OVERVIEW

LEAF - Wisconsin's K-12 Forestry Education Program in collaboration with the Forest History Association of Wisconsin has created these activities to help forestry stakeholders introduce students to historical tools that were used by lumberjacks and early loggers. The activities are ideal for use in the forest and/or at field days and provide students with a hands-on opportunity to learn how the tools - and Wisconsin forests - helped build our state. Further discussions following the activities can help students understand the continued value of Wisconsin forests today and how Wisconsin has become a leader in sustainable forestry.

The lesson complements LEAF Unit 4, Lesson 3, "Help Wanted - Lumberjacks" that is designed for 4th grade educators to use with students in their classrooms.

ENDURING UNDERSTANDINGS

- As Europeans settled Wisconsin, forests provided jobs for a growing immigrant workforce, resources for building the nation, and dollars for a new state economy.
- Early logging, the resultant cutover, attempts to change land use, and the reforestation of pre-existing forest lands were activities that contributed to the need for forestry.
- Forest management is the use of techniques to promote, conserve, or alter forests to meet desired outcomes.
- Humans value forests for their aesthetic, cultural, ecological, economic, educational and recreational benefits.
- Humans depend on forests for products and services that they use every day.

TARGET AUDIENCE

The lesson is designed for 4th grade students. It can be used in a similar format for students in grades 3-6.

LESSON/ACTIVITY TIME

Introduction	5-10 minutes *(can cut to 1-2 minutes if you are short on time)*
Activities (3)	20 minutes / activity *(you may do one OR all three activities)*
Conclusion	10-15 minutes *(can be cut to 3-5 minutes if you are short on time)*

TEACHING SITE

Outdoors, preferably a forested area

SPECIAL NOTES

If possible, connect with your local historical society and see if they have local images of lumber camps or lumberjacks using these tools.

INTRODUCTION

Ask students to think about the following questions. Allow multiple students to share their answers. Accept all answers that are given; reinforce that there are no right or wrong answers, the questions are meant to start a discussion.

- Have you ever cut wood? Hauled wood? Split wood? Stacked wood? If so, what tools did you use? Describe the process? Was it a challenge? If so, what made it challenging? If not, what made it easy?
- Why do you, your relatives, your neighbors or others in your community cut wood? Why do people cut wood today?
- Do you think people cut wood for the same reasons in the past? Explain. Do you think they cut, hauled, split and stacked wood in the same way in the past? Explain.
- Do any of you have family members who have worked in the wood/forest industry? What types of jobs do they have? (If students struggle with these questions help them out…logger, lumber mill, paper mill, window manufacturer, builder.) What types of tools do they use? How are they similar to the tools you (or others you know) use to cut wood?

Explain to students that today they are going to learn about and use tools that loggers and lumberjacks used many years ago right here in Wisconsin.

TIP…It is important to be cognizant of who is in your audience. If you are working with students from an urban area, don't assume they have personal experience cutting wood and adjust the questions accordingly. Likewise, don't assume that all students living in rural, or even forested areas, have experience cutting wood.

ACTIVITY: ONE & TWO PERSON CROSSCUT SAWS & BOW SAWS

Background Information

(Share this information with students while they participate in the activity.)

One and two man **crosscut saws** were the tools loggers and lumberjacks used to cut Wisconsin's Pines from the mid-1800's up to the early 1900s. They were rugged and well suited to **fell** (cut a tree and drop it in the place you want it to land) and **buck** (cut a tree into usable lengths) various types of trees. They needed to be sharpened often. Tools called **files** were used to sharpen the saws.

Materials

- One and Two Person Crosscut Saws
- Bow Saws
- 8-foot pulpwood sticks; Preferably Pine or Spruce (softwood) or Aspen (non-dense hardwood) *Note…Oak or Maple (dense hardwood) are harder to cut through and will increase the time required for students to complete a sawing exercise, and impact the time flow/time requirement for a class of students.*
- Sawbuck; The height of the sawbuck should be equal to the average waist height of the students

Activity

- Place pulp sticks in the **sawbuck** (explain to students what a sawbuck is and is used for).
- Have an adult assist a student and demonstrate how to cut a 3-4 inch **cookie** off the end of the stick using a one-person crosscut saw. Allow multiple students (potentially all) to have a turn cutting a cookie off the end of the stick (with adult assistance as needed).
- Demo the two-person crosscut saw with one or two students. Allow other students (potentially all) to have a turn using the two-person crosscut saw.
- Demo the bow saw with a student. Allow other students (potentially all) to have a turn using the bow saw. Ask students to compare the time required to cut a cookie with a bow saw compared to the crosscut saw. *(The time required to cut a cookie with the Bow Saw will be shorter than the Crosscut.)*

ACTIVITY: CANT HOOKS & PEAVEYS

Background Information

(Share this information with students while they participate in the activity.)

A **cant hook** is different from the **peavey** in that it has a blunt toe on the end and was used mostly on **skidways**. The peavey had a sharp spike and was used mostly on **river drives**. Both tools had hardwood handles.

Materials

- 8 foot sawlog at least 12 inches in diameter
- Peavey
- Cant hook

Activity

- Show and discuss the physical differences between the peavey and cant hook and explain the different ways they were used.
- Peaveys were made to lift the end of a floating log on river drives. Logs were moved by rolling them into the water on log drives.
- Cant hooks were used to 'roll' and move logs on solid ground. Logs were moved on **roll ways** for loading on sleighs and railcars.
- Give two students their own cant hook. Instruct them on how to engage the log and roll it toward a target location. Allow other students (potentially all) to have a turn using the cant hooks.

ACTIVITY: BARK SPUDS

Background Information

(Share this information with students while they participate in the activity.)

A **forest product** in high demand in the late 1800s and early 1900s was **hemlock bark**. The bark is high in tannic acid and was used for tanning leather. Milwaukee was a nationally known center for tanning leather. Hemlock trees were often harvested just for the value of their bark. Hemlock bark was removed with **bark spuds**. In the mid

1900's a lot of money was also paid out for **peeled** Aspen pulpwood. Bark spuds were used to peel the bark from aspen pulpwood.

Materials

- 4-6 Aspen pulp sticks
- Bark spud
- Sawbuck; The height of the sawbuck should be equal to the average waist height of the students

Activity

- Select a student to help demonstrate the use of a bark spud to remove Aspen bark.
- Allow other students (potentially all) to have a turn using the cant hooks.

CONCLUSION

This set of questions can be used at the end of each activity or after students have completed all three activities.

- Do people still cut wood today? Explain.
- Do people still peel bark from wood today? Explain.
- Do you think people use these same tools today when cutting wood and peeling bark from it? Explain.
- Do some people (or industries) use other tools today to cut wood and peel bark from it? Explain.

This set of questions can be used to reflect on the importance of forests and forest products in helping to build Wisconsin and how forests and forest products are still important to Wisconsin today.

- Do you know how many trees were cut down in Wisconsin's forests during the lumberjack days? *(pretty much all of them)*
- What was the wood from these trees used for?
- How did cutting down these trees help build Wisconsin?
- What were some of the negative impacts of cutting down all/most of Wisconsin's forests. (Think about who was living in the forests and using them before immigrants arrived.)
- Do we still use products from the forests today? What are some examples? Are these products important?
- What else do Wisconsin forests provide for us (other than forest products) today?
- How do we make sure the forests will continue to provide for us (and others) in the future?

These questions may also be used to help students understand why **forestry/forest management**, specifically **sustainable forestry,** was needed following the logging days.

- What is forestry?
- What does it mean to manage something?
- What is forest management?
- Have you heard of the word sustainable? Do you know what it means?
- What do you think sustainable forestry or sustainable forest management is?

- Can you still cut down trees when you practice sustainable forest management? Explain.
- How will sustainable forestry/forest management ensure that forests will continue to provide for us and future generations?
- Is there something you can do to help sustain Wisconsin's forests?

RECOMMENDED RESOURCES FOR EDUCATORS

- LEAF Unit 4, Lesson 3: *Help Wanted - Lumberjacks*
- LEAF Unit 4, Field Enhancement 1: *Unlocking a Forest's Past*
- LEAF Unit 4, Field Enhancement 2: Are Forests Important Today?

RELATED ACTIVITY: ROLLWAY CONSTRUCTION / OPERATION

Note - the Rollway Construction/Operation - Using Chains and rigging for stacking/loading logs for transport is not a part of the formal lesson since it requires a simulated "logging sleigh" that would be difficult for forestry stakeholders to have readily available for use. It is included here for those ambitious enough to give it a try.

Logging Chain was commonly used to set rigging to move cut products. Having moved logs and pulp sticks in the previous exercises, it would be possible to have positioned a few pulp sticks or small sawlogs within a process to replicate the loading of a logging sleigh, using chain, and have the students 'simulate' being "draft animals" similar to the historic process that utilized horses. **Possible Exercise**. *(Reference Photos from Mert Crowley's Book – "Daylight in the Swamp" which depicts three applications where rollways were set up.)*

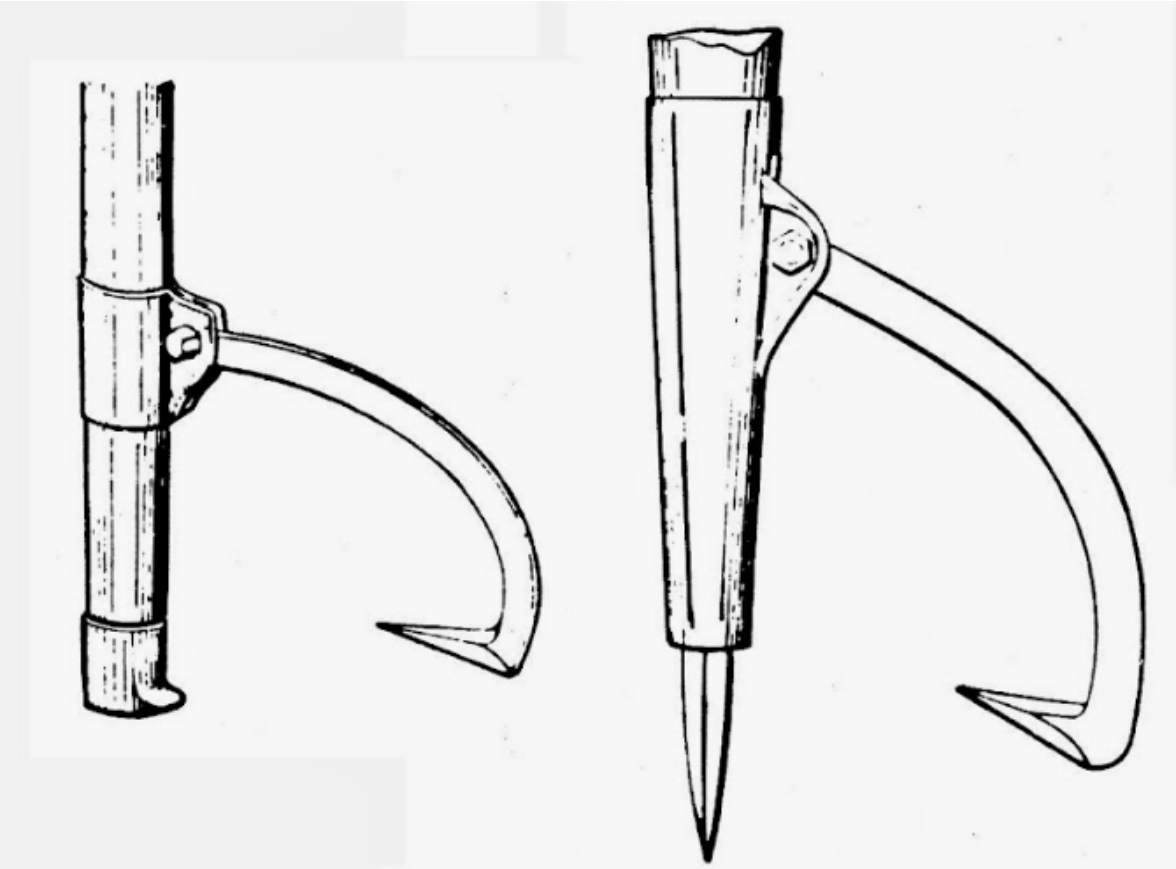
- A simulated "logging sleigh" could be constructed out of two discard pallets, two pulp sticks shaped with a chainsaw to resemble 'runners', and four 2x4's for side stakes.
- The exercise would require two 'rails' on which the subject 'logs' would be rolled up.
- Position two 'ramps' to take the log up from the rails to the load (two 'logs' should already be on the 'sleigh')
- With Cant Hooks move a log on the rails, over a 'looped' chain, hook a second chain in the end of the loop, position 'students being horses' along the chain to pull the log up on the load.
- Position two 'send up' people at either end of the log being loaded to ensure proper travel.
- Repeat.

IMAGE 1: Sawbuck

IMAGE 2: SAWS

IMAGE 3: CANT HOOKS

IMAGE 4: CANT HOOK VS. PEAVEY



The cant-hook differed from the peavey in that it had a blunt toe on the end and was used mostly on the skidways. The peavey had a sharp spike and was used mostly on the river drives and sometimes on the skidways. Both had hardwood handles.

IMAGE 5: BROAD AX, PICAROON, ADZE

IMAGE 6: LOADING A LOG SLEIGH

All the essentials for chain loading a sleigh are shown by this photo. The white team is hitched to the sleigh being loaded. Two ramp poles lean up against the top log on the load to serve as a ramp. One end of a single chain has been attached to a log or other stationary object and is looped around the log on the ramp. The other end of the chain is connected to the eveners on the team on the other side of the sleigh. As they pull forward pulling the chain, the log is slid up the ramp. Two "send-up" men stand ready on either end of the log to straighten it out or "cut-it" if it should begin to slip sideways on the ramp. The top-loader is ready to get the log in position once it reaches the top.