- **A. OBJECTIVES** The objectives of the 4-H/FFA Forestry event for youth are:
 - 1. To develop leadership skills, to work as a team, and to practice good study habits.
 - 2. To acquire information about forest ecosystems and forestry skills used in forest management and the utilization of forest products.
 - 3. To appreciate and manage wisely Indiana's forest resources.
- **B.** AREA Event The area qualifying event will determine which teams qualify to attend the state event. Contestants should bring a non-programmable calculator, clipboards and pencils. Participants will be given a list of trees and disorders to mark the appropriate number on the Scantron answer sheet to identify the specimens.

Some problems may require simple math calculations so a non-programmable calculator will be allowed.

Junior Event - identify 20 leaves, 10 seeds and 5 tree disorders. The junior written quiz will have 20 questions. Quiz guestions will be taken from the resources found at:

https://extension.purdue.edu/4-H/get-involved/state-programs/career-development-events/forestry-cde.html.

Senior Event - identify 30 leaves, 10 seeds, , 5 woods and 10 tree disorders. The senior written quiz will consist of 50 questions. Quiz questions will be taken from the resources found at:

https://extension.purdue.edu/4-H/get-involved/state-programs/career-development-events/forestry-cde.html.

Time: The recommended time for the quiz and identification is given in the table below. The contest coordinator may adjust if needed, particularly at the beginning of the contest, when participants are learning the process.

Materials - Area event specimen kits are maintained by Area 4-H and FFA Event Coordinators. They should be used for the Area CDE only. Area kits contain leaf, seed, and wood specimens.. Event coordinators are asked to do their own photo-copying. Practice specimens for the event should be prepared by local 4-H clubs and FFA chapters. See directions for preparing a kit at the website: https://extension.purdue.edu/4-H/get-involved/state-programs/career-development-events/forestry-cde.html. Area coordinators may provide a picture from the resource in "Fifty Trees of Indiana" (4-H-15-80) with leaf specimens, if they wish.

Scoring and Suggested Time

Junior	(Area)	Suggested Time (minutes)	Points
Event	identifications: 35, 10 points each	25	350
	written quiz: 20 questions, 7 points each	25	140
TOTAL POSSIBLE POINTS			490

Senior	(Area)	Suggested Time (minutes)	Points
Event	identifications, 55, 10 points each	30	550
	written quiz: 50 questions, 7 points each	30	350
TOTAL POSSIB	LE POINTS		900

Tie breakers will be in the following order:

- Individual:
 - 1. Combined identifications
 - 2. Exam
- Team:
 - 1. Extra team member
 - 2. Combined identifications
 - 3. Exam

C. STATE Event

This CDE has a staggered start so that every team sees the same specimens (senior or junior). They start times follow the schedule shown below.

Even Years	Odd Years
9 AM Start: Teams in Extension Areas 1-6	9 AM Start: Teams in Extension Areas 7-11
11:00* Start: Teams in Extension Areas 7-11	11:00* Start: Teams in Extension Areas 1-6

^{*}the second group will begin as soon as the first group (9 AM start) is finished.

Contestants should bring a non-programmable calculator, clipboard and pencils. Participants will be given a list of trees and disorders to mark the appropriate number on the Scantron answer sheet to identify the specimens. Some problems may require simple math calculations so a non-programmable calculator will be allowed.

Junior Event - identify 30 leaves, 10 seeds and 5 tree damages. The junior written quiz will have 20 questions. Quiz questions will be taken from the resources found at:

https://extension.purdue.edu/4-H/get-involved/state-programs/career-development-events/forestry-cde.html.

Senior Event - identify 35 leaves, 10 seeds, 5 woods and 10 tree damages. The senior written quiz will have 50 questions. Quiz questions will be taken from the resources found at:

https://extension.purdue.edu/4-H/get-involved/state-programs/career-development-events/forestry-cde.html.

Materials - The state event is held at Purdue University. Practice specimens for the event should be prepared by local 4-H clubs and FFA chapters.

Scoring

Junior Event	(State)	Suggested Time (minutes)	Points
	identifications: 45, 10 points each	30	450
	written quiz: 20 questions, 7 points each	30	140
TOTAL POSSIBLE POINTS		590	

Senior Event	(State)	Suggested Time (minutes)	Points
	identifications, 60, 10 points each	40	600
	written quiz: 50 questions, 7 points each	40	350
TOTAL POSSIBLE	POINTS		950

Notes:

- ID: Contestants will choose from numbered answer list provided.
- Both the Identification and Quiz portions of this CDE will be electronically scored using Scantron.
- Tie breakers will be in the following order:
 - Individual:
 - 1. Combined identifications
 - 2.Exam
 - Team:
 - 1. Extra team member
 - 2. Combined identifications
 - 3. Exam

D. List of Possible Specimens

L	e	a	v	e	S

<u>Leaves</u>		
101. American basswood (<u>Tilia americana</u>)	128. Largetooth/Bigtooth aspen (Populus grandidentata)	
102. American beech (Fagus grandifolia)	129. Mockernut hickory (<u>Carya tomentosa</u>)	
103. American elm (<u>Ulmus americana</u>)	130. Northern catalpa (<u>Catalpa speciosa</u>)	
104. Bitternut hickory (<u>Carya cordiformis</u>)	131. Northern red oak (Quercus rubra)	
105. Black cherry (Prunus serotina)	132. Ohio buckeye (Aesculus glabra)	
106. Black gum/Black tupelo (Nyssa sylvatica)	133. Osage-orange (Maclura pomifera)	
107. Black locust (Robinia pseudoacacia)	134. Persimmon (<u>Diospyros virginiana</u>)	
108. Black maple (<u>Acer nigrum</u>)	135. Pignut hickory (<u>Carya glabra</u>)	
109. Black oak (Quercus velutina)	136. Pin oak (<u>Quercus palustris</u>)	
110. Black walnut (<u>Juglans nigra</u>)	137. Quaking aspen (Populus tremuloides)	
111. Black willow (Salix nigra)	138. Red maple (<u>Acer rubrum</u>)	
112. Blue beech (Carpinus caroliniana)	139. Red mulberry (<u>Morus rubra</u>)	
113. Boxelder (Acer negundo)	140. Red pine (<u>Pinus resinosa</u>)	
114. Bur oak (Quercus macrocarpa)	141. River birch (<u>Betula nigra</u>)	
115. Butternut (Juglans cinerea)	142. Sassafras (<u>Sassafras albidum</u>)	
116. Chestnut oak (Quercus prinus)	143. Scotch pine (Pinus sylvestris)	
117. Chinquapin oak (Quercus muhlenbergii)	144 Shagbark hickory (<u>Carya ovata</u>)	
118. Eastern cottonwood (Populus deltoides)	145. Shingle oak (<u>Quercus imbricaria</u>)	
119. Eastern redbud (Cercis canadensis)	146. Silver maple (<u>Acer saccharinum</u>)	
120. Eastern red cedar (Juniperus virginiana)	147. Slippery elm/Red elm (<u>Ulmus rubra</u>)	
121. Eastern white pine (Pinus strobus)	148. Sugar maple (<u>Acer saccharum</u>)	
122. Flowering dogwood (Cornus florida)	149. Swamp white oak (Quercus bicolor)	
123. Hackberry (Celtis occidentalis)	150. Sweetgum (<u>Liquidambar styraciflua</u>)	
124. Honeylocust (Gleditsia triacanthos)	151. Sycamore (<u>Platanus occidentalis</u>)	
125. Ironwood (Ostrya virginiana)	152. Tuliptree/Yellow-poplar (<u>Liriodendron tulipifera</u>)	
126. Jack pine (Pinus banksiana)	153. Virginia pine (Pinus virginiana)	
127. Kentucky coffeetree (Gymnocladus dioica)	154. White ash (Fraxinus americana)	
	155. White oak (Quercus alba)	
<u>Seeds</u>		
201. American basswood (<u>Tilia americana</u>)	Seeds (cont.)	
202. American beech (Fagus grandifolia)	220. Sugar maple (<u>Acer saccharum</u>)	
203.Black oak (Quercus velutina)	221. Sweetgum (<u>Liquidambar styraciflua</u>)	
204. Black walnut (Juglans nigra)	222. Sycamore (<u>Platanus occidentalis</u>)	
205. Blue beech (<u>Carpinus caroliniana</u>)	223. Tuliptree/Yellow-poplar (<u>Liriodendron tulipifera</u>)	
206. Bur oak (Quercus macrocarpa)	224. Virginia pine (<u>Pinus virginiana</u>)	
207. Butternut (Juglans cinerea)	225. White oak (Quercus alba)	
	223. Wille Oak (<u>Quercus alba)</u>	
208. Eastern red cedar (Juniperus virginiana)		
209. Eastern white pine (Pinus strobus)		
210. Honeylocust (Gleditsia triacanthos)	Note: Compared the FF tree energies wood in the	
211. Ironwood (Ostrya virginiana)	Note: Some of the 55 tree species used in the	
212. Jack pine (Pinus banksiana)	identification contest are not described in "Fifty trees	
213. Kentucky coffeetree (Gymnocladus dioica)	of Indiana," therefore supplementary tree	
214. Northern red oak (Quercus rubra)	identification books are recommended.	
215. Ohio buckeye (Aesculus glabra)		
216. Persimmon (Diospyros virginiana)		
217. Red maple (<u>Acer rubrum</u>)		
218. Shagbark hickory (<u>Carya ovata</u>)		
219. Silver maple (Acer saccharinum)		

<u>Woods</u> (Seniors only)
301. American basswood (<u>Tilia americana</u>)
302. American beech (<u>Fagus grandifolia</u>)
303. American elm (<u>Ulmus americana</u>)
304. Black cherry (<u>Prunus serotina</u>)
305. Black walnut (Juglans nigra)
306. Butternut (<u>Juglans cinerea</u>)
307. Eastern red cedar (Juniperus virginiana)
308. Northern red oak (<u>Quercus rubra</u>)
309. Shagbark hickory (<u>Carya ovata</u>)
310. Sugar maple (Acer saccharum)
311. Sycamore (Platanus occidentalis)
312. Tuliptree/Yellow-poplar (<u>Liriodendron tulipifera</u>)
313. White ash (<u>Fraxinus americana</u>)
314. White oak (Quercus alba)

Tree Damage Identification by Insect or Disease

<u>http://4hforestryinvitational.org/training/insect-and-disease-contest/index_html</u>
Insect Damage:

	Common name	Scientific name
401	Asian longhorned beetle	Anoplophora glabripennis
402	balsam woolly adelgid	Adelges piciae
403	beech scale	Cryptococcus fagisuga
404	bronze birch borer	Agrilus anxius
405	<u>caterpillar hunter beetle</u>	Calosoma sycophanta
406	checkered beetle	Thanasimus dubius
407	eastern tent caterpillar	Malacosoma americanum
408	emerald ash borer	Agrilus planipennis
409	European pine sawfly	Neodiprion sertifer
410	<u>fall webworm</u>	Hyphantria cunea
411	forest tent caterpillar	Malacosoma disstria
412	gypsy moth	Lymantria dispar
413	hemlock woolly adelgid	Adelges tsugae
414	Japanese beetle	Popillia japonica
415	locust borer	Megacyllene robiniae
416	locust leafminer	Odontota dorsalis
417	Nantucket pine tip moth	Rhyacionia frustrana
418	pales weevil	Hylobius pales
419	periodical cicada	Magicicada septendecim
420	pine needle scale	Chionaspis pinifoliae
421	red oak borer	Enaphalodes rufulus
422	smaller European elm bark beetle	Scolytus multistriatus
423	twolined chestnut borer	Agrilus bilineatus
424	white pine weevil	Pissodes strobi
425	whitemarked tussock moth	Orgyia leucostigma

Disease Damage:

	Common Name	Scientific Name
426	artist's conk	Ganoderma applanatum
427	beech bark disease	Neonectria coccinea
428	black knot	Apiosporina morbosa
429	cedar-apple rust	Gymnosporangium juniperi-virginianae
430	chestnut blight	Cryphonectria parasitica
431	dogwood anthracnose	Discula destructiva
432	<u>Dutch elm disease</u>	Ophiostoma ulmi
433	dwarf mistletoes	Arceuthobium sp.
434	hypoxylon canker	Biscogniauxia atropunctata var. atropunctata
435	<u>lichens</u>	numerous species
436	nectria canker	Neonectria galligena
437	needle cast fungi	numerous species
438	oak wilt	Ceratocystis fagacearum
439	red heart of pine	Phellinus pini
440	white pine blister rust	Cronartium ribicola

Exam question will be from the following Purdue Forestry and Natural Resources publications. Junior questions will come from:

National 4-H Forestry Invitational Training

Indiana 4-H Forestry

Fifty Trees of Indiana

How Baby Bear's Chair Was Made

Environmental and Management Injury in Hardwood Tree Plantations

Planting Forest Trees and Shrubs in Indiana

The Great Clearcut Controversy

Who Does That Job? - A Forestry & Natural Resources Coloring Book

Senior questions will come from all junior publications and these:

Diagnosing and Controlling Wildlife Damage in Hardwood Plantations

Fertilizing, Pruning, and Thinning Hardwood Plantations

Financial and Tax Aspects of Tree Planting

Hardwood Log Grades and Lumber Grades: Is There a Relationship?

How to Identify Some Common Indiana Woods

How to Make and Use the Tree Measuring Stick

How to Treat Timber Sale Income

Indiana Forest Products Price Report and Trend Analysis

Invasive Plant Species in Hardwood Tree Plantations

Log and Tree Scaling Techniques

Marketing Timber

Nursery Production of Hardwood Seedlings

Some Important Indiana Hardwoods Their Characteristics and Uses

Sources of Wood and Wood Residues for Energy Production in Indiana

The Hardwood Ecosystem Experiment: Indiana Forestry and Wildlife

Tips on How to Get the Most from Your Timber Harvest

Wood from Midwestern Trees

E. Resources

Additional references are available on-line at:

- Articles: http://www.fnr.purdue.edu/extension/index.shtml See Forests and Trees and Wood Products sections.
- Articles: Purdue Extension <u>publications</u> (list being updated and final list will be added to Forestry CDE web page) https://mdc.itap.purdue.edu/, Search For: Forestry, Wood
- On-line ID: Iowa State University Extension, Identification of Common Trees of Iowa: http://www.extension.iastate.edu/pages/tree/, see Index of Iowa Trees
- National 4-H Forestry Invitational Contest Training Materials: http://4hforestryinvitational.org/training
- National FFA Forestry CDE: https://www.ffa.org/participate/cdes/forestry/

Universal Form H Form #709-1

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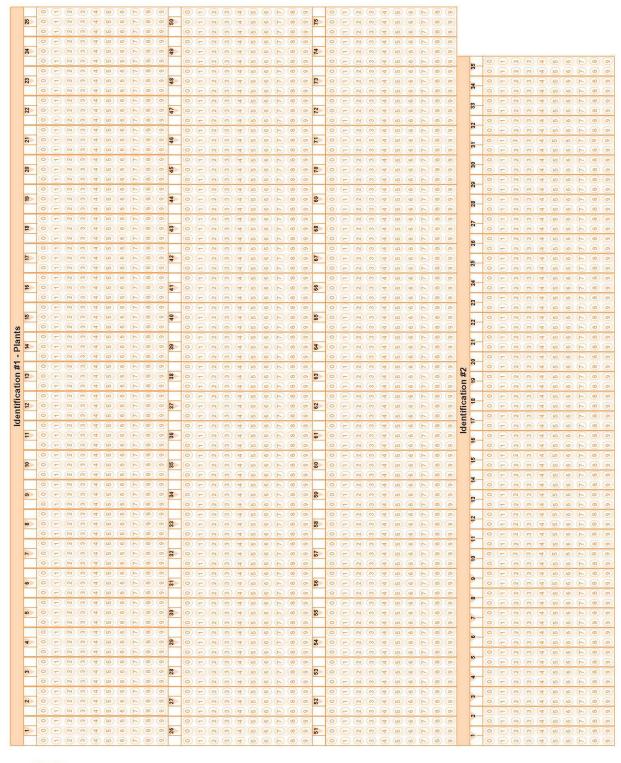
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This sheet is for demonstration and
practice only. You must use a real scan
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Floriculture Disorders Practicum

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6 ID	Chem. Control	7 ID	Chem. Control	8 ID	Chem. Control	9 ID	Chem. Control	10 ID	Chem. Control
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1 1	2 5 Cultural	100	2 5 Cultural	1	2 5 Cultural	1	2 5 Cultural	1 1	2 5 Cultural
(2) (2)	Control	3 3	Control	3 (3)	Control	3 3	Control	3 3	Cultural Control
4 4	(D) (D)	4 4	(D) (T)	4 4	(0) (1)	(4) (4)	(D) (T)	4 4	(0) (1)
5	(2) (3)	(5)	2 3	(5)	2 3	(5)	(2) (3)	(5)	2 (3)
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11 ID	Chem. Control	12 ID	Chem. Control	13 ID	Chem. Control	14 ID	Chem. Control	15 ID	Chem. Control
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3 3	Condo	(3) (3)	Control	(3) (3)	Control	(3) (3)	Control	(3) (3)	Control
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