

Illinois Association of Vocational Agriculture Teachers Forestry Career Development Event

A. General Information

1. **Team:** A team shall consist of five participants. The three participants with the highest score shall constitute the team score.
2. **Placings/Scoring:** Official placings will be given immediately following completion of the event.
3. **Miscellaneous:** Under no circumstances will any participant be allowed to touch or handle plant material during the event. Any infraction of this rule will be sufficient cause to eliminate this team member from the event. Observers will not be permitted in the event area while the event is in progress. Any participant caught cheating and/or talking during the event will be disqualified. All participants are expected to be prompt at their stations throughout the event. No provision will be made for tardiness and will cause late participants to lose event points.

Participants will be assigned to group leaders who will escort them to various event staging sites. All participants will be given a participant number by which they will be designated throughout the event. Each participant is to stay with his or her group leader throughout the event or until told to change leaders by the event chairman. Participants should come prepared to work in adverse weather conditions; they should have raincoats and proper clothing.

All written materials will be furnished for the event. Each participant should provide a clipboard and pencil; electronic calculators will be allowed. Unless prior arrangements are made with the event chairman, each participant should provide a tree scale stick (Biltmore).

4. **Additional Information:** Refer to the *Annual Information and General Rules* section for the current year for information concerning **Entry Fees, Registration, and Location** of the event.

B. Career Development Event

1. **General Knowledge (150 points)**
Fifty objective-type multiple-choice questions, from the listed references, will be selected 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 50 minutes to complete this phase of the event. Each answer has a value of 3 points for a maximum score of 150 points.
2. **Tree Identification (75 points)**
Fifteen specimens from the following list will be displayed for participants to identify by common names. Each specimen will be designated by a number.

Each participant will be allowed 30 minutes to complete this phase, or approximately 2 minutes for each specimen station. Five points will be given for each correctly identified specimen for a maximum of 75 points.

3. **Equipment Identification (75 points)**

Fifteen pieces of equipment from the following list will be displayed for participants to identify by technical names. Each piece of equipment will be designated by a number. Each participant will be allowed 30 minutes to complete this phase, or approximately 2 minutes for each equipment station. Five points will be given for each piece of equipment identified correctly.

4. Practicums

Each practicum will have a score of 100 points. Participants will compete individually in three practicums from the following list. In even years, practicums will be Timber Cruising for Cord Volume; Forest Management Evaluation – Timber Stand Improvements (TSI) and/or Thinning; and Compass Practicum. In odd years, practicums will be Tree Measurement – Timber Cruising for Board Volume; Map Interpretation; and Tree/Forest Disorders. The Chain Saw Part Identification, Troubleshooting, and Safety Practicum may be substituted for one of the other practicums in any year.

a. **Tree Management – Timber Cruising for Board Volume**

- (1) Using a scale stick, each participant will measure prenumbered trees on a fractional acre plot for board foot volume as specified by the division superintendent. The participant must record the Diameter Breast Height (DBH) computed to the nearest inch, and the merchantable height of each tree, height rounded down to the nearest 8-foot log. Participants must convert the volume to a one-acre basis.
- (2) The following minimum diameters and log length will be:

Minimum Saw Timber

DBH	12 inches
Top Diameter (inside bark)	8 inches
Height	16 feet

- (3) Time: Participants will be allowed 15 minutes to record DBH and height of the trees and an additional 15 minutes to make volume recordings and conversions.
- (4) Volume tables will be provided at the event site.
- (5) Scoring: Three points will be allowed for the correct DBH and 3 points for the correct height. Forty points will be allowed for the correct volume per acre. Five points will be deducted for each 5 percent plus or minus from the correct measured volume.

b. **Timber Cruising for Cord Volume**

- (1) Using forest measuring tools (such as scale stick, diameter tape, or hypsometer), each participant will measure prenumbered standing trees on a fractional acre plot for cord volume as specified by the division superintendent. The participant will record the Diameter Breast Height (DBH) and merchantable height of each tree. The height will be rounded down to the nearest 4-foot stick. The DBH will be to the nearest inch. The participant must convert the volume to a one-acre basis.
- (2) Minimum

DBH	5 inches
Top Diameter (inside bark)	4 inches
Height	12 feet

- (3) Volume tables and the amount of cubic feet per one cord will be provided for calculation at the event site.
- (4) Time: Participants will be allowed 15 minutes to record DBH and height of the trees and an additional 15 minutes to make volume recordings and conversions.
- (5) Scoring: Three points will be allowed for the correct DBH and three points for the correct height. Forty points will be allowed for the correct volume per acre. Five points will be deducted for each 5 percent plus or minus from the correct measured volume.

c. **Forest Management Evaluation–Timber Stand Improvement (TSI) and/or Thinning**

- (1) The trees selected and designated for use in this part of the event may be all of one species or a mixture of species.
- (2) An area will be selected and identified by ribbons, paint, rope, etc. It will contain at least 15, and not more than 30, marked trees within a timber stand that needs thinning or some TSI work.
- (3) All trees in the selected area will be considered as a forest management site and each marked tree will be scored by the participants using one of the following options.
 - a) Harvest – utilize the tree.
 - b) Leave – the tree should remain in the stand for a good reason
 - c) Deaden – undesirable tree, not merchantable or beneficial to wildlife, should be deadened or cut down and left in the woods.
- (4) The participants will be given a *situation* concerning the forest management objectives of the stand selected. Information that will be needed to help participants in their decisions will include:
 - a) Markets available – including hardwood.
 - b) Wildlife habitat considerations – scope, etc.
 - c) Present condition of stand.
 - d) Final goal of the management plan.

This information will be given to participants at the site before they start evaluation of the stand orally, by poster, or a *handout* sheet.

- (5) Time: Participants will be given 30 minutes to make their decisions.
- (6) Scoring: Four points will be allowed for each correct decision up to a maximum total of 100 points, depending on the number of trees. The possible score for this phase of the event will vary.

d. **Map Interpretation**

- (1) Participants will be furnished a U.S. Geological Survey topographic map with specific points marked for the participant to identify. The participant shall know legal descriptions, recognize topographic map symbols, understand the meaning of map symbols and size, and describe location of 40 acres or more in a section.
- (2) Ten points on the map will be clearly marked with a number or arrow pointing to a section, symbol, or area on the map to be identified.
- (3) Examples:
 - a) What is the legal description of the area boxed?
 - b) What is the item located at this point?

- c) What is the acreage of the area enclosed?
 - d) In what section is the city of Marshall located?
- (4) Legal descriptions will be written or described according to the following:
NW – Northwest
T – Township
SE – Southeast
R – Range
S – Section (640 acres)
¼ - Quarter of a section (160 acres) or a quarter of a quarter (40 acres of the 160)
- (5) Time: Thirty minutes will be allowed for this phase.
- (6) Scoring: Ten questions or problems will be completed. Ten points will be awarded for each correct answer.

e. **Compass Practicum**

- (1) 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 compass course will have 10 marked points. The student will start at any point and record the compass reading and distance to the next point. Azimuth readings shall be recorded.
- (2) Time: Thirty minutes will be provided for this portion of the test.
- (3) Scoring: A total of 100 points is possible – 10 points for each correctly numbered site; 5 points for correct azimuth, and 5 points for correct distance. Partial credit will be given with a deduction of 1 point for each 2 degrees or 2 feet the participant is off the correct answer.

f. **Chain Saw Part Identification, Troubleshooting, and Safety**

This practicum is divided into three parts:

Part 1 – Part Identification

In the chain saw part identification each participant will identify parts of a chain saw. These parts will be labeled on a saw or will be removed from the saw.

Part 2 – Troubleshooting

The participant will identify *problems or troubles*. Each station will have a part, component, saw, or written situation with problem areas clearly marked. The participant may pick up parts or touch the saw.

Part 3 – Safety

The participant will observe photos, actual parts, written situations, and/or problems to identify a safety hazard or unsafe practice.

- (1) Time: Thirty minutes will be allowed
- (2) Scoring: A total of 100 points is possible for this section.

g. **Tree/Forest Disorder**

- (1) Symptoms of at least 10, and not more than 20, disorders such as, but not limited to, the following list will be displayed for participants to identify by common names. The symptoms will be presented in one or more of the following forms:
- a) Actual Sample
 - b) Picture(s)/Slide(s)
 - c) Written Description
 - d) Written case history

Each set of symptoms representing a disorder will be designated by a number.

- (2) Time: Each participant will be allowed 30 minutes to complete this practicum or at least 1 ½ minutes for each disorder station.
- (3) Scoring: Five points will be given for each disorder that is correctly identified for a total of up to 100 points, depending on the number of disorders. The possible score for this practicum will vary.

Tree Disorder

<u>Name</u>	<u>Name</u>
Aphid	Sunscald
Scale	Damping off
Gypsy moth	Mistletoe
Douglas fir tussock moth	Wetwood or slime flux
Spruce budworm	Chemical damage
Spider mite	Tent caterpillar
Cicada	Mechanical logging/construction
Leaf spot	Landscaping maintenance equipment damage
Beetles	Girdling roots
Wood borer	Fire damage
Wildlife/Livestock damage	Climatic injury: snow, wind, frost, drought, hail
Needle cast	Nematode
Sawfly	Rust
Air pollution	Lightning damage
Canker	Butt or heart rot

C. Suggested References

Primary

Holland, I.I., G.L. Rolfe, and D.A. Anderson. *Forests and Forestry*, 4th Ed. Interstate Publishers, Inc., Danville, IL.

Harlow, W.M., E.S. Harrar, J.L. Hardin, and F.M. White. 1991. *Textbook of Dendrology*, 7th Ed. McGraw-Hill, St. Louis, Missouri.

McManar Collins, B. and F.M. White, *Elementary Forestry*. Reston Publishing Co., Reston, VA

U.S. Forest Service, *Silvics of Forests of the United States*. Handbook 271. U.S. Forest Service, Washington, DC.

Haygreen, J.G., and J.L. Bowyer. 1989. *Forest Products and Wood Science*, 2nd Ed. Iowa State University Press, Ames, Iowa.

Other

Wenger, K. (ed.). 1984. *Society of American Foresters*. Forestry Handbook. John Wiley & Sons, NY.

Mohlenbrock, R.H. 1983. *Forest Trees of Illinois*, 4th Ed. Illinois Dept. of Conservation.

Society of American Foresters. 1981. *Choices of Silviculture for American Forests*. Bethesda, MD.

Vocational Agriculture Service. *Land Surveys and Descriptions (U2042)*. University of Illinois.

National FFA Career Development Events Manual.

D. Judging Cards

Cards for this event may be ordered from Information Technology and Communication Services,
University of Illinois at Urbana-Champaign, 1 (800) 345-6087 OR (217) 333-3871