



Georgia FFA Association

Forestry CDE - Senior Division

I. OVERVIEW

The Forestry Career Development Event is an activity which provides opportunities for FFA members to demonstrate their technical and management skills in forestry.

II. PURPOSE

The purpose of the Forestry CDE is to stimulate student interest and to promote forestry instruction in the agricultural education curriculum, and to provide recognition for those who have demonstrated skills and competencies as a result of forestry instruction.

III. ELIGIBILITY

This event is open to students in grades 9-12 who are agricultural education students and are paid members of a chartered FFA chapter. Each member of the team must be a member of the chapter registering them, and each student's name must appear on the chapter's FFA roster at least 10 days prior to competition.

IV. SPECIAL NEEDS REQUEST

To report any special needs or request special services for a student to compete in a Career Development Event or FFA Award area (Area or State level), it is the responsibility of the FFA advisor to provide a detailed and specific request and explanation in writing. Requests should include written documentation from the school system verifying the IEP and need being requested. Written requests must be submitted to the CDE Superintendent prior to registering for the CDE/event (at least 3 weeks prior to the date of competition.)

V. RULES

1. The team will consist of four individuals, and all four scores will count toward the team score.
2. The top two (2) teams in each Area CDE will advance to the state CDE.
3. The team score is comprised of the combined scores of each individual and the team activity in which all team members will participate. Participants must come to the event prepared to work in adverse weather conditions. The event will be conducted regardless of weather. Participants should have rain gear, warm clothes and closed toed shoes.
4. Students are required to bring their own pencils.
5. Participants must bring their own tools for the event: Biltmore Stick, Clipboard, Compass (Azimuth or Bearing), Clinometer, and calculator (no other equipment is permitted).
6. 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.
7. No team, team member or team advisor shall visit the event facilities to observe plant materials and facilities after one month prior to the contest. Any team, team member or advisor reported and proven to do so will cause the elimination of the team from the Area or State FFA Forestry CDE.
8. 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.
9. 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.
10. Score sheets **will not** be given out by judges prior to announcement of the winners. The decisions of the judges are **final**. The score sheets will be returned to advisors at a later date.



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VI. EVENT FORMAT

A. Equipment

Materials student must provide – Each participant must have a clean, free of notes clipboard, two sharpened pencils, and may have an electronic calculator. Calculators used in this event should be non-programmable with only these functions – addition, subtraction, multiplication, division, equals, percent, square root, +/- key, and one memory register. No other calculators are allowed to be used during the event. Students may not have cell phones with them during the events.

Provided – Participants will be provided with blank score sheets, graph paper and exams, if applicable, to complete this event.

B. State Forestry CDE Team Activity (450 points)- State Only

This activity is a phase of the State Forestry CDE, and is a required activity for any team to represent the Georgia FFA Association at the National FFA Forestry CDE. A four (4) person team will participate in the following activity as a cooperative team activity. Ninety minutes (90) will be allowed to plan and complete the activity.

Each team will perform tasks normally performed in some phase of the forest industry requiring teamwork to complete. These tasks will be described in situational terms for presentation to each team. The topics of the team activity include:

Tree Identification	Map Interpretation
Tree Measurement	Compass
Forest Management	Chainsaw Part Identification, Troubleshooting and Safety
Equipment Identification	Tree/Forest Disorders
Forest Products	Forest Business Management

C. General Knowledge Exam (100 points each)- State Only-

Each individual will take a fifty (50) multiple-choice

question test from areas of the forestry industry. This phase of the event will test the participant's knowledge and understanding of basic principles of forestry. Each participant will be allowed 45 minutes to complete this phase of the event. Questions will come from the following reference: Science of Forestry Management. Kris Irwin. University of Georgia

D. Individual Activities

- 1. Tree Identification (100 points)-** Each contestant will be allowed 30 minutes to complete this phase. 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 contestant will be given a sheet with numbered blanks for each tree's common name. Participants should write in the letter of the correct specie in the blank provided on the answer sheet. Tiebreakers will be additional specimens from the list below. Oral questions may be used, if necessary, to break a tie. Each specimen will be weighted equally and the total converted to a 100-point basis.



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2. **Timber Cruising for Board Volume (100 points)**-Each participant will be allowed 30 minutes to complete this phase and 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 $\frac{1}{2}$ log. 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 10 inches DIB

Height 16 feet

Merchantable height stops are estimated to the upper point on a tree where it becomes 10 inches in diameter or where a major fork in a tree stem occurs or where a limb has a diameter equal to $\frac{1}{2}$ of the diameter of the tree at that point.

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.

3. **Forest Management Evaluation- Timber Stand Improvement (100 points)**- The trees selected and designated for use in this part of the event may be all of one species or a mixture of species. An area will be selected and identified by ribbons, paint, rope, etc. It will contain 20 marked trees within a timber stand. All trees in the selected area will be considered as a forest management site, and the participants will score each marked tree using one of the following options:

Harvest — utilize the tree.

Leave — the tree should remain in stand for a good reason.

Deaden — Undesirable tree, not merchantable or beneficial to wildlife, should be deadened or cut down and left in woods.

The participants will be given a situation concerning the forest management objectives of the stand selected. This information will be given to participants at the site before they start. Information that will be needed to help participants in their decisions will include the following:

Markets available.

Wildlife considerations.

Present condition of stand.

Management plan.

4. **Compass Practicum (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 up to 10 points. 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.



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VI. SCORING

Phase	Individual Points	Team Points
Forest Management/TSI	100	400
Timber Cruising/BF Volume	100	400
Tree Identification	100	400
Hand Compass Practicum	100	400
*General Knowledge Exam	100	400
*Team Activity	NA	450
Total Team Points		2,450

*This activity is only conducted as a phase of the State Forestry CDE, and is not a requirement of the Area Forestry CDEs. It is a requirement of teams competing in the State Forestry CDE. The total points allowed at an Area Forestry CDE are 1600 points, and the total points allowed at the State Forestry CDE are 2,450 points. Winners will be decided based on the total of actual number of points earned.

VII. TIEBREAKERS

Team Tiebreakers for teams will be:

1. Highest score on the team activity (state only)
2. Adding together the individual ranking of team members. The team with the lowest score will earn the tiebreak.

Individual Tiebreakers:

1. Knowledge exam (state only)
2. Timber cruising
3. Tree identification
4. Total rotational practicum score

VIII. AWARDS

Awards shall be determined each year by the Board of Trustees of the Georgia FFA Foundation. This event at the state level is made possible through the Georgia FFA Foundation as a special project of an industry sponsor or from the Foundation general fund.

IX. REFERENCES

GENERAL KNOWLEDGE EXAM

Science of Forestry Management. Kris Irwin. University of Georgia, AAVIM. Please call 706-742-5355 or email sales@aa vim.com. Request Item #400. Cost is ~ \$25 plus \$10.50 shipping. Please leave your name, Item, number of copies, shipping and billing address, and phone number. They will respond to secure payment information.



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TREE IDENTIFICATION

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

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 & Independence

Avenue SW, Washington, DC 20013.

TREE MEASUREMENT

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

FOREST MANAGEMENT

Introduction to Forestry Science. Burton, Delmar Publications.

Science of Forestry Management. Kris Irwin. University of Georgia, AAVIM. . Please call 706-742-5355 or email sales@aavim.com. Request Item #400. Cost is ~ \$25 plus \$10.50 shipping. Please leave your name, Item, number of copies, shipping and billing address, and phone number. They will respond to secure payment information.

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?
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.

COMPASS

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

CHAINSAW PARTS AND IDENTIFICATION

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

FOREST PRODUCTS

www.fpl.fs.fed.us/products/publications/several_pubs.php?grouping_id=100&header_id=p
https://www.dec.ny.gov/docs/lands_forests_pdf/woodproducts.pdf
www.home-extension.co.uk/timber.pdf

FOREST BUSINESS MANAGEMENT

Introduction to Forestry Science. Burton, Delmar Publications.

Science of Forestry Management. Kris Irwin. University of Georgia, AAVIM.



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Tree Identification Specimen List

1. Alder, Red (*Alnus rubra*)
2. Ash (*Fraxinus* sp.)
3. Aspen, Bigtooth (*Populus grandidentata*)
4. Aspen, Quaking (*Populus tremuloides*)
5. Baldcypress (*Taxodium distichum*)
6. Beech, American (*Fagus americana*)
7. Birch, Black (*Betula lenta*)
8. Birch, White (*Betula papyrifera*)
9. Cherry, Black (*Prunus serotina*)
10. Cottonwood, Eastern (*Populus deltoides*)
11. Elm (*Ulmus* sp.)
12. Fir, Balsam (*Abies balsamea*)
13. Fir, Douglas (*Pseudotsuga menziesii*)
14. Hemlock, Eastern (*Tsuga canadensis*)
15. Hemlock, Western (*Tsuga heterophylla*)
16. Hickory (*Carya* sp.)
17. Maple, Red (*Acer rubrum*)
18. Maple, Sugar (*Acer saccharum*)
19. Oak, Black (*Quercus velutina*)
20. Oak, Chestnut (*Quercus montana*)
21. Oak, Northern Red (*Quercus rubra*)
22. Oak, Scarlet (*Quercus coccinea*)
23. Oak, Southern Red (*Quercus falcata*)
24. Oak, White (*Quercus alba*)
25. Pecan (*Carya illinoensis*)
26. Pine, Eastern White (*Pinus strobus*)
27. Pine, Loblolly (*Pinus taeda*)
28. Pine, Lodgepole (*Pinus contorta*)
29. Pine, Longleaf (*Pinus palustris*)
30. Pine, Pitch (*Pinus rigida*)
31. Pine, Ponderosa (*Pinus ponderosa*)
32. Pine, Red (*Pinus resinosa*)
33. Pine, Shortleaf (*Pinus echinata*)
34. Poplar, Yellow (*Liriodendron tulipifera*)
35. Red Cedar, Western (*Thuja plicata*)
36. Redcedar, Eastern (*Juniperus virginiana*)
37. Spruce, Red (*Picea rubens*)
38. Spruce, Sitka (*Picea sitchensis*)
39. Spruce, White (*Picea glauca*)
40. Sweetgum (*Liquidambar styraciflua*)
41. Sycamore (*Platanus* sp.)
42. Walnut, Black (*Juglans nigra*)



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Equipment Identification List

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



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Tree Disorders Identification List

1. Aphid
2. Asian longhorn beetle
3. Butt or heart rot
4. Canker
5. Chemical damage
6. Cicada
7. Climatic injury: snow, wind, frost, drought, hail
8. Damping off
9. Douglas fir tussock moth
10. Emerald ash borer
11. Fir engraver beetle
12. Fire damage
13. Gypsy moth
14. Hemlock woolly adelgid
15. Ips engraver beetle
16. Landscape equipment damage
17. Lightning damage
18. Mechanical damage
19. Mistletoe
20. Mountain pine beetle
21. Nematode
22. Rust
23. Sawfly
24. Scale
25. Spruce budworm
26. Sunscald
27. Tent caterpillar
28. Wetwood or slime flux
29. Wildlife/Livestock damage