

Agricultural Tools and Materials Identification

Sponsor

This event is sponsored by C.V. Tart Endowment, and Interstate Bolt and Supply Company, Incorporated.

State Event Superintendent

The superintendent for this event is Mr. Jason Davis, State FFA Coordinator, Campus Box 7654 NCSU, Raleigh, NC 27695 Phone: 919.515.4206 Fax: 919.513.0216 Email: jason_davis@ncsu.edu

Eligibility and General Guidelines

This event is open only to students who are active FFA members and who are enrolled in their first agricultural education course and not beyond the sophomore level in high school. **Students may not compete in this event more than once.**

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, Personal Digital Assistants (PDA's) 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.

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, members may participate in only one career development event with the exceptions of Creed and Parliamentary Procedure or Prepared Public Speaking and Parliamentary Procedure.

Procedures for Administering the Event

- A. The event coordinator shall be responsible for setting up the event, choosing event officials, and developing materials according to the criteria listed below.
- B. The Tool Identification Phase (80 points total and 40 minutes to complete)
 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 two sets 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.
- C. 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(s) of 20 randomly selected tools will be developed by the coordinator selecting 20 tools and 25 uses 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.
- D. 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.

member score is the alternate score.

Special Note: In the event a tie exists between first, second or third place teams on the regional level, the tied teams will be allowed to participate in the state event. In the event a tie exists in a federation event that sends teams directly to state competition, the tied teams will be allowed to participate in the state event.

Dress Code

Participants are required to follow the North Carolina FFA Career Development Event Dress Code. A ten percent reduction in the total team score will be taken if a participant violates the dress code. Participants should wear long pants, an appropriate shirt with a collar or an appropriate high school or FFA t-shirt. Clothing should be appropriate for work in a shop or laboratory setting.

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

Medallion

Supplemental Information

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

Procedure for Determining the State Event Winner when Scores are Tied

In the event a tie score exists, apply the following methods in sequential order until the tie is broken:

1. Compare the alternate scores. The lowest team



INSTRUCTIONAL MATERIALS AVAILABLE

Copies of the “Official FFA Agricultural Tools and Materials Identification Manual” are available to download from the North Carolina FFA Association Chapter Guide to State Activities website at <http://ncffa.org/resources/chapter-guide/>

GROWING NORTH CAROLINA'S FUTURE

WWW.NCFFA.ORG



NORTH CAROLINA
FFA ASSOCIATION SINCE 1929

Learning to Do, Doing to Learn,
Earning to Live, Living to Serve.

Official Tools and Materials Identification List

Revised 2001

Instructions: Tools/Materials will be numbered 1-40. The contestant is to write the appropriate number in the space to the left of the tool.

SCORE _____ (No. correct multiplied by 2)

Contestant Number _____ Contestant Name _____

List of Tools

- | | |
|----------------------------------|-------------------------------|
| _____ 45° pipe elbow | _____ Diagonal cutting pliers |
| _____ 90° pipe elbow | _____ Drift punch |
| _____ 90° street elbow | _____ Drill press vise |
| _____ Adjustable wrench | _____ Duplex receptacle |
| _____ Allen wrench | _____ Dust mask |
| _____ Aviation snips | _____ Ear tagger |
| _____ Ball pein hammer | _____ Electrical multimeter |
| _____ Bar clamp | _____ Emery dresser |
| _____ Bent nose pliers | _____ End cutting nippers |
| _____ Bolt cutters | _____ Expansion shield |
| _____ Bolt die | _____ Extension |
| _____ Bolt die stock | _____ Eye bolt |
| _____ Bolt tap | _____ Fence pliers |
| _____ Box end wrench | _____ Fence staple |
| _____ Brick jointer | _____ File card |
| _____ Brick trowel | _____ Finishing nail |
| _____ Bulb planter | _____ Flaring tool |
| _____ Bush axe | _____ Flathead stove bolt |
| _____ Butt hinge | _____ Flathead wood screw |
| _____ C clamp | _____ Framing square |
| _____ Carriage bolt | _____ Fuse puller |
| _____ Castrator | _____ Gate valve |
| _____ Center punch | _____ Glass cutter |
| _____ Chain saw file | _____ Grafting tool |
| _____ Chalk line reel | _____ Grease gun |
| _____ Chipping hammer | _____ Groove joint pliers |
| _____ Circuit breaker | _____ Hacksaw |
| _____ Circular carbide saw blade | _____ Half hatchet |
| _____ Cold chisel | _____ Half round file |
| _____ Combination oil stone | _____ Hammer drill |
| _____ Combination square | _____ Hand screw clamp |
| _____ Combination wrench | _____ Hedge shears |
| _____ Common nail | _____ Hinge handle |
| _____ Compass | _____ Hose bib |
| _____ Compass saw | _____ Implant gun |
| _____ Concrete finishing trowel | _____ Impulse sprinkler |
| _____ Concrete float | _____ Increment borer |
| _____ Coping saw | _____ Junction box |
| _____ Cordless drill | _____ Lag screw |
| _____ Countersink | _____ Level |
| _____ Cutting torch | _____ Line level |
| _____ Deep socket | _____ Long nose pliers |
| _____ Dehorner | _____ Lopping shears |

----- Machine bolt	----- Sledge hammer
----- Machinist's vise	----- Slip joint pliers
----- Mason hammer	----- Slotted screwdriver
----- Mason level	----- Solderless wire nut
----- Masonry bit	----- Soil auger
----- Masonry nail	----- Soil thermometer
----- Mill file	----- Soil tube
----- Miter box	----- Soldering gun
----- Nail hammer	----- Spark plug gauge
----- Nail set	----- Spark plug socket
----- Nailing gun	----- Speed bore bit
----- Nut driver	----- Speed handle
----- Obstruction wrench	----- Straight shank drill bit
----- Open end wrench	----- Strap hinge
----- Phillips screwdriver	----- Switch box
----- Pin punch	----- T-hinge
----- Pipe bushing	----- Tap wrench
----- Pipe cap	----- Tape rule
----- Pipe coupling	----- Thickness gauge
----- Pipe nipple	----- Timing light
----- Pipe plug	----- Tip cleaners
----- Pipe reducer	----- Tire chuck
----- Pipe stop & waste	----- Tire gauge
----- Pipe tee	----- Toggle bolt
----- Pipe union	----- Toggle switch
----- Pipe wrench	----- Toggle switch plate
----- Piston ring compressor	----- Torch lighter
----- Planting bar	----- Torque wrench
----- Plumb bob	----- Torx screwdriver
----- Portable circular saw	----- Tree diameter tape
----- Portable electric drill	----- Triangular file
----- Portable jig saw	----- Try square
----- Portable electric sander	----- Tube cutter
----- Pruning saw	----- Universal joint
----- Pruning shears	----- Universal socket
----- Putty knife	----- Valve spring compressor
----- PVC cutter	----- Vise grip pliers
----- Regular socket	----- Vise grip welding clamp
----- Reversible ratchet	----- Water breaker
----- Roofing nail	----- Welding gloves
----- Round file	----- Welding goggles
----- Roundhead stove bolt	----- Welding helmet
----- Roundhead wood screw	----- Welding torch
----- Router	----- Wheel puller
----- Rubber mallet	----- Wire scratch brush
----- Safety glasses	----- Wire strippers
----- Safety goggles	----- Wood chisel
----- Screw extractor	----- Wood mallet
----- Screwmate	----- Wood rasp
----- Sheet metal screw	----- Wrecking bar
----- Side cutting pliers	

FFA AGRICULTURAL TOOLS AND MATERIALS CAREER DEVELOPMENT EVENT

Name	Proper Use of Tools, Equipment or Materials
45° pipe elbow	Making a 45 degree turn with pipe
90° pipe elbow	Making a 90 degree turn with pipe
90° street elbow	Making a 90-degree turn with galvanized pipe when threads are inside on one end and outside on the other
Adjustable wrench	Turning various size nuts and bolts
Allen wrench	Turning hex head socket screws
Aviation snips	Cutting sheet metal
Ball pain hammer	Hammering metal
Bar clamp	Clamping large sections of wood together
Bent nose pliers	Reaching obstructive or awkward places
Bolt cutters	Cutting bolts and steel rods
Bolt die	Cutting threads on bolts and rods
Bolt die stock	Holder for bolt die
Bolt tap	Cutting inside threads
Box end wrench	Turning hex head nuts and bolts
Brick jointer	Smoothing and designing masonry joints
Brick trowel	Placing and spreading mortar
Bulb planter	Planting and transplanting bulbs
Bush axe	Cutting bushes and under growth
Butt hinge	Hinge for narrow fencing
C clamp	Clamping two or more pieces of metal together
Carriage bolt	Used for bolting wood to wood or wood to metal
Castrator	Tool for sterilizing small animals
Center punch	Starting holes in metal
Chain saw file	Sharpening chain saw chain
Chalk line reel	Marking straight lines
Chipping hammer	Removing slag from welds
Circuit breaker	Protection from overload in electrical circuits
Circular carbide saw blade	Blade for use on a portable electric saw
Cold chisel	Cutting metal
Combination oil stone	For sharpening and honing cutting tools
Combination square	Determining 45° and 90° angles
Combination wrench	Turning hex and square nuts and bolts
Common nail	For nailing boards together where holding power is desired
Compass	Drawing circles
Compass saw	Cutting wood in close places
Concrete finishing trowel	Smoothing concrete
Concrete float	Leveling concrete
Coping saw	Cutting curves and irregular cuts
Cordless drill	Drilling holes with a tool that uses a battery pack
Countersink	Flaring top of hole for recessing head for flathead screw or bolt
Cutting torch	Cutting metal with heat
Deep socket	Turning nuts and bolts in depressed areas
Dehorner	Removing horns from cattle
Diagonal cutting pliers	Surface and diagonal wire cutting
Drift punch	Aligning holes
Drill press vise	Holding stock while drilling
Duplex receptacle	Used to plug in electrical units
Dust mask	Protects the respiratory system from airborne particles
Ear tagger	Labels individual animals for identification
Electrical multimeter	Performs various tests on electrical circuits

Emery dresser	Smoothing face of grinding wheel
End cutting nippers	Cutting ends of wire, nails and small bolts
Expansion shield	anchoring a lag screw into concrete, brick or block
Extension	Extends reach of socket
Eye bolt	Bolt used to attach wire onto
Fence pliers	Building and repair of wire fences
Fence staple	For nailing up fencing
File card	Cleaning cutting grooves of file
Finishing nail	Nailing boards where head will not be noticed
Flaring tool	Flaring ends of tubing
Flathead stove bolt	for fastening wood or metal to metal with a wrench and leaving a flat surface
	Flathead wood screw for fastening wood to wood where a flat surface is required
Framing square	Squaring cut corners and laying out stairs & rafters
Fuse puller	Removing cartridge fuses
Gate valve	For cutting off water supply on a main line
Glass cutter	Cutting glass
Grafting tool	Preparing woody parts for grafting
Grease gun	Lubricating through grease fitting
Groove joint pliers	Gripping when greater pressure is needed
Hack saw	Sawing metal
Half hatchet	Cutting and fitting wood
Half round file	Curve and flat filing
Hammer drill	For power drilling in concrete, brick or block
Hand screw clamp	Clamping wood together
Hedge shears	Trimming and shaping hedge
Hinge handle	Socket handle to be used when flexibility is needed
Hose bib	Valve for attaching a water hose and turning water supply on and off
Implant gun	Injects growth hormones in animals
Impulse sprinkler	For overhead irrigation of plants where rotation is water driven
Increment borer	Checking growth rate of trees
Junction box	Box used to join several electrical wires into a circuit
Lag screw	Screw used where great pressure to turn is required
Level	Leveling and plumbing
Line level	Leveling between long distance points
Long nose pliers	Reaching into recessed areas
Lopping shears	Cutting large branches when pruning shrubbery
Machine bolt	For fastening metal to metal with a wrench
Machinist's vise	Holding metal firm while working
Mason hammer	Chipping and shaping masonry material
Mason level	Leveling and plumbing masonry materials
Masonry bit	Boring a hole in concrete, brick or block
Masonry nail	Nailing in concrete, brick or block
Mill file	Filing metal
Miter box	Cutting angles
Nail hammer	Driving nails
Nail set	Countersinking nail heads
Nailing gun	Rapid nailing using air, gas or electricity
Nut driver	Socket permanently attached to a handle for turning small nuts and bolts
Obstruction wrench	Reaching nuts & bolts around obstructions
Open end wrench	Turning square head nuts & bolts
Phillips screwdriver	Turning Phillips head screws

Pin punch	Driving out metal pins
Pipe bushing	Reducing pipe size
Pipe cap	Closing the end of a pipe by going over the pipe end
Pipe coupling	Joining two pieces of pipe
Pipe nipple	Adding length to a piece of pipe
Pipe plug	Closing the end of a pipe, threads on outside
Pipe reducer	Reducing pipe size
Pipe stop & waste	For turning off water and draining the line
Pipe tee	For joining pipe at 90° angles
Pipe union	Joining two pieces of pipe where neither side can be turned
Pipe wrench	Turning and holding metal pipe
Piston ring compressor	Compressing ring for inserting into cylinder
Planting bar	Setting out tree seedlings
Plumb bob	Vertical plumbing to locate points
Portable circular saw	Sawing wood in construction projects
Portable electric drill	Drilling holes with an external source of electricity
Portable jig saw	Making irregular cuts
Portable electric sander	Smooths surface with an external source of electricity
Pruning saw	Sawing limbs from shrubbery and trees
Pruning shears	Cutting and shaping shrubbery
Putty knife	Applying and smoothing putty
PVC cutter	Cutting non-metallic pipe
Regular socket	General purpose socket for turning nuts & bolts
Reversible ratchet	Reverse rotation of socket turning
Roofing nail	For nailing tin, aluminum, fiberglass or asphalt roofing
Round file	Filing inside holes
Roundhead stove bolt	For fastening wood or metal to metal with a screwdriver and wrench
Roundhead wood screw	For fastening wood to wood
Router	Makes edges or designs in wooden surfaces
Rubber mallet	Hammering to avoid marring surface
Safety glasses	To protect eyes from the impact of foreign objects
Safety goggles	To protect eyes from liquids and vapors
Screw extractor	Removing broken bolts, studs & screws
Screwmate	Drills & countersinks flat head wood screw holes
Sheet metal screw	Joining two pieces of sheet metal
Side cutting pliers	Holding and/or cutting wire
Sledge hammer	Heavy hammering
Slip joint pliers	Adjust for holding various size materials
Slotted screwdriver	Turning slotted screws
Solderless wire nut	Joining two or more electrical wires
Soil auger	Boring into soil to get samples
Soil thermometer	Determining soil temperature
Soil tube	Obtaining soil for testing
Soldering gun	Melting solder
Spark plug gauge	Gauge and set spark plug gap
Spark plug socket	Install and remove spark plugs
Speed bore bit	Wood-boring bit for electric drill
Speed handle	Rapid turning of socket
Straight shank drill bit	Drilling metal
Strap hinge	Hinge used where major strength or support is required
Switch box	Used to install toggle switches or duplex receptacles
T-hinge	Used where strength is required but one facing is narrow
Tap wrench	Holding bolt tap
Tape rule	Straight or curved measuring

Thickness gauge	Determining gaps
Timing light	Timing ignition
Tip cleaners	Cleaning welding and cutting tips
Tire chuck	To inflate tires
Tire gauge	Checking tire air pressure
Toggle bolt	Anchoring into a hollow space
Toggle switch	Turning current on and off
Toggle switch plate	Cover for toggle switch
Torch lighter	Light acetylene and propane
Torque wrench	Measure amount of torque
Torx screwdriver	Turning torx-head screws and bolts
Tree diameter tape	Measure circumference of trees
Triangular file	Filing saws
Try square	90° squaring
Tube cutter	Cutting soft tubing
Universal joint	Holding socket for angle turning
Universal socket	Socket of angle turning
Valve spring compressor	Compressing valve spring for removal and insertion
Vise grip pliers	For extra firm gripping
Vise grip welding clamp	For extra firm gripping of welding materials
Water breaker	Reduces the impact of water pressure on soil and plants
Welding gloves	Protects welders hands
Welding goggles	Protects welders eyes
Welding helmet	Protects face and eyes from welding flash
Welding torch	Heats and fuses metal
Wheel puller	Remove wheel from axle
Wire scratch brush	Cleaning metal
Wire strippers	Removing insulation from electric wire
Wood chisel	Dressing and shaping wood
Wood mallet	Driving non-metallic objects
Wood rasp	Coarse filing of wood
Wrecking bar	Ripping and prying

Knowledge Test – Proper Tool Uses

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. Screwmate | 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. Drills & countersinks flat head wood screw holes |
| _____ 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 |