C.V. Tart Agricultural Tools and Materials Career Development Event

Sponsor

This event is sponsored by C.V. Tart Endowment.

State Event Superintendent

The superintendent for this event is Mr. Joshua Bledsoe, NC State University, Campus Box 7654, Raleigh, NC 27695 Phone: 919.513.1205 Fax: 919.513.3201 Email: joshua_bledsoe@ncsu.edu

Eligibility and General Guidelines

This event is open only to active FFA members who are enrolled in Agricultural Education as a 6th, 7th, 8th, or 9th grader. No sophomores, juniors, or seniors are eligible to compete in this event at any level. Students may compete more than once, however FFA members winning a previous state event in this area are ineligible.

Teams may consist of three or four individuals. The fourth lowest team member score is not considered except in the case of a tie. No alternates are allowed in state events. Any alternate found participating in a state event would result in team disqualification. FFA members and advisors may not visit the site of a state career development event within seven days of the start of the event. Teams that violate this rule will be disqualified.

FFA members in good standing may also participate as individuals in this event. A chapter may have up to two members participate as individuals as long as the chapter does not have a team participating in the event. Their scores will only count toward individual recognition and will not be tallied as a team score. Three members participating in this event from the same chapter constitute a team.

The top three individuals in the federation event are eligible to participate in the state event as individuals regardless of their team placing. The top three teams in the federation are eligible to participate in the state event

The use of cellular phones or any other mobile electronic communication device is prohibited during any state-level career development event. Any violation of this rule by any team member will result in total team disqualification.

The North Carolina FFA Association, in keeping with the FFA mission and purposes, does not permit the use of tobacco products, e-cigarettes, vapes, or Juuls at any FFA facility or at any FFA activity.

Any member found cheating in any state-level career development event will result in total team disqualification for that event.

At the North Carolina FFA State Convention, participation in more than one CDE/LDE is permitted as long as events are not being held concurrently and no special previsions are required to facilitate participation.

In compliance with the Americans with Disabilities Act, NC FFA will honor requests for reasonable accommodations made by individuals with disabilities. Please direct accommodation requests to: Carmen Bracey at carmen_bracey@ncsu.edu. Requests can be served more effectively if notice is provided at least 10 days before the event.

Middle School Participation

Middle school students and teams may participate in any Career Development Event or Leadership Development Event. The top three middle school participants will be recognized in each division of an event. Middle school participants should designate during registration.

Dress Code

The North Carolina FFA Association strives to promote a positive image at all Official FFA Events. The dress code policy was established to address the issue of appropriate attire at all Official FFA Events. Members should adhere to this policy for all events. A ten percent reduction will be applied to all individual scores from a chapter if a participant from that chapter violates the dress code during that event.

Procedures for Administering the Event

The event coordinator shall be responsible for setting up the event, choosing event officials, and developing materials according to the criteria listed below.

<u>The Tool Identification Phase (80 points total and 40 minutes to complete)</u>

1. Forty (40) tools will be selected from the attached official list.
2. Each tool used in the event shall have a number attached to it by a string; thus, participants can pick up the tool to examine it.
3. Participants will place the number of the tool in the space to the left of that tool name on the official list.
4. When more than one set of tools are used, they shall include the same tools.
5. No tool will be used more than once in the identification portion of the event.
6. Each participant will be assigned a tool to begin identification.
7. Each participant will remain at each tool for one minute and then progress to the next tool.
8. No participant will be permitted to go to a tool for a second time.
9. Grading will be done by giving two (2) points for each tool correctly identified.
10. If it is observed that a participant uses the same number on his or her paper for more than identification, neither number will be counted as correct thus resulting in a penalty for using the same number twice.
11. When teachers are involved in the grading of papers, they shall not grade any papers of their own team members.

The Knowledge Test Phase (20 points total and 40 minutes to complete)

1. A written (matching) test designed to test the knowledge of the participants regarding the proper use of 20 randomly selected tools will be developed by the coordinator. 20 tools and 25 uses will be selected from the attached tool identification listing.
2. Participants will place the letter of the correct use in the space to the left of each tool.
3. Each participant will be given 40 minutes to complete the test. One (1) point will be given for each tool with the correct use.
4. When teachers are involved in the grading of papers, they shall not grade papers of their own team members.

Scoring

1. The top three scores of participants from a team will be counted to determine team rankings.
2. Papers of the top three teams shall be rechecked for accuracy.

Procedure for Determining the State Event Winner when Scores are Tied

In the event a tie score exists, apply the following method will be applied:

- Compare the alternate scores. The lowest team member score is the alternate score.

Special Note: In the event a tie exists between the third place teams at the federation level, the tied teams will be allowed to participate in the state event.

State Awards

The following awards will be presented annually at the state FFA convention provided sponsorship is available:

State Winning Team: First place team plaque, pins and toolboxes with a starter set of tools for team members

Second Place Team: Second place team plaque, pins for team members

Third Place Team: Third place team plaque, pins for team members

High Scoring Individual(s): Medallion

Supplemental Information

Please review the following pages for supplemental information regarding the agricultural tools and materials career development event.

Official Tools and Materials Identification List - Revised 2017

Instructions: Tools/Materials will be numbered 140. The contestant is to write the appropriate number in the space to the left of the tool.

Contestant Number_____ Contestant Name_____

_____45° pipe elbow
_____90° pipe elbow
_____90° street elbow
_____Abrasive chop saw
_____Adjustable wrench
_____Allen wrench
_____Animal clippers
_____Aviation snips
_____Ball peen hammer
_____Bar clamp
_____Bent nose pliers
_____Bolt cutters
_____Bolt die
_____Bolt die stock
_____Bolt tap
_____Bolt tap wrench
_____Brick jointer
_____Brick trowel
_____Bulb planter
_____Butt hinge
_____C clamp
_____Carriage bolt
_____Castrator
_____Caulking gun
_____Center punch
_____Chalk line reel
_____Chipping hammer
_____Circuit breaker
_____Clinometer
_____Cold chisel
_____Combination oil stone
_____Combination square
_____Combination wrench
_____Common nail
_____Compass saw
_____Compression tester
_____Concrete finishing trowel
_____Concrete float
_____Concrete screw
_____Coping saw
_____Cordless drill
_____Countersink
_____Curry comb
_____Cutting torch
_____Deep socket
_____Dehorner
_____Diagonal cutting pliers
_____Drift punch
_____Drill press vise
_____Duplex receptacle
_____Ear tagger
_____Egg candler
_____Electrical multimeter
_____End cutting nippers
_____Engineer's hammer
_____Expansion shield
_____Extension
_____Eye bolt
_____Face shield
_____Fence pliers
_____Fence staple
_____Finishing nail
_____Flaring tool
_____Flathead stove bolt
_____Flathead wood screw
_____Framing square
_____Fuse puller
_____Garden trowel
_____Gate valve
_____Glass cutter
_____Grafting tool
_____Grease gun
_____Groove joint pliers
_____Ground fault circuit interrupter
_____Hacksaw
_____Half round file
_____Hearing protector
_____Hedge shears
_____Hinge handle / flex handle
_____Hoof knife
_____Hose bib
_____Implant gun
_____Impulse sprinkler
_____Increment borer
_____Junction box
_____Lag screw
_____Level
_____Line level
_____Long nose pliers
_____Lopping shears
_____Machine bolt
_____Machinist's vise
_____Mason hammer
_____Mason level
_____Masonry bit
_____Masonry nail
_____Micrometer
_____Mill file / flat file
_____Nail gun
_____Nail hammer
_____Nail set
_____Nut driver
_____Obstruction wrench
_____Oil filter wrench
_____Open end wrench

_____Pex coupling
_____Pex pinch clamp ring
_____Phillips screwdriver
_____Pin punch
_____Pipe bushing
_____Pipe cap
_____Pipe coupling
_____Pipe nipple
_____Pipe plug
_____Pipe reducer
_____Pipe tee
_____Pipe union
_____Pipe wrench
_____Piston ring compressor
_____Planting bar
_____Plumb bob
_____Pole pruner
_____Portable circular saw
_____Portable electric drill
_____Portable grinder
_____Portable hammer drill
_____Portable impact wrench
_____Portable jig saw
_____Portable miter saw
_____Portable reciprocating saw/ Sawzall
_____Portable rotary tool
_____Portable router
_____Portable sander
_____Pruning saw
_____Pruning shears
_____Putty knife
_____PVC cutter
_____Regular socket
_____Respirator
_____Reversible ratchet
_____Roofing nail
_____Round file
_____Roundhead stove bolt
_____Roundhead wood screw
_____Rubber mallet
_____Safety glasses
_____Safety goggles
_____Screw extractor
_____Sheet metal screw
_____Side cutting pliers
_____Single pole switch
_____Sledge hammer
_____Slip joint pliers
_____Slotted screwdriver
_____Snap ring pliers
_____Soil auger
_____Soil tube
_____Soldering gun
_____Solderless wire nut
_____Spark plug gauge
_____Spark plug socket
_____Spark tester
_____Speed bore bit
_____Speed handle
_____Speed square
_____Straight shank drill bit
_____Strap hinge
_____Switch box
_____Syringe
_____T bevel
_____T hinge
_____Tape rule
_____Thickness gauge
_____Three way switch
_____Tip cleaners
_____Tire chuck
_____Tire gauge
_____Toggle bolt
_____Torch lighter
_____Torque wrench
_____Torx screwdriver
_____Tree diameter tape
_____Triangular file
_____Try square
_____Tube cutter
_____Universal joint
_____Universal socket
_____Valve spring compressor
_____Vise grip pliers
_____Vise grip welding clamp
_____Welding goggles
_____Welding gloves
_____Welding helmet
_____Welding torch
_____Wheel puller
_____Wire brush
_____Wire strippers
_____Wood chisel
_____Wood mallet
_____Wrecking bar

FFA AGRICULTURAL TOOLS AND MATERIALS CAREER DEVELOPMENT EVENT

Name **Proper Use of Tools, Equipment and Materials**

1. 45° pipe elbow – Making a 45 degree turn with a pipe
2. 90° pipe elbow – Making a 90 degree turn with a pipe
3. 90° street elbow – Making a 90 degree pipe turn; threads on inside of one end and outside of other
4. Abrasive chop saw – Cutting various types and sizes of materials with abrasive wheels
5. Adjustable wrench – Turning various sized nuts and bolts
6. Allen wrench – Turning hex head socket screws
7. Animal clippers – Trimming hair or wool on pets and livestock
8. Aviation snips – Cutting sheet metal
9. Ball peen hammer – Hammering metal
10. Bar clamp – Clamping large sections of wood together
11. Bent nose pliers – Reaching obstructive or awkward places
12. Bolt cutters – Cutting bolts and steel rods
13. Bolt die – Cutting threads on bolts and rods
14. Bolt die stock – Holding a bolt die
15. Bolt tap – Cutting inside threads
16. Bolt tap wrench – Holding bolt tap
17. Brick jointer – Smoothing and designing masonry joints
18. Brick trowel – Placing and spreading mortar
19. Bulb planter – Planting and transplanting bulbs
20. Butt hinge – Hinge for narrow facing
21. C clamp – Clamping two or more pieces of metal together
22. Carriage bolt – Bolting wood to wood or wood to metal
23. Castrator – Sterilizing male animals
24. Caulking gun – Holding a tube with material for patching holes or sealing cracks
25. Center punch – Starting holes in metal
26. Chalk line reel – Marking straight lines
27. Chipping hammer – Removing slag from welds
28. Circuit breaker – Protecting electrical circuits from overload
29. Clinometer – Measuring heights of objects or elevations of slopes
30. Cold chisel – Cutting metal
31. Combination oil stone – Sharpening and honing cutting tools
32. Combination square – Determining 45° and 90° angles
33. Combination wrench – Turning hex and square nuts and bolts
34. Common nail – Nailing boards together where holding power is desired
35. Compass saw – Cutting wood in close places
36. Compression tester – Providing accurate readings on the pressure inside engine cylinders
37. Concrete finishing trowel – Smoothing concrete
38. Concrete float – Leveling concrete
39. Concrete screw – Anchoring into predrilled holes in concrete, brick or block
40. Coping saw – Cutting curves and irregular cuts
41. Cordless drill – Drilling holes with a tool that uses a battery pack
42. Countersink – Flaring top of hole for recessing head for flathead screw or bolt
43. Curry comb – Removing mud, dirt, and hair from animals' coats

44. Cutting torch – Cutting metal with heat
45. Deep socket – Turning nuts and bolts in depressed areas
46. Dehorner – Removing horns from cattle
47. Diagonal cutting pliers – Surface and diagonal wire cutting
48. Drift punch – Aligning holes
49. Drill press vise – Holding stock while drilling
50. Duplex receptacle – To plug in electrical units
51. Ear tagger – Labeling individual animals for identification
52. Egg candler – Detecting embryonic development or for evaluating shell eggs
53. Electric multimeter – Performing various tests on electrical circuits
54. End cutting nippers – Cutting ends of wire, nails, and small bolts
55. Engineer's hammer – Pounding hot metal, breaking up concrete, or demolition
56. Expansion shield – Anchoring a lag screw into concrete, brick or block
57. Extension – Extending the reach of a socket
58. Eye bolt – Bolt used to attach wire onto
59. Face shield – Protecting face from flying debris while working
60. Fence pliers – Building and repairing wire fences
61. Fence staple – Nailing up fence
62. Finishing nail – Nailing boards where head will not be noticed
63. Flaring tool – Flaring ends of tubing
64. Flathead stove bolt – Fastening wood to metal or metal to metal with wrench leaving a flat surface
65. Flathead wood screw – Fastening wood to wood where a flat surface is required
66. Framing square – Squaring cut corners and laying out stairs and rafters
67. Fuse puller – Removing cartridge fuses
68. Garden trowel – Used for smaller garden chores like planting, weeding, and scooping soil or media
69. Gate valve – Cutting off water supply on a main line
70. Glass cutter – Cutting glass
71. Grafting tool – Preparing woody parts for grafting
72. Grease gun – Lubricating through grease fitting
73. Groove joint pliers – Gripping when greater pressure is needed
74. Ground fault circuit interrupter – Shutting off power when current flows along an unintended path
75. Hack saw – Sawing metal
76. Half round file – Curved and flat filing
77. Hearing protector – Decreasing hearing exposure to high decibel levels
78. Hedge shears – Trimming and shaping hedges
79. Hinge handle/Flex handle – Socket handle to be used when flexibility is needed
80. Hoof knife – Removing hard and uneven surfaces on an untrimmed hoof
81. Hose bib – Valve for attaching a water hose; turning water supply on and off
82. Implant gun – Injecting growth hormones in animals
83. Impulse sprinkler – Overhead irrigation of plants where rotation is water driven
84. Increment borer – Checking growth rate of trees
85. Junction box – Joining several electrical wires into a circuit
86. Lag screw – Screw used where great pressure to turn is required
87. Level – Leveling and plumbing
88. Line level – Leveling between long distance points
89. Long nose pliers – Reaching into recessed areas

90. Lopping shears – Cutting large branches when pruning shrubbery
91. Machine bolt – Fastening metal to metal with a wrench
92. Machinist's vise – Holding metal firm while working
93. Mason hammer – Chipping and shaping masonry material
94. Mason level – Leveling and plumbing masonry materials
95. Masonry bit – Boring a hole in concrete, brick or block
96. Masonry nail – Nailing in concrete, brick or block
97. Micrometer – Gauging or measuring small distances or thicknesses
98. Mill file/Flat file – Filing metal
99. Nail gun – Rapid nailing using air, gas, or electricity
100. Nail hammer – Driving nails
101. Nail set – Countersinking nail heads
102. Nut driver – Socket permanently attached to a handle for turning small nuts and bolts
103. Obstruction wrench – Reaching nuts and bolts around obstructions
104. Oil filter wrench – Installing or removing oil filters
105. Open end wrench – Turning square head nuts and bolts
106. Pex coupling – Making hot or cold-water supply line connections
107. Pex pinch clamp ring – Securing water supply pipes to fittings
108. Phillips screwdriver – Turning phillips head screws
109. Pin punch – Driving out metal pins
110. Pipe bushing – Connecting pipes of different diameters
111. Pipe cap – Closing the end of a pipe by going over the pipe end
112. Pipe coupling – Joining two pieces of pipe
113. Pipe nipple – Adding length to a piece of pipe
114. Pipe plug – Closing the end of a pipe, threads on the outside
115. Pipe reducer – Reducing pipe size
116. Pipe tee – Joining pipe at 90° angles
117. Pipe union – Joining two pieces of pipe where neither side can be turned
118. Pipe wrench – Turning and holding metal pipe
119. Piston ring compressor – Compressing ring for inserting into cylinder
120. Planting bar – Setting out tree seedlings
121. Plumb bob – Vertical plumbing to locate points
122. Pole pruner – Removing elevated or hard-to-reach branches and limbs
123. Portable circular saw – Sawing wood in construction projects
124. Portable electric drill – Drilling holes with an external source of power
125. Portable grinder – Power tool used for cutting, grinding, or polishing
126. Portable hammer drill – Power drilling in concrete, brick or block
127. Portable impact wrench – Installing or removing fasteners, lug nuts, or lag screws
128. Portable jig saw – Making irregular cuts
129. Portable miter saw – Cutting 90 degree crosscuts as well as various angles
130. Portable reciprocating saw/Sawzall – Cutting various materials with push and pull blade action
131. Portable rotary tool – Handheld tool for sharpening, polishing, or trimming various materials
132. Portable router – Cutting shapes and designs into wooden surfaces in various locations
133. Portable sander – Power tool used for smoothing surfaces
134. Pruning saw – Sawing limbs from shrubbery and trees
135. Pruning shears – Cutting and shaping shrubbery
136. Putty knife – Applying and smoothing putty
137. PVC cutter – Cutting non-metallic pipe
138. Regular socket – General purpose socket for turning nuts and bolts

139. Respirator – Preventing particles, gases, and vapors from being inhaled
140. Reversible ratchet – Turning sockets in forward and reverse rotations
141. Roofing nail – Nailing tin, aluminum, fiberglass, or asphalt roofing
142. Round file – Filing inside holes
143. Roundhead stove bolt – Fastening wood or metal to metal with a screwdriver or wrench
144. Roundhead wood screw – Fastening wood to wood
145. Rubber mallet – Hammering to avoid marring surface
146. Safety glasses – Protecting eyes from the impact of foreign objects
147. Safety goggles – Protecting eyes from liquid splash, acid vapors, dust, and impact hazards
148. Screw extractor – Removing broken bolts, studs, or screws
149. Sheet metal screw – Joining two pieces of sheet metal
150. Side cutting pliers – Holding and/or cutting wire
151. Single pole switch – Completing a circuit or creating a gap in the flow of electricity
152. Sledge hammer – Heavy hammering
153. Slip joint pliers – Adjust for holding various size material
154. Slotted screwdriver – Turning slotted screws
155. Snap ring pliers – Removing or installing internal or external snap rings
156. Soil auger – Boring into soil to get samples
157. Soil tube – Obtaining soil for testing
158. Soldering gun – Melting solder
159. Solderless wire nut – Joining two or more electrical wires
160. Spark plug gauge – Gauging and setting spark plug gap
161. Spark plug socket – Installing and removing spark plugs
162. Spark tester – Checking the condition of the ignition system at each cylinder
163. Speed bore bit – Wood boring bit for electric drill
164. Speed handle – Used for rapid turning of socket
165. Speed square – Measuring and marking 0-90 degree angles, finding roof pitches, and laying out rafters
166. Straight shank drill bit – Drilling metal
167. Strap hinge – Hinge used where major strength or support is required
168. Switch box – Used to install toggle switches or duplex receptacles
169. Syringe – Administering drugs and measuring liquids with a cylinder and plunger
170. T bevel – Adjustable gauge for setting or transferring angles
171. T hinge – Used where strength is required but one facing is narrow
172. Tape rule – Used for straight or curved measuring
173. Thickness gauge – Determining gaps
174. Three-way switch – Turning current on and off from two locations
175. Tip cleaners – Cleaning welding and cutting tips
176. Tire chuck – Inflating tires
177. Tire gauge – Checking tire air pressure
178. Toggle bolt – Anchoring into a hollow space
179. Torch lighter – Lighting acetylene and propane torches
180. Torque wrench – Measuring amount of torque
181. Torx screwdriver – Turning torx-head screws and bolts
182. Tree diameter tape – Measuring circumference of tree
183. Triangular file – Filing saws
184. Try Square – Squaring 90° angles
185. Tube cutter – Cutting soft tubing
186. Universal joint – Holding socket for angled turning

187. Universal socket – Socket used for angled turning
188. Valve spring compressor – Compressing valve spring for removal and insertion
189. Vise grip pliers – Extra firm gripping
190. Vise grip welding clamp – Used for extra firm gripping of welding materials
191. Welding gloves – Protects the welder's hands
192. Welding goggles – Protecting welder's eyes
193. Welding helmet – Protecting face and eyes from welding flash
194. Welding torch – Heating and fusing metal
195. Wheel puller – Removing wheel from axle
196. Wire brush – Cleaning metal
197. Wire strippers – Removing insulation from electrical wire
198. Wood chisel – Dressing and shaping wood
199. Wood mallet – Driving non-metallic objects
200. Wrecking bar – Ripping and prying

SAMPLE FORMAT

Knowledge Test – Proper Tool Uses
Agricultural Tools and Materials Career Development Event

Instructions to participants:
You are to choose the correct use for each of the following tools. After you have chosen a use for a given tool, place the appropriate letter in the space to the left of the tool.

Contestant name_____ Contestant number_____

_____1.	Bolt die	a.	Aligning holes
_____2.	Universal joint	b.	Heats and fuses metal
_____3.	Pipe cap	c.	Closing the end of a pipe, threads on outside
_____4.	Gate valve	d.	Flaring top of hole for recessing head for flathead screw or bolt
_____5.	Straight shank drill bit	e.	Cutting and shaping shrubbery
_____6.	Pin punch	f.	Holding socket for angle turning
_____7.	Cutting torch	g.	For fastening metal to metal with a wrench
_____8.	Three way switch	h.	Driving out metal pins
_____9.	Aviation snips	i.	Sharpening chain saw chain
_____10.	Round file	j.	Cutting metal with heat
_____11.	Side cutting pliers	k.	For cutting off water supply on a main line
_____12.	Welding torch	l.	For fastening wood to wood
_____13.	Lopping shears	m.	Cutting ends of wire, nails and small bolts
_____14.	Machine bolt	n.	Reduces the impact of water pressure on soil and plants
_____15.	Speed handle	o.	Cutting metal
_____16.	Drift punch	p.	Rapid turning of socket
_____17.	End cutting nippers	q.	Cutting threads on bolts and rods
_____18.	Pruning shears	r.	Turning current on or off from two locations
_____19.	Roundhead wood screw	s.	Cutting sheet metal
_____20.	Cold chisel	t.	Drilling metal
		u.	Cutting large branches when pruning shrubbery
		v.	Socket handle to be used when flexibility is needed
		w.	Closing the end of a pipe by going over the pipe end
		x.	Holding and/or cutting wire
		y.	Filing inside holes