



IDM: Protecting New Hampshire's Forests

Educator's Guide

Compelling Question

Are New Hampshire's forests a natural resource we should protect?

Supporting Questions

1. How are forests an important natural resource in New Hampshire?
2. What has threatened New Hampshire forests, past and present?
3. How have people tried to protect New Hampshire's forests?



Caption: This photograph taken in 1906 by George W. Perry shows employees of the Concord Lumber Company gathered at a wood lot. They are surrounded by timber in various stages of processing. New Hampshire Historical Society.



Compelling Question	Are New Hampshire’s forests a natural resource we should protect?
Staging the Question	Debate what is gained and lost as a landscape changes from a forest to a city.

Supporting Question 1	Supporting Question 2	Supporting Question 3
How are forests an important natural resource in New Hampshire?	What has threatened New Hampshire forests, past and present?	How have people tried to protect New Hampshire’s forests?
Formative Performance Task	Formative Performance Task	Formative Performance Task
How are forests an important natural resource in New Hampshire? Using evidence from the sources, define “natural resource” and identify how a forest is an important natural resource in New Hampshire.	Using evidence from the sources and identify threats to the health of New Hampshire’s forests. Write a claim about the greatest threats to forests today, using evidence from the sources to support your argument.	Examine the sources and identify methods that have been used in the past to preserve New Hampshire’s forests. Write and support a claim about the method you think would be the most effective using evidence from the sources.
Featured Sources	Featured Sources	Featured Sources
<p>Source A: Forest Cover 1894</p> <p>Source B: Concord Lumber Company</p> <p>Source C: Inside a Paper Mill</p> <p>Source D: Hikers Near Henniker</p> <p>Source E: Ash Basket</p> <p>Source F: Land Use in New Hampshire</p> <p>Source G: New Hampshire Forest Statistics</p>	<p>Source A: Forest Fire</p> <p>Source B: Clearcutting Near Albany</p> <p>Source C: 2018 New Hampshire Forest Damage</p>	<p>Source A: Buy a Tree</p> <p>Source B: Tree Purchase Certificate</p> <p>Source C: Prevent Forest Fires</p> <p>Source D: White Mountain Region</p>

Summative Performance Task	ARGUMENT Are New Hampshire’s forests a natural resource we should protect? Create a presentation that teaches others about this topic and presents your argument through text, images, and audio.
	EXTENSION How have the reasons and methods for forest protection changed over time? Research a current effort to protect New Hampshire’s forests and compare it to one of the methods used in the early 20th century.
Taking Informed Action	UNDERSTAND Identify a natural resource has been important to your local community in the past and/or present.
	ASSESS How is that natural resource used today? Is a local resource under threat?
	ACTION Create a public service announcement to teach others about this natural resource and provide tips for protecting it. Share it through an online or local media outlet.

Standards

For the full listing of standards this IDM meets (NH Frameworks, C3 Framework, NCSS Ten Themes, Common Core, and NexGen Science), see pp. 6–7 of this educator’s guide.

“Moose on the Loose” Content Standards	Students will understand that New Hampshire has a diverse geography, with mountains, seacoast, and farming land. They will understand that this land has been inhabited for thousands of years and has a variety of resources. (Key Idea 4.T1.1)
	Students will understand that by the end of the 19th century, the rise of industry in the state raised concerns about preserving New Hampshire’s natural landscape. (Key Idea 4.T6.2)
“Moose on the Loose” Skills Standards	Gathering, Interpreting, and Using Evidence (Key Skills 4.S1.1 and 4.S1.2)
	Communicating and Critiquing Conclusions (Key Skill 4.S2.2)
	Comprehensive Geographic Reasoning (Key Skill 4.S4.1)
	Understanding and Participating in Government (Key Skill 4.S6.2)
	Using Technology Responsibly (Key Skill 4.S7.1)

Overview

Inquiry Description

This inquiry asks students to consider how a major natural resource in New Hampshire—its forests—is used and why it has been and continues to be protected. A significant amount of New Hampshire’s land cover is forest—about 81% today. It is the second most forested state in the country. People in New Hampshire have made use of forests to meet a variety of needs for thousands of years. In the late 19th and early 20th centuries, excessive logging devastated thousands of acres of forest and impacted the navigability of rivers, leading to multiple efforts to purchase private lands in order to create national and state forests. Fire, fungal, and insect damage are other threats that impact the health of New Hampshire’s forests.

On its surface, the compelling question “Are New Hampshire’s forests a natural resource we should protect?” seems to have one obvious answer. Through examination of sources in formative and summative tasks, students consider layers that inform an answer. How are New Hampshire’s forests used as a resource for people? How have people tried to protect New Hampshire’s forests and why? Do we still need to protect them for the same reasons as we did in the past? The investigation associated with Supporting Question 3 will be more meaningful if students have some background knowledge about specific historic events, as described below. You may want to spend more time preparing students with this information before asking them to investigate the featured sources. The formative and summative tasks in this inquiry develop students’ social studies, ELA, and science skills as they examine sources, organize information, and support claims in an effort to respond to the compelling question.

NOTE: This inquiry is expected to take three to five 40-minute class periods. The inquiry time frame could expand if teachers think their students need additional instructional experiences (i.e., supporting questions, formative performance tasks, and featured sources). Please adapt all the material in this inquiry, as necessary, to meet the needs of the students in your classroom.

Structure of the Inquiry

In addressing the compelling question “Are New Hampshire’s forests a natural resource we should protect?” students work through a series of supporting questions, performance tasks, and sources in order to construct an argument supported by evidence while acknowledging competing views.

Staging the Compelling Question

Project or distribute copies of a photograph of any cityscape. Ask students what they think the space looked like 100 years ago, 200 years ago, and 500 years ago. What has been gained and lost as the landscape has changed? Who changed it and why? Structure this discussion as a debate and encourage students to support their points of view with evidence from their own experience and prior learning.



Supporting Question 1

The first supporting question—“How are forests an important natural resource in New Hampshire?”—asks students to define a key term and understand its definition in the context of how people meet their needs in New Hampshire. To do this, students examine primary sources (a map of forest cover and historic photographs depicting a variety of past uses of forest) and secondary sources (an infographic and excerpts from a 2012 inventory of New Hampshire’s forests). You may wish to encourage students to determine if the uses of forest in the past continue today. Students may also be encouraged to consider the motives behind the publication of the 1894 map: who does this map help? What does that tell us about the value of the forest as a natural resource in New Hampshire’s history? The formative performance task asks students to define “natural resource” and identify how the forest is an important natural resource in New Hampshire using evidence from the sources.

Supporting Question 2

The second supporting question—“What has threatened New Hampshire forests, past and present?”—asks students to examine primary and secondary sources related to natural and human-made threats to the health of New Hampshire’s forests. Source A is a historic photo depicting the progress of a forest fire. Source B is a historic photo of a logging camp that captures evidence of how clearcutting stripped large sections of forest cover, one of hundreds taken by Ralph C. Larrabee. He was a New Hampshire physician, photographer, and early member of the Appalachian Mountain Club and was devoted to documenting New Hampshire’s mountainous landscape. Source C is a bar graph made by the New Hampshire Historical Society using data collected by the State of New Hampshire Division of Forests & Lands. In their study of the photographs, encourage students to consider the cause and effects of those types of forest damage. When interpreting the bar graph, ask students to think about why logging and forest fires no longer cause a relatively great amount of damage. The formative performance task asks students to create a claim that identifies threats to forests and uses evidence from the sources to establish which threat is the greatest today.

Supporting Question 3

The third supporting question—“How have people tried to protect New Hampshire’s forests?”—asks students to investigate various methods that have been used in the past to protect New Hampshire’s forests. Sources A and B relate to the statewide campaign in the late 1920s to purchase Franconia Notch for the purposes of creating a state forest.

Franconia Notch had previously been owned privately; it was part of the property owned by the proprietors of the famed Profile House, one of the grand 19th-century White Mountain resorts. After the hotel was destroyed by fire in 1923, the owners considered selling the land to a private company that wanted rights to the timber. Federal government funds provided the state with half of the \$400,000 purchase price. The efforts of the relatively new Society for the Protection of New Hampshire Forests and several individuals led to a campaign that raised the remaining \$200,000, half of which came from donations from 15,000 people who could “buy” a tree for \$1. Source C is an example of the fire prevention signs that were posted in forests in the early 20th century. Source D is a historic map that illustrates the White Mountain region around 1915, as the federal government was purchasing land in accordance with the Weeks Act. This 1911 act of Congress gave the

federal government authority and funding to purchase forest lands in an effort to restore the navigability of waterways impacted by the effects of excessive logging. The formative task asks students to develop and support a claim about the method they think would be the most effective means of preserving forest using evidence from the featured sources.

Summative Performance Task

At this point in the inquiry, students have multiple layers beneath the question of whether or not to protect one of New Hampshire's natural resources. In this task, students construct an evidence-based argument responding to the compelling question, "Are New Hampshire's forests a natural resource we should protect?" Students are encouraged to create a multimedia presentation with the intention of teaching others about the topic while also clearly stating their claim and supporting it with evidence from the sources.

Students' arguments likely will vary but could include any of the following:

- New Hampshire's forests must be protected because so much of the state is covered with forest.
- New Hampshire's forests must be protected because people enjoy them for recreation as well as for meeting their needs.
- New Hampshire's forests are a natural resource that can be both protected and used for a variety of purposes.

Taking Informed Action

Students have the opportunity to Take Informed Action by researching a natural resource that has been of particular importance to their local community in the past and/or present. New Hampshire is known for a variety of other natural resources including sand, gravel, and granite; its arable farmland; and its waterways. Students may discover that a local natural resource is under threat from a natural or human-made element and can create a public service announcement (PSA) to educate others about the resource and how to protect it, ultimately sharing the PSA through an online or local media outlet.

Standards

"Moose on the Loose" Content Standards:

- ✓ Students will understand that New Hampshire has a diverse geography, with mountains, seacoast, and farming land. They will understand that this land has been inhabited for thousands of years and has a variety of resources. (Key Idea 4.T1.1)
- ✓ Students will understand that by the end of the 19th century, the rise of industry in the state raised concerns about preserving New Hampshire's natural landscape. (4.T6.2)

"Moose on the Loose" Skills Standards:

- ✓ Gathering, Interpreting, and Using Evidence (4.S1.1; 4.S1.2)
- ✓ Communicating and Critiquing Conclusions (4.S2.2)
- ✓ Comprehensive Geographic Reasoning (4.S4.1)
- ✓ Understanding and Participating in Government (4.S6.2)
- ✓ Using Technology Responsibly (4.S7.1)



New Hampshire Social Studies Frameworks:

- ✓ Acquiring information (Skills 2.1.A.1, 2.1.A.3, 2.1.B.2, 2.1.B.6, 2.1.B.7, 2.1.C.1, 2.1.C.2)
- ✓ Organizing & Communicating Information (Skills 2.2.G.1, 2.2.G.2, 2.2.G.4, 2.2.G.7, 2.2.H.1, 2.2.H.2, 2.2.H.3, 2.2.I.1, 2.2.I.4)
- ✓ Real World Application of Social Studies (Skills 2.3.J.1, 2.3.K.1, 2.3.K.2, 2.3.K.3)
- ✓ The Nature and Purpose of Government (SS:CV:4:1.2)
- ✓ Human Systems (SS:GE:4:3.5)
- ✓ Environment and Society (SS:GE:4:5.2, SS:GE:4:5.3, SS:GE:4:5.4)
- ✓ Economic Systems & Technology (SS:HI:4:4.2)

C3 Framework:

- ✓ Processes, Rules, and Laws (D2.Civ.14.3-5)
- ✓ Human Population: Spatial Patterns and Movements (D2.Geo.8.3-5)
- ✓ Historical Sources and Evidence (D2.His.10.3-5)
- ✓ Causation and Argumentation (D2.His.14.3-5; D2.His.16.3-5)

NCSS Ten Themes of Social Studies:

- ✓ Theme 1: Culture
- ✓ Theme 2: Time, Continuity, and Change
- ✓ Theme 3: People, Places, and Environments
- ✓ Theme 5: Individuals, Groups, and Institutions
- ✓ Theme 8: Science, Technology, and Society

Common Core ELA:

- ✓ Write informative/explanatory texts to examine a topic and convey ideas and information clearly (W.4.2.b)
- ✓ Production and Distribution of Writing (W.4.4)
- ✓ Research to Build and Present Knowledge (W.4.7)
- ✓ Presentation of Knowledge and Ideas (SL.4.4; SL.4.5)

Next Gen Science:

- ✓ Earth and Human Activity (4-ESS3-1; 4-ESS3-2)

Name:

	Above Standard (4)	At Standard (3)	Approaching Standard (2)	Below Standard (1)	Self	Teacher
Completeness	A claim is clearly stated and supported with evidence from multiple primary and secondary sources.	A claim is stated and supported with evidence from a primary or secondary source.	A claim is stated but not supported with evidence from a primary or secondary source.	A claim is not present or not clearly stated and supporting evidence has not been provided.		
Creativity	Multiple formats were used appropriately to share information including text, visuals, and audio.	More than one format was used appropriately to share information, including text and visuals.	Only one format was used appropriately to share information, either text or visuals.	Selected formats were not used appropriately to share information.		
Communication	The claim and evidence were presented in a clear, cohesive way in order to teach others new information. Audience was engaged by project.	The claim and evidence were presented in a fairly clear way in order to teach others new information.	The claim and evidence were presented. Audience had some difficulty understanding new information.	The claim and evidence were not presented in a way that demonstrated the purpose of teaching others.		
Effort and Time	Effort is obvious. Project is completed on time.	Effort is present. Project is completed on time.	Some effort is present, but more is needed. Project might be late.	The product does not show significant effort. Project is late.		
Comments:				Total of 20 points:		