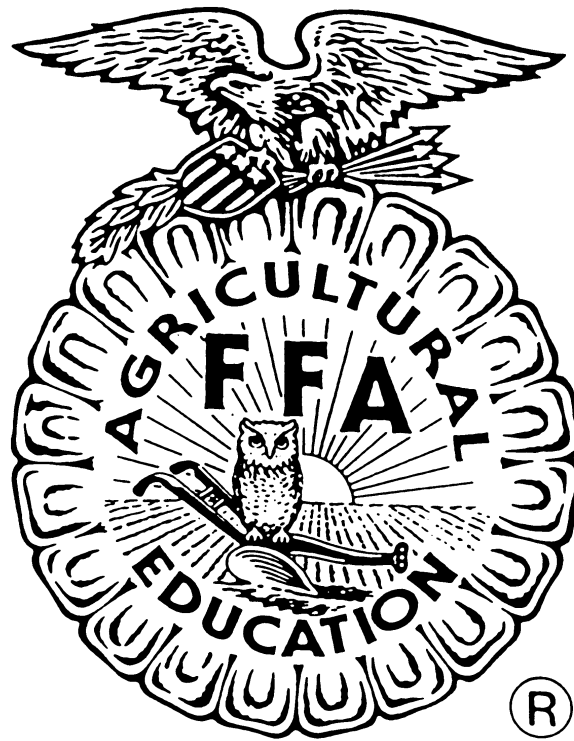


***FORESTRY
CAREER DEVELOPMENT EVENT***

RULES AND REGULATIONS

TEAM COMPETITION



ALABAMA FFA ASSOCIATION

TABLE OF CONTENTS

Purpose.....	1
Eligibility and Regulations	1
State Awards	1
Sponsor	1
General Event Rules	1
Event Phases	
General Knowledge Examination	4
Timber Cruising/Estimating	4
Timber Stand Improvement (TSI) and/or Thinning	15
Tree Identification	18
Compass Course.....	21
<u><i>Equipment Identification (State event only).....</i></u>	<u>24</u>
Team Activity: Map Interpretation (State event only).....	26
Tabulation Sheet – District	27
Tabulation Sheet – State.....	28
Suggested Schedule	29

No person shall be denied employment, be excluded from participation in, be denied the benefits of, or be subjected to discrimination in any program or activity on the basis of disability, sex, race, religion, national origin, color, or age. Ref: Sec. 1983, Civil Rights Act, 42 U.S.C.; Title VI and VII, Civil Rights Act of 1964; Rehabilitation Act of 1973, Sec. 504; Age Discrimination in Employment Act; Equal Pay Act of 1963; Title IX of the Education Amendment of 1972: Title IX Coordinator, P.O. Box 302101, Montgomery, Alabama 36130-2101 or call (334) 242-8444.

FORESTRY CAREER DEVELOPMENT EVENT

PURPOSE

To stimulate interest and to promote forestry instruction in the Agriscience Education curriculum as well as to provide recognition for those who have demonstrated skills and competencies as a result of instruction in forestry.

ELIGIBILITY AND REGULATIONS

For specific eligibility of participants, refer to the Contests and Awards Booklet.

Teams winning county events will be eligible to compete at the district level.

NOTE: An elimination event at the county level must be held to determine the county winner. Only the winner from each county in a district is eligible to participate in the district event. The County Chairman is responsible for planning the county event before the district event is held.

The top four place winners in the North, Central and South Districts will compete in the state finals.

STATE AWARDS

First Place	\$ 2,500.00 and chapter banner
Second Place	100.00 and chapter banner
Third Place	75.00 and chapter banner
Fourth Place	50.00 and chapter banner
High-Scoring Individual	-- Trophy

SPONSORS

Alabama Forestry Association
National FFA Foundation

GENERAL EVENT RULES

1. The teams competing in this event will be composed of a maximum of four members. The three highest scorers will make up the team. In, the field phase participants will be divided into four groups and will be allowed 20 minutes to complete each of the six parts.

2. No persons will be within the perimeter of an event, unless they are participants or a judge. Once participants have started an event, they will not be allowed to talk with anyone other than a judge until the event has been completed.
3. Binoculars can be used during the forestry event.
4. The site for the state event will be different from sites of local, county, and/or district eliminations.
5. The following materials will be necessary -- clean, covered clipboard or writing board, pencil, tree scale stick (purchased or made) and paper. Calculators may be used during the event. Participants will not be allowed to attach anything to the tree scale stick.
6. The use of tobacco is not permitted during the event.
7. The event will consist of five phases.

Phase 1. General Knowledge Examination (District and State -- optional at county level). Fifty minutes (30 minutes at State event) will be allowed to complete this phase. Questions dealing with site index will be included in the General Knowledge Examination. State Event only: Phase one will include Equipment ID.

Phase 2. Timber Cruising/Estimating -- Pulpwood and/or Sawtimber from standing trees. (Either one or the other or both will be selected.)

Phase 3. Timberstand Improvement (TSI)

Phase 4. Tree Identification

Phase 5. Compass Course

Phase 6. Team Activity: Map Interpretation (State only)

8. Tree measurements will be made by the official judges with a diameter tape and either a clinometer or abney level. Officials will round ½" diameters UP. Example: A tree that measures exactly 10.5 will be recorded as an 11" DBH.
9. The official study guides are 100 Forest Trees of Alabama, Developing Farm Woodlands in Alabama, and FFA Forestry Test Bank.

10. Notice! In case of a tie, the team with the highest individual score(s) will be the winner.
11. Notice! Written management objectives will be given for TSI.
12. The written test and team activity will be given on Monday. The field portion will be conducted on Monday, weather permitting. If cancelled on Monday, due to weather, the field portion will be conducted at 8:00 a.m. on Tuesday. The decision to cancel the field portion will be made by a representative of Agriscience Technology Education, the Alabama Forestry Association, and the Alabama Forestry Commission.
13. Compasses cannot be used to help determine tree height.
14. Participants are not allowed to touch or move the stakes in the compass course phase of the event.
15. Plants can be handled as long as there is no damage to them.
16. Participation by "alternates" (other than 4th member drop score) in County and District events is left to the discretion of the officials involved. Only official team members (3 + 1 drop score) will be allowed to participate in the State event.
17. Cell phones and other electronic devices (other than standard pocket calculators) are NOT to be used during the event.

EVENT PHASES

Phase 1 -- GENERAL KNOWLEDGE EXAMINATION

Fifty (50) objective-type, multiple-choice questions will be selected from areas of the forestry industry. This phase of the event will test the participants knowledge and understanding of basic principles of forestry. Each participant will be allowed 50 minutes (30 minutes at State Event) to complete this phase of the event. Each answer has a value of two points for a total maximum score of 100 points on the written test. The written test is optional at the county level and is mandatory (required) at the district and state levels. Questions will be taken from the reference, FFA Forestry Test Bank. Site index will be addressed in the General Knowledge Examination. (Example: interpreting a site index chart.)

State Event only: Phase one will include Equipment ID.

Phase 2A -- TIMBER CRUISING/ESTIMATING

1. A tree scale stick will be used. The tree scale stick may be purchased commercially or homemade.
2. A plot will be selected for sawtimber and/or pulpwood volume estimation. Event administrators should select sites that do not have dense stands in order for participants to have sufficient time to measure all marked trees. A plot will consist of a range of 8-10 trees. If both pulpwood and sawtimber are chosen, a minimum of 4 of each must be selected. NOTICE! If more than 10 pulpwood or 10 sawtimber trees are on the plot, then a less dense stand should be selected. It is not necessary to have 10 trees in a plot, but 10 will be the maximum.

Participants will be required to give the volume of pulpwood and/or the total volume of sawtimber on one acre by assuming the fifth-acre plot as representative of the whole area.

3. Participants will be given 20 minutes to measure the diameter and height of trees, followed immediately by a 20-minute period to complete volume calculations. No talking during the calculation period.

4. Using a scale stick, each participant will measure pre-numbered trees on a 1/5 acre plot for tree volumes. The participant must record the D.B.H. to the nearest inch and the merchantable height of each tree. Height is rounded down to the nearest 8' half-log or nearest 4' stick of pulpwood.

Height	No. of Logs	Height	No. of Logs
16	1	16-23	1
24	1½	24-31	1½
32	2	32-39	2
40	2½	40-47	2½
48	3	48-55	3
56	3½	56-63	3½
64	4	64-71	4
72	4½	72-79	4½
80	5	80-87	5

The minimum log will be 10 inches D.B.H. and 1 log merchantable. The minimum pulpwood trees will be 5 inches D.B.H. and 12 feet merchantable. Event officials will designate trees as to the pulpwood or sawlog category. All designated trees must be measured and recorded.

5. Each tree volume will be found in the volume tables (Table 1 and Table II), which will be furnished at the event. The volume tables are shown on pages 10-11. Record sawlog volumes as found in the table. Total all sawlog volumes after all trees have been estimated. Total all pulpwood cubic feet volumes after all trees have been estimated. Divide cubic feet by 75 to obtain cords. Carry out division to give nearest one hundredth of a cord.
6. Three points will be awarded for each correct D.B.H., number of 16' logs, or 4' lengths of pulpwood.
7. Forty points will be allowed for the correct total sawtimber volume per acre. Forty points will be allowed for the correct total volume of pulpwood per acre. REMEMBER -- the total volume will be the volume on the representative one acre (five times the total volume of the plot).
8. Five (5) points will be deducted for each 5% plus or minus from the correct measured volume. (See Score Card on pages 12-13)
9. It is recommended that event officials use 9" white paper plates to identify pulpwood or sawtimber trees. Pulpwood could be marked with a PW and sawtimber with a ST
10. Event officials will not select trees that the log tables will not accommodate (Tables I and II).

MEASUREMENT OF STANDING TREES STUDY GUIDE

PURPOSE: Standing trees are measured to obtain an estimate of the amount of various products which might be cut from the tree. This is done to have an idea of what volume is present. Most timber sales are based on volume. All forest properties must have some estimate of total volume, volume per acre, and volume by product so that the forest manager can decide the course of his/her future actions.

PRODUCTS: Forest products which may be measured are poles and piling, sawlogs, veneer logs, pulpwood, and fence posts.

METHOD Since all trees are basically a part of a cylinder, they have diameter and height which may be measured. Diameter of standing trees is measured at 4½ feet above ground level standing on the uphill side of the tree. This is abbreviated as D.B.H. (diameter breast high). The way to determine diameter will be explained in detail later. Height of a standing tree might be measured as total, the entire height from ground line to the top, or merchantable. This is a variable point, depending on the product which might be cut. If a tree might make a pole or piling, the height used will be measured in feet, by multiples of 5'. The top diameter is fixed by certain specifications. If a tree is to be cut into logs, the lengths cut will vary, depending on the demand of the mill to which the logs will go. This is true of sawlogs, as well as veneer logs. As a result, total merchantable lengths will vary. For this event, trees suitable for logs will have a top limiting diameter of 8" (disregarding whirls and limbs). Trees to be cut for pulpwood have a top limit of 4" outside bark.

TOOLS: To measure diameter, one may use a caliper, diameter tape, or tree scale stick. Since the tree scale stick is to be used in the event, the method of using it will be explained. Figure 1 shows how the tree scale stick is used to secure tree diameter.

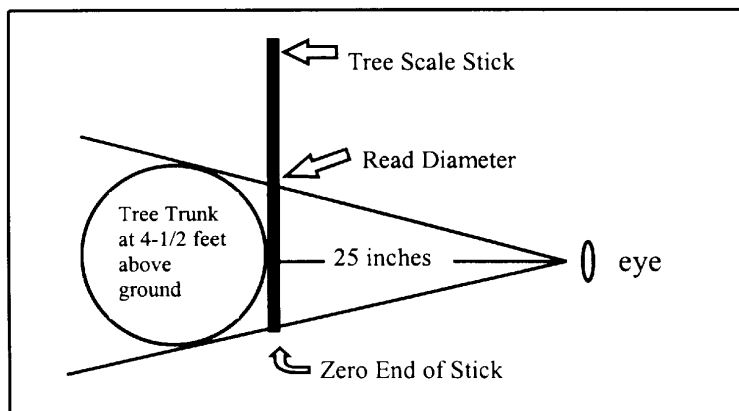


FIGURE 1: Method of using tree scale stick to obtain tree diameter. DO NOT MOVE HEAD, JUST EYE.

USING A TREE SCALE STICK: Use the flat side of the stick, indicated “Diameter of Tree” (in inches). **TREE SCALE** Hold the stick level at 25 inches from the eye, against the tree, at a **STICK** height of 4 1/2 feet above ground.

For those students whose arm reach is less than 25 inches, the following formula may be used to determine reach:

Scale graduations for the Biltmore stick may be computed by this formula,

$$\text{D.B.H. graduation} = \sqrt{\frac{AD^2}{A+D}}$$

Where A is the fixed distance from the eye to the stick in inches and D is any selected tree diameter in inches.

On commercially manufactured Biltmore sticks, diameter graduations are usually based on a fixed distance of 25 inches from the observer’s eye to D.B.H. However, foresters may construct sticks based on a different arm reach by use of the preceding formula (Avery, 1959).

$$\frac{\text{Arm reach (inches)}}{\text{Distance from tree (feet)}} = \frac{\text{Scale interval (inches)}}{\text{Log height (feet)}}$$

The foregoing ratio is solved to determine the scale interval, and this distance is uniformly marked off on a straight rule to define the desired log height spacings. The Merritt hypsometer is a useful aid for estimating tree heights by log intervals, but it is not generally reliable for precise work.

Practice is needed to find both the 4½-foot point in relation to your height, and the 25-inch distance to your eye. When the stick is placed against a tree, close one eye, sight at the left or zero end. This and the tree bark should be in the same line. Now, **DO NOT MOVE YOUR HEAD**. Just move your eye across the stick, to the right hand edge of the tree. Read the tree diameter to the nearest inch. It is necessary to hold the stick at a right angle to the tree.

Height is measured as follows, pace out 66 feet from the base of the tree, to a point where the entire tree can be seen. Hold the stick so that the “Number of 16 foot logs” side faces you. The zero end should point toward the ground. Plumb the stick, at 25 inches from the eye. Sight the zero end to appear to rest on the stump. **DO NOT MOVE YOUR HEAD**. Run your eye up the stick to the point where the top of the last merchantable cut would be made in the tree. Remember to round down. Refer to examples on page 4, number 4.

Practice on pacing is needed to find the 66-foot point. The 25-inch distance from eye to stick is still the same as in measuring tree diameter.

Occasionally, a stand of young trees is so dense that the 66-foot distance is too far to clearly see the tree being measured. In this case, use a 25-foot distance from the tree and the 25-inch distance from eye to stick. Now, use the inch scale on the opposite edge of the stick (marked "Diameter of Log"). Sight with the zero at stump height and without moving your head, run your eye up the inch scale to find the merchantable length. At this 25-foot distance, with the 25-inch eye to stick distance, 1 inch on the stick equals 1 foot on the tree. If arm reach is less than 25 inches, use the distance in feet equivalent to the arm reach to read the correct height on the inch scale.

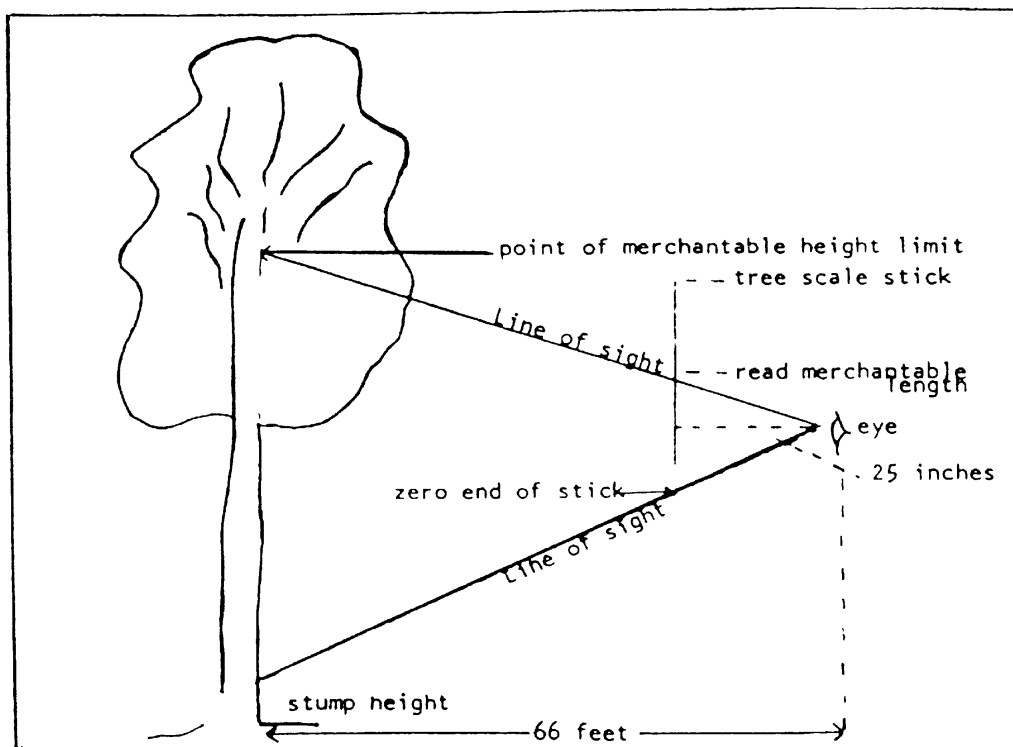


FIGURE 2: Method of using tree scale stick to obtain merchantable height. DO NOT MOVE HEAD, JUST EYE.

VOLUME TABLES

These are a composite of actual values on an average basis for the product indicated. Once the tree measurement is determined, enter the appropriate table from the left with the tree diameter (D.B.H.). Move across the right to the column containing tree merchantable height at the top. At the intersection of these two points will be that tree's volume. Sawlog trees will range from a minimum of 10 to a maximum of 30 inches D.B.H. The table shows the number of logs by half-log intervals from one to five logs. Read and record each tree volume directly and separately.

Pulpwood tree volumes are shown for trees from 5 to 16 inches and from 12 to 64 feet merchantable. The volume is in cubic feet. This is recorded on the vent score sheet for each tree measured. In order to find the number of cords, divide the total cubic feet volume by 75. When you divide the sum of the cubic feet volume by 75, you will determine the number of standard cords that you have measured.

Use Table I for pulpwood and Table II for sawlogs.

TABLE I - (Pulpwood)
CUBIC - FOOT VOLUME TABLE

FC - 78

DBH INCHES	MERCHANTABLE LENGTH - in feet													
	12	16	20	24	28	32	36	40	44	48	52	56	60	64
5	1.3	1.7	2.0	2.3	2.5									
6	1.8	2.4	2.8	3.2	3.6	3.9	4.3							
7	2.4	3.1	3.6	4.1	4.6	5.1	5.6	6.1	6.6					
8	3.0	3.9	4.5	5.1	5.7	6.3	7.0	7.6	8.2	8.8	9.4			
9	3.8	4.9	5.6	6.4	7.1	7.8	8.6	9.3	10.0	10.8	11.5	12.2		
10		6.0	6.8	7.7	8.5	9.4	10.2	11.0	11.9	12.7	13.6	14.4	15.3	16.1
11			8.8	10.1	11.4	12.8	13.8	14.8	15.8	16.9	17.4	18.2	19.0	19.7
12				12.0	13.6	15.2	16.4	17.7	19.0	20.2	21.2	22.0	23.0	23.9
13				14.0	15.9	17.9	19.4	20.8	22.3	23.8	24.9	26.0	27.2	28.4
14					18.4	20.6	22.3	24.0	25.7	27.5	28.7	30.0	31.3	32.5
15					21.2	23.8	26.2	27.9	29.9	32.0	33.7	35.2	36.7	38.2
16					24.2	27.1	29.4	31.8	34.2	36.5	38.5	40.4	42.1	43.7

SOURCE: Southern Forest Experiment Station

FY-11

TABLE II (Sawlogs)
DOYLE LOG RULE
FC - 78

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	14	17	20	21	22				
11	22	27	32	35	38				
12	29	36	43	48	53	54	56		
13	38	48	59	66	73	76	80		
14	48	62	75	84	93	98	103		
15	60	78	96	108	121	128	136		
16	72	94	116	132	149	160	170		
17	86	113	140	161	182	196	209		
18	100	132	164	190	215	232	248		
19	118	156	194	225	256	276	297		
20	135	180	225	261	297	322	346	364	383
21	151	207	260	302	344	374	404	428	452
22	174	234	295	344	392	427	462	492	521
23	195	264	332	388	444	483	522	558	594
24	216	293	370	433	496	539	582	625	668
25	241	328	414	486	558	609	660	709	758
26	266	362	459	539	619	678	737	793	849
27	292	398	505	594	684	749	814	877	940
28	317	434	551	650	750	820	890	961	1032
29	346	475	604	714	824	902	980	1061	1142
30	376	517	658	778	898	984	1069	1160	1251

SOURCE: United States Department of Agriculture Forest Service

SCORE CHART FOR VOLUME OF PULPWOOD AND SAWTIMBER

Check One: Pulpwood _____ Sawtimber _____

Volume		
<u>Percent Range</u>	<u>Volume Range</u>	<u>Volume Score</u>
60 - 65%-----	_____	----- 5 pts.
65 - 70%-----	_____	----- 10 pts.
70 - 75%-----	_____	----- 15 pts.
75 - 80%-----	_____	----- 20 pts.
80 - 85%-----	_____	----- 25 pts.
85 - 90%-----	_____	----- 30 pts.
90 - 95%-----	_____	----- 35 pts.
95-105%-----	_____	----- 40 pts.
105-110%-----	_____	----- 35 pts.
110-115%-----	_____	----- 30 pts.
115-120%-----	_____	----- 25 pts.
120-125%-----	_____	----- 20 pts.
125-130%-----	_____	----- 15 pts.
130-135%-----	_____	----- 10 pts.
135-140%-----	_____	----- 5 pts.

This chart is to be used only by official scorers.

Front of Timber Cruising/Estimating Score Card

ALABAMA FFA FORESTRY CAREER
DEVELOPMENT EVENT SCORE CARD

Participant's Name _____

Participant's No. _____

School _____

TIMBER CRUISING/ESTIMATING

(Maximum Score 140 Points)

A. Pulpwood

No.	DBH (3 pts.)	Mrch. Ht. (3 pts.)	Cu.Ft. (0pts.)	Score
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

Cu. Ft. on 1/5 AC plot _____ Crusing Score _____

Cu. Ft. per Acre _____ Volume Score _____
(Maximum Volume Score 40 Points)

Cords per Acre _____

TOTAL PULPWOOD SCORE _____

Back of Timber Cruising/Estimating Score Card

B. Sawtimber

No.	DBH(3 pts.)	#16'Logs (3 pts.)	Bd.Ft. (0pts.)	Score
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

Bd. Ft. on 1/5 acre plot _____ **Crusing Score** _____

Bd. Ft. per Acre _____ **Volume Score** _____
 (Maximum Volume Score 40 Points)

TOTAL SAWTIMBER SCORE _____

Phase 3 -- TIMBER STAND IMPROVEMENT (TSI) AND/OR THINNING

1. Twenty five (25) trees will be selected and designated for use in this of the event part. All twenty five trees selected should be within a 1/5 acre plot (52'8" radius).
2. The 25 trees selected will represent a timber stand that needs either thinning or some TSI work. The participants will be given a "situation" concerning the forest management objectives of this imaginary stand. Unmarked trees will be considered as part of the stand. Information that will help the participants with their decisions will include such things as wildlife habitat considerations, markets available, present condition of the stand, and the final goal of the management plan. Other information may be offered in order to help make the proper decisions.
3. Participants will have only 3 options for each of the 25 trees. The options will be:
 1. Harvest -- Utilize the tree.
 2. Leave -- This tree will remain in the stand for a good reason.
 3. Deaden -- (Undesirable tree, not merchantable or beneficial to wildlife, should be deadened or cut down and left in woods)
4. Four points will be allowed for each correct decision for a total of 100 points.
5. Participants will be given 20 minutes to make their decision in TSI.

TIMBER STAND IMPROVEMENT (TSI) AND/OR THINNING
STUDY GUIDE

PURPOSE: Exercising proper judgment in removing poor quality trees from your timber stands at the opportune time is essential to the overall health, vigor, and value of your forests.

THINNING:

You should thin (harvest) overstocked woods or those which are becoming crowded in order to give the remaining trees more space in which to grow in size and value.

METHOD

1. Determine which species of trees you want to harvest.

Trees will be marked for harvest if they are merchantable, will not help the landowner meet his objective(s), and are interfering with the growth of better trees. Trees that will not survive until the next cutting cycle should be harvested

regardless of spacing unless they are useful for non-economic objectives. Minimum merchantable size is 5.0 inches DBH and twelve feet in height to a 4.0 inch top unless otherwise specified in the written "situation". Maximum merchantable size for particular product classifications is unlimited unless so specified. Large trees may be considered unmerchantable if they are hollow or decayed throughout the majority of the main stem. All species are considered merchantable for any and all product classifications unless otherwise specified in the written "situation".

2. Determine which species of trees you want to leave.

Trees will be marked leave, that are either considered "crop" trees that will remain in the stand until the final harvest or the next cutting cycle or will in some other way help the landowner achieve his management objective(s).

3. Determine which species of trees you want to deaden.

Trees should be deadened that are not merchantable, will not help achieve the management objective(s), and are interfering with the growth of better trees.

TSI Timber stand improvement will eliminate woody vegetation, undesirable species and commercially cull trees that prevent or restrict the growth and development of desired trees and forage plants. Only those trees that are harmful to the orderly execution of your management plans should be deadened. Often low grade or undesirable species of hardwood can be sold. This approach should be considered with the assistance of a Forester before TSI work is started. Also, some cull trees and low quality species may be considered from the wildlife standpoint.

	(T) (1)	(F) (2)	(3)	KEY (4)
1	A	B	C	D E
2	A	B	C	D E
3	A	B	C	D E
4	A	B	C	D E
5	A	B	C	D E
6	A	B	C	D E
7	A	B	C	D E
8	A	B	C	D E
9	A	B	C	D E
10	A	B	C	D E
11	A	B	C	D E
12	A	B	C	D E
13	A	B	C	D E
14	A	B	C	D E
15	A	B	C	D E
16	A	B	C	D E
17	A	B	C	D E
18	A	B	C	D E
19	A	B	C	D E
20	A	B	C	D E
21	A	B	C	D E
22	A	B	C	D E
23	A	B	C	D E
24	A	B	C	D E
25	A	B	C	D E
26	A	B	C	D E
27	A	B	C	D E
28	A	B	C	D E
29	A	B	C	D E
30	A	B	C	D E
31	A	B	C	D E
32	A	B	C	D E
33	A	B	C	D E
34	A	B	C	D E
35	A	B	C	D E
36	A	B	C	D E
37	A	B	C	D E
38	A	B	C	D E
39	A	B	C	D E
40	A	B	C	D E
41	A	B	C	D E
42	A	B	C	D E
43	A	B	C	D E
44	A	B	C	D E
45	A	B	C	D E
46	A	B	C	D E
47	A	B	C	D E
48	A	B	C	D E
49	A	B	C	D E
50	A	B	C	D E

PART 1

IMPORTANT

USE PENCIL ONLY

• EXAMPLE: A B C D E

• ERASE COMPLETELY TO CHANGE

© 1988 SCANTRON SYSTEMS, INC.

NAME _____

SUBJECT _____

DATE _____ HOUR _____

SCANTROM FORM 882

TEST RECORD	
PART 1	
PART 2	
TOTAL	

FORM 882 (11-81)

FEED THIS DIRECTION

A scantron card will be used as the score card for TSI. Participants will mark their option choice on the scantron card as follows:

- Harvest -- mark "A"
- Leave -- mark "B"
- Deaden -- mark "C"

Phase 4 -- TREE IDENTIFICATION

1. Participants will be required to identify 20 species from those listed. The same species may be used more than once on the same event. Participants will be judged on the accuracy of identification.

The Tree Identification Score Card has been revised. The front is shown on page 18 and back on page 19. Participants will simply write the number representing the tree species as listed on the back of the card. Participants will no longer be required to spell the name of the tree.

2. Five points will be given for each correct answer.

SPECIES

American Beech	Common Persimmon	Sassafras
American Elm	Eastern Cottonwood	Scarlet Oak
American Holly	Eastern Redbud	Shortleaf Pine
American Sycamore	Eastern Redcedar	Silver Maple
Ash	Flowering Dogwood	Slash Pine
Baldcypress	Hackberry	Slippery Elm
Basswood	Hickory	Sourwood
Bay	Honey Locust	Southern Catalpa
Black Cherry	Live Oak	Southern Magnolia
Blackgum	Loblolly Pine	Southern Red Oak
Blackjack Oak	Longleaf Pine	Sweetgum
Black Locust	Northern Red Oak	Virginia Pine
Black Oak	Osage-orange	Water Oak
Black Walnut	Overcup Oak	White Oak
Black Willow	Pecan	Willow Oak
Boxelder	Post Oak	Winged Elm
Buckeye (sp)	Red Maple	Yellow-poplar
Cherrybark Oak	Red Mulberry	
Chestnut Oak	River Birch	

NOTE: Only these trees will be considered. The official study guide for the Tree Identification phase is 100 Forest Trees of Alabama.

Front of Tree Identification Score Card

**ALABAMA FFA FORESTRY CAREER
DEVELOPMENT EVENT SCORE CARD**

Participant's Name _____

Participant's No. _____

School _____

TREE IDENTIFICATION (Maximum Score 100 Points)

Specimen Number	Number From Back of Card	Specimen Number	Number From Back of Card
1	_____	11	_____
2	_____	12	_____
3	_____	13	_____
4	_____	14	_____
5	_____	15	_____
6	_____	16	_____
7	_____	17	_____
8	_____	18	_____
9	_____	19	_____
10	_____	20	_____

Score

Back of Tree Identification Score Card

Enter the number in front of the tree species below in the appropriate space on the front of this card.

- | | |
|-------------------------------|------------------------------|
| 1. American Beech | 29. Loblolly Pine |
| 2. American Elm | 30. Longleaf Pine |
| 3. American Holly | 31. Northern Red Oak |
| 4. American Sycamore | 32. Osage-orange |
| 5. Ash | 33. Overcup Oak |
| 6. Baldcypress | 34. Pecan |
| 7. Basswood | 35. Post Oak |
| 8. Bay | 36. Red Maple |
| 9. Black Cherry | 37. Red Mulberry |
| 10. Blackgum | 38. River Birch |
| 11. Blackjack Oak | 39. Sassafras |
| 12. Black Locust | 40. Scarlet Oak |
| 13. Black Oak | 41. Shortleaf Pine |
| 14. Black Walnut | 42. Silver Maple |
| 15. Black Willow | 43. Slash Pine |
| 16. Boxelder | 44. Slippery Elm |
| 17. Buckeye (sp) | 45. Sourwood |
| 18. Cherrybark Oak | 46. Southern Catalpa |
| 19. Chestnut Oak | 47. Southern Magnolia |
| 20. Common Persimmon | 48. Southern Red Oak |
| 21. Eastern Cottonwood | 49. Sweetgum |
| 22. Eastern Redbud | 50. Virginia Pine |
| 23. Eastern Redcedar | 51. Water Oak |
| 24. Flowering Dogwood | 52. White Oak |
| 25. Hackberry | 53. Willow Oak |
| 26. Hickory | 54. Winged Elm |
| 27. Honey Locust | 55. Yellow-poplar |
| 28. Live Oak | |

Phase 5 -- COMPASS COURSE

1. The compass course is a part of the event at the county, district, and state levels.
2. **Course Setup**

The tools needed for setting up the compass course are: one accurate hand compass, staff compass; one steel tape; and a minimum of six wooden stakes of sufficient length to leave two to three feet above the ground.

Mark 6 points, using a stake at each point. (It is suggested that stakes be either painted orange or wrapped with orange flagging.) There should be a minimum of five degrees difference in direction and 50 feet distance between each point. The entire course should not be over 600 feet.

Points and direction should be designated A (start), B, C, D, E, and F (end). Distances should be designated as A-B, B-C, C-D, D-E, and E-F.

Points (stakes) should be clearly visible. Each point should be clearly labeled as A, B, C, D, E, and F (perhaps using paper plates stapled to each stake).

3. **Operation of Course**

Event officials must keep in mind that each group has only twenty minutes to complete the course

It is suggested that if the number of teams represented is expected to exceed six, then one or more parallel courses should be set up. This will permit more than one participant in each group to work on the same point at the same time. (It would not be necessary to separate these parallel courses by more than three to four feet.)

Each participant will take a bearing (or azimuth) at each of the first five points, using any type hand compass. Compasses designed to be mounted on a tripod or staff should not be allowed. **"Digital" and/or "electronic" compasses are NOT ALLOWED.**

Each team member will need to bring a hand compass with declination set at zero. (Note: Each team member should have their team name on their compass.)

After each direction is recorded, the participant will pace the following distance and record it to the nearest foot. Standard pocket Calculators may be used to convert paces to feet.

Participants MAY NOT support their compass on any stake or other object. **Participants MAY NOT touch or move the stakes in any way.**

4. Scoring

Each participant will be awarded 100 points for the compass course phase at the beginning of the event. Ten (10) points will be awarded for each compass reading and ten (10) points for each correct distance. For each two degree error, one point will be deducted. For each 2-foot error, one point will be deducted. For each direction or each distance that is omitted, ten (10) points will be deducted. No more than 10 points will be deducted for each direction or distance.

ALABAMA FFA FORESTRY CAREER DEVELOPMENT EVENT SCORE CARD

**COMPASS COURSE
SCORE CARD**
Maximum Score
100 points

Participant's Name _____

Participant's No. _____

School _____

POINT	DIRECTION (bearing or azimuth)	ERROR	POINT DEDUCTION (1 point for each 2-degree error) Maximum 10 pts.	LINE	DISTANCE (to nearest foot)	ERROR	POINT DEDUCTION (1 point for each 2-foot error) Maximum 10 pts.
A				A-B			
B				B-C			
C				C-D			
D				D-E			
E				E-F			
TOTALS							TOTALS

TOTAL POINTS DEDUCTED: _____

COMPASS COURSE SCORE _____

FY-24

Equipment Identification: State Contest Only (beginning 2011)

This is an individual event to be conducted in conjunction with the Written Exam. (30 minute time limit for Equipment ID and 30 minute time limit for written exam)

Twenty (20) pieces of equipment (or slides/photos or a combination) 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: Three points will be given for each piece of equipment identified correctly for a total of 60 points. All answers must be correct. No partial credit will be given.

51 Tree Stick

52 Diameter Tape

53 Increment Borer

54 Bark Gauge

55 Tree Caliper

56 Pulaski Forester Axe

57 Stereoscope

58 GPS Receiver

59 Soil Sampler

60 Wheeler Caliper

61 Wedge Prism

62 Relaskop

63 Staff Compass

64 Hand Compass

65 Tree Planting Hoe or Bar

66 Log Rule

67 Planimeter

68 Survey Instrument (some type)

69 Hip Chain

70 Plastic Flagging

71 Tree Marking Gun

72 Logger's Tape

73 Clinometer

74 Hypo-Hatchet

75 Canthook

76 Chainsaw

77 Safety Hard Hat

78 Chainsaw Chaps

79 Safety Glasses

80 Altimeter

81 Tally Meter

82 Fiberglass Measuring Tape

83 Fire Rake

84 Drip Torch

85 Data Recorder

86 Fire Weather Kit

87 Tally Book

88 Fire-Swatter

89 Dot Grid

90 Back-pack Fire Pump

91 Plant Press

92 Flow/current Meter

93 Soil Test Kit

94 Water Sampler

95 Densiometer

96 Water Test Kit

97 pH Meter

98 Hand Lens/Field Microscope

Alabama FFA Forestry Career Development Event Scorecard

Participant's Name _____

Participant's number _____

School _____

Equipment Identification (maximum 60 points)

Specimen number	number from equip. list	Specimen number	number from equip. list
1.	_____	11.	_____
2.	_____	12.	_____
3.	_____	13.	_____
4.	_____	14.	_____
5.	_____	15.	_____
6.	_____	16.	_____
7.	_____	17.	_____
8.	_____	18.	_____
9.	_____	19.	_____
10.	_____	20.	_____

TOTAL SCORE:

TEAM ACTIVITY: MAP INTERPRETATION

This team activity will be conducted at the State level only. All teams will be required to participate.

1. Participants will be furnished a *United States Geological Survey topographic map* with specific points marked to be identified. 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 a map will be clearly marked with a number or arrow pointing to the section, symbol, or area on the map to be identified.

Examples:

- (1) What is the legal description of the area boxed?
 - (2) What is the item located at this point?
 - (3) What is the acreage of the area enclosed?
 - (4) In what section is the city of Marshall located?
3. 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 section (160 acres)
 4. **SCORING:** Ten questions or problems will be completed. The ten questions or problems will be multiple-choice with four (4) possible answers. Ten points will be awarded for each correct answer.

REFERENCES:

The U.S. Department of Interior Geological Survey Topographic Map information and Symbols Key. Available from: Map Distribution, U. S. Geological Survey, Box 25286, Federal Center, Denver, CO 80223.

- *How to teach with Topographic Map (\$12.95)
- *Your Way with Map and Compass Orienteering (\$8.95)
- *Be Expert with Map and Compass (\$17.25)

*All Available through "Ben Meadows Co." or "Forestry Suppliers"

**FORESTRY
 CAREER DEVELOPMENT EVENT**

CHAPTER _____

Participant	Participant Number	Event Phase	Participant Score	Participant Total
Name of Participant # 1	Written Exam	(100 points)		
	Timber Cruising/Estimating	(Max. 140 points.)		
	Pulpwood (Score:)			
	Sawtimber (Score:)			
	Timberstand Improvement (TSI)	(100 pts.)		
	Tree Identification	(100 points.)		
	Compass Course	(100 points.)		
Participant # 1's Total			(Maximum score possible is 540 points.)	
Name of Participant # 2	Written Exam	(100 points)		
	Timber Cruising/Estimating	(Max. 140 points.)		
	Pulpwood (Score:)			
	Sawtimber (Score:)			
	Timberstand Improvement (TSI)	(100 pts.)		
	Tree Identification	(100 points.)		
	Compass Course	(100 points.)		
Participant # 2's Total			(Maximum score possible is 540 points.)	
Name of Participant # 3	Written Exam	(100 points)		
	Timber Cruising/Estimating	(Max. 140 points.)		
	Pulpwood (Score:)			
	Sawtimber (Score:)			
	Timberstand Improvement (TSI)	(100 pts.)		
	Tree Identification	(100 points.)		
	Compass Course	(100 points.)		
Participant # 3's Total			(Maximum score possible is 540 points.)	
Name of Participant # 4	Written Exam	(100 points)		
	Timber Cruising/Estimating	(Max. 140 points.)		
	Pulpwood (Score:)			
	Sawtimber (Score:)			
	Timberstand Improvement (TSI)	(100 pts.)		
	Tree Identification	(100 points.)		
	Compass Course	(100 points.)		
Participant # 4's Total			(Maximum score possible is 540 points.)	
TEAM RANKING		TOTAL TEAM SCORE		
		(The three highest individual participant scores will make up the team score. Maximum score possible is 1620 points.)		

FORESTRY
CAREER DEVELOPMENT EVENT

CHAPTER _____

Participant	Participant Number	Event Phase	Participant Score	Participant Total	
Name of Participant # 1	Written Exam (100 points)				
	Timber Cruising/Estimating (Max. 140 points.) Pulpwood (Score:) Sawtimber (Score:)				
	Timberstand Improvement (TSI) (100 pts.)				
	Tree Identification (100 points.)				
	Compass Course (100 points.)				
	Equipment Identification (60 points)				
	Participant # 1's Total (Maximum score possible is 600 points.)				
	Name of Participant # 2	Written Exam (100 points)			
Timber Cruising/Estimating (Max. 140 points.) Pulpwood (Score:) Sawtimber (Score:)					
Timberstand Improvement (TSI) (100 pts.)					
Tree Identification (100 points.)					
Compass Course (100 points.)					
Equipment Identification (60 points)					
Participant # 2's Total (Maximum score possible is 600 points.)					
Name of Participant # 3		Written Exam (100 points)			
	Timber Cruising/Estimating (Max. 140 points.) Pulpwood (Score:) Sawtimber (Score:)				
	Timberstand Improvement (TSI) (100 pts.)				
	Tree Identification (100 points.)				
	Compass Course (100 points.)				
	Equipment Identification (60 points)				
	Participant # 3's Total (Maximum score possible is 600 points.)				
	Name of Participant # 4	Written Exam (100 points)			
Timber Cruising/Estimating (Max. 140 points.) Pulpwood (Score:) Sawtimber (Score:)					
Timberstand Improvement (TSI) (100 pts.)					
Tree Identification (100 points.)					
Compass Course (100 points.)					
Equipment Identification (60 points)					
Participant # 4's Total (Maximum score possible is 600 points.)					
TEAM ACTIVITY: Map Interpretation (100 points)					
TEAM RANKING	TOTAL TEAM SCORE (The three highest individual participant scores plus the team activity score will make up the team score. Maximum score possible is 1840 points.)				

SUGGESTED SCHEDULE

Team Activity - 20 minutes				
	Group 1	Group 2	Group 3	Group 4
Time Period A	Timber Measurements	Tree ID	TSI	Compass Course
B	Calculations	Timber Measurements	Compass Course	TSI
C	Compass Course	Calculations	Timber Measurements	Tree ID
D	Tree ID	TSI	Calculations	Timber Measurements
E	TSI	Compass Course	Tree ID	Calculations

Note: Time Periods are twenty minutes each.