

OF THE NEW YORK STATE MUSEUM

A Teacher's Guide

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Introduction

Adirondack Hall is divided into three main areas: The prehistoric wilderness, the wilderness ca. 1800-1900, and the contemporary wilderness ca. 1900-present. Each area stresses the relationship between people and the Adirondack mountains; from the early American hunter, to the 19th century miner and logger, to the early 20th century traveler.



NEW YORK State
Museum

Exhibit Map

ADIRONDACK
HALL

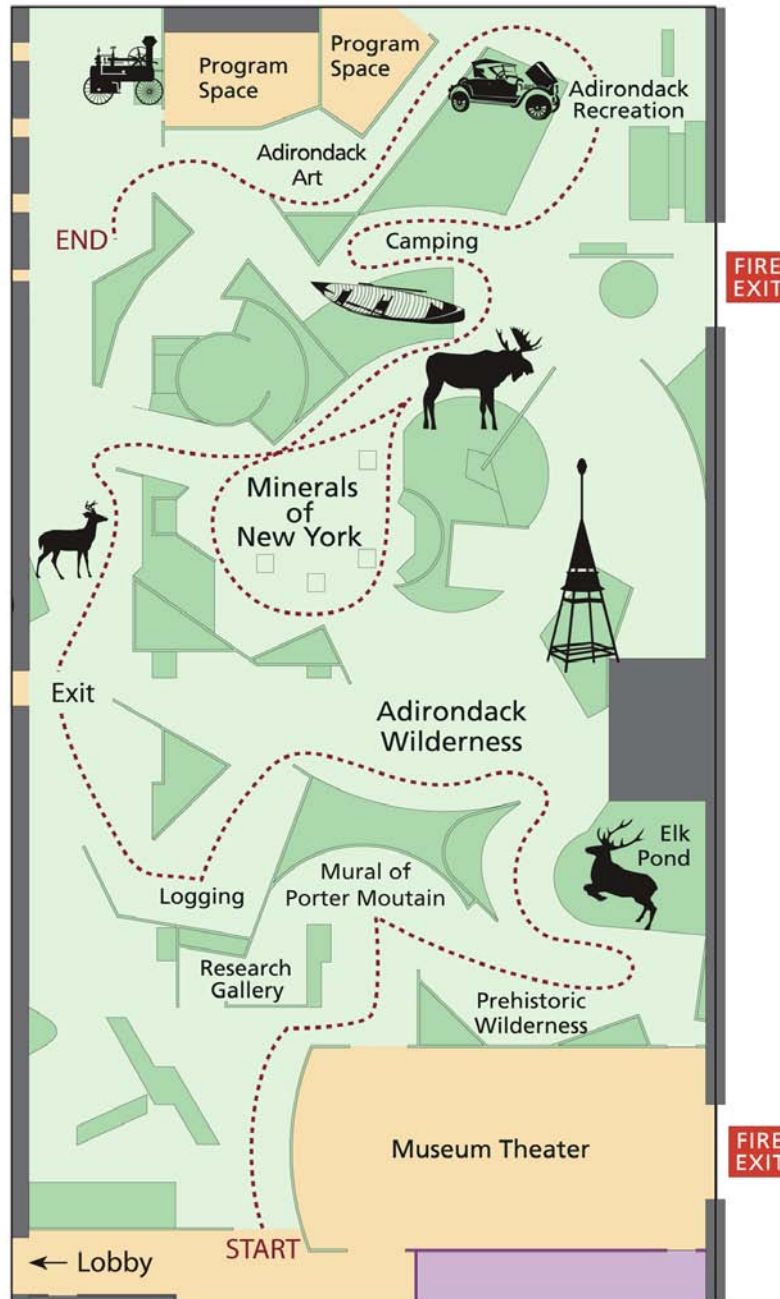


Exhibit Goals

Through animal and human life groups, artifacts, photographs, music, video, and our mineral gallery visitors will view the abundant resources of New York's Adirondack mountains, and see the effects humans and these resources have had upon each other.

*Words marked with an * have definitions found in the glossary near the end of this guide.*



Exhibit Content

Where to Go

What to See

NYS Standards



As you enter the Museum at the west entrance point out the Adirondacks on the relief map of New York State. Then turn directly around and enter Adirondack hall. Your first view will be a photomural of Porter Mountain.

Ask students to compare what the Adirondacks looked like to them on the large relief map with this photograph. What expectations did the relief map give them? Does this photo fulfill these expectations? Why or why not?

ELA- 3.2
MST- 6.2 Models

What can this photo of one Adirondack peak tell someone about the Adirondacks? What might be missing?

ELA- 3.2
Arts- 3 Visual Arts
MST- 1 Scientific Inquiry 1.1

Now that they have seen these two different views of the Adirondacks ask students about their expectations for the hall.

ELA- 4.1

It's always good to have a brief discussion about the expectations of your students for a hall or exhibit.



As you face the photomural turn and enter the Lost Species* section.

All of the animals shown here are examples of local extinction*. What do all of the extinctions in this section have in common?

MST- The Living Environment 4.7

Touch the tracks¹. Compare your hand to the footprints of these different animals.

MST- The Living Environment 4.1

¹ Although exhibits in the Museum are not to be touched these tracks may be.

Exhibit Content

Where to Go

What to See

NYS Standards



As you leave the elk pond and move into the log jam.

Look at the ends of the logs. What are the marks for?

ELA- 3.2
MST- 5.1

Notice the design of the boat. How would this be useful?

ELA- 3.2
MST- 5.2
MST- 1 Engineering Design

What type of weather are these men dressed for? Are they wearing any special equipment?

ELA- 3.2
MST- 5.2

Moving logs downstream and clearing jams was considered the most dangerous part of logging, why?

ELA- 3.2
Family and Consumer Sciences 2.1



Continue past the log jam to view the mural photo and log sled.

Study this artifact and background photo. What do these two things tell about the loggers' dependence upon seasonal change?

MST- The Living Environment 4.5
MST- 6.1

Do you think logging had positive or negative effects on the Adirondacks? Why?

MST- The Living Environment 4.7
Health- 2.1
SS- 3 Geography

As you leave logging continue on to view the white tailed deer. From the deer proceed up the ramp. Continue straight ahead to view the moose.

Compare the deer and moose. Although they are from the same mammal* family and can both be found in the Adirondacks they have differences as well. What are the similarities and differences?

MST- The Living Environment 4.1

Exhibit Content

Where to Go

What to See

NYS Standards



Turn back from the moose into the mineral gallery.

Think about minerals* and ores* as you walk through the gallery. Notice not only the great variety of minerals found in the state, but also what you do not see here. Can every mineral that exists be found in New York? Why or why not?

MST- Scientific Inquiry 1.1, 1.3

Notice the collections on exhibit in the gallery. Is every mineral that can be found in New York represented here? Why or why not?

MST- Physical Setting 4.2
SS- 3 Geography

Some of the collections came from particular areas of the state. What can this tell you about the geology* of New York?



Exit the mineral gallery by the moose and continue on to the mining cart and photos.

Contrast the wooden 19th century mining cart and tools to the more modern truck shown on the photo. This is just one example of how mining changed over 100 years. What elements allowed for this change and what other possible changes can you list?

MST-Technology 5.5, 5.6

Exhibit Content

Where to Go

What to See

NYS Standards



Turn around and go straight across to the fishing camp.

Observe the camp of the men fishing. What did they bring? Where do they sleep? How did they get here? Is this how you would camp today?

One of these men is a paid Adirondack guide. The other is his wealthy client. Which is which? How can you tell?

There are still Adirondack guides today. How might this job have changed over 100 years? What elements of the job are unchanged, and why?

SS- 1.4 Historical Analysis
MST- 5.5 History and Evolution of Technology
SS-3.1 Geography



Look directly behind at the wagon. Continue on to your left through the exhibit observing next the luggage and couple with the car.

Consider the technology represented by first the horse drawn wagon used for secondary transport after train travel and next the automobile used for an Adirondack "sojourn*". How might these changes in traveling technology in turn change the Adirondacks?

MST 6.5 Patterns of Change
MST 5.5 History and Evolution of Technology
MST 5.6 Impacts of Technology

Exhibit Content

Where to Go

What to See

NYS Standards

Continue around car and enter the alcove of Adirondack Art.

Observe the variety of artistic techniques displayed here. Can you list all of them?

Arts 2 Visual Arts

Compare the paintings by William Crosby and Charles A Sommer. The styles are very different yet the paintings have similarities. What are they? How are both artists conveying the same concept in different ways?

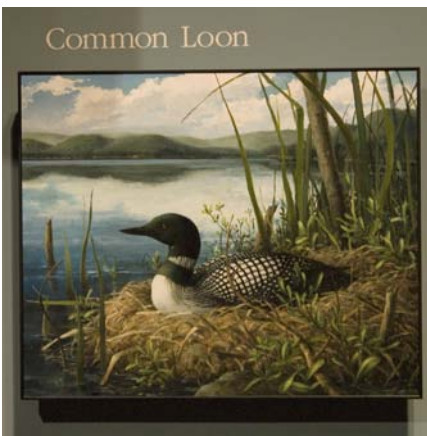
Arts 3 Visual Arts

This is not the only art in Adirondack Hall. What other forms of art have you viewed as you have walked through the hall?

Arts 2 Visual Arts

What different purposes do these art forms serve?

Arts 3 Visual Arts



As you exit Adirondack Art continue straight then turn sharply to your left to view Success Stories.

Loon, falcon, bald eagle, fisher*, American marten*. Think about the lost species you saw in the beginning of your hike. The species shown here we call success stories. Why?

MST 4 The Living Environment 7



Skills Goals

Students visiting the exhibit may:

- Identify the many resources found in the Adirondacks.
- Understand positive and negative human effects upon animal, plant and mineral natural resources that exist in the Adirondacks.
- View minerals, many still on the matrix* in their natural state.
- See the Adirondacks as both a place to work and play.

Content Goals

- Show impact humans can have on the environment and resources.
- Present a sampling of natural resources in the Adirondacks.
- Give examples of how important the Adirondacks have been and continue to be to New York State.
- Current, recovering and lost species of the Adirondacks.

Suggested Activities

PRE-VISIT ACTIVITY

With adjustments for Elementary, Intermediate and Commencement level learners.

Skills Goals

- Prepare for a compare and contrast of technology used in the Adirondacks 100 years ago versus today.
- Research the technology needs of Adirondack related activities and industry.

Content Goals

- Technology change.
- Compare and contrast.

Learning Standards

- MST 5.5 Technology
- MST 6.5 Patterns of Change
- MST 1 Scientific Inquiry
- ELA 1 Information and Understanding
- ELA 3 Critical Analysis and Evaluation

This activity will prepare students for the various technologies of the late 19th and early 20th centuries they will see during their visit.

Encouraging students to keep in mind needs like equipment, transportation, safety, health, food, and shelter ask them to make a list of supplies and technology they might need today to do any of the following:

- Hike
- Camp
- Cut down trees (logging)
- Mine for rock or mineral resources

Elementary level

Class can work on this list together and perhaps narrow the topics to only one or two, such as camping or logging.

Intermediate level

Break class into quarters and assign each group one of the topics. Each group should create their list and present their findings to the class.

Commencement level

Assign each student one of the topics to research through books, magazines and the internet. After completing their research students with similar topics should team up to create a comprehensive list which will be presented to their classmates.

Bring your class lists and/ or research with you on your visit. This will allow for a discussion of technology differences and similarities between today and 100 years ago.

VISIT ACTIVITY

Skills Goals

- Analyze human interactions with nature.

Content Goals

- Go on a simulated hike.
- Discuss popular Adirondack activities

Learning Standards

- MST 4 The Living Environment 4, 5 & 6

While touring Adirondack Hall consider yourselves on a hike through a mountain wilderness. Have a discussion about how you should behave in the woods. What challenges are there and can you be better prepared for them? How can seeing animal tracks or scat help you on your hike?

Teachers can also lead students in discussions on topics such as erosion, water quality, and plant and animal habitats. How can fun and healthy activities like hiking, canoeing or skiing affect the Adirondacks, in both positive and negative ways? What about activities like snowmobiling, mountain biking, motor biking or motor boating?

POST VISIT ACTIVITY

Elementary level learners

Skills Goals

- Discover the relationship between minerals and students everyday lives.
- View minerals as useful other than gemstones.

Content Goals

- Demonstrate common uses of minerals

Learning Standards

- MST 1 Analysis, Inquiry
- MST 5 Technology 2

Using the worksheet found at the end of this guide have students perform a treasure hunt through their homes or classroom to find at least one item made from the minerals listed on the sheet.

POST VISIT ACTIVITY

With adjustments for Intermediate to Commencement level learners.

Skills Goals

- Use mathematical computations associated with geometry.
- Determine approximately how many trees it took to frame a building, including a home.

Content Goals

- Geometry mathematics
- Usage of a renewable resource

Learning Standards

- MST 1 Analysis, Inquiry and Design
- MST 3
- MST The Living Environment 4.7

In the following activity students will be asked to complete mathematical computations to determine the board footage available within 5 random trees. Students are then provided with a construction industry estimate of the average number of board feet needed per square foot to frame a wooden-framed building. Using this data students can determine how many of “their” trees will need to be cut down to frame structures of varying sizes.

Part I

Begin by giving students the following data:

1. There are 5 trees to be cut down (height and diameters are fictional estimates). The trees measure as follows:
 - a. 27 feet high, 17 inch diameter at 4.5 feet above ground
 - b. 17 feet high, 12 inch diameter at 4.5 feet above ground
 - c. 21 feet high, 12 inch diameter at 4.5 feet above ground
 - d. 46 feet high, 29 inch diameter at 4.5 feet above ground
 - e. 55 feet high, 30 inch diameter at 4.5 feet above ground
2. Divide the diameter of each tree by 2 to determine its radius.
3. Take the resulting radius and divide by 12 to convert inches into feet.
4. Use the following formulas in order determine the number of board feet for each tree:
 - a. $\pi \times (\text{Radius divided by } 12)^2 = \text{Area at } 4.5 \text{ feet above ground}$
 - b. $\text{Area} \times \text{tree height} = \text{Volume of the tree}$
 - c. $\text{Volume of tree} / 4 = \text{Cubic feet of lumber in each tree}$
(Division by 4 accounts for trunk width at bottom and narrowness at top)
 - d. $\text{Cubic feet of lumber} \times 12 = \text{board feet in each tree}$
5. Add up all 5 tree results and divide by 5 to get an average number of board feet for their trees.

Intermediate level learners

This exercise can be simplified by giving the students data that they have 5 trees that have an average of 300 board feet of lumber in each tree. Then proceed to the next part.

Commencement Level learners

Using a clinometer, and a tape measure students can go outside to choose and measure their own trees. Students should be encouraged to choose between 5 and 10 trees of the same type where the trunk is at least 16 feet tall.

Part II

Estimates vary, but using the following information on building sizes and board feet have each student determine the number of their “average” trees needed to frame the structures listed.

1. 1000ft² building = 6,300 board feet approximately
2. 1500ft² building = 9,450 board feet approximately
3. 2000ft² building = 12,600 board feet approximately

These numbers are based upon an estimate of roughly 6.3 board feet per square foot. Different sources will estimate the number of board feet per foot² differently, so this should be considered to be just an estimate.

Have students find out the number of square feet in the building they live in and how many trees it may have taken to frame that structure.

Topics for further discussion are:

- Not every building is framed with wood. What other resources might be used?
- The trees represented are only to frame the building and not figured in are other possible items made of wood like doors, sheathing, floors, siding, cabinets, etc...
- Buildings that house more people (apartment buildings, duplexes) may use more trees, but they do it more efficiently.
- Different types of wood serve different purposes. Pine is most often used in construction. Maple and oak more often are used in furniture and cabinetry.

Below are some websites that were used to create this exercise.

<http://www.dreamhomesource.com/xq/asp/XQ.1/ArticleID.30/Type.2/qx/Article.htm>

http://www.green-rated.org/faq_grated.asp

http://www.na.fs.fed.us/spfo/pubs/uf/lab_exercises/calc_board_footage.htm

http://www.offwell.free-online.co.uk/wet_wood_survey_2001/height.htm



Glossary

American Marten	Mammal, larger member of weasel family, but smaller than the fisher.
Clinometer	Device for measuring an angle of elevation or incline.
Fisher	One of the largest members of the weasel family. Smaller than a wolverine.
Geology	The study of the earth.
Local Extinction	None of a species living in a particular area, but living elsewhere.
Mammal	Any of a class (Mammalia) of warm blooded animals, with hair or fur, have live births and nurse their young.
Matrix	Something within or from which something else originates, develops, or takes form.
Mineral	A solid, consistent, crystalline element or compound that results from the inorganic processes of nature.
Ore	A mineral or mineral containing rock which is mined or processed for it's economic value.
Portage	The carrying of boats and supplies overland between two waterways or around an obstacle to navigation.
Species	A class of individuals or objects grouped by virtue of their common attributes and assigned a common name, a division subordinate to a genus.
Sojourn	Reside temporarily. A brief stay.

Web Site Links

American Heritage Dictionary of the English Language
www.bartleby.com

Miriam Webster Online Dictionary
<http://www.m-w.com/>

Tree facts from Elementary School students
<http://www.ed.uri.edu/RIPROJ/facts.html>

The Adirondacks <http://www.adirondack-park.net/>

Adirondack Museum <http://www.adkmuseum.org/>

Traditional logging in the Adirondacks provided by the Adirondack Museum
<http://www.adirondackhistory.org/logging/>

How to calculate the height of a tree
http://www.offwell.free-online.co.uk/wet_wood_survey_2001/height.htm

Make your own clinometer
<http://zappa.nku.edu/~longa/classes/shows/IEQ/clinometer/clinometer.html>

Rock and Mineral uses
<http://www.rocksandminerals.com/uses.htm>

Calcite
<http://www.science.uwaterloo.ca/earth/waton/s9910.html>

Mineral Information Institute
<http://www.mii.org/commonminerals.html>

Bibliography

Princeton Field Guides: Mammals of North America
by Roland W. Kays and Don E. Wilson
Princeton University Press, Princeton New Jersey, 2002.

Horton Hears a Who by Dr. Seuss
Random House Incorporated, 1976.

The Lorax by Dr. Seuss
Random House Incorporated, 1976.

Bartholomew and the Oobleck by Dr. Seuss
Random House Incorporated, 1976.

Thidwick the Big Hearted Moose by Dr. Seuss
Random House Incorporated, 1976.

The Magic School Bus Inside the Earth by Joanna Cole
Scholastic Inc., 1989.

Little Critter at Scout Camp by Mercer Mayer
Golden Books, 1998.

A Day at Camp by Mercer Mayer
Mercer Mayer First Readers, 2001.

Toasting Marshmallows: Camping Poems
by Kristine O'Connell George. Clarion Books, 2001.

Our Wilderness: How the People of New York Found, Changed, and Preserved the Adirondacks
by Michael Steinberg
Lake George, NY: Adirondack Mountain Club, 1992.

Early Loggers and the Sawmill by Peter Adams
New York Crabtree, 1981.

Minerals in My Life Worksheet

- Hunt around your home or classroom to find everyday items made from minerals.
- Many of these minerals are mined in New York State.
- Try to find and write at least one thing in each box that is made from that mineral. There are clues to help you.

<p>Talc cosmetics, bar deodorants</p>	<p>Quartz used to make glass, paints and abrasives</p>	<p>Halite table salt and rock salt</p>	<p>Gypsum Sheetrock wall board</p>	<p>Copper Wires, coins, or Brass or Bronze items like jewelry and hardware.</p>
<p>Garnet Sandpaper</p>	<p>Calcite antacid, paper making</p>	<p>Corundum Emory board</p>	<p>Graphite Pencils</p>	<p>Wollastonite ceramic glazes, car brakes</p>
<p>Feldspar glass, ceramics</p>	<p>Fluorite toothpaste, ceramics</p>	<p>Hematite or Magnetite anything made with iron</p>	<p>Limestone cement</p>	<p>Marble tiles</p>
<p>Mica sparkly paints or cosmetics</p>				