

Forestry



1. Prerequisite: Tree Honor
2. Learn the proper use of the following common forestry tools and practice using them on trees in a forest. Record the information for each tree giving also the common name of each tree.
 - a. DBH (diameter at breast height) tape – measure the diameter of trees (or measure the tree circumference and calculate the diameter).
 - b. Clinometer or Tangent height gauge – measure the height of trees.
 - c. Increment borer – count the growth rings to determine age.
 - d. Prism or angle gauge – estimate the basal area per acre or hectare.
3. Use the information gathered in #2 to determine the board foot volume of the trees in the forest you measured.
4. Calculate the basal area of a tree from the diameter (dbh) or circumference measurement. What is basal area per acre or hectare?
5. Study five tree species important to forestry in your area and give the following information about each.
 - a. common and scientific name.
 - b. range of tree
 - c. height and diameter of tree at maturity.
 - d. common use and importance of tree.
 - e. habitat of tree, forest zone, and elevation.
6. List the benefits of forests to the environment, water quality, air quality, wildlife, and recreation.
7. List the uses of wood produced in the forests in your area, and which tree species are important for each use.
8. What methods are used to insure reforestation of a harvested area? Participate in a reforestation project.
9. How are forests managed to reduce the damage from insects and disease? What factors influence fire behavior? Considering that wildfires produce both benefits and destruction, what treatments could reduce wildfire severity?
10. Explore the biblical stories in Genesis 1-3 and Revelation 22 that talk about the tree of life. In your discussion, discover the role of trees in God's perfect environment, and our responsibility to take care of our environment.

Answers to suggestions:

11. Board foot volume is determined by using volume tables. They are specific for each species.

Example: Douglas-fir Board Foot Volume Table

| Total Height in Feet | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 |
|----------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| DBH in Inches | | | | | | | | | | | |
| 12 | 50 | 69 | 87 | 105 | 124 | 140 | | | | | |
| 14 | 74 | 101 | 129 | 155 | 175 | 201 | 225 | | | | |
| 16 | | 136 | 170 | 205 | 235 | 265 | 296 | | | | |
| 18 | | 174 | 215 | 257 | 294 | 329 | 367 | 410 | | | |
| 20 | | | 262 | 311 | 355 | 397 | 440 | 494 | 558 | | |
| 22 | | | 309 | 367 | 420 | 470 | 520 | 584 | 658 | 732 | |
| 24 | | | | 426 | 489 | 545 | 607 | 676 | 758 | 848 | 950 |

12. Reforestation methods

- Site preparation by mechanical, chemical or burning.
- Planting with seedlings, seed or cuttings.
- Reducing competition from weeds and damage by animals

13. Forest Damage

- Reduced by planting the correct tree specie for the site, thinning crowded trees, salvaging diseased trees
- Fire behavior influenced by fuels(material that can burn), weather and topography.
- Fire severity reduced by thinning, pruning, prescribed burning, salvage dead trees and control undergrowth.

References:

Silvics of North America, Agriculture Handbook 654
(on the internet at: www.na.fs.fed.us under the publications tab)

Forestry Suppliers, Inc., 205 West Rankin Street, Jackson, MS 39201
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Skill Level 2

Original Honor 2010

Forestry, Advanced

1. Prerequisites: Tree Honor; Forestry Honor
2. Define the following terms:

| | | | |
|-------------------|----------------------|---------------|------------------|
| a. basal area | e. selective cutting | i. crown | m. rotation |
| b. bole | f. shelterwood cut | j. pulpwood | n. sawtimber |
| c. DBH (diameter) | g. silviculture | k. succession | o. climax forest |
| d. Seed tree cut | h. canopy | l. thinning | p. habitat |
3. Study five tree species important to forestry in your area and give the following information about each.
 - a. common and scientific name.
 - b. range of tree
 - c. height and diameter of tree at maturity.
 - d. common use and importance of tree.
 - e. habitat of tree, forest zone, and elevation.
 - f. habitat of tree, forest zone, and elevation
 - g. common age of rotation (harvesting) for various uses
4. On a map of your country, draw the forest areas and indicate the types of forest in each area.
5. Write a short report (250 words or more) on the importance of the forests in your country.
6. Tour one of the following, or write a report with diagrams about operations:
 - a. Sawmill
 - b. Pulpmill
 - c. Furniture factory
7. Do one of the following in forest regeneration:
 - a. Tour a forest seedling nursery
 - b. Plant forest seedlings or forest seed
8. Do a forest survey in a typical forest for your area. Using a prism, mark all trees large enough to be counted "in", and record the following data for each "in" tree, and record the basal area by species for the whole plot:
 - a. common and scientific name
 - b. DBH
 - c. Height
 - d. Age (determined by increment borer)

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Skill Level 3

Original Honor 2010

Nature
North American Division
2010 Update