksheets with answer keys, games, and interactive quizzes all designed to help students become proficient at organizing and expressing their ideas.

Search the Correlations Tables:

Open the Navigation window by pressing Ctrl + F, or click the *Home* tab and then *Find* in the *Editing* box. An activity name, standard, Concept word/phrase, or skill can be located by typing it in the search box.

Acknowledgements:

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Monitoring Forest Health

Activity 1

Standard	Description	Subject	Target Grades	Level of Activity	Level of Complexity
SC.912.CS-CS.1.3	Explain how data analysis is used to enhance the understanding of complex natural and human systems.	SC	9-12	2	-
SC.912.E.7.1	Analyze the movement of matter and energy through the different biogeochemical cycles, including water and carbon.	SC	9-12	1	3
SC.912.L.17.1	Discuss the characteristics of populations, such as number of individuals, age structure, density, and pattern of distribution.	SC	9-12	3	2
SC.912.L.17.6	Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.	SC	9-12	1	2
SC.912.L.17.8	Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.	SC	9-12	1	3
SC.912.L.17.10	Diagram and explain the biogeochemical cycles of an ecosystem, including water, carbon, and nitrogen cycle.	SC	9-12	1	2
SC.912.L.17.11	Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests.	SC	9-12	2	3
SC.912.L.17.18	Describe how human population size and resource use relate to environmental quality.	SC	9-12	1	2
SC.912.L.17.20	Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.	SC	9-12	1	3
SC.912.N.1.6	Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied.	SC	9-12	1	2
LAFS.K12.W.3.7	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.	LA	9-12	3	2
LAFS.910.W.3.7	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.	LA	9-12	3	4

LAFS.910.WHST.3.7	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.	LA	9-12	3	4
LAFS.1112.W.3.7	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.	LA	9-12	3	2
LAFS.1112.WHST.3.7	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.	LA	9-12	3	4
MAFS.912.S-ID.1.4	Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.	MA	9-12	2	2

Story of Succession

Activity 2

Standard	Description	Subject	Target Grades	Level of Activity	Level of Complexity
SC.912.CS-CC.1.5	Communicate and publish key ideas and details to a variety of audiences using digital tools and media-rich resources.	SC	9-12	2	-
SC.912.CS-CS.1.3	Explain how data analysis is used to enhance the understanding of complex natural and human systems.	SC	9-12	2	-
SC.912.L.15.13	Describe the conditions required for natural selection, including: overproduction of offspring, inherited variation, and the struggle to survive, which result in differential reproductive success.	SC	9-12	2	2
SC.912.L.17.1	Discuss the characteristics of populations, such as number of individuals, age structure, density, and pattern of distribution.	SC	9-12	3	2

SC.912.L.17.4	Describe changes in ecosystems resulting from seasonal variations, climate change and succession.	SC	9-12	3	2
SC.912.L.17.8	Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.	SC	9-12	2	3
SC.912.L.17.18	Describe how human population size and resource use relate to environmental quality.	SC	9-12	1	2
SC.912.L.17.20	Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.	SC	9-12	1	2
SC.912.N.1.6	Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied.	SC	9-12	1	2
LAFS.K12.SL.2.4	Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.	LA	9-12	2	3
LAFS.K12.SL.2.5	Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.	LA	9-12	2	2
LAFS.K12.W.1.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.	LA	9-12	3	2
LAFS.K12.W.1.2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.	LA	9-12	2	2
LAFS.910.RH.3.7	Integrate quantitative or technical analysis (e.g., charts, research data) with qualitative analysis in print or digital text.	LA	9-12	2	3
LAFS.910.SL.2.4	Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.	LA	9-12	2	3
LAFS.910.SL.2.5	Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	LA	9-12	2	3
LAFS.1112.SL.2.4	Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the	LA	9-12	2	3

	organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.				
LAFS.1112.SL.2.5	Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	LA	9-12	2	3
SS.912.G.2.4	Use geographic terms and tools to analyze case studies of how selected regions change over time.	SS	9-12	2	-
SS.912.G.3.2	Use geographic terms and tools to explain how weather and climate influence the natural character of a place.	SS	9-12	1	-
SS.912.G.5.4	Analyze case studies of how humans impact the diversity and productivity of ecosystems.	SS	9-12	1	-
SS.912.G.5.6	Analyze case studies to predict how a change to an environmental factor can affect an ecosystem.	SS	9-12	3	-
SS.912.G.6.5	Develop criteria for assessing issues relating to human spatial organization and environmental stability to identify solutions.	SS	9-12	2	-

Who Owns America's Forests?

Activity 3

Standard	Description	Subject	Target Grades	Level of Activity	Level of Complexity
SC.912.L.17.8	Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.	SC	9-12	1	3
SC.912.L.17.11	Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests.	SC	9-12	2	2
LAFS.K12.SL.2.4	Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.	LA	9-12	2	3
LAFS.K12.SL.1.1	Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.	LA	9-12	2	2
LAFS.910.SL.1.1	Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades	LA	9-12	3	3

	<p>9–10 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.</p> <ol style="list-style-type: none"> Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented. 				
LAFS.910.SL.2.4	Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.	LA	9-12	2	3
LAFS.1112.SL.1.1	<p>Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.</p> <ol style="list-style-type: none"> Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of 	LA	9-12	3	3

	positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives. d. Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.				
LAFS.1112.SL.2.4	Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.	LA	9-12	2	3
SS.912.E.2.2	Use a decision-making model to analyze a public policy issue affecting the student's community that incorporates defining a problem, analyzing the potential consequences, and considering the alternatives.	SS	9-12	2	-
SS.912.FL.5.1	Compare the ways that federal, state, and local tax rates vary on different types of investments. Describe the taxes effect on the after-tax rate of return of an investment.	SS	9-12	1	-
SS.912.G.1.4	Analyze geographic information from a variety of sources including primary sources, atlases, computer, and digital sources, Geographic Information Systems (GIS), and a broad variety of maps.	SS	9-12	3	-
SS.912.G.2.4	Use geographic terms and tools to analyze case studies of how selected regions change over time.	SS	9-12	1	-
SS.912.G.5.5	Use geographic terms and tools to analyze case studies of policies and programs for resource use and management.	SS	9-12	2	-
SS.912.G.6.1	Use appropriate maps and other graphic representations to analyze geographic problems and changes over time.	SS	9-12	1	-
SS.912.P.2.2	Describe and compare a variety of quantitative (e.g., surveys, correlations, experiments) and qualitative (e.g., interviews, narratives, focus groups) research methods.	SS	9-12	2	-

Tough Choices				Activity 4	
Standard	Description	Subject	Target Grades	Level of Activity	Level of Complexity
SC.912.CS-PC.2.3	Discuss and analyze the impact of values and points of view that are presented in media messages (e.g., racial, gender, and political).	SC	9-12	2	-
SC.912.L.17.11	Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests.	SC	9-12	2	3
LAFS.1112.SL.2.4	Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.	LA	9-12	2	2
LAFS.910.SL.2.4	Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.	LA	9-12	2	3
LAFS.1112.SL.2.4	Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.	LA	9-12	2	3
SS.912.C.2.4	Evaluate, take, and defend positions on issues that cause the government to balance the interests of individuals with the public good.	SS	9-12	2	-
SS.912.C.2.11	Analyze public policy solutions or courses of action to resolve a local, state, or federal issue.	SS	9-12	2	-
SS.912.G.2.3	Use geographic terms and tools to analyze case studies of regional issues in different parts of the world that have critical economic, physical, or political ramifications.	SS	9-12	1	-
SS.912.G.6.5	Develop criteria for assessing issues relating to human spatial organization and environmental stability to identify solutions.	SS	9-12	2	-

SS.912.P.12.2	Distinguish fact from opinion in data sources to analyze various points of view about a social issue.	SS	9-12	3	-
SS.912.S.1.6	Distinguish fact from opinion in data sources to analyze various points of view about a social issue.	SS	9-12	3	-
SS.912.S.7.6	Evaluate possible solutions to resolving social problems and the consequences that might result from those solutions.	SS	9-12	1	-

The Nature of Fire

Activity 5

Standard	Description	Subject	Target Grades	Level of Activity	Level of Complexity
SC.912.CS-CC.1.5	Communicate and publish key ideas and details to a variety of audiences using digital tools and media-rich resources.	SC	9-12	3	-
SC.912.CS-PC.2.3	Discuss and analyze the impact of values and points of view that are presented in media messages (e.g., racial, gender, and political).	SC	9-12	2	-
SC.912.N.1.1	<p>Define a problem based on a specific body of knowledge, for example: biology, chemistry, physics, and earth/space science, and do the following:</p> <ol style="list-style-type: none"> Pose questions about the natural world, (Articulate the purpose of the investigation and identify the relevant scientific concepts). Conduct systematic observations, (Write procedures that are clear and replicable. Identify observables and examine relationships between test (independent) variable and outcome (dependent) variable. Employ appropriate methods for accurate and consistent observations; conduct and record measurements at appropriate levels of precision. Follow safety guidelines). Examine books and other sources of information to see what is already known, Review what is known in light of empirical evidence, (Examine whether available empirical evidence can be interpreted in terms of existing knowledge and models, and if not, modify or develop new models). Plan investigations, (Design and evaluate a scientific investigation). Use tools to gather, analyze, and interpret data (this includes the use of measurement in metric and other systems, and also 	SC	9-12	2	3

	<p>the generation and interpretation of graphical representations of data, including data tables and graphs), (Collect data or evidence in an organized way. Properly use instruments, equipment, and materials (e.g., scales, probeware, meter sticks, microscopes, computers) including set-up, calibration, technique, maintenance, and storage).</p> <p>7. Pose answers, explanations, or descriptions of events,</p> <p>8. Generate explanations that explicate or describe natural phenomena (inferences),</p> <p>9. Use appropriate evidence and reasoning to justify these explanations to others,</p> <p>10. Communicate results of scientific investigations, and</p> <p>11. Evaluate the merits of the explanations produced by others.</p>				
LAFS.K12.L.2.3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.	LA	9-12	2	2
LAFS.K12.SL.2.4	Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.	LA	9-12	2	2
LAFS.K12.SL.2.5	Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.	LA	9-12	3	2
LAFS.K12.W.3.7	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.	LA	9-12	3	4
LAFS.910.L.1.1	<p>Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.</p> <p>a. Use parallel structure.</p> <p>b. Use various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent; noun, relative, adverbial) to convey specific meanings and add variety and interest to writing or presentations.</p>	LA	9-12	2	3
LAFS.910.L.2.3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.	LA	9-12	2	3

	a. Write and edit work so that it conforms to the guidelines in a style manual (e.g., <i>MLA Handbook</i> , <i>Turabian's Manual for Writers</i>) appropriate for the discipline and writing type.				
LAFS.910.L.3.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a. Interpret figures of speech (e.g., euphemism, oxymoron) in context and analyze their role in the text. b. Analyze nuances in the meaning of words with similar denotations.	LA	9-12	3	3
LAFS.910.SL.2.4	Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.	LA	9-12	2	3
LAFS.910.SL.2.5	Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	LA	9-12	3	3
LAFS.910.W.3.7	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.	LA	9-12	3	4
LAFS.910.WHST.3.7	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.	LA	9-12	3	4
LAFS.1112.L.3.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings. a. Interpret figures of speech (e.g., hyperbole, paradox) in context and analyze their role in the text. b. Analyze nuances in the meaning of words with similar denotations.	LA	9-12	3	3
LAFS.1112.SL.2.4	Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the	LA	9-12	2	3

	organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.				
LAFS.1112.SL.2.5	Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	LA	9-12	3	3
LAFS.1112.L.2.3	Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening. a. Vary syntax for effect, consulting references (e.g., Tufte’s Artful Sentences) for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.	LA	9-12	2	3
LAFS.1112.W.3.7	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.	LA	9-12	3	2
LAFS.1112.WHST.3.7	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.	LA	9-12	3	4
SS.912.A.1.6	Use case studies to explore social, political, legal, and economic relationships in history.	SS	9-12	1	-
SS.912.G.1.4	Analyze geographic information from a variety of sources including primary sources, atlases, computer, and digital sources, Geographic Information Systems (GIS), and a broad variety of maps.	SS	9-12	2	-
SS.912.G.2.5	Use geographic terms and tools to analyze case studies of debates over how human actions modify a selected region.	SS	9-12	2	-
SS.912.G.5.4	Analyze case studies of how humans impact the diversity and productivity of ecosystems.	SS	9-12	2	-
SS.912.G.5.5	Use geographic terms and tools to analyze case studies of policies and programs for resource use and management.	Ss	9-12	2	-

S.912.G.5.6	Analyze case studies to predict how a change to an environmental factor can affect an ecosystem.	SS	9-12	2	-
SS.912.G.6.1	Use appropriate maps and other graphic representations to analyze geographic problems and changes over time.	SS	9-12	3	-

Forest to Faucet

Activity 6

Standard	Description	Subject	Target Grades	Level of Activity	Level of Complexity
SC.912.L.17.8	Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.	SC	9-12	1	3
SC.912.L.17.11	Evaluate the costs and benefits of renewable and nonrenewable resources, such as water, energy, fossil fuels, wildlife, and forests.	SC	9-12	3	3
SC.912.L.17.20	Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.	SC	9-12	2	3
LAFS.K12.W.1.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.	LA	9-12	3	2
LAFS.K12.W.1.2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.	LA	9-12	3	2
LAFS.K12.W.3.7	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.	LA	9-12	2	2
LAFS.910.W.1.1	Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content. <ul style="list-style-type: none"> a. Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. b. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic. 	LA	9-12	3	4

	<ul style="list-style-type: none"> c. Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. d. Use precise language and domain-specific vocabulary to manage the complexity of the topic. e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). 				
LAFS.910.W.3.7	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.	LA	9-12	2	4
LAFS.910.WHST.1.1	<p>Write arguments focused on <i>discipline-specific content</i>.</p> <ul style="list-style-type: none"> a. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence. b. Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience’s knowledge level and concerns. c. Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. e. Provide a concluding statement or section that follows from or supports the argument presented. 	LA	9-12	3	4

LAFS.910.WHST.3.7	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.	LA	9-12	2	4
LAFS.1112.W.1.1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. <ul style="list-style-type: none"> a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence. b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience’s knowledge level, concerns, values, and possible biases. c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. e. Provide a concluding statement or section that follows from and supports the argument presented. 	LA	9-12	3	4
LAFS.1112.W.3.7	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.	LA	9-12	2	2
LAFS.1112.WHST.1.1	Write arguments focused on <i>discipline-specific content</i> . <ul style="list-style-type: none"> a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. 	LA	9-12	3	4

	<p>b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience’s knowledge level, concerns, values, and possible biases.</p> <p>c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.</p> <p>e. Provide a concluding statement or section that follows from or supports the argument presented.</p>				
LAFS.1112.WHST.3.7	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.	LA	9-12	2	4
MAFS.912.C.3.11	Model rates of change, including related rates problems.	MA	9-12	2	3
MAFS.912.F-IF.2.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.	MA	9-12	2	2
SS.912.G.2.4	Use geographic terms and tools to analyze case studies of how selected regions change over time.	SS	9-12	3	-
SS.912.G.5.2	Analyze case studies of how changes in the physical environment of a place can increase or diminish its capacity to support human activity.	SS	9-12	1	-
SS.912.G.5.4	Analyze case studies of how humans impact the diversity and productivity of ecosystems.	SS	9-12	2	-
SS.912.G.5.5	Use geographic terms and tools to analyze case studies of policies and programs for resource use and management.	SS	9-12	2	-

SS.912.G.5.6	Analyze case studies to predict how a change to an environmental factor can affect an ecosystem.	SS	9-12	2	-
SS.912.G.6.1	Use appropriate maps and other graphic representations to analyze geographic problems and changes over time.	SS	9-12	3	-

Forest Invaders

Activity 7

Standard	Description	Subject	Target Grades	Level of Activity	Level of Complexity
SC.912.CS-CS.1.3	Explain how data analysis is used to enhance the understanding of complex natural and human systems.	SC	9-12	2	-
SC.912.L.17.6	Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.	SC	9-12	1	2
SC.912.L.17.8	Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.	SC	9-12	2	3
LAFS.K12.SL.2.5	Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.	LA	9-12	2	2
LAFS.K12.W.3.7	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.	LA	9-12	3	2
LAFS.910.SL.2.5	Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	LA	9-12	2	3
LAFS.910.W.3.7	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.	LA	9-12	3	4
LAFS.910.WHST.3.7	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.	LA	9-12	3	4

LAFS.1112.SL.2.5	Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	LA	9-12	2	3
LAFS.1112.W.3.7	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.	LA	9-12	3	2
LAFS.1112.WHST.3.7	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.	LA	9-12	3	4

Climate Change and Forests

Activity 8

Standard	Description	Subject	Target Grades	Level of Activity	Level of Complexity
SC.912.CS-CS.1.3	Explain how data analysis is used to enhance the understanding of complex natural and human systems.	SC	9-12	1	-
SC.912.E.7.1	Analyze the movement of matter and energy through the different biogeochemical cycles, including water and carbon.	SC	9-12	2	3
SC.912.E.7.3	Differentiate and describe the various interactions among Earth systems, including: atmosphere, hydrosphere, cryosphere, geosphere, and biosphere.	SC	9-12	2	3
SC.912.L.17.15	Discuss the effects of technology on environmental quality.	SC	9-12	1	2
SC.912.L.17.16	Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution.	SC	9-12	1	3
SC.912.L.17.8	Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.	SC	9-12	1	3
SC.912.P.8.12	Describe the properties of the carbon atom that make the diversity of carbon compounds possible.	SC	9-12	1	2

LAFS.K12.R.1.1	Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.	LA	9-12	2	2
LAFS.K12.R.4.10	Read and comprehend complex literary and informational texts independently and proficiently.	LA	9-12	2	2
LAFS.910.SL.1.1	<p>Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.</p> <ul style="list-style-type: none"> a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed. c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions. d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented. 	LA	9-12	2	3
LAFS.1112.SL.1.1	<p>Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.</p> <ul style="list-style-type: none"> a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. 	LA	9-12	2	3

	<p>b. Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed.</p> <p>c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives.</p> <p>d. Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.</p>				
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SS.912.G.2.5	Use geographic terms and tools to analyze case studies of debates over how human actions modify a selected region.	SS	9-12	1	-
SS.912.G.5.4	Analyze case studies of how humans impact the diversity and productivity of ecosystems.	SS	9-12	2	-
SS.912.G.5.5	Use geographic terms and tools to analyze case studies of policies and programs for resource use and management.	SS	9-12	3	-
SS.912.G.5.6	Analyze case studies to predict how a change to an environmental factor can affect an ecosystem.	SS	9-12	3	-

Words to Live By **Activity 9**

Standard	Description	Subject	Target Grades	Level of Activity	Level of Complexity
LAFS.K12.R.2.6	Assess how point of view or purpose shapes the content and style of a text.	LA	9-12	3	2
LAFS.K12.R.3.9	Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.	LA	9-12	3	2
LAFS.K12.W.2.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	LA	9-13	2	3
LAFS.K12.W.3.7	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.	LA	9-12	2	2

LAFS.K12.W.3.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.	LA	9-12	3	3
LAFS.910.RH.2.6	Compare the point of view of two or more authors for how they treat the same or similar topics, including which details they include and emphasize in their respective accounts.	LA	9-12	3	3
LAFS.910.RI.1.3	Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.	LA	9-12	1	3
LAFS.910.RI.2.6	Determine an author’s point of view or purpose in a text and analyze how an author uses rhetoric to advance that point of view or purpose.	LA	9-12	2	3
LAFS.910.W.2.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	LA	9-12	3	3
LAFS.910.W.3.7	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.	LA	9-12	2	4
LAFS.910.W.3.7	Draw evidence from informational texts to support analysis, reflection, and research.	LA	9-12	3	3
LAFS.1112.RH.2.6	Evaluate authors’ differing points of view on the same historical event or issue by assessing the authors’ claims, reasoning, and evidence.	LA	9-12	3	3
LAFS.1112.RI.2.6	Determine an author’s point of view or purpose in a text in which the rhetoric is particularly effective, analyzing how style and content contribute to the power, persuasiveness or beauty of the text.	LA	9-12	2	3
LAFS.1112.W.2.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	LA	9-12	3	3
LAFS.1112.W.3.7	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.	LA	9-12	2	2
LAFS.1112.WHST.3.9	Draw evidence from informational texts to support analysis, reflection, and research.	LA	9-12	3	3

SS.912.G.5.5	Use geographic terms and tools to analyze case studies of policies and programs for resource use and management.	SS	9-12	3	-
SS.912.P.4.12	Explain how experiences and expectations influence perception.	SS	9-12	3	-
SS.912.S.3.3	Examine and analyze various points of view relating to historical and current events.	SS	9-12	2	-
SS.912.W.1.5	Compare conflicting interpretations or schools of thought about world events and individual contributions to history (historiography).	SS	9-12	2	-