**C A R E E R D E V E L O P M E N T E V E N T**

**FORESTRY**

**LOUISIANA FFA**

Forestry Career Development Event

**Purpose**

*The Louisiana FFA Forestry Career Development Event is designed to stimulate student interest and to promote the forestry industry as a career choice. It also provides recognition for those who have demonstrated skills and competencies resulting from forestry instruction in the agricultural education classroom.*

# Objectives

Students will be able to

1. Understand and use forestry terms.
2. Promote an understanding of the economic impact of the forest environment and the forest industry to Louisiana’s economy.
3. Recognize sustainability (multiple use) opportunities in the forests.
4. Recognize environmental and social factors affecting the management of forests. Identify major species of trees of economic importance to Louisiana.
5. Identify and properly use hand tools and equipment in forestry management. Recognize and understand approved silvicultural practices in the United States. Identify forest disorders.
6. Take a forest inventory.
7. Recognize safety practices in forest management.

# Event Rules

The team will consist of four individuals, and all four scores will count toward the team score.

All general rules apply except as indicated in the specific rules for this event The team score is comprised of the combined scores of each individual.

Students are required to bring their own pencil

Participants must follow instructions from event staff for handling materials during the event. Any infraction of this rule will be sufficient to eliminate the team from the event.

Observers will not be permitted in the event area while the event is in progress.

No team, team member or team coach shall visit the event facilities to observe plant materials and facilities one month prior to the event.

Participants will be assigned to group leaders who will escort them to various event- staging sites. Each participant is to stay with his or her assigned group leader throughout the event or until told to change leaders by the event superintendent.

All written materials will be furnished for the event. No written materials such as tests, problems and worksheets shall be removed from the event site.

Any participant in possession of an electronic device in the event area is subject to disqualification.

# Event Format

**INDIVIDUAL ACTIVITIES**

#### General Knowledge Exam (100 points)-STATE CONTEST ONLY

Fifty multiple-choice questions will be selected from areas of the forestry industry reflected in the event objectives. This phase of the event will test the participant’s knowledge and understanding of basic principles of forestry. Tests will come from the past five years of national forestry CDE exams.

Each participant will be allowed 45 minutes to complete this phase of the event.

#### Tree Identification (100 points)

Twenty live specimens, pressed samples, fresh leaf samples and/or standing trees, from the tree identification specimen list will be displayed for participants to identify by common names. A number will designate each specimen.

Each participant will be allowed 30 minutes to complete this phase. Each participant will be given 1 minute per specimen

#### Tree Measurement — Timber Cruising for Board Volume (100 points)

Each participant will measure ten pre-numbered trees on a plot for board foot volume. The participant must record the DBH (Diameter Breast Height) to the nearest one-inch class and the merchantable height of each tree height rounded down to the nearest ½ log.

Each participant may use a Biltmore stick and or clinometer to measure the diameter and height of each tree (no sharing among team members each school must provide each member with a instrument)

The ten trees will represent a ¼ acre plot. Volume tables will be provided at the event.

The following minimum diameters and log length will be:

|  |
| --- |
| **Minimum Saw Timber** |
| DBH | 10 inches |
| Top diameter | 8 inches DIB Pine 10 inch DIB Hardwood |
| Height | 16 feet |

Merchantable height will stop at a whorl, fork or a top limiting diameter.

For this contest, a whorl will consist of three or more limbs encircling a tree with at least one of the limbs having a 3-inch diameter at the trunk of the tree. Pine trees have a top limiting diameter of 8 inches. Hardwood trees have a top limiting diameter of 10 inches. Cut off points for hardwoods could also be a large fork or a branch that is half the diameter of the trunk at that point.

Each participant will be allowed 30 minutes to complete this phase.

Thirty points will be given for the correct DBH and thirty points for the correct height. Forty points will be given for the correct volume per acre. Five points will be deducted for each five percent deviation (plus or minus) from the correct measured volume.

##### COMPASS/PACING (100 POINTS)

The participant will use a hand compass and pacing to the nearest full foot to simulate the determination of the property lines on a tract of timber. The participant will start at any point and record the compass reading and distance to the next point. Azimuth readings shall be recorded. Participants will record data for 10 points. Each participant must provide their own compass no sharing (The mirror and look-through compasses are both permitted)

Partial credit will be given with a deduction of one point for each two degrees or two feet the participant is off the correct answer.

30 minutes will be allowed to complete this phase.

##### EQUIPMENT IDENTIFICATION (100 POINTS)

Twenty-five pieces of equipment from the equipment identification list will be displayed for participants to identify by technical names. Each piece of equipment will be designated by number.

30 minutes will be allowed to complete this phase.

The equipment will be presented in one or more of the following forms:

Actual samples.

Pictures or slides.

##### MAP INTERPRETATION (100 POINTS)

Participants will answer questions using a furnished United States Geological Survey topographic map. The participant should know legal description, recognize topographic map symbols, and understand the meaning of map symbols, size and location of 40 acres or more in a parcel. Ten multiple choice questions will be asked from the supplied USGS map.

**Examples of questions for map practicum:**

What is the legal description of the boxed area?

What type of building is located at the point labeled “B”? What is the acreage of the area shaded black?

In what section is the city of Oberlin located? What is the scale of this map?

What is the elevation at this point?

Legal descriptions will be described according to the public land survey system.

* **Example:** SE ¼ of NW ¼, Section 3, T3N, R1E
* **Maps for this part of the contest will be limited to the following quadrangles:**

### Branson, Missouri Quadrangle 1989 version

1. Hindustan, Indiana Quadrangle 1980 version 3.McCordsville, Indiana Quadrangle 1998 version 4.Webster parish, Louisiana Minden North 1981

Maps can be purchased for $8-$15 or downloaded for free online at <https://store.usgs.gov/map-locator>

**Rotational Practicum (100 points)**

Participants will compete individually in a practicum from the following list:

* 1. Chainsaw part identification, troubleshooting and safety.(Odd years ex. 2019,2021,2023,2025)
	2. Tree/Forest disorder. (Even years ex. 2018,2020,2022,2024)

Each participant will have 30 minutes to complete each practicum.

##### CHAINSAW PART IDENTIFICATION, TROUBLESHOOTING AND SAFETY PRACTICUM (100 POUINTS)

This test will consist of no less than 10 and no more than 20 questions from the three types of areas listed below. This test may utilize photos, demonstration, actual parts, written situations and/or problems.

1. **Chainsaw parts identification:** Each participant will identify parts of a chainsaw (does not include internal engine components).
2. **Troubleshooting:** The participant will identify chainsaw problems or troubles.
3. **Safety:** The participant will identify safety hazards, unsafe practices and/or proper safety equipment.

Troubleshooting and safety questions will be derived from the **Husqvarna publication**, How to Work with a Chainsaw, found on the National FFA website.

##### TREE/FOREST DISORDERS PRACTICUM (100 POINTS)

Symptoms of at least 10, but not more than 20, disorders from the Tree Disorders Identification List will be displayed for participants to identify by common names. The symptoms will be presented in one or more of the following forms:

* 1. Actual sample.
	2. Pictures/slides.
	3. Written description
	4. Written case history.

A number will designate each set of symptoms representing a disorder.

### *Scoring*

|  |  |  |
| --- | --- | --- |
| **Activities** | **Individual Points** | **Team Points** |
| General knowledge exam (state only) | 100 | 400 |
| Tree identification | 100 | 400 |
| Tree measurements — timber cruising | 100 | 400 |
| Compass/Pacing | 100 | 400 |
| Equipment Identification | 100 | 400 |
| Map Interpretation | 100 | 400 |
| Individual Practicum | 100 | 400 |
| **TOTAL** | 700 | 2800 |

**TIEBREAKERS**

*Team*

Tiebreakers for teams will be determined by adding together the individual ranking of team members. The team with the lowest score will earn the tiebreak.

*High Individual*

1. Knowledge exam
2. Timber cruising
3. Tree identification
4. Compass/ Pacing

# Awards

Awards will be presented at the awards ceremony to individuals and/or teams based upon their rankings.

The high individual in each of the following areas will be given special recognition certificates: Tie breakers for event sections (when applicable):

## Section 1st Tie Breaker 2nd Tie Breaker

|  |  |  |
| --- | --- | --- |
| Saw Logs | Equipment ID | Rotational Practicum |
| Equipment ID | Tree Identification | Map Reading |
| Tree Identification | Rotational Practicum | Compass |
| Rotational Practicums | Map Reading | Saw Logs |
| Map Reading | Compass | Tree Identification |
| Compass | Saw Logs | Equipment ID |
| Exam | Tree Identification | Saw Logs |

**References**

*This list of references is not intended to be all-inclusive.*

Other sources may be utilized, and teachers are encouraged to make use of the very best instructional materials available. Make sure to use discretion when selecting website references by only using reputable, proven sites. The following list contains references that may prove helpful during event preparation. The most current edition of resources will be used.

Past CDE materials and other resources are available by logging in to [FFA.org](http://www.ffa.org/).

**GENERAL KNOWLEDGE EXAM**

Provided in a test bank by the Louisiana FFA Association

Uses the past five years of the National FFA Forestry CDE Exams

**TREE IDENTIFICATION**

Dendrology at Virginia Tech, <http://dendro.cnre.vt.edu/dendrology/main.htm>

“FFA Georgia State and National Tree Lists,” available from [www.amazon.com](http://www.amazon.com/)

W. H. Harlow, E. S. Harrar, and F. M. White. Textbook of Dendrology, current edition. New York, NY: McGraw-Hill Book Company.

Silvics of North America, Handbook #654, volume one and two, U.S. Forest Service, P. O. Box 2417, 12th and Independence Avenue SW, Washington, DC 20013.

Commercial Trees of Louisiana, by Clair A. Brown

Louisiana Trees, 1st edition 2015, John D. Hodges, David Evans and Linda W. Garnett

**TREE MEASUREMENT**

* <https://www.americanforests.org/wp-content/uploads/2014/12/AF-Tree-Measuring-Guidelines_LR.pdf>

**EQUIPMENT IDENTIFICATION**

* Current Catalog of Forestry Suppliers, Inc., 205 West Rankin Street, Jackson, MS 39204-039.
* <http://www.husqvarna.com/us/accessories/>
* [www.deere.com/en\_US/industry/forestry/forestry.page](http://www.deere.com/en_US/industry/forestry/forestry.page)?
* [www.treestuff.com](http://www.treestuff.com/)

**MAP INTERPRETATION**

The U.S. Department of Interior Geological Survey Topographic Map Information and Symbols Key, Map Distribution, U. S. Geological Survey, Box 25286, Federal Center, Denver CO.

<https://www.norfolk.gov.uk/-/media/norfolk/downloads/.../map-reading-guide.pdf>

ftp://ftp.bpcrc.osu.edu/downloads/outreach/Watersheds/01\_Exercise3.5v1.pdf

### Compass

* www2.ca.uky.edu/Forestry/FOR250/Compass.pdf

**CHAINSAW PARTS AND IDENTIFICATION**

Husqvarna publication, How to Work With a Chainsaw, National FFA website

# Tree Identification Specimen List

|  |  |  |
| --- | --- | --- |
| 01 | Red Maple | *Acer rubrum* |
| 02 | Pecan | *Carya illinoensis* |
| 03 | Hickory | *Carya spp.* |
| 04 | Sugarberry | *Celtis laevigata* |
| 05 | Eastern Redbud | *Cercis canadensis* |
| 06 | Flowering Dogwood | *Cornus florida* |
| 07 | Common Persimmon | *Diospyros virginiana* |
| 08 | American Beech | *Fagus grandifolia* |
| 09 | Ash | *Fraxinus spp.* |
| 10 | Honeylocust | *Gleditsia triacanthos* |
| 11 | American Holly | *Ilex opaca* |
| 12 | Black Walnut | *Juglans nigra* |
| 13 | Eastern Redcedar | *Juniperus virginiana* |
| 14 | Sweetgum | *Liquidambar styraciflua* |
| 15 | Yellow-poplar | *Liriodendron tulipifera* |
| 16 | Southern Magnolia | *Magnolia grandiflora* |
| 17 | Red Mulberry | *Morus rubra* |
| 18 | Water Tupelo | *Nyssa aquatica* |
| 19 | Blackgum | *Nyssa sylvatica* |
| 20 | Shortleaf Pine | *Pinus echinata* |
| 21 | Slash Pine | *Pinus elliottii* |
| 22 | Spruce Pine | *Pinus glabra* |
| 23 | Longleaf Pine | *Pinus palustris* |
| 24 | Loblolly Pine | *Pinus taeda* |
| 25 | American Sycamore | *Platanus occidentalis* |
| 26 | Eastern Cottonwood | *Populus deltoides* |
| 27 | Black Cherry | *Prunus serotina* |
| 28 | White Oak | *Quercus alba* |
| 29 | Southern Red Oak | *Quercus falcata* |
| 30 | Overcup Oak | *Quercus lyrata* |

|  |  |  |
| --- | --- | --- |
| 31 | Blackjack Oak | *Quercus marilandica* |
| 32 | Cow Oak | *Quercus michauxii* |
| 33 | Water Oak | *Quercus nigra* |
| 34 | Cherrybark Oak | *Quercus pagoda* |
| 35 | Willow Oak | *Quercus phellos* |
| 36 | Shumard Oak | *Quercus shumardii* |
| 37 | Post Oak | *Quercus stellata* |
| 38 | Nuttall Oak | *Quercus texana* |
| 39 | Live Oak | *Quercus virginiana* |
| 40 | Black Locust | *Robinia pseudoacacia* |
| 41 | Black Willow | *Salix nigra* |
| 42 | Sassafras | *Sassafras albidum* |
| 43 | Baldcypress | *Taxodium distichum* |
| 44 | Tallow Tree | *Triadica sebifera* |
| 45 | Winged Elm | *Ulmus alata* |
| 46 | American Elm | *Ulmus americana* |

**Equipment Identification List**

* 1. Altimeter
	2. Angle gauge
	3. Ascender
	4. Automatic level
	5. Backpack fire pump 06 Bark gauge
1. Bulldozer
2. Canthook
3. Carabiner
4. Chainsaw
5. Chainsaw chaps
6. Clinometer
7. Combination tool
8. Data recorder
9. Densiometer
10. Diameter tape
11. Dot grid
12. Drip torch
13. Ear protection
14. Endloader
15. Feller buncher
16. Felling wedge
17. Fiberglass measuring tape
18. Fire rake
19. Fire shelter
20. Fire weather kit
21. Fire-swatter
22. First aid kit
23. Flow/current meter
24. GPS receiver
25. Hand compass
26. Hand lens/field microscope
27. Hip chain
28. Hypo-hatchet
29. Increment borer
30. Jacob staff
31. Log rule
32. Logger’s tape
33. Maul
34. Peavy
35. pH meter
36. Planimeter
37. Plant press
38. Plastic flagging
39. Pole saw
40. Pruning Saw
41. Pulaski Axe
42. Relaskop
43. Safety glasses
44. Safety hard hat
45. Scale stick
46. Secchi disc
47. Soil sampler
48. Soil test kit
49. Staff compass
50. Stereoscope
51. Tally book
52. Tally meter
53. Timber tongs
54. Tree caliper
55. Tree harvester
56. Tree marking gun
57. Tree planting hoe or bar
58. Tree skidder
59. Water sampler
60. Water test kit
61. Wedge prism

**Tree Disorders Identification List**

* 1. Aphid
	2. Asian longhorn beetle 03 Butt or heart rot
1. Canker
2. Chemical damage
3. Cicada
4. Climatic injury: snow, wind, frost, drought, hail 08 Damping off

09 Emerald ash borer 10 Fire damage

1. Gypsy moth
2. Ipps engraver beetle 13 Lightning damage
3. Mechanical damage
4. Mistletoe
5. Nematode
6. Rust
7. Sawfly
8. Scale
9. Southern Pine Beetle 21 Sunscald
10. Tent caterpillar
11. Wetwood or slime flux
12. Wildlife/Livestock damage

**Doyle Log Rule**

**FORM CLASS 80**

|  |
| --- |
| **Volume (Board Feet) by Number of 16 Foot Logs** |
| **DBH****Inches** | **1** | **1 1/2** | **2** | **2 1/2** | **3** | **3 1/2** | **4** | **4 1/2** | **5** |
| 10 | 16 | 20 | 23 | 24 | 26 |  |  |  |  |
| 11 | 24 | 30 | 35 | 38 | 42 |  |  |  |  |
| 12 | 31 | 39 | 47 | 52 | 57 | 60 | 62 |  |  |
| 13 | 42 | 53 | 64 | 72 | 80 | 84 | 88 |  |  |
| 14 | 52 | 67 | 82 | 93 | 104 | 109 | 114 |  |  |
| 15 | 64 | 84 | 104 | 118 | 132 | 141 | 150 |  |  |
| 16 | 77 | 101 | 125 | 143 | 161 | 174 | 186 |  |  |
| 17 | 92 | 122 | 152 | 175 | 198 | 214 | 230 |  |  |
| 18 | 108 | 144 | 179 | 206 | 234 | 254 | 273 |  |  |
| 19 | 126 | 168 | 210 | 244 | 278 | 301 | 324 |  |  |
| 20 | 144 | 193 | 242 | 282 | 321 | 348 | 374 | 396 | 417 |
| 21 | 164 | 221 | 278 | 324 | 370 | 403 | 436 | 462 | 489 |
| 22 | 185 | 250 | 315 | 368 | 420 | 458 | 497 | 529 | 561 |
| 23 | 208 | 282 | 356 | 417 | 478 | 521 | 564 | 604 | 643 |
| 24 | 231 | 314 | 397 | 466 | 536 | 583 | 630 | 678 | 725 |
| 25 | 256 | 350 | 443 | 522 | 600 | 655 | 710 | 764 | 818 |
| 26 | 282 | 386 | 489 | 576 | 663 | 727 | 791 | 852 | 912 |
| 27 | 310 | 425 | 540 | 638 | 735 | 806 | 877 | 946 | 1015 |
| 28 | 339 | 466 | 592 | 700 | 807 | 885 | 963 | 1040 | 1118 |
| 29 | 370 | 509 | 648 | 766 | 884 | 970 | 1056 | 1144 | 1232 |
| 30 | 400 | 552 | 703 | 832 | 961 | 1055 | 1149 | 1248 | 1346 |

# Bd Ft Volume Estimation Worksheet

|  |  |  |  |
| --- | --- | --- | --- |
| **Tree Number** | **DBH** | **Number of Logs** | **Volume** |
| 1. |  |  |  |
| 2. |  |  |  |
| 3. |  |  |  |
| 4. |  |  |  |
| 5. |  |  |  |
| 6. |  |  |  |
| 7. |  |  |  |
| 8. |  |  |  |
| 9. |  |  |  |
| 10 |  |  |  |
| **TOTAL VOLUME** |  |

*Remember to record the DBH, Number of Logs and Total Volume on your Scantron sheet.*