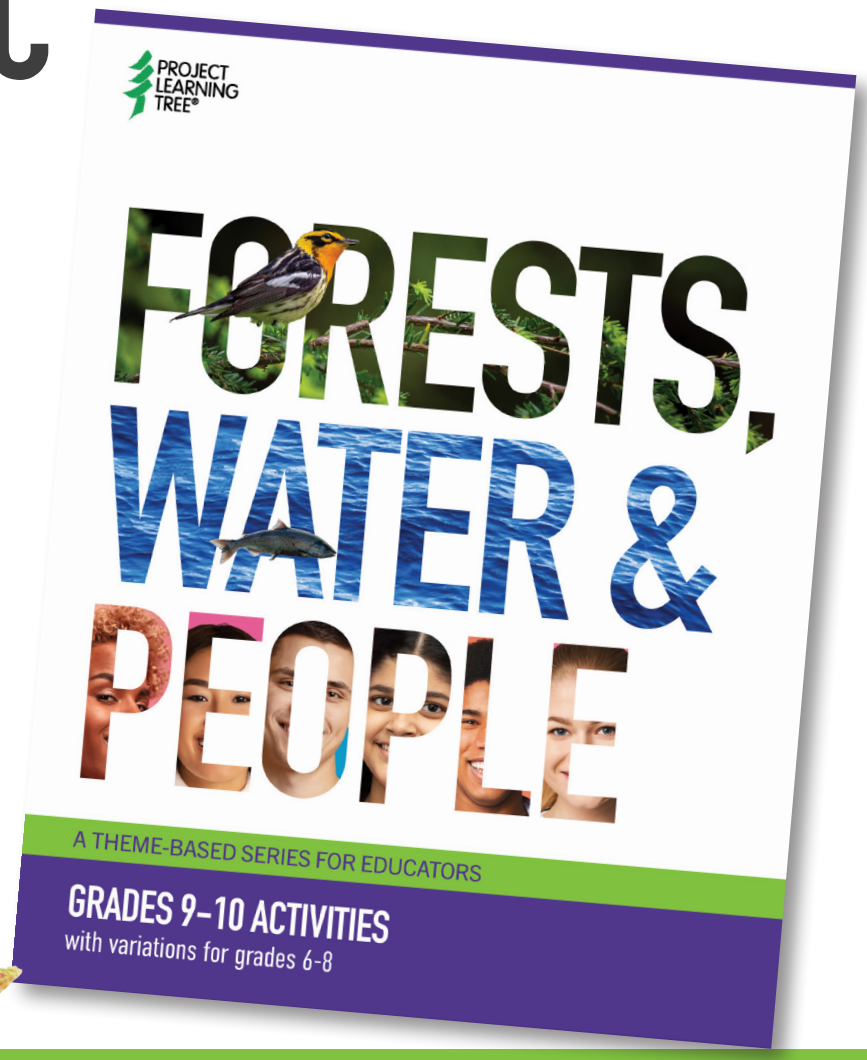
PROJECT LEARNING TREE®

NEXT GENERATION SCIENCE STANDARDS

COMMON CORE STATE STANDARDS INITIATIVE
PREPARING AMERICA'S STUDENTS FOR COLLEGE & CAREER

COLLEGE, CAREER & CIVIC LIFE
C3 FRAMEWORK
FOR SOCIAL STUDIES STATE STANDARDS

CONNECTING PLT'S FORESTS, WATER & PEOPLE TO ACADEMIC STANDARDS



FROM TAP ROOT TO TAP WATER

ACADEMIC STANDARDS

SCIENCE

Practices

- Developing and using models
- Planning and carrying out investigations

Concepts

- Human impacts on earth systems
- Natural resources

ENGLISH LANGUAGE ARTS

Practices

- Speaking and listening: comprehension and collaboration
- Speaking and listening: presentation of knowledge and ideas

SOCIAL STUDIES

Practices

- Constructing compelling questions

Concepts

- Geography: graphic representations
- Geography: human-environment interactions

SCIENCE: NEXT GENERATION SCIENCE STANDARDS

PRACTICES

Developing and Using Models

- HSS.ESS1.1. Develop a model based on evidence to illustrate the relationships between systems or components of a system.

Planning and Carrying Out Investigations

- SEP.3. Plan an investigation or test a design individually and collaboratively to produce data to serve as the basis for evidence as part of building and revising models, supporting explanations for phenomena, or testing solutions to problems. Consider possible confounding variables or effects and evaluate the investigations' design to ensure variables are controlled.

CONCEPTS

Human Impacts on Earth's Systems

- ESS3.D. Through computer simulations and other studies, important discoveries are still being made about how the ocean, the atmosphere, and the biosphere interact and are modified in response to human activities.

Natural Resources

- ESS3.A. Natural Resources. Resource availability has guided the development of human society.

ENGLISH LANGUAGE ARTS: COMMON CORE STATE STANDARDS

PRACTICES

Speaking and Listening: Comprehension and Collaboration

- SL.9-10.1. 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.

Speaking and Listening: Presentation of Ideas

- SL.9-10.4. 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.

FROM TAP ROOT TO TAP WATER

SOCIAL STUDIES: C3 FRAMEWORK

PRACTICES

Constructing Compelling Questions

- D1.2.9-12. Explain points of agreement and disagreement experts have about interpretations and applications of disciplinary concepts and ideas associated with a compelling question.

CONCEPTS

Geography: Graphic Representations

- D2.Geo.2.9-12. Use maps, satellite images, photographs, and other representations to explain relationships between the locations of places and regions and their political, cultural, and economic dynamics.
- D2.Geo.3.9-12. Use geographic data to analyze variations in the spatial patterns of cultural and environmental characteristics at multiple scales.

Geography: Human–Environment Interactions

- D2.Geo.4.9-12. Analyze relationships and interactions within and between human and physical systems to explain reciprocal influences that occur among them.

FOREST LITERACY FRAMEWORK CONCEPTS

Download PLT's *Forest Literacy Framework* at plt.org/forestliteracy.

- 1.B.6. As part of the forest ecosystem, trees have various roles. These roles include supplying oxygen, producing food, providing habitat for wildlife, stabilizing soil, moderating temperature, capturing and storing carbon, and cycling water and nutrients.
- 1.C.3. Forest ecosystems include processes such as photosynthesis, energy flow, and the cycling of nutrients, water, carbon, and other matter.
- 2.A.4. Forests filter sediment and toxins from surface runoff and are critical to the water cycle, due to their role in evapotranspiration at a very large scale.
- 2.C.4. Forests provide multiple economic benefits that include financial returns to owners and investors. They also provide ecosystem service benefits such as carbon storage, clean water, recreation, and tourism.

MAPPING YOUR COMMUNITY THROUGH TIME

ACADEMIC STANDARDS

SCIENCE

Practices

- Developing and using models
- Planning and carrying out investigations

Concepts

- Human impacts on earth systems
- Human sustainability
- Natural resources

ENGLISH LANGUAGE ARTS

Practices

- Speaking and listening: comprehension and collaboration
- Speaking and listening: presentation of knowledge and ideas
- Writing in history/social studies, science, & technical subjects

SOCIAL STUDIES

Practices

- Constructing compelling questions
- Determining helpful resources

Concepts

- Geography: graphic representations
- Geography: human–environment interactions

SCIENCE: NEXT GENERATION SCIENCE STANDARDS

PRACTICES

Developing and Using Models

- HSS.ESS1.1. Develop a model based on evidence to illustrate the relationships between systems or components of a system.

Planning and Carrying Out Investigations

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CONCEPTS

Human Impacts on Earth's Systems

- ESS3.D. Through computer simulations and other studies, important discoveries are still being made about how the ocean, the atmosphere, and the biosphere interact and are modified in response to human activities.

Human Sustainability

- ESS3.C. The sustainability of human societies and the biodiversity that supports them requires responsible management of natural resources.

Natural Resources

- ESS3.A. Natural Resources. Resource availability has guided the development of human society.

ENGLISH LANGUAGE ARTS: COMMON CORE STATE STANDARDS

PRACTICES

Speaking and Listening: Comprehension and Collaboration

- SL.9-10.1. 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.

Speaking and Listening: Presentation of Ideas

- SL.9-10.4. 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.

Writing in History/Social Studies, Science, & Technical Subjects

- WHST.9-10.7. 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.

SOCIAL STUDIES: C3 FRAMEWORK

PRACTICES

Constructing Compelling Questions

- D1.2.9-12. Explain points of agreement and disagreement experts have about interpretations and applications of disciplinary concepts and ideas associated with a compelling question.

Determining Helpful Resources

- D.1.5.9-12. Determine the kinds of sources that will be helpful in answering compelling and supporting questions, taking into consideration multiple points of view represented in the sources, the types of sources available, and the potential uses of the sources.

CONCEPTS

Geography: Graphic Representations

- D2.Geo.2.9-12. Use maps, satellite images, photographs, and other representations to explain relationships between the locations of places and regions and their political, cultural, and economic dynamics.
- D2.Geo.3.9-12. Use geographic data to analyze variations in the spatial patterns of cultural and environmental characteristics at multiple scales.

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FOREST LITERACY FRAMEWORK CONCEPTS

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- 1.C.5. Natural and human-caused disturbance events are a part of forest ecosystems. Examples of natural events include wildfires, storms, ice damage, insects, disease, and volcanic activity. Examples of human-caused events include accidental fires, forest management, road construction, introduction of nonnative species, and development.
- 2.A.4. Forests filter sediment and toxins from surface runoff and are critical to the water cycle, due to their role in evapotranspiration at a very large scale.
- 2.C.4. Forests provide multiple economic benefits that include financial returns to owners and investors. They also provide ecosystem service benefits such as carbon storage, clean water, recreation, and tourism.
- 2.C.9. Urban tree cover provides green infrastructure that shades buildings and hard surfaces and manages runoff entering stormwater drainage systems. Green infrastructure mimics natural landscape features and can capture, retain, and reuse water on site. These are valuable economic benefits. Tree canopy can also filter particulate matter and pollutants, reducing municipal costs.

ACADEMIC STANDARDS

SCIENCE

Practices

- Constructing explanations and designing solutions

Concepts

- Human impacts on earth systems
- Human sustainability
- Developing possible solutions

ENGLISH LANGUAGE ARTS

Practices

- Speaking and listening: comprehension and collaboration
- Speaking and listening: presentation of knowledge and ideas
- Writing in history/social studies, science, & technical subjects

SOCIAL STUDIES

Practices

- Determining helpful resources

Concepts

- Geography: graphic representations
- Geography: human–environment interactions

SCIENCE: NEXT GENERATION SCIENCE STANDARDS

PRACTICES

Constructing Explanations and Designing Solutions

- SEP.6. Design, evaluate, and refine a solution to a complex real-world problem, based on scientific knowledge, student-generated sources of evidence, prioritized criteria, and tradeoff considerations.

CONCEPTS

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Human Sustainability

- ESS3.C. The sustainability of human societies and the biodiversity that supports them requires responsible management of natural resources.

Developing Possible Solutions

- ETS1.B. When evaluating solutions, it is important to take into account a range of constraints, including cost, safety, reliability, and aesthetics, and to consider social, cultural, and environmental impacts.

ENGLISH LANGUAGE ARTS: COMMON CORE STATE STANDARDS

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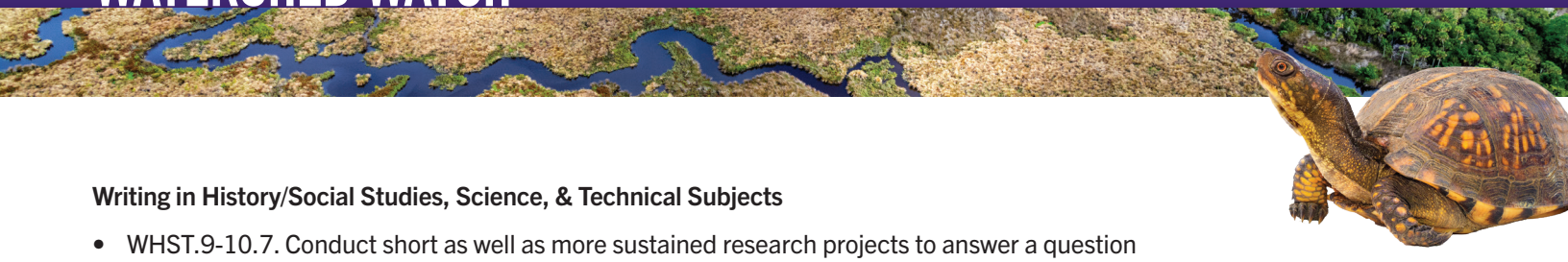

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- 4.A.2. Resources that we use and consume every day are connected to forests. We have the opportunity to choose products (e.g., renewable, legally sourced, certified) that support sustainability.
- 4.A.4. Everyone is a stakeholder in the forest. Individuals can take action by becoming informed and active voters, attending public meetings, and participating in lifelong environmental learning.
- 4.B.5. As individuals or as members of groups, we influence laws and policies affecting our forests. Individuals can have their say by voting, working with community officials, joining organizations that conserve forestland, and weighing in when public opinion is sought.