

# 4-H Virtual Forest User's Guide

*Timberrrr!*

## Concept

Timber harvesting is a necessary and useful process for getting trees from the woods to the factories that make products we use in everyday life. This module will illustrate the timber harvesting process.

This module supports the following Science SOLs:

### Earth Resources

4.8 d) forests, soil, and land

6.9 a) natural resources are important to protect and maintain

6.9 b) renewable and nonrenewable resources can be managed

## Module Description

**Begin: Intro.** An introduction that addresses the importance of timber harvesting and the forest products industry to Virginia's economy. The text reads:

"Timber harvesting is a necessary and important process for getting trees from the woods to the factories that make many of the products we use every day."

The second paragraph leads in to a quiz question, followed by four possible answers:

"Virginia's forests provide jobs for many people. For example, foresters might study, measure, and map trees and forests. Loggers harvest trees and take them to wood-using industries or factories. Factory workers help turn these trees into products. Administrative workers in offices help keep track of details so that the factories operate smoothly."

"How many jobs do you think the forest industry and supporting businesses supply for Virginia's citizens? Click on your answer below."

A) 1,350

B) 42,895

C) 76,984

D) 131,762

The correct answer is (D) 131,762. According to a 2022 economic report by the University of Virginia's Weldon Cooper Center for Public Service, Virginia's forests provide 131,762 jobs in the forest industry and supporting businesses and thousands of jobs in recreation, tourism, retail and service. The total forest industry ranks third in employment in the manufacturing sector.

A buzzer sounds if the user selects A, B, or C. If the user selects (D), the following popup appears:

“Correct! Virginia’s forests provide 131,762 jobs in the forest industry and supporting businesses and thousands of jobs in recreation, tourism, retail, and service.”

There are two steps that are important for landowners to consider prior to harvesting timber: management planning and timber cruising.

**Management Plan.** Foresters encourage landowners to have a management plan done on their property prior to making management decisions. This involves examining forest health, collecting maps that show soils, topography, and other features, and talking with the landowner about his or her objectives, among other things. The photograph shows a forest landowner and forester (off screen) studying an increment core sample (see the Let's Cruise!!! module for a detailed description of determining a tree's age).

**Timber Cruise.** If the landowner and forester decide that a timber harvest is necessary to improve forest health, create income, or regenerate a declining forest, then a timber cruise is performed. A timber cruise provides the volume of material to be sold. A value is then placed on this material. Without a cruise, the landowner does not know what they are selling. The photograph illustrates a 4-H forestry team member measuring the diameter—on his way to estimating the volume—of a forest tree.

The actual timber harvesting process is very involved and takes a lot of planning. Loggers undertake several steps to harvest timber and transport the wood to factories that make many of the products we use on a daily basis. These steps include felling, skidding, processing, and transportation.

**Felling.** In much of Virginia, trees are cut down using the feller/buncher. This machine approaches the tree, grabs onto it, holds it steady, and cuts the tree off at the ground with either a set of powerful shears or a sawhead. The feller/buncher then lays the tree (or bunch of trees) on the ground and proceeds on to the next one. In some logging operations, people use chain saws for felling trees. One variation of a feller-buncher is pictured.

**Skidding.** After the feller/buncher lays the trees down in a small pile, a skidder comes along, grabs onto them, and drags the trees to a common area called a log deck or landing. Skidders hold the trees with either a large clamp or a strong cable. The clamp is called a grapple. A grapple skidder is pictured.

**Processing.** There is a lot of activity at the log deck. The skidder brings in loads of trees and drops them off. Then, another machine picks the trees up, removes the limbs, cuts them to the appropriate length, and loads them onto the log truck. Sometimes, different machines handle each of these jobs. Sometimes one machine can perform all three operations. The machine that loads logs onto a truck is called the loader.

**Transporting.** After trees have been processed, they are loaded onto log trucks for transportation to a wood-using mill or factory. Tie-down straps help to keep the logs held firmly in place while the truck travels down the road. Log trucks take logs to different factories. Characteristics such as tree size, species, and quality all help determine which trees will go to which factory.

**Summary.** The summary frame deals with the myth that harvesting trees will make us run out of oxygen.

“Many people think that we will run out of oxygen if we cut down trees. This isn’t true, for three main reasons. First, although trees do contribute oxygen to the atmosphere, most of the earth’s oxygen comes from plantlike organisms growing in the ocean and geologic processes. Second, making things out of wood often uses less oxygen than making things out of aluminum, concrete or steel. Last, healthy forests and young, fast growing forests produce more oxygen than declining, unhealthy forests. Timber harvesting removes sick, dying, and overcrowded trees to make more space for vigorous trees that produce a lot of oxygen!”

Note that users now have an opportunity to put their knowledge to the test by taking a quiz. To do this, click on the “Take a Quiz” icon located in the upper right hand corner of the screen.

**Take a Quiz.** As a logger, you have a big job to do. You must harvest trees and get logs out of the woods and to the mill, all while protecting the environment. See if you can do it!

*Entitled “Do You Think like a Logger?”, the quiz consists of six questions that are based on the module. After clicking each answer the animated character will respond either “Yes” or “No”. Press the “Continue” bar to begin the quiz.*

## Do You Think Like a Logger?

1. A landowner wants you to buy 40 acres of trees. What should you do?

- a) Offer \$100 per tree
- b) Ask to see a timber cruise
- c) Say you don't want to cut trees
- d) Laugh

Answer b) is correct.

2. The timber you bought is on level ground. What equipment is best suited to cut the trees down?

- a) Feller-buncher
- b) Scissors
- c) Cross-cut saw
- d) Grapple-skidder

Answer a) is correct.

3. When you work in the woods, you like to drive around a lot. Which piece of equipment would you pick to operate on your logging job?

- a) Tricycle
- b) Loader
- c) Grapple-skidder
- d) Sports Car

Answer c) is correct.

4. The most valuable logs go to one mill, and less valuable logs go to another. If you are good at judging the quality of logs, what job should you do?

- a) Write the management plan
- b) Drive the feller-buncher
- c) Operate the loader
- d) Tree cookie taste-tester

Answer c) is correct.

5. You are worried that the ground may be really soft where you plan to harvest timber.

Where might you find a description of the soils?

- a) Timber cruise
- b) Management plan
- c) Loader
- d) Grapple-skidder

Answer b) is correct.

6. Your friend thinks that harvesting trees will reduce the Earth's oxygen supply. How do you respond?

- a) Most of Earth's oxygen comes from plant-like organisms growing in the ocean.
- b) Making things out of wood often uses less oxygen than making things out of aluminum, concrete or steel.
- c) Timber harvesting helps maintain healthy forests that produce more oxygen.
- d) All of the above.

Answer d) is correct.

*The number of correct answers is shown at the end of the quiz. To try again, click the "Continue" bar. To review the correct answers, click the bar labeled "Answers". Click the "Timberrr!" icon to return to the main module.*

## References

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