

All Teams are to meet at the Bus Lot, located at Gate 1 on the day of the event. The bus will leave promptly at 7:00 am.

Student are **not** allowed, to wear sneakers to the event and are recommended to bring leather work boots.

EASTERN REGIONAL FFA FORESTRY CAREER DEVELOPMENT EVENT

IMPORTANT NOTE: *Please thoroughly read the Introduction Section at the beginning of this handbook for complete rules and procedures that are relevant to all Big E FFA Career Development Events.*

PURPOSE

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 because of forestry instruction.

OBJECTIVES

- A. Ability to understand and use forestry terms.
 - 1. Glossary
- B. Ability to promote an understanding of the economic impact of the forest environment and the forest industry to the American economy.
 - 1. Size of forestry industry
 - 2. Types of forestry industry
 - 3. Careers in forestry
 - 4. Agencies responsible for our forests
 - 5. Federal regulation on forestry
 - 6. International
 - 7. Social Issues
- C. Ability to recognize multiple-use opportunities in the forests.
 - 1. Wood products for home and industry
 - 2. Wildlife
 - 3. Water
 - 4. Range
 - 5. Recreation
 - 6. Fisheries
 - 7. Aesthetics
 - 8. Natural Areas
 - 9. Wilderness Areas
- D. Ability to recognize environmental and social factors affecting the management of forests.
 - 1. Multiple use conflicts /with economic development
 - 2. Pollution
 - 3. Water Shed/Water Quality
 - 4. Wind Breaks/Soil Erosion
 - 5. Recreational Impacts
 - 6. World Populations
 - 7. Habitat Manipulation
 - 8. Endangered Species
- E. Ability to identify major species of trees of economic importance to the United States and internationally.
 - 1. Know the economically important major trees of each region of the United States.
 - 2. Identify the major tree species of those regions.
 - 3. Ability to identify hand tools, equipment, and their uses in forestry management.
 - 4. Forestry measurement and scaling equipment
 - 5. Forest harvesting equipment
 - 6. Planting equipment
 - 7. Safety equipment
 - 8. Environmental protective and enhancement
- F. Ability to recognize and understand approved silvicultural practices in the United States.
 - 1. Harvesting techniques (methods)
 - 2. Thinning /pruning schedules

3. Regeneration methods
 4. Timber stand improvement (TSI)
 5. Fire as a management tool
 6. Technological advances
 7. Habitat manipulation for wildlife, fisheries, and endangered species
- G. Ability to identify forest disorders caused by:
1. Insect and insect like pests
 2. Diseases
 3. Chemical applications or imbalance
 4. Mechanical Damage
 5. Animals
 6. Environmental factors such as:
 - a. Air pollution
 - b. Fire
 - c. Other natural disaster
 - d. Water Quality
 - e. Soil/site relationships
 - f. Drought
- H. Ability to take a forest inventory
1. Reading maps (land descriptions)
 2. Interpreting aerial photographs
 3. Using a compass
 4. Cruising standing timber
 - a. Diameter
 - b. Height
 - c. Volume
 - d. Site index
 - e. Species
 - f. Grade
- I. Ability to use marketing management strategies
1. Sales contracts
 2. Logging contracts
 3. Taxes
 4. Loss or profit
 5. Record-keeping
- J. Ability to recognize safety practices in forest management.
1. Wearing apparel
 2. Environmental awareness
 3. Equipment use
 4. Health hazards
 5. Government laws

EVENT RULES

1. **Team Make-up:** Team size shall be a minimum of 3 members with 4 being permissible. No multiple teams or additional individuals will be considered at this time. The team score is comprised of the three best individual scores.
2. **Participants must come to the event prepared to work in adverse weather conditions. The event will be conducted regardless of weather. They should have rain gear, warm clothes and work boots. Hard hats are required and leather work boots are recommended. No sneakers are allowed.**
3. **All events occur off site and students are to meet at Gate 1 on the morning of the event.**
4. **All national rules apply to this event.**
5. 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 to eliminate the team from the event.
6. Observers will be permitted, with prior permission of the superintendent, to observe the event is in progress.
7. 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.

8. All participants will be given an identification number by which they will be designated throughout the event.
9. Written Materials: 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.

EVENT FORMAT

A. EQUIPMENT

Materials student must provide: **Each participant must have a clean, free of notes clipboard, two sharpened No.2 pencils, and an electronic calculator.** Calculators used in this event should be battery operated, non-programmable, silent with large keys and large displays. Calculators should have 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.

Provided: All other tools and equipment will be furnished for the event. Participants must use the tools and equipment furnished at the event site.

B. CORE EVENTS

The contest will be made up of six events where individuals will accumulate points for their team and one event where the team works together. Three individual events and one team event will be core events, which remain the same every year.

Core Events:

General Forestry exam	(Individual)
Tree Identification	(Individual)
Forestry Equipment Identification	(Individual)
Comprehensive Team Event	(Entire Team)

1. General Knowledge Exam (100 points): The test may be completed as an individual or team effort. The superintendent will designate the format of the test. Fifty objective-type 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.

Time: Each participant will be allowed 30 minutes to complete this phase of the event.

Scoring: Each answer has a value of 2 points for a total maximum score of 100 points.

2. Tree Identification (100 points): Twenty specimens from the following list will be displayed for participants to identify by common names. A number will designate each specimen.

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

Scoring: Five points will be given for each specimen that is correctly identified for a maximum of 100 points.

Ash, White-Fraxinus americana	Chestnut, American-Castanea dentata
Basswood-Tilia americana	Cottonwood-Populus deltoides
Beech, American-Fagus grandifolia	Dogwood, Flowering-Cornus florida
Birch, Black-Betula lenta	Elm, American-Ulmus americana
Birch, Gray-Betula populifolia	Fir, Balsam-Abies balsamea
Birch, Paper-Betula papyrifera	Hemlock, Canadian-Tsuga canadensis
Birch, Yellow-Betula lutea	Hickory, Shagbark-Carya ovata
Boxelder-Acer negundo	Holly, American-Ilex opaca
Buckeye, Ohio-Aesculus glabra	Horsechestnut -Aesculus hippocastanum
Butternut-Juglans cinerea	Locust, Black-Robinia pseudoacacia
Catalpa-Catalpa bignoides	Maple, Norway-Acer platanoides
Cedar, No. White-Thuja occidentalis	Maple, Red-Acer rubrum
Cedar, Eastern Red-Juniperus virginiana	Maple, Silver-Acer saccharinum
Cherry, Black-Prunus serotina	Maple, Sugar-Acer saccharum
	Oak, No. Red-Quercus rubra

Oak, Pin-*Quercus palustris*
 Oak, White-*Quercus alba*
 Persimmon-*Diospyros virginiana*
 Pine, Pitch-*Pinus rigida*
 Pine, Red-*Pinus resinosa*
 Pine, Scotch-*Pinus sylvestris*
 Pine, White-*Pinus strobus*
 Sassafras-*Sassafras albidum*

Spruce Blue-*Picea pungens*
 Spruce White-*Picea glauca*
 Spruce, Norway-*Picea abies*
 Sweetgum-*Liquidambar styraciflua*
 Sycamore-*Platanus occidentalis*
 Tulip Tree-*Liriodendron tulipifera*
 Tupelo-*Nyssa sylvatica*
 Walnut, Black-*Juglans nigra*

3. Equipment Identification (100 points)

Twenty 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 number.

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

Scoring: Five points will be given for each piece of equipment identified correctly for 100 points. All answers must be correct. No partial credit will be given.

Specimen

No. Name

1. Tree Stick
2. Diameter Tape
3. Increment Borer
4. Bark Gauge
5. Tree Caliper
6. Pulaski Forester Axe
7. Stereoscope
8. GPS Receiver
9. Soil Sampler
10. Wheeler Caliper
11. Wedge Prism
12. Relaskop
13. Staff Compass
14. Hand Compass
15. Tree Planting Hoe or Bar
16. Log Rule
17. Planimeter
17. Survey Instrument (some type)
18. Hip Chain
19. Plastic Flagging
20. Tree marking Gun
21. Clinometer

22. Hypo-Hatchet
23. Canthook
24. Chainsaw
25. Safety Hard Hat
26. Chainsaw Chaps
27. Safety Glasses
28. Altimeter
29. Tally Meter
30. Fiberglass Measuring Tape
31. Fire Rake
32. Drip Torch
33. Data Recorder
34. Fire Weather Kit
35. Tally Book
36. Fire-Swatter
37. Dot Grid
38. Back-pack Fire Pump
39. Plant Press
40. Flow/Current Meter
41. Soil Test Kit
42. Water Sampler
43. Densimeter
44. Water Test Kit
45. PH Meter
46. Hand Lens/Field Microscope

C. INDIVIDUAL EVENTS

Participants will compete individually in three practicums from the following list. The event superintendent will designate three practicums to be completed by the participant. Each practicum has a score of 100 points and a time period of 30 minutes.

I. Tree Measurement Timber Cruising for Board Volume

1. Using forest measuring tools, (such as scale stick, diameter tape, or clinometer), each participant will measure pre-numbered trees on a fractional acre plot for board foot volume as specified by the event superintendent. The participant must record the DBH (Diameter Breast Height) computed to the nearest inch, and the merchantable height of each tree, height rounded down to the nearest 8' log. Participant must convert the volume to a one-acre basis.

- The following minimum diameters and log length will be:

Minimum Saw Timber	
DBH	12 inches
Top Diameter	8 inches
Height	16 feet

- Volume tables will be provided at the event.
- 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.

II. Timber Cruising for Cord Volume

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

- Minimum

DBH	5 inches
Height	12 feet
Top Diameter	4 inches

- Volume tables and the amount of cubic feet per one cord will be provided for calculation at the event.
- Scoring:** Three points will be allowed for the correct DBH and three points for the correct height. Forty (40) points will be allowed for the correct volume per acre. Five points will be deducted for each five percent plus or minus from the correct measured volume.

III. Forest Management Evaluation -Timber Stand Improvements (TSI) and/or thinning

- 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 at least 15, and not more than 30 marked trees within a timber stand, that needs thinning or some TSI work.
- All trees in the selected area will be considered as a forest management site, and the participants using one of the following options will score each marked tree:
 - 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. Information that will be needed to help participants in their decisions will include:
 - Markets available -(including hardwood)
 - Wildlife habitat considerations -(scope, etc.)
 - Present condition of stand
 - 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 either poster or a "handout" sheet.

- Time: Participants will be given 30 minutes to make their decisions.
- 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.)

IV. Map Interpretation

1. Participants will be furnished a United States geological survey topographic map with specific points marked for the participant to identify. The participant shall know legal description, recognize topographic map symbols, understand the meaning of map symbols and size and 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 the 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)
1/4	Quarter of a section (160 acres)
5. Scoring: Ten questions or problems will be completed. Ten points will awarded for each correct answer.

V. Compass Practicum

5. 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 ten 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.
6. **Scoring:** 100 points are possible: Ten points for each correct numbered site. Five points for correct azimuth and five points for correct distance. 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.

VI. Chainsaw Part Identification, Troubleshooting, and Safety

This practicum is divided into three parts:

Part 1 - Chainsaw part identification - Each participant will identify parts of a chainsaw. 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 the safety hazard or unsafe practice.

Scoring: 100 points are possible for this section.

VII. Tree/Forest Disorders

1. Symptoms of at least 10, and not more than 20 disorders from 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)/ Slides
 - c. Written descriptions
 - d. Written case history

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

2. Scoring: Five points will be given for each disorder that is correctly identified for a total of up to 100 points, depend-

ing on the number of disorders. (The possible score for this practicum will vary).

Tree Disorders

Aphid	Scale	Gypsy moth
Tussock moth	Spruce budworm	Spider mite
Cicada	Leaf spot	Beetles
Wood borer	Wildlife/Livestock damage	Mechanical Damage
Landscape Equipment Damage	Girdling roots	Fire damage
Nematode	Rust	Lightning damage
Butt or Heart Rot	Needle cast	Sawfly
Air Pollution	Canker	Sunscald
Damping off	Mistletoe	Wetwood or slime flux
Climatic injury: snow, wind, frost, Drought, hail	Chemical Damage	Tent Caterpillar

VIII. Forest Products Practicum

1. Ten to twenty wood products/samples will be displayed for participants to evaluate and identify its tree species source from the approved tree specimen list. The wood products/samples will be presented in one or more of the following forms:
 - a. Actual Sample
 - b. Picture(s)/slides
 - c. Written description

A number will designate each sample representing a species.

2. Scoring: This will be a multiple-choice practicum. Five points will be given for each wood product or sample that is correctly identified for a total of up to 100 points, depending on the number of products/samples. (The possible score for this practicum will vary).

IX. Forest Business Management Problem

1. This section is designed to determine the participants ability to apply economic principles and concepts of management to the decision making process by actual problem analysis and to defend the decisions made. This will involve a model forest operation with possible calculation on profit/loss, cost of operation, taxes, depreciation, marketing product, stumpage cost, record keeping, etc. The exact problem may or may not be in a listed reference. A maximum of ten problems or questions will be used.

D. TEAM EVENT

The team event can be any one of the 3 Core or 8 Individual Events listed **or** a combination thereof. All of the team members will participate in this event.

Time: The team will be allowed a total of 30 minutes to complete the event.

SCORING: The event will have a total value of 100 points.

E. SCORING

Phase	Individual Points	Team Points
Knowledge Exam	100	300
Tree Identification	100	300
Equipment Identification	100	300
Team Event		100
Practicums (2)	<u>200</u>	<u>600</u>
Total	500	1600

F. TIEBREAKERS

Tiebreakers for teams will be the first, second and third high individuals. Tiebreakers for individual scores will be 1) Knowledge Exam, 2) Tree Identification and 3) Equipment Identification.

AWARDS

All awards will be presented at the Awards Banquet. Awards for this event are sponsored by The Big E.

REFERENCES

This list of references is not intended to be inclusive. Other sources may be utilized and teachers are encouraged to make use of the very best instructional materials available. The following list contains references that may prove helpful during event preparation. The most current edition of each of the following references will be used.

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 80223. David A. Anderson, I. I. Holland and Gary L. Rolfe. *Forests and Forestry*, current edition. Danville, IL: The Interstate Printers Publishers, Inc. W. M. Harlow, E. S. Harrar, and F. M. White. *Textbook of Dendrology*, current edition. New York, NY: McGraw-Hill Book Company B. McManar Collins and Fred M. White. *Elementary Forestry*. Reston, VA: Reston Publishing Company, Inc.

B. McManar Collins and Fred M. White. *Elementary Forestry*. Reston, VA: Reston Publishing Company, Inc.

Silvics of Forests of United States, Handbook #271, U. S. Forest Service, P.O. Box 2417, 12th and Independence Avenue, SW, Washington, DC 20013.

Owners Manual -Homelite -Division of Textron, P.O. Box 7047, Charlotte, NC 28217.

Forestry Handbook, current edition, Edited by Karl Wenger for the Society of American Foresters, 5400 Grosvenor Lane, Bethesda, MD 20814.

Choices in Silviculture for American Forests, current edition. Society of American Foresters, 5400 Grosvenor Lane, Bethesda, MD 20814.

Timber Harvesting, current edition, American Pulpwood Association, The Interstate Printers & Publishers, Inc. Danville, IL.

Chain Saw Manual, current edition, American Pulpwood Association, The Interstate Printers & Publishers, Inc., Danville, IL

William G. Camp & Thomas R. Daugherty. *Managing Our Natural Resources*, current edition,. Albany, NY: Delmar Publishers, Inc.

Equipment References

Current Catalog of Forestry Suppliers, Inc., 205 West Rankin Street, Jackson, MS 39204-0397.

Other selected references are available from the U.S. Forest Service and state forestry agencies.

COMPASS PRACTICUM

Name _____ Chapter _____

State _____ Member No. _____

Station	Compass Reading	Distance	Score
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			