Forestry CDE

Purpose

The purpose of the Forestry Career Development Event is to stimulate student interest and to promote forestry instruction in the agricultural education curriculum.

By participating in this event, students gain an understanding of the economic impact of the forest environment and the forestry industry, while recognizing environmental and social factors affecting the management of forests.

Sponsor

This event is currently sponsored by David and Beverly Harris, with in-kind contributions by Extension Forestry at North Carolina State University.

Superintendent

Comments and questions may also be directed to Mr. Jason Davis, State FFA Coordinator, Department of Agricultural and Extension Education, NCSU, Box 7654, Raleigh, NC 27695-7654. Phone: 919.515.4206 Fax: 919.513.3201 Email: jason\_davis@ncsu.edu

Eligibility

This event is open to all FFA chapters and FFA This event is open to all FFA chapters and FFA members in good standing. Members winning a previous state event in this area or that have participated in a previous national event in the area are ineligible.

Team size shall be four members. All four members will be scored and all four scores will count towards the team total. No alternates are allowed in the state events. Any alternate found participating in a state event will result in a team disqualification.

FFA members in good standing may also participate as individuals in this event. A chapter may have up to two members participate as individuals as long as the chapter does not have a team participating in the event. Their scores will only count toward individual recognition, and will not be tallied as a team score. Three members participating in this event from the same chapter constitute a team.

The top three individuals in the federation event are eligible to participate in the regional event as individuals regardless of their team placing. The top three individuals in the regional event are eligible to participate in the state event as individuals regardless of their team placing.

The appropriate numbers of teams based on event participation from each region are eligible to compete in the state career development event. The top three individuals in the regional event are eligible to participate in the state event as individuals regardless of their team placing. Teams and individuals advancing to state event participation must be certified by the regional FFA advisor.

The use or possession of cellular phones, Personal Digital Assistants (PDA’s) or any other mobile electronic communication device is prohibited during any state-level career development event. Any violation of this rule by any team member will result in total team disqualification.

Any member found cheating in any state-level career development event will result in total team disqualification for that event.

At the North Carolina FFA State Convention, members may participate in only one career development event with the exceptions of Creed and Parliamentary Procedure or Prepared Public Speaking and Parliamentary Procedure.

Dress Code

Participants are required to follow the North Carolina FFA Career Development Event Dress Code. A ten percent reduction in the total team score will be taken if a participant violates the dress code.

Procedures for Administering the Event

The event will consist of four sections, with each member of the team participating in all sections.

No two members of any one team will participate in the same section at the same time.

Each section of the event will have a maximum time limit of thirty minutes, requiring orderly movement of all participants in sequence from the section that they were assigned at the beginning

The following items are to be provided by each participant:

1. Tree Scale Stick (Biltmore Stick)
2. Clipboard
3. Pencil
4. Hand Held Calculator

The four sections of the Forestry Career Development Event are

Part 1: Timber Cruising for Board Volume (Saw Timber)

Each participant will provide their own scale stick. Calipers, diameter tapes or other measuring instruments will not be allowed at the federation, regional, or state level.

The official sawtimber tally card is based on the International 1/4 inch Rule Form Class 78 and is included in the supplemental material on subsequent pages.

Estimates will be made to the nearest half log (eight feet) of merchantable timber and to inch diameter classes on each tree recorded.

The cutoff point at the top of the tree will be a minimum diameter of eight inches or at the point where merchantability stops due to limbs or other defects.

Standing trees will be tagged with numbers. .

The total board feet of each tree will be computed and recorded but only the total volume determined by the participant will be graded.

The tally sheet will be turned in to the designated official at the end of the thirty-minute time period. The total possible points for this section will be one hundred (100) points. One point will be deducted for each ten (10) board feet of variance from the total volume as determined by the event officials.

Minimums: DBH 10 inches, 1” diameter classes

Top Diameter- 8”

Height 16’; Round to the nearest ½ log

Part 2: Timber Cruising for Cord Volume (Pulpwood)

Each participant will provide their own scale stick. Calipers, diameter tapes or other measuring instruments will not be allowed at the federation, regional, or state level.

The official pulpwood estimation tally card is based on the cord volume table of Form Classes 75-79 and is included in the supplemental material on subsequent pages.

Diameter breast height (DBH) estimates will be made to the nearest one inch class and merchantable height measurements to the nearest four-foot (4’) class to a minimum top diameter.

Standing trees for judging will be tagged with numbers.

DBH, merchantable length estimates and cord volume contents of each individual tree will be computed and recorded to the nearest thousandth of a cord but only the total volume determined by the participant will be graded.

Tally sheets will be turned in to the designated official at the end of the thirty-minute time period. The total possible points for this section will be one hundred (100) points. One point will be deducted for each 1/100th of a cord variance from the total cords as determined by the event officials.

Pulpwood tree volumes are shown for trees from 5 to 12 inches and from 12 to 64 feet merchantable. The volume is in cubic feet. This is recorded on the contest score sheet for each tree measured. In order to find the number of cords, divide the total cubic foot volume by 90. The unit of measurement for a standard cord of rough wood is 128 cubic feet. When you divide the sum of the cubic foot volume by 90, you will determine the number of standard cords that you have measured. (Table I)

TABLE I

CUBIC-FOOT VOLUME TABLE (including bark)

Average - Southern Pine

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| D.B.H.  Inches | MERCHANTABLE LENGTH (in feet) | | | | | | | | | | | | | |
| 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 | 52 | 56 | 60 | 64 |
| 5 | 1.2 | 1.6 | 2.0 | 2.4 | 2.8 |  |  |  |  |  |  |  |  |  |
| 6 | 1.6 | 2.2 | 2.7 | 3.2 | 3.8 | 4.3 | 4.8 |  |  |  |  |  |  |  |
| 7 | 2.1 | 2.8 | 3.6 | 4.3 | 5.0 | 5.7 | 6.4 | 7.1 |  |  |  |  |  |  |
| 8 | 2.3 | 3.6 | 4.6 | 5.5 | 6.4 | 7.3 | 8.3 | 9.1 | 10.1 | 11.0 |  |  |  |  |
| 9 |  | 4.5 | 5.7 | 6.8 | 8.0 | 9.1 | 10.2 | 11.3 | 12.5 | 13.6 | 14.7 |  |  |  |
| 10 |  |  | 6.8 | 8.2 | 9.5 | 10.8 | 12.3 | 13.6 | 14.9 | 16.3 | 17.7 | 19.0 | 20.4 |  |
| 11 |  |  |  | 9.6 | 11.6 | 12.8 | 14.4 | 16.0 | 17.6 | 19.2 | 20.8 | 22.4 | 24.0 | 25.6 |
| 12 |  |  |  | 11.2 | 13.0 | 14.9 | 16.7 | 18.6 | 20.5 | 22.3 | 24.2 | 26.0 | 27.9 | 29.8 |

Source: U.S. Forest Service. Odd diameters calculated.

Minimums: DBH 5inches, 1” diameter class

Top Diameter-4”

Height 12’; Round to the nearest ¼ log

Part 3: Tree Identification

Each participant will identify twenty (20) trees. Trees common to the area should be used for local and federation events, but at the regional and state level, any of the trees on the official list can be used. A tree species may be used more than once if necessary. Trees will be numbered one to twenty. Participants are to write the appropriate number in the correct space on the tree identification answer sheet. The total possible points for this section will be one hundred (100) points. Five (5) points will be deducted for each incorrect answer.

Part 4: Forestry Equipment Identification

Team members will work together to examine Each participant will identify twenty (20) tools from the approved equipment list. Each tool is worth five (5)points. The total possible points for this section will be one hundred (100) points.

Scoring

*Maximum Score 400*

Saw Timber 100

Pulpwood 100

Tree Identification 100

Equipment Identification 60

Procedure for Determining the State Event Winner When Scores are Tied

In the event a tie score exists, apply the In the event a tie score exists, apply the following methods in sequential order until the tie is broken:

1. Compare the alternate scores. The lowest team member score is the alternate score.

2. Compare the total team scores for the identification component and the higher scoring team is the winner.

3. If these methods fail to break the tie, co-winners will be declared and a run-off event will be held to determine which team will represent North Carolina at the National FFA Convention. The run-off event will follow the same rules as the state event.

Special Note: In the event a tie exists between first, second or third place teams on the regional level, the tied teams will be allowed to participate in the state event. In the event a tie exists in a federation event that sends teams directly to state competition, the tied teams will be allowed to participate in the state event.

State Awards

The following awards will be presented annually at the state FFA convention provided sponsorship is available:

State Winning Team

*$500 and first place team plaque*

Second Place Team

*Second place team plaque*

Third Place Team

*Third place team plaque*

High Scoring Individual

*Plaque*

National Career Development Event Participation

State winning teams advancing to the national career development event will be automatically registered for the national event. It is the responsibility of the FFA Chapter Advisor to complete all necessary national certification and waiver forms and return them to the state FFA Coordinator by the assigned due date.

State winning CDE Teams that choose not to participate at the national level should contact the state office by Sept 1 prior to national convention. Teams that fail to inform the state office prior to Sept 1 will be ineligible to participate in that same CDE for the next year (chapters may appeal to the State FFA Board of Directors). Teams that do not compete at the National Convention will be required to pay back the $500 travel award.

TIMBER CRUISING FOR CORD VOLUME

(PULPWOOD ESTIMATION)

FORESTRY CAREER DEVELOPMENT EVENT

Cord Volume Table

Merchantable Rough Cord Volume Using Merchantable Stem Length

Form Classes 75-79

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| D.B.H.  (inches) | Merchantable Length of Stem (Feet) | | | | | | | | | | | | | | |  |  |  |  |
|  | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 | 52 | 56 | 60 | 64 |
| 5 | .013 | .018 | .022 | .027 | .031 |  |  | . | . |  |  |  |  |  |
| 6 | .018 | .024 | .030 | .036 | .042 | .048 | .053 |  |  |  |  |  |  |  |
| 7 | .023 | .031 | .040 | .048 | .056 | .063 | .071 | .078 |  |  |  |  |  |  |
| 8 | .026 | .040 | .051 | .061 | .071 | .081 | .092 | .101 | .112 | .122 |  |  |  |  |
| 9 |  | .050 | .063 | .076 | .089 | .101 | .113 | .126 | .139 | .151 | .163 |  |  |  |
| 10 |  |  | .076 | .091 | .105 | .120 | .137 | .151 | .166 | .181 | .197 | .211 | .227 |  |
| 11 |  |  |  | .107 | .129 | .142 | .160 | .178 | .196 | .213 | .231 | .249 | .267 | .284 |
| 12 |  |  |  | .124 | .144 | .166 | .186 | .207 | .228 | .248 | .269 | .289 | .310 | .331 |

Timber Cruising for Cord Volume Tally Sheet

(Pulpwood Estimation Tally Sheet)

|  |  |  |  |
| --- | --- | --- | --- |
| Tree Number | Diameter (Inches) | Merchantable Height (Feet) | Volume Cords |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |
| 6 |  |  |  |
| 7 |  |  |  |
| 8 |  |  |  |
| 9 |  |  |  |
| 10 |  |  |  |
|  |  | Total Volume Cords |  |

The total points for this section will be one hundred (100) points. One point will be deducted for each 1/100th of a cord variance from the total cords as determined by event officials.

Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Participant Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Chapter Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ SCORE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

TREE MEASUREMENT-TIMBER CRUISING FOR BOARD VOLUME

(SAWTIMBER ESTIMATION) Tree Measurement-Timber Cruising

FORESTRY CAREER DEVELOPMENT EVENT for Board Volume Tally Sheet

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tree Diameter | | Gross Volume of Tree, International 1/4 Inch Rule  Form Class 78  Volume (Board Feet) by Number of Usable 16 Foot Logs | | | | | | | | | | | | | | | |
|  | 1 | | | 1.5 | 2 | | 2.5 | 3 | | 3.5 | 4 | | 4.5 | 5 | 5.5 | 6 |
| 10 | 36 | | | 48 | 59 | | 66 | 73 | |  |  | |  |  |  |  |
| 11 | 46 | | | 61 | 76 | | 88 | 96 | |  |  | |  |  |  |  |
| 12 | 56 | | | 74 | 92 | | 106 | 120 | | 128 | 137 | |  |  |  |  |
| 13 | 67 | | | 90 | 112 | | 130 | 147 | | 158 | 168 | |  |  |  |  |
| 14 | 78 | | | 105 | 132 | | 153 | 174 | | 187 | 200 | |  |  |  |  |
| 15 | 92 | | | 124 | 156 | | 182 | 206 | | 225 | 242 | |  |  |  |  |
| 16 | 106 | | | 143 | 180 | | 210 | 241 | | 263 | 285 | |  |  |  |  |
| 17 | 121 | | | 164 | 206 | | 242 | 278 | | 304 | 330 | |  |  |  |  |
| 18 | 136 | | | 184 | 233 | | 274 | 314 | | 344 | 374 | |  |  |  |  |
| 19 | 154 | | | 209 | 264 | | 311 | 358 | | 392 | 427 | |  |  |  |  |
| 20 | 171 | | | 234 | 296 | | 348 | 401 | | 440 | 480 | | 511 | 542 |  |  |
| 21 | 191 | | | 262 | 332 | | 391 | 450 | | 496 | 542 | | 579 | 616 |  |  |
| 22 | 211 | | | 290 | 368 | | 434 | 500 | | 552 | 603 | | 647 | 691 |  |  |
| 23 | 231 | | | 318 | 404 | | 478 | 552 | | 608 | 663 | | 714 | 766 |  |  |
| 24 | 251 | | | 346 | 441 | | 523 | 605 | | 664 | 723 | | 782 | 840 |  |  |
| 25 | 275 | | | 380 | 484 | | 574 | 665 | | 732 | 800 | | 865 | 930 |  |  |
| 26 | 299 | | | 414 | 528 | | 626 | 725 | | 801 | 877 | | 949 | 1021 |  |  |
| 27 | 323 | | | 448 | 572 | | 680 | 788 | | 870 | 952 | | 1032 | 1111 |  |  |
| 28 | 347 | | | 482 | 616 | | 733 | 850 | | 938 | 1027 | | 1114 | 1201 | 1280 | 1358 |
| 29 | 375 | | | 521 | 667 | | 794 | 920 | | 1016 | 1112 | | 1210 | 1308 | 1398 | 1488 |
| 30 | 403 | | | 560 | 718 | | 854 | 991 | | 1094 | 1198 | | 1306 | 1415 | 1517 | 1619 |
| 31 | 432 | | | 602 | 772 | | 921 | 1070 | | 1184 | 1299 | | 1412 | 1526 | 1640 | 1754 |
| 32 | 462 | | | 644 | 826 | | 988 | 1149 | | 1274 | 1400 | | 1518 | 1637 | 1762 | 1888 |
| 33 | 492 | | | 686 | 880 | | 1053 | 1226 | | 1360 | 1495 | | 1622 | 1750 | 1888 | 2026 |
| 34 | 521 | | | 728 | 934 | | 1119 | 1304 | | 1447 | 1590 | | 1727 | 1864 | 2014 | 2163 |
| 35 | 555 | | | 776 | 998 | | 1196 | 1394 | | 1548 | 1702 | | 1851 | 2000 | 2156 | 2312 |
| 36 | 589 | | | 826 | 1063 | | 1274 | 1485 | | 1650 | 1814 | | 1974 | 2135 | 2298 | 2461 |
| 37 | 622 | | | 873 | 1124 | | 1351 | 1578 | | 1752 | 1926 | | 2099 | 2272 | 2444 | 2616 |
| 38 | 656 | | | 921 | 1186 | | 1428 | 1670 | | 1854 | 2038 | | 2224 | 2410 | 2590 | 2771 |
| 39 | 694 | | | 976 | 1258 | | 1514 | 1769 | | 1968 | 2166 | | 2359 | 2552 | 2744 | 2937 |
| 40 | 731 | | | 1030 | 1329 | | 1598 | 1868 | | 2081 | 2294 | | 2494 | 2693 | 2898 | 3103 |
| Tree Number | | | Diameter (Inches) | | | Number Logs | | | Volume Board Feet | | |
| 1 | | |  | | |  | | |  | | |
| 2 | | |  | | |  | | |  | | |
| 3 | | |  | | |  | | |  | | |
| 4 | | |  | | |  | | |  | | |
| 5 | | |  | | |  | | |  | | |
| 6 | | |  | | |  | | |  | | |
| 7 | | |  | | |  | | |  | | |
| 8 | | |  | | |  | | |  | | |
| 9 | | |  | | |  | | |  | | |
| 10 | | |  | | |  | | |  | | |
|  | | |  | | | Ttl. Volume BdFt. | | |  | | |

100 Point Total-One point deducted for each 10 BF of variance from the total volume as determined by officials.

Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Number: \_\_\_\_\_\_\_\_

Chapter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ SCORE \_\_\_\_\_\_\_\_\_\_\_\_

EQUIPMENT IDENTIFICATION

FORESTRY CAREER DEVELOPMENT EVENT

Instructions: Equipment will be numbered 1-20. The contestant is to write the appropriate number in the space to the left of the tool. Each correct answer is worth 5 points.

\_\_\_\_\_ Altimeter

\_\_\_\_\_ Back-pack Fire Pump

\_\_\_\_\_ Bark Gauge

\_\_\_\_\_ Canthook

\_\_\_\_\_ Chainsaw

\_\_\_\_\_ Chainsaw Chaps

\_\_\_\_\_ Clinometer

\_\_\_\_\_ Data Recorder

\_\_\_\_\_ Densiometer

\_\_\_\_\_ Diameter Tape

\_\_\_\_\_ Drip Torch

\_\_\_\_\_ Dot Grid

\_\_\_\_\_ Fiberglass Measuring Tape

\_\_\_\_\_ Fire Rake

\_\_\_\_\_ Fire-Swatter

\_\_\_\_\_ Fire Weather Kit

\_\_\_\_\_ Flow/current Meter

\_\_\_\_\_ GPS Receiver

\_\_\_\_\_ Hand Compass

\_\_\_\_\_ Hand Lens/Field Microscope

\_\_\_\_\_ Hip Chain

\_\_\_\_\_ Hypo-Hatchet

\_\_\_\_\_ Increment Borer

\_\_\_\_\_ Log Rule

\_\_\_\_\_ Logger’s Tape

\_\_\_\_\_ pH Meter

\_\_\_\_\_ Planimeter

\_\_\_\_\_ Plant Press

\_\_\_\_\_ Plastic Flaggin

\_\_\_\_\_ Pulaski Forester Axe

\_\_\_\_\_ Relaskop

\_\_\_\_\_ Safety Glasses

\_\_\_\_\_ Safety Hard Hat

\_\_\_\_\_ Soil Sampler

\_\_\_\_\_ Soil Test Kit

\_\_\_\_\_ Staff Compass

\_\_\_\_\_ Stereoscope

\_\_\_\_\_ Survey Instrument

\_\_\_\_\_ Tally Book

\_\_\_\_\_ Tally Meter

\_\_\_\_\_ Tree Caliper

\_\_\_\_\_ Tree Marking Gun

\_\_\_\_\_ Tree Planting Hoe or Bar

\_\_\_\_\_ Tree Stick

\_\_\_\_\_ Water Sampler

\_\_\_\_\_ Water Test Kit

\_\_\_\_\_ Wedge Prism

\_\_\_\_\_ Wheeler Caliper

Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Participant Number: \_\_\_\_\_\_\_\_\_\_\_

Chapter: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ SCORE: \_\_\_\_\_\_\_\_\_\_\_\_

## TREE IDENTIFICATION

FORESTRY CAREER DEVELOPMENT EVENT

\_\_\_\_\_\_\_\_\_\_ American Holly

\_\_\_\_\_\_\_\_\_\_ Ash

\_\_\_\_\_\_\_\_\_\_ Baldcypress

\_\_\_\_\_\_\_\_\_\_ Beech

\_\_\_\_\_\_\_\_\_\_ Birch

\_\_\_\_\_\_\_\_\_\_ Black Cherry

\_\_\_\_\_\_\_\_\_\_ Blackgum

\_\_\_\_\_\_\_\_\_\_ Black Oak

\_\_\_\_\_\_\_\_\_\_ Black Walnut

\_\_\_\_\_\_\_\_\_\_ Chestnut Oak

\_\_\_\_\_\_\_\_\_\_ Cottonwood

\_\_\_\_\_\_\_\_\_\_ Dogwood

\_\_\_\_\_\_\_\_\_\_ Elm

\_\_\_\_\_\_\_\_\_\_ Fraser Fir

\_\_\_\_\_\_\_\_\_\_ Hemlock

\_\_\_\_\_\_\_\_\_\_ Hickory

\_\_\_\_\_\_\_\_\_\_ Loblolly Pine

\_\_\_\_\_\_\_\_\_\_ Locust

\_\_\_\_\_\_\_\_\_\_ Longleaf Pine

\_\_\_\_\_\_\_\_\_\_ Northern Red Oak

\_\_\_\_\_\_\_\_\_\_ Pecan

\_\_\_\_\_\_\_\_\_\_ Persimmon

\_\_\_\_\_\_\_\_\_\_ Post Oak

\_\_\_\_\_\_\_\_\_\_ Red Cedar

\_\_\_\_\_\_\_\_\_\_ Red Maple

\_\_\_\_\_\_\_\_\_\_ Redbud

\_\_\_\_\_\_\_\_\_\_ Shortleaf Pine

\_\_\_\_\_\_\_\_\_\_ Sourwood

\_\_\_\_\_\_\_\_\_\_ Southern Red Oak

\_\_\_\_\_\_\_\_\_\_ Sweetgum

\_\_\_\_\_\_\_\_\_\_ Sycamore

\_\_\_\_\_\_\_\_\_\_ Virginia Pine

\_\_\_\_\_\_\_\_\_\_ Water Oak

\_\_\_\_\_\_\_\_\_\_ Water Tupelo

\_\_\_\_\_\_\_\_\_\_ White Oak

\_\_\_\_\_\_\_\_\_\_ White Pine

\_\_\_\_\_\_\_\_\_\_ Willow Oak

\_\_\_\_\_\_\_\_\_\_ Yellow Poplar

The total possible points for this section will be one hundred (100) points. Each correct answer will be worth five (5) points.

Participant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Participant Number: \_\_\_\_\_\_\_\_\_\_

Chapter \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SCORE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_