4-H Forestry Competition Handbook

Content

General Information

The Mississippi 4-H Forestry Competition tests forestry knowledge and skills. This competition is held at the district and/or state levels. Many counties have local competitions to select a forestry team to represent the county at the district competition. County competitions are strongly encouraged, because they promote 4-H forestry activity in the county, but they are not required.

The 4-H Forestry Competition is modeled after the National 4-H Forestry Invitational held annually at Jackson's Mill State 4-H Camp in West Virginia. This helps Mississippi 4-H'ers to be prepared to advance from their county competitions all the way to the National 4-H Forestry Invitational.

The Forestry Competition is conducted at the junior and senior levels, but only seniors may compete at the state and national levels.

The junior competition is conducted only at the district level and includes three events:

1. Tree Identification
2. Tree Measurement
3. Forest Knowledge

The senior competition is held at the district and/or state level and includes four events:

1. Tree Identification
2. Tree Measurement
3. Forest Knowledge
4. Forest Insect and Disease Identification

The forest is a source of products, services, values, and benefits necessary for quality living.

Goals and Objectives

The purpose of the 4-H Forestry Competition is to provide the opportunity for 4-H forestry members to:

- Develop leadership talents, achieve character development, and make new friends.
- Appreciate the need and importance of conserving forests as a source of products, services, values, and benefits necessary for quality living.
- Acquire information and understanding of practical skills in forest management, use of forest products, and appreciation of forest ecology.
- Realize that privately owned forest products provide most of the raw material used by forest products manufacturers in Mississippi.

The competition, while competitive in nature, is intended and managed to provide a well-rounded forestry educational experience. Study references are available from Extension Forestry, unless otherwise noted.

General Rules

1. The forestry competition will have at least three parts: Tree Identification, Tree Measurement, and Forest Knowledge (seniors will also compete in Forest Insect and Disease Identification).
2. This competition is a team event. A team will have three or preferably four members. Individuals may compete, but they will not be eligible to advance in district and state competition. Senior teams that place first, second, and third in the district competition, if one is held, will advance to compete in the state competition, with a chance to represent Mississippi at the National 4-H Forestry Invitational.
3. Each contestant must bring a pencil, clipboard, and tree scale stick. It is also suggested that contestants wear appropriate field clothes (jeans and boots), since part of the contest is held outdoors.
4. Calculators are permitted.
5. In scoring, the lowest combined score of a four-member team is dropped and the top three combined scores used as the team total. If a team has only three members, the low score is not dropped.
6. Ties are broken with the highest scores in (1) Forest Knowledge, (2) Tree Identification, and (3) Tree Measurement.

Junior Competition

The junior competition is similar, but less demanding, than the senior competition. It is designed to make junior 4-H forestry contestants familiar with the competition, so they will develop into strong competitors at the senior level.

Tree Identification

1. Junior participants are required to identify 20 trees from leaf mounts, photos, or specimens in the field. MSU Extension publication 146 Know Your Trees contains tree species included in this portion of the contest.
2. The contest is conducted indoors like a "lab practical." Participants will be given no more than 1 minute per station to identify each leaf mount. The contest will have a time limit of 30 minutes.
3. The correct answer for each tree is the **common name** shown on the Official 4-H Forestry Tree Identification List (page 6). This list is derived from the common names given in MSU Extension Publication 146 *Know Your Trees*.
4. The answer given must be the complete, correctly spelled **common name** as given in on the Official 4-H Forestry Tree List. One-half credit is given if the name is incomplete or misspelled. **Example:** If the species is **river birch**, then **birch** will receive half credit for an incomplete common name. If **birch** is also misspelled, no credit is given.
5. A total of 100 points is possible in this event; each answer is worth five points. In the case of a tie, the winner is the participant with the greatest number of correctly identified oaks, then pines, then elms.

Tree Measurement

1. Tree measurement participants will measure three trees using a tree scale stick. For each tree, participants will identify the common name, measure the diameter at breast height (DBH) in inches, measure merchantable height in logs, and figure the total timber volume in the measured trees. The time limit for this event is 45 minutes.
2. DBH is measured in 2-inch, even-numbered-diameter classes. The correct answers for the DBH on the contest score form are even numbers, such as 10, 16, 22, and so on. A tree in the diameter range 9.1 to 11.0 inches is tallied as DBH 10 inches. In timber cruising for management purposes, it is common to tally trees in 2-inch-diameter classes.
3. Merchantable height is measured in 16-foot logs and estimated to the nearest full ½ log. For example, if a tree measures 2¼ logs, it should be tallied as 2 logs, because the ¼ log is too short to make another full ½ log. When measuring logs, always round **down**, not up. Measure merchantable height up to an 8-inch top or a major fork in the trunk. Deciding where to "cut the tree off" can be a judgment call based on species and log quality. However "controversial" trees will be avoided, and

4-H'ers will be given trees that will challenge their abilities to measure diameter and height only.

4. DBH and merchantable height are used to determine volume of lumber in each tree by using a volume table given at the contest. 4-H forestery contestants should know how to find a log volume from a volume table before coming to the contest. A volume table will be given at the contest.
5. All individual tree volumes are added together to arrive at a "plot volume" that will be entered on the score sheet. Calculators are permitted.
6. A total of 100 points is possible in this event. The common name, DBH, merchantable height, and volume for each tree will be valued at 5 points each. A possible maximum of 40 points will be given for the "plot volume" estimate. The "plot volume" will be scored as follows:

If the contestant's estimate of plot volume is within:

±	5% of official volume	=	40 points
±	10% of official volume	=	30 points
±	15% of official volume	=	20 points
±	20% of official volume	=	10 points
>±	20% of official volume	=	0 points

The common name given in the Tree Measurement section is the same as required in Tree Identification. The same scoring rules as Tree Identification apply.

Forest Knowledge

There is a wealth of information about forestry available through MSU Extension and the Internet. 4-H youth are encouraged to explore these resources, and develop their own forestry library. There is a section on Study References at the end of the Senior Competition Section.

Participants will answer 20 written, multiple choice, or true-false questions on forestry subject matter taken from the listed references. The time limit for the event is 30 minutes. A total of 100 points is possible in this event, with each question worth 5 points. Forest Knowledge is designed to test the 4-H contestant's general knowledge of important forestry concepts.

Senior Competition

The senior competition is designed to challenge participants' skills and knowledge of forestry, while preparing them for national competition.

Tree Identification

1. The senior participants are required to identify 50 trees from leaf mounts, photos, or specimens in the field. All species listed in MSU Extension Publication *146 Know Your Trees* may be included in this portion of the contest.
2. The contest consists of two sections: indoor and outdoor. The indoor portion is a "lab practical," with the contestants required to identify 25 trees from leaf mounts or photos. The remaining 25 trees must be identified from live specimens in the field. Participants are given no more than 1 minute to identify each leaf mount or live specimen. The time limit for this event is 30 minutes per section.
3. The correct answer for each tree is the **common name** shown on the Official 4-H Forestry Tree Identification List (page 6). This list is derived from the common names given in MSU Extension Publication 146 *Know Your Trees*.
4. The answer given must be the complete, correctly spelled **common name** as given in on the Official 4-H Forestry Tree List. One-half credit is given if the name is incomplete or misspelled. **Example:** If the species is **river birch**, then **birch** will receive half credit for an incomplete common name. If **birch** is also misspelled, no credit is given.
5. A total of 100 points is possible in this event; each answer is worth 2 points. In the case of a tie, the winner is the participant with the greatest number of correctly identified oaks, then pines, then elms.

Tree Measurement

1. Senior contestants will measure 10 trees using a tree scale stick. For each tree, participants will identify the common name, measure the diameter at breast height (DBH) in inches, measure merchantable height in logs, and estimate total timber volume per acre. The time limit for this event is 45 minutes.
2. DBH is measured in 2-inch, even-numbered-diameter classes. For example, the correct answers for the DBH on the contest score form are even numbers, such as 10, 16, 22, etc. A tree in the diameter range 9.1 to 11.0 inches is tallied as DBH 10 inches. In timber cruising for management purposes, it is common to tally trees in 2-inch-diameter classes.
3. Merchantable height is measured in 16-foot logs and estimated to the nearest full ½ log. For example, if a tree measures 2¼ logs, it should be tallied as 2 logs, because the ¼ log is too short to make another full ½ log. When measuring logs, always round **down**, not up. Measure merchantable height up to an 8-inch top or a major fork in the trunk. Deciding where to "cut the tree off" can be a judgment call based on species and log quality. However "controversial" trees will be avoided, and 4-H'ers will be given trees that will challenge their abilities to measure diameter and height only.

4. DBH and merchantable height are used to determine volume of lumber in each tree by using a volume table given at the contest. 4-H forestry contestants should know how to find a log volume from a volume table before coming to the contest.
5. All individual tree volumes are added together to arrive at a "plot volume." This "plot volume," multiplied by a plot size factor, yields the estimated volume per acre. The plot size is given to the contestants at the contest. Participants should come to the contest with the knowledge of how to use a plot factor. For example, if the sample plot size given is ¼ acre, then the sample plot volume must be multiplied by 4 to arrive at an estimated volume per acre. Calculators are permitted.
6. A total of 100 points is possible in this event. The common name, DBH, merchantable height, and volume for each tree will be valued at 2 points each. A possible maximum of 20 points will be given for the "plot volume" estimate. The "plot volume" will be scored as follows:

If the contestant's estimate of volume per acre is within:

±	5% of official volume	=	20 points
±	10% of official volume	=	15 points
±	15% of official volume	=	10 points
±	20% of official volume	=	5 points
>±	20% of official volume	=	0 points

The common name given in the Tree Measurement section is the same as required in Tree Identification. The same scoring rules as Tree Identification apply.

Forest Knowledge

1. The competition will be a test consisting of 50 multiple choice or true-false questions on forestry subject matter taken from the listed references. The time limit for the event is 45 minutes.
2. A total of 100 points is possible in this event, with each question worth two points.
3. Forest Knowledge is designed to test the 4-H contestant's general knowledge of important forestry concepts.

Forest Insect and Disease Identification

1. The contestant will be asked to identify the **common name** of 10 forest insects and 10 forest diseases. All species listed on the Official 4-H Forest Insect and Disease List (page 14) may be used in this event.
2. The competition consists of two sections, with each section given in a "lab practical" situation. Each contestant is required to identify 10 insects or insect-damaged specimens and 10 diseases or disease-damaged specimens. Pictures of the insect or disease specimen may also be used. The contestant is given no more than 1 minute per station to identify each specimen. The time limit for this event is 15 minutes maximum per section.
3. The correct answer for each specimen is the common name shown on the Official 4-H Forest Insect and Disease List.
4. The answer given must be the complete, correctly spelled common name as given in the Official 4-H Forest Insect and Disease List. One-half credit will be given if the name is misspelled or incomplete. **Example:** If the species is **Nantucket pine tip moth**, then **tip moth** will receive ½ credit. If it is also misspelled, no credit will be given.
5. A total of 100 points is possible in this event, with each answer worth 5 points. Ties are broken using the participant with the greatest number of correctly named insects, then correctly named diseases.

Study References

All MSU Extension Service publications are available online at *www.extension.msstate.edu/publications*:

- P0146 *Know Your Trees*
- P0160 *Tree Planting is Easy*
- P1205 *Welcome to 4-H Forestry*
- P1250 *Forestry Terms for Mississippi Landowners*
- P1281 *Timber Stand Improvement*
- P1305 *Making Your Own Forestry Library, 4-H Forestry Project #4*
- P1473 *Measuring Standing Sawtimber, 4-H Forestry Project #7*
- P1337 *Forest Management Alternatives for Private Landowners*
- P1612 *Forestry/Wildlife Myths and Misconceptions*
- P1686 *Making a Tree Scale Stick*
- P1687 *Identifying Forest Insects and Diseases, 4-H Forestry Project #8*
- P1864 *Waterfowl Habitat Management Handbook*
- P2179 *Ecology and Management of the Northern Bobwhite*
- P2233 *Streamside Management Zones and Forest Landowners*
- P2283 *Prescribed Burning in Southern Pine Forests: Fire Ecology, Techniques, and Uses for Wildlife Management*
- P2260 *Are My Pine Trees Ready to Thin?*
- P2402 *Mississippi Recreational Gardens: Establishing a Backyard Wildlife Habitat*
- P2467 *Ecology and Management of Rabbits in Mississippi*
- P2466 *Ecology and Management of Squirrels in Mississippi*
- P2470 *Managing the Family Forest in Mississippi*
- P2617 *What are Genetically Improved Seedlings?*
- P2822 *Forest Soils of Mississippi*
- P2823 *Site Preparation: The First Step to Regeneration*

- P3406 *Wild Turkey Ecology and Management*
- P3508 *Geocaching in Natural Resources: Fun with Forests around Us*
- P3562 *The Economic Contributions of Forestry and Forest Products, Mississippi*
- P3597 *Wildlife Find Food in Pine Trees, Too*

Additional reading that can be found online:

USDA Forest Service, Rocky Mountain Research Station. (2010). *A Field Guide to Diseases and Insects of the Rocky Mountain Region*. General Technical Report RMRS-GTR-241. Available online at **https://www.fs.usda.gov/treesearch/pubs/37290**

Mississippi Forestry Commission. (2016). Mississippi trees, 2nd ed. Online at **https://www.mfc.ms.gov/programs/educational-workshops/publications/**

National 4-H Forestry Invitational. *Training materials and References.* Available online at **https://4hforestryinvitational.org/training**

USDA Forest Service. (2004). *The Impact and Control of Major Southern Forest Diseases*. Southern Forest Science: Past, Present, and Future. USDA Forest Service, General Technical Report 075. Available online at **https://www.fs.usda.gov/treesearch/pubs/9678**

USDA Natural Resources Conservation Service. (2019). *National plants database*. Available online at **https://plants.sc.egov.usda.gov/home**

Appendix

Official 4-H Forestry Tree Identification List

Common name	Scientific name	Common name	Scientific name
Ash, Green	*Fraxinus pennsylvanica*	Oak, Northern Red	*Quercus rubra*
Ash, White	*Fraxinus americana*	Oak, Nuttal	*Quercus texana*
Baldcypress	*Taxodium distichum*	Oak, Overcup	*Quercus lyrata*
Basswood*	*Tilia* spp.	Oak, Post	*Quercus stellata*
Beech, American	*Fagus grandifolia*	Oak, Scarlet	*Quercus coccinea*
Birch, River	*Betula nigra*	Oak, Shumard	*Quercus shumardii*
Blackgum	*Nyssa sylvatica*	Oak, Southern Red	*Quercus falcata*
Boxelder	*Acer negundo*	Oak, Swamp Chestnut	*Quercus michauxii*
Catalpa, Southern	*Catalpa bignonioides*	Oak, Water	*Quercus nigra*
Cherry, Black	*Prunus serotina*	Oak, White	*Quercus alba*
Cottonwood, Eastern	*Populus deltoides*	Oak, Willow	*Quercus phellos*
Dogwood, Flowering	*Cornus florida*	Orange, Osage	*Maclura pomifera*
Elm, American	*Ulmus americana*	Pecan	*Carya illinoensis*
Elm, Slippery	*Ulmus rubra*	Persimmon, Common	*Diospyros virginiana*
Elm, Winged	*Ulmus alata*	Pine, Loblolly	*Pinus taeda*
Hickory*	*Carya* spp.	Pine, Longleaf	*Pinus palustris*
Holly, American	*Ilex opaca*	Pine, Shortleaf	*Pinus echinata*
Honeylocust	*Gleditsia triacanthos*	Pine, Slash	*Pinus elliotii*
Hophornbeam, Eastern	*Ostrya virginiana*	Pine, Spruce	*Pinus glabra*
Hornbeam, American	*Carpinus caroliniana*	Poplar, Yellow	*Liriodendron tulipifera*
Locust, Black	*Robinia pseudoacacia*	Redbud, Eastern	*Cercis canadensis*
Magnolia, Southern	*Magnolia grandiflora*	Redcedar, Eastern	*Juniperus virginiana*
Maple, Red	*Acer, rubrum*	Sassafras	*Sassafras albidum*
Maple, Silver	*Acer saccharinum*	Sugarberry	*Celtis laevigata*
Mulberry, Red	*Morus rubra*	Sweetbay	*Magnolia virginiana*
Oak, Black	*Quercus velutina*	Sweetgum	*Liquidambar styraciflua*
Oak, Blackjack	*Quercus marilandica*	Sycamore, American	*Platanus occidentalis*
Oak, Bluejack	*Quercus incana*	Tupelo, Water	*Nyssa aquatica*
Oak, Cherrybark	*Quercus pagoda*	Walnut, Black	*Juglans nigra*
Oak, Laurel	*Quercus laurifolia*	Willow, Black	*Salix nigra*
Oak, Live	*Quercus virginiana*		

*Contestants are only responsible to identify the genus level for basswood and hickory.

Junior Tree Identification Score Sheet
Mississippi 4-H Forestry Judging

Your name _____ Contestant # _____

Your county _____ Team # _____

		Do not write in this space.		
No.	Common name	Correct +2	Incomplete/ Misspell +1	Score
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
	TOTALS			
		Contestant's score		

Senior Tree Identification Score Sheet
Mississippi 4-H Forestry Judging

Your name _____ Contestant # _____

Your county _____ Team # _____

Session (circle one) **Indoor** **Outdoor**

		Do not write in this space.		
No.	Common name	Correct +2	Incomplete/ Misspell +1	Score
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
	TOTALS			
		Contestant's score		

Measurement of Standing Trees Study Guide

Purpose

Standing trees are measured to obtain an estimate of the amount of various forest products that might be cut from them. 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 you can decide the course of your forest's management.

Products

Forest products that may be measured are poles and pilings, sawlogs, veneer logs, pulpwood, and fence posts.

Method

Since all trees are basically a part of a cylinder, they have a diameter and height that may be measured. Diameter of standing trees is measured by time-honored custom, at 4½ feet aboveground on the uphill side of the tree. This is abbreviated as **DBH** (diameter at breast height). The method to measure diameter is explained in detail.

Height of a standing tree can be measured as **total** (the entire height from ground line to the top of the crown) or **merchantable** height. Merchantable height varies, depending on the product that is to be cut from the tree. The top stem diameter is fixed by certain specifications. In 4-H Tree Measurement, this is an 8-inch top diameter. 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. In the Tree Measurement event, measure the tree to the nearest ½ log, a log being specified as 16 feet long.

Tools

The diameter can be measured using a caliper, diameter tape, or tree scale stick. Since the tree scale stick is to be used in the contest, the method of using it is explained.

Diameter Measurement

Figure 1 shows how the tree scale stick is used to find tree diameter:

Use the flat side of the stick labeled "Diameter of Tree (in inches)."

Hold the stick level against the tree at a height of 4½ feet above the ground, 25 inches from your eye. Practice to

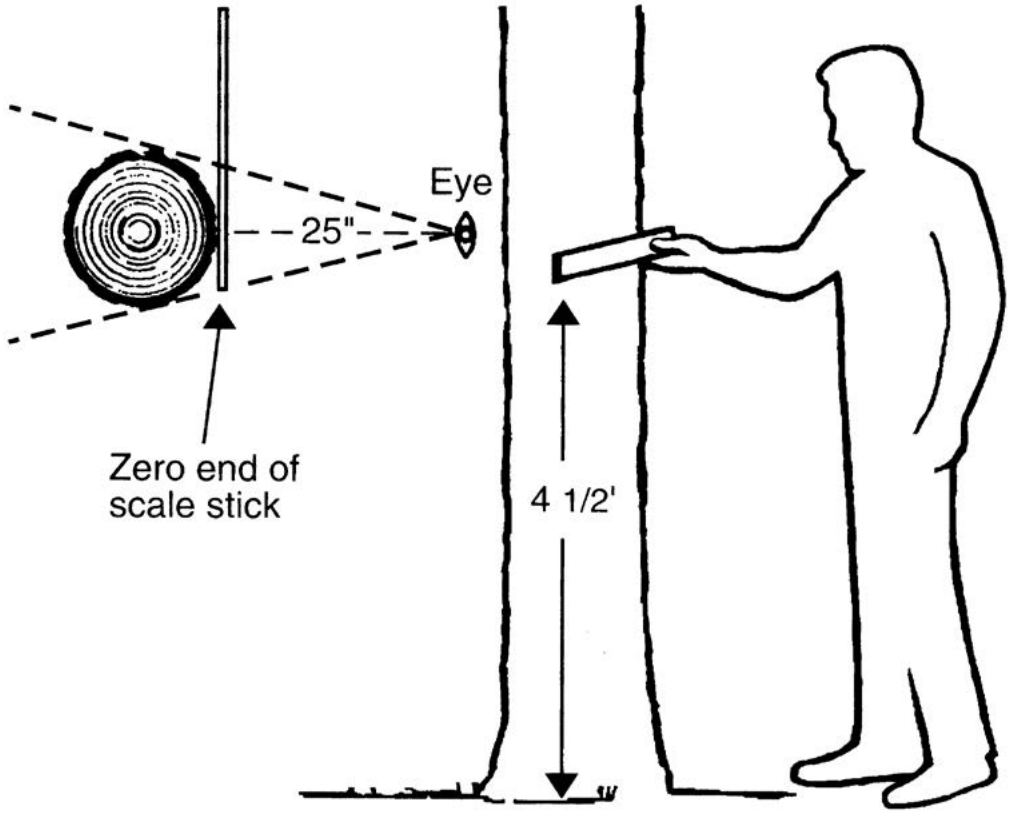

Figure 1. Using a tree scale stick to obtain tree diameter. Do not move your head, just your eye.

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 and sight at the left or zero end.

The zero end of the tree scale stick and the tree bark should be in the same line.

Do not move your head. Glance across the stick to the right-hand edge of the tree. Read the tree diameter from the stick to the nearest inch.

Height Measurement

Figure 2 illustrates how to use the tree scale stick to measure height. Height is measured as follows:

Pace out 66 feet as 'measured from the center-line of the tree in the direction to which you pace. The entire tree must 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 your eye.

Sight the zero end to appear to rest at the stump height (stump height is 6 inches above the ground). **Do not move your head or the stick.**

Look up the stick to the point where the top of the last merchantable cut would be made in the tree, an 8-inch top diameter. The merchantable height on the stem is where the tree trunk "disappears' behind the edge of the tree scale stick. Read sawlogs to the nearest **full** one-half log off the tree scale stick.

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

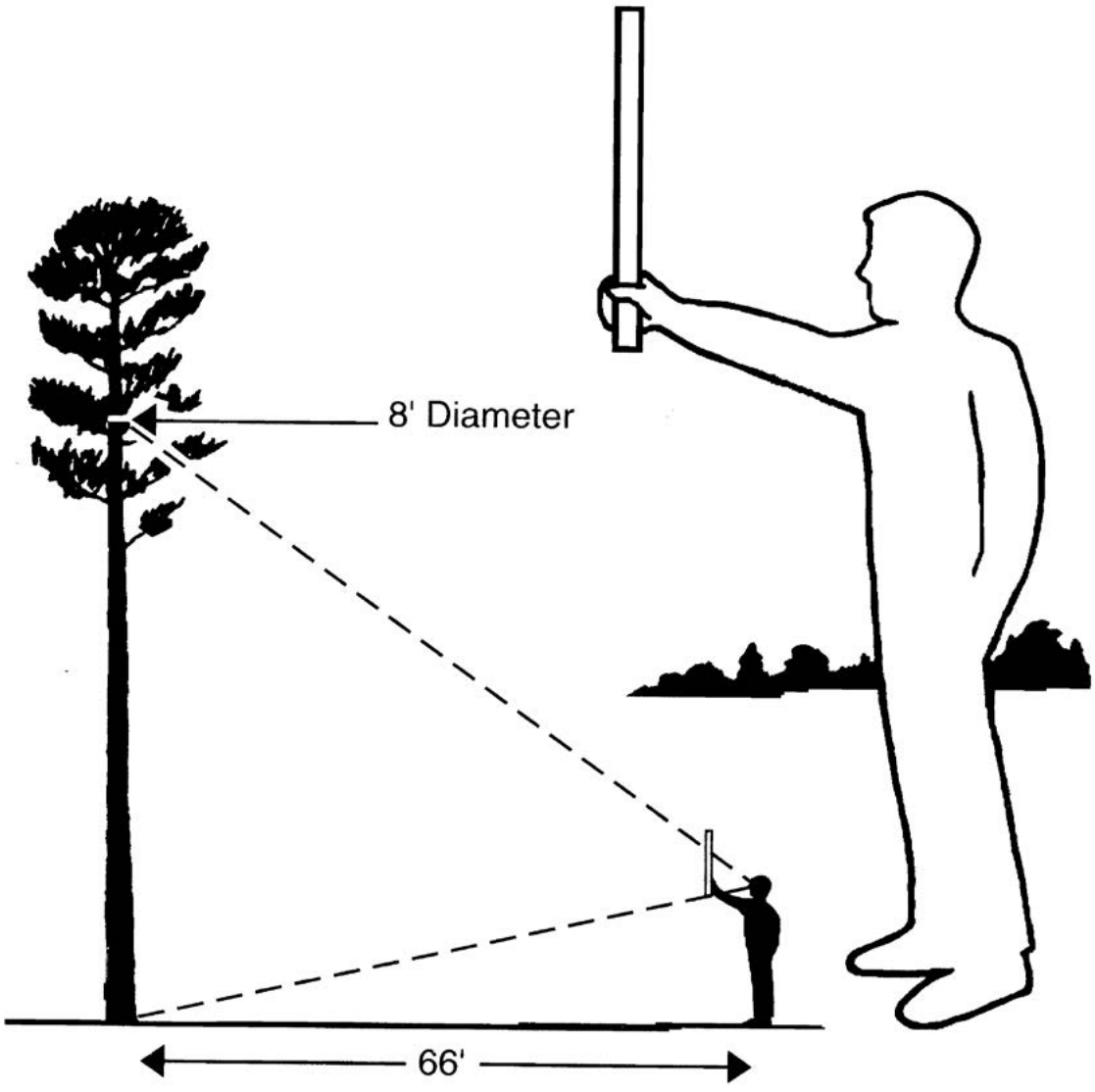

Figure 2. Using a tree scale stick to obtain tree height. Do not move your head, just your eye.

Junior Tree Measurement Score Sheet
Mississippi 4-H Forestry Judging

Your name _____ Contestant # _____

Your county _____ Team # _____

Tree No.	Common name (5 points)	DBH (5 points)	#16-ft logs (5 points)	Board foot volume (5 points)	Score
1					
2					
3					
		(A)Subtotal (60 points possible)			
Total board foot volume in plot					
	(B)Score for volume in plot (40 points possible)				
	(C)Total Score (A + B) (100 points possible)				
	Do not write in this space.				

Senior Tree Measurement Score Sheet
Mississippi 4-H Forestry Judging

Your name _____ Contestant # _____

Your county _____ Team # _____

Tree No.	Common name (2 points)	DBH (2 points)	#16-ft logs (2 points)	Board foot volume (2 points)	Score
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
		(A)Subtotal (80 points possible)			
Plot factor					
Total board foot volume in plot					
Total board foot volume per acre					
	(B)Score for volume per acre (20 points possible)				
	(C)Total score (A + B) (100 points possible)				
	Do not write in this space.				

Sample Volume Table
Doyle Log Rule, Form Class 78
Gross tree volume in board feet, by number of usable 16-foot logs

Tree diameter (inches)	Tree height (16-ft logs)								
	1	**1½**	**2**	**2½**	**3**	**3½**	**4**	**4½**	**5**
10	18	22	26	28	30	32	33		
12	33	42	51	57	63	65	68	71	
14	54	70	85	96	107	113	119	125	
16	79	98	128	146	165	178	189	198	
18	109	144	179	207	235	254	272	283	
20	144	193	242	281	320	348	375	396	417
22	184	249	313	366	418	455	484	525	557
24	228	310	392	459	527	574	645	667	713
26	279	380	482	566	651	713	775	835	894
28	331	454	577	682	787	861	935	1,011	1,087
30	392	539	687	814	940	1,032	1,122	1,216	1,310
32	457	631	805	958	1,110	1,222	1,334	1,441	1,548
34	525	727	929	1,106	1,284	1,416	1,548	1,675	1,803
36	599	834	1,068	1,276	1,484	1,638	1,793	1,945	2,097
38	676	943	1,210	1,450	1,690	1,868	2,046	2,223	2,400
40	740	1,035	1,330	1,594	1,858	2,059	2,260	2,248	2,636

Official 4-H Forest Insect and Disease List

	Common name	Scientific name
Insects		
1.	Nantucket pine tip moth	*Rhyacionia frustrana* (Comstock)
2.	Locust borer	*Meqacyllene robiniae* (Forster)
3.	European pine shoot moth	*Rhyacionia buoliana* (Schiff.)
4.	White pine weevil	*Pissodes strobi* (Peck)
5.	Walkingstick	*Diapheromera femorata* (Say)
6.	Gypsy moth	*Lymantria dispar* (Linnaeus)
7.	Birch leafminer	*Fenusa pusilla* (Lepeletier)
8.	Eastern tent caterpillar	*Malacosoma americanum* (Fabricus)
9.	Pine webworm	*Tetralopha robustella* (Zeller)
10.	Fall webworm	*Hyphantria cunea* (Drury)
11.	Bronze birch borer	*Aqrilus anxius* (Gory)
12.	Black turpentine beetle	*Dendroctonus terebran* (Olivier)
13.	Ips engraver beetles	*Ips* app.
14.	Conifer sawflies	*Hymenoptera: Diprionidae*
15.	Bagworm	*Thyridopteryx ephemeraeformis* (Haworth)
16.	Southern pine beetle	*Dendroctonus fontalia* (Zimmerman)
17.	Tussock moth	*Lepidoptera: Lymantriidae*
18.	Spruce budworm	*Choristoneura fumiferana* (Clemens)
19.	Locust leafminer	*Odontota dorsalis* (Thunberg)
20.	White oak borer	*Goes tiqrinus* (DeGeer)
21.	Pales weevil	*Hylobius pales* (Hbst.)
22.	Variable oakleaf caterpillar	*Heterocampa manteo* (Dbldy)
23.	Periodic cicada	*Maquicicada septendecim*
24.	Pin oak sawfly	*Caliroa lineata*
25.	Leaf cutting ant	*Atta texana* (Buckley)
Diseases		
1.	White pine blister rust	*Cronartuim ribicola*
2.	Oak wilt	*Ceratocystis faqacearum*
3.	Chestnut blight	*Endothia parasitica*
4.	Black knot on cherry	*Apiosporina morbosa*
5.	Nectria canker	*Nectria qualliqena* or *magnoliae*
6.	Dutch elm disease	*Ceratocystia ulmi*
7.	Verticillium wilt	*Verticillium albo-atrum*
8.	Annosus root rot	*Heterobasidion annosum*
9.	Brown spot	*Scirrhia acicola*
10.	Witches broom	*Various agents*
11.	Dwarf mistletoe	*Arceuthobium pusillum*
12.	Fusiform rust	*Cronartium quercuum* f.sp. *fusiforme*
13.	Cedar-apple rust	*Gymnosporanqium juniperi-virginianae*
14.	Needle cast	*Hypoderma* and *Lophodermium*
15.	Red heart	*Fomes pini*
16.	White trunk rot of birch	*Inonotus obliquus* (FORMERLY *Poria obliqua*)
17.	Hypoxylon cankers	*Hypoxylon* spp.
18.	Artist conk	*Fomes pini*
19.	Phomopsis blight	*Phomopsis juniperovora*
20.	Heart rot	Various agents

Senior Forest Insect and Disease Identification Score Sheet
Mississippi 4-H Forestry Judging

Your name _____ Contestant # _____

Your county _____ Team # _____

Session (circle one) **Insects** **Disease**

		Do not write in this space.		
No.	Common name	Correct +5	Incomplete/ Misspell +2.5	Score
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
	TOTALS			
		Contestant's score		

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