

# Instructional Scenario



**TITLE:** Measuring DBH, creating a harvest map, and calculating volume board feet of lumber.

**Course/Duty Area:** Forestry Management, Advanced (18502-II)

**Competencies:** 55 Identify the roles of government, industry, and private forestry agencies, 62: Conduct a land navigation exercise, 63: Research mapping programs and geographic information systems (GIS). 65: Create a map of a local forest in VA, 67: Develop a plan for management of a forest, 75: Measure forest products, 77: Calculate the volume board feet (VBF) and value of sawtimber/saw logs in standing trees, 80: Outline the essential steps of a harvest plan.

## Scenario:

A forest around your school is being looked at by local authorities to boost town revenue. They are considering cutting the timber and have asked your students to assess its value based on current market prices. Students will need to find a local mobile sawmill company who will cut the timber and broker it.

The agency has also requested the students create a map of the area being considered for harvest using GIS technology. They want the map submitted with the profit estimate for the area being considered for harvest. The area is owned by the school and managed by the county. Who will potentially get the profits from the timber and how will the money be distributed.

## Focused Questions:

1. What is Diameter at Breast Height (DBH), and how is it measured by foresters?
2. How can foresters estimate the height of a tree using different instruments?
3. Where can students find Virginia timber stumpage (standing timber) prices for pine sawtimber, chip-n-saw, pulpwood, oak sawtimber, mixed hardwood sawtimber and pulpwood and cut timber and processed lumber?
4. What current technology can be used to create a map of the area using GIS technology?

**Project-Based Assessment:** Students will visit a local forest and calculate the volume board feet of  $\frac{1}{4}$  acre of the forested land. The project should include measurements of trees to include height, DBH and estimated board feet in finished lumber. Students will also contact local VDOF representatives to get the current market price of sawtimber and pulpwood and use their findings to create a value submission for the area in question. The area can be more than the  $\frac{1}{4}$  acre, however, the ( $\frac{1}{4}$  acre) should be used to estimate the entire area.

Students can work in groups of 2 or 3 to evaluate the timber stand.

Students should include the following information in the project presentation:

- average DBH of Stand (must show work)
- average height of stand (must show work)
- total estimated volume board feet in the stand
- map of the area in question
- a list of the current estimated value for both cut timber and processed dimensional lumber.

## Teacher Resources:

- Virginia Department of Forestry
- US Topoview Maps

*Instructional scenario submitted by Chris Jones, Instructor, Greene County Technical Education Center, Greene County Public Schools*