



OFFICIAL AGRICULTURAL TOOLS & MATERIALS IDENTIFICATION MANUAL



ADOPTED 2025
NORTH CAROLINA FFA ASSOCIATION

Agricultural Tools & Materials Identification CDE Revision Committee

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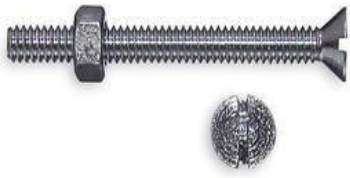
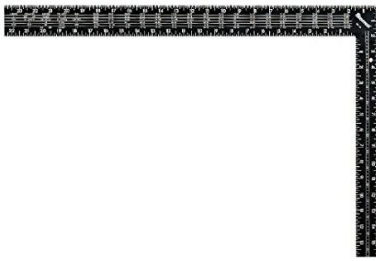
The purpose of this guide is to assist teachers of Agricultural Education to instruct their students to correctly identify tools and know their proper use. This guide is not meant to be all inclusive of tools used in the agriculture industry nor the depictions shown the only ones that may be seen in an Agricultural Tools competition.

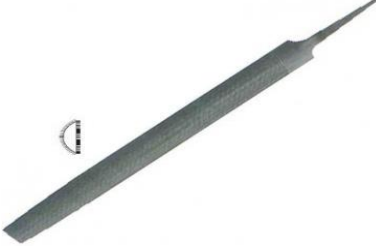
		
101 – 45° pipe elbow	102 – 90° pipe elbow	103 – 90° street elbow
		
104 – Abrasive chop saw	105 – Adjustable wrench	106 – Air compressor/hose
		
107 – Allen wrench	108 – Angle grinder	109 – Animal clippers
		
110 – Aviation snips	111 – Backpack sprayer	112 – Ball peen hammer
		
113 – Balling gun	114 – Bar clamp	115 – Bent nose pliers

		
116 – Bolt cutters	117 – Bolt die	118 – Bolt die stock
		
119 – Bolt tap	120 – Bolt tap wrench	121 – Brick jointer
		
122 – Brick trowel	123 – Butt hinge	124 – C clamp
		
125 – Carriage bolt	126 – Castrator	127 – Caulking gun
		
128 – Center punch	129 – Chalk line reel	130 – Chipping hammer

 131 – Circuit breaker	 132 – Circular saw	 133 – Clinometer
 134 – Cold chisel	 135 – Combination square	 136 – Combination wrench
 137 – Common nail	 138 – Compression tester	 139 – Concrete finishing trowel
 140 – Concrete float	 141 – Concrete screw	 142 – Coping saw
 143 – Countersink	 144 – Curry comb	 145 – Cutting torch

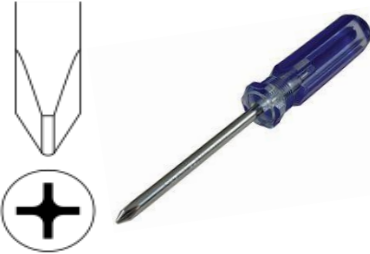
 146 – Deep socket	 147 – Dehorner	 148 – Diagonal cutting pliers
 149 – Drench gun	 150 – Drift punch	 151 – Drill press vise
 152 – Duplex receptacle	 153 – Ear tagger	 154 – Egg candler
 155 – Electrical multimeter	 156 – End cutting nippers	 157 – Engineer's hammer
 158 – Expansion shield	 159 – Extension	 160 – Eye bolt

 161 – Face shield	 162 – Fecal loop	 163 – Fence pliers
 164 – Fence staple	 165 – Finishing nail	 166 – Flathead stove bolt
 167 – Flathead wood screw	 168 – Framing square	 169 – Friction lighter
 170 – Fuse puller	 171 – Garden trowel	 172 – Gate valve
 173 – Glass cutter	 174 – Grafting tool	 175 – Grease gun

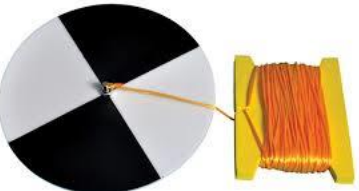
 176 – Groove joint pliers	 177 – Ground fault circuit interrupter (GFCI)	 178 – Hacksaw
 179 –Half round file	 180 – Hammer drill	 181 – Hand compass
 182 – Hand hoe	 183 – Hearing protection	 184 – Hedge shears
 185 – Hinge handle/flex handle	 186 – Hitch pin	 187 – Hoof knife
 188 – Hoof rasp	 189 – Hose bib	 190 – Impact driver

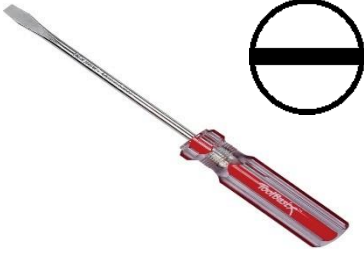
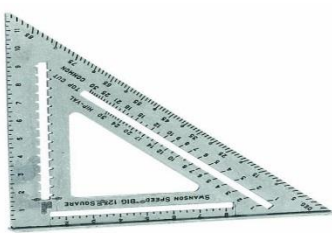
 191 – Impact wrench	 192 – Implant gun	 193 – Impulse sprinkler
 194 – Increment borer	 195 – Jig saw	 196 – Junction box
 197 – Lag screw	 198 – Laser level	 199 – Level
 200 – Line level	 201 – Locking pliers	 202 – Locking welding clamp
 203 – Long nose pliers	 204 – Lopping shears	 205 – Machine bolt

		
206 – Machinist's vise	207 – Mason hammer	208 – Mason level
		
209 – Masonry bit	210 – Masonry nail	211 – Micrometer
		
212 – Mill file/flat file	213 – Miter saw	214 – Muzzle
		
215 – Nail gun	216 – Nail hammer	217 – Nail set
		
218 – Nut driver	219 – Obstruction wrench	220 – Oil filter wrench

 221 – Open end wrench	 222 – Oscillating tool	 223 – Pex coupling
 224 – Pex pinch clamp ring	 225 – Phillips screwdriver	 226 – Pin Punch
 227 – Pipe bushing	 228 – Pipe cap	 229 – Pipe coupling
 230 – Pipe nipple	 231 – Pipe plug	 232 – Pipe reducer
 233 – Pipe tee	 234 – Pipe union	 235 – Pipe wrench

 236 – Piston ring compressor	 237– Plumb bob	 238 – Pole pruner
 239 – Portable drill	 240 – Portable router	 241 – Portable sander
 242 – Pressure gauge	 243 – Pruning saw	 244 – Pruning shears
 245 – Putty knife	 246 – PVC cutter	 247 – Reciprocating saw
 248 – Regular socket	 249 – Respirator	 250 –Reversible ratchet

 251 – Roofing nail	 252 – Rotary tool	 253 – Round file
 254 –Roundhead stove bolt	 255 – Roundhead wood screw	 256 – Rubber mallet
 257 – Safety glasses	 258 – Safety goggles	 259 – Scale stick
 260 – Screw extractor	 261 – Secchi disc	 262 – Sheet metal screw
 263 – Side cutting pliers	 264 – Single pole switch	 265 – Sledge hammer

 266 – Slip joint pliers	 267 – Slotted screwdriver	 268 – Snap ring pliers
 269 – Soil auger	 270 – Soil thermometer	 271 – Soil tube
 272 – Soldering gun	 273 – Solderless wire nut	 274 – Spade bit
 275 – Spark plug gauge	 276 – Spark plug socket	 277 – Spark tester
 278 – Speed square	 279 – Stethoscope	 280 – Straight shank drill bit

		
281 – Strap hinge	282 – Sweep net	283 – Switch box
		
284 – Syringe	285 – T bevel	286 – T hinge
		
287 – Tape measure	288 – Tattooing instruments	289 – Thickness gauge
		
290 – Three way switch	291 – Tip cleaners	292 – Tire chuck
		
293 – Tire gauge	294 – Toggle bolt	295 – Torque wrench

 296 – Torx screwdriver	 297 – Tree diameter tape	 298 – Tree planting hoe or bar
  299 – Triangular file	 300 – Try square	 301 – Tube cutter
 302 – Universal joint	 303 – Universal socket	 304 – Valve spring compressor
 305 – Water breaker	 306 – Welding gloves	 307 – Welding goggles
 308 – Welding helmet	 309 – Welding torch	 310 – Wheel puller

		
311 – Wire brush	312 – Wire strippers	313 –Wood chisel
		
314 – Wood mallet	315 – Wrecking bar	

NAME

PROPER USE

101. 45° pipe elbow.....	Making a 45 degree turn with a pipe
102. 90° pipe elbow.....	Making a 90 degree turn with a pipe
103. 90° street elbow.....	Making a 90 degree pipe turn; threads on inside of one end and outside of the other
104. Abrasive chop saw.....	Cutting various types and sizes of materials with abrasive wheels
105. Adjustable wrench.....	Turning various sized nuts and bolts
106. Air compressor/hose.....	Machine that supplies air used for tools and equipment
107. Allen wrench.....	Turning hex head socket screws
108. Angle grinder.....	Power tool used for cutting, grinding, or polishing
109. Animal clippers.....	Trimming hair or wool on pets and livestock
110. Aviation snips.....	Cutting sheet metal
111. Backpack sprayer.....	Used to spray liquid pesticides in mist form on plants or soil
112. Ball peen hammer.....	Hammering metal
113. Balling gun.....	Delivering solid medication to large animals orally
114. Bar clamp.....	Clamping large sections of wood together
115. Bent nose pliers.....	Reaching obstructive or awkward places
116. Bolt cutters.....	Cutting bolts and steel rods
117. Bolt die.....	Cutting threads on bolts and rods
118. Bolt die stock.....	Holding a bolt die
119. Bolt tap.....	Cutting inside threads
120. Bolt tap wrench.....	Holding bolt tap
121. Brick jointer.....	Smoothing and designing masonry joints
122. Brick trowel.....	Placing and spreading mortar
123. Butt hinge.....	Hinge for narrow facing
124. C clamp.....	Clamping two or more pieces of metal together
125. Carriage bolt.....	Bolting wood to wood or wood to metal
126. Castrator.....	Sterilizing male animals

127.	Caulking gun.....	Holding a tube with material for patching holes or sealing cracks
128.	Center punch.....	Starting holes in metal
129.	Chalk line reel.....	Marking straight lines
130.	Chipping hammer.....	Removing slag from welds
131.	Circuit breaker.....	Protecting electrical circuits from overload
132.	Circular saw.....	Sawing wood in construction projects
133.	Clinometer.....	Measuring heights of objects or elevations of slopes
134.	Cold chisel.....	Cutting metal
135.	Combination square.....	Determining 45° and 90° angles
136.	Combination wrench.....	Turning hex and square nuts and bolts
137.	Common nail.....	Nailing boards together where holding power is desired
138.	Compression tester.....	Providing accurate readings on the pressure inside engine cylinders
139.	Concrete finishing trowel.....	Smoothing concrete
140.	Concrete float.....	Leveling concrete
141.	Concrete screw.....	Anchoring into predrilled holes in concrete, brick or block
142.	Coping saw.....	Cutting curves and irregular cuts
143.	Countersink.....	Flaring top of hole for recessing head for flathead screw or bolt
144.	Curry comb.....	Removing mud, dirt, and hair from animals' coats
145.	Cutting torch.....	Cutting metal with heat
146.	Deep socket.....	Turning nuts and bolts in depressed areas
147.	Dehorner.....	Removing horns from cattle
148.	Diagonal cutting pliers.....	Surface and diagonal wire cutting
149.	Drench gun.....	Administering precise amounts of liquid medications to animals
150.	Drift punch.....	Aligning holes
151.	Drill press vise.....	Holding stock while drilling
152.	Duplex receptacle.....	To plug in electrical units
153.	Ear tagger.....	Labeling individual animals for identification
154.	Egg candler.....	Detecting embryonic development or for evaluating shell eggs
155.	Electrical multimeter.....	Performing various tests on electrical circuits
156.	End cutting nippers.....	Cutting ends of wire, nails, and small bolts
157.	Engineer's hammer.....	Pounding hot metal, breaking up concrete, or demolition
158.	Expansion shield.....	Anchoring a lag screw into concrete, brick or block
159.	Extension.....	Extending the reach of a socket
160.	Eye bolt.....	Bolt used to attach wire onto
161.	Face shield.....	Protecting face from flying debris while working
162.	Fecal loop.....	To extract a stool sample from the rectum for analysis
163.	Fence pliers.....	Building and repairing wire fences
164.	Fence staple.....	Nailing up fence
165.	Finishing nail.....	Nailing boards where head will not be noticed
166.	Flathead stove bolt.....	Fastening wood to metal or metal to metal with wrench leaving a flat surface
167.	Flathead wood screw.....	Fastening wood to wood where a flat surface is required
168.	Framing square.....	Squaring cut corners and laying out stairs and rafters
169.	Friction lighter.....	Lighting acetylene and propane torches
170.	Fuse puller.....	Removing cartridge fuses
171.	Garden trowel.....	Used for smaller garden chores like planting, weeding, and scooping soil or media
172.	Gate valve.....	Cutting off water supply on a main line
173.	Glass cutter.....	Cutting glass
174.	Grafting tool.....	Preparing woody parts for grafting
175.	Grease gun.....	Lubricating through grease fitting
176.	Groove joint pliers.....	Gripping when greater pressure is needed

177.	Ground fault circuit interrupter (GFCI).....	Shutting off power when current flows along an unintended path
178.	Hacksaw.....	Sawing metal
179.	Half round file.....	Curved and flat filing
180.	Hammer drill.....	Power drilling in concrete, brick or block
181.	Hand compass.....	An instrument that indicates magnetic north
182.	Hand hoe.....	Used to till the soil
183.	Hearing protection.....	Decreasing hearing exposure to high decibel levels
184.	Hedge shears.....	Trimming and shaping hedges
185.	Hinge handle/flex handle.....	Socket handle to be used when flexibility is needed
186.	Hitch pin.....	A fastener used to connect as drawn (pulled) implement to a tractor
187.	Hoof knife.....	Removing hard and uneven surfaces on an untrimmed hoof
188.	Hoof rasp.....	Coarse file used to trim and shape the hooves of animals
189.	Hose bib.....	Valve for attaching a water hose; turning water supply on and off
190.	Impact driver.....	Uses a combination of rotational and concussive force to drive fasteners into various materials and uses a quick – change clamp
191.	Impact wrench.....	Installing or removing fasteners, lug nuts, or lag screws
192.	Implant gun.....	Injecting growth hormones in animals
193.	Impulse sprinkler.....	Overhead irrigation of plants where rotation is water driven
194.	Increment borer.....	Checking growth rate of trees
195.	Jig saw.....	Making irregular cuts
196.	Junction box.....	Joining several electrical wires into a circuit
197.	Lag screw.....	Screw used where great pressure to turn is required
198.	Laser level.....	Projecting a line vertically and/or horizontally to serve as a visual guide
199.	Level.....	Leveling and plumbing
200.	Line level.....	Leveling between long distance points
201.	Locking pliers.....	Extra firm gripping
202.	Locking welding clamp.....	Used for extra firm gripping of welding materials
203.	Long nose pliers.....	Reaching into recessed areas
204.	Lopping shears.....	Cutting large branches when pruning shrubbery
205.	Machine bolt.....	Fastening metal to metal with a wrench
206.	Machinist's vise.....	Holding metal firm while working
207.	Mason hammer.....	Chipping and shaping masonry material
208.	Mason level.....	Leveling and plumbing masonry materials
209.	Masonry bit.....	Boring a hole in concrete, brick or block
210.	Masonry nail.....	Nailing in concrete, brick or block
211.	Micrometer.....	Gauging or measuring small distances or thicknesses
212.	Mill file / flat file.....	Filing metal
213.	Miter saw.....	Cutting 90 degree crosscuts as well as various angles
214.	Muzzle.....	Fastening or covering the mouth of an animal to prevent eating or biting
215.	Nail gun.....	Rapid nailing using air, gas, or electricity
216.	Nail hammer.....	Driving nails
217.	Nail set.....	Countersinking nail heads
218.	Nut driver.....	Socket permanently attached to a handle for turning small nuts and bolts
219.	Obstruction wrench.....	Reaching nuts and bolts around obstructions
220.	Oil filter wrench.....	Installing or removing oil filters
221.	Open end wrench.....	Turning square head nuts and bolts
222.	Oscillating tool.....	A handheld power tool that vibrates back and forth at high speeds to cut, sand, or polish material
223.	Pex coupling.....	Making hot or cold-water supply line connections
224.	Pex pinch clamp ring.....	Securing water supply pipes to fittings
225.	Phillips screwdriver.....	Turning phillips head screws

226.	Pin punch.....	Driving out metal pins
227.	Pipe bushing.....	Connecting pipes of different diameters
228.	Pipe cap.....	Closing the end of a pipe by going over the pipe end
229.	Pipe coupling.....	Joining two pieces of pipe
230.	Pipe nipple.....	Adding length to a piece of pipe
231.	Pipe plug.....	Closing the end of a pipe, threads on the outside
232.	Pipe reducer.....	Reducing pipe size
233.	Pipe tee.....	Joining pipe at 90° angles
234.	Pipe union.....	Joining two pieces of pipe where neither side can be turned
235.	Pipe wrench.....	Turning and holding metal pipe
236.	Piston ring compressor.....	Compressing ring for inserting into cylinder
237.	Plumb bob.....	Vertical plumbing to locate points
238.	Pole pruner.....	Removing elevated or hard-to-reach branches and limbs
239.	Portable drill.....	Drilling holes or driving fasteners with a bit
240.	Portable router.....	Power tool used to shape the edge, cut a groove or mill a design in a piece of wood
241.	Portable sander.....	Power tool used for smoothing surfaces
242.	Pressure gauge.....	Device on a regulator that displays the pressure inside the cylinder
243.	Pruning saw.....	Sawing limbs from shrubbery and trees
244.	Pruning shears.....	Cutting and shaping shrubbery
245.	Putty knife.....	Applying and smoothing putty
246.	PVC cutter.....	Cutting non-metallic pipe
247.	Reciprocating saw.....	Cutting various materials with push and pull blade action
248.	Regular socket.....	General purpose socket for turning nuts and bolts
249.	Respirator.....	Preventing particles, gases, and vapors from being inhaled
250.	Reversible ratchet.....	Turning sockets in forward and reverse rotations
251.	Roofing nail.....	Nailing tin, aluminum, fiberglass, or asphalt roofing
252.	Rotary tool.....	Handheld tool for sharpening, polishing, or trimming various materials
253.	Round file.....	Filing inside holes
254.	Roundhead stove bolt.....	Fastening wood or metal to metal with a screwdriver or wrench
255.	Roundhead wood screw.....	Fastening wood to wood
256.	Rubber mallet.....	Hammering to avoid marring surface
257.	Safety glasses.....	Protecting eyes from the impact of foreign objects
258.	Safety goggles.....	Protecting eyes from liquid splash, acid vapors, dust, and impact hazards
259.	Scale stick.....	Measuring tree diameter and height of trees.
260.	Screw extractor.....	Removing broken bolts, studs, or screws
261.	Secchi disc.....	Measuring turbidity of water
262.	Sheet metal screw.....	Joining two pieces of sheet metal
263.	Side cutting pliers.....	Holding and/or cutting wire
264.	Single pole switch.....	Completing a circuit or creating a gap in the flow of electricity
265.	Sledge hammer.....	Heavy hammering
266.	Slip joint pliers.....	Adjust for holding various size material
267.	Slotted screwdriver.....	Turning slotted screws
268.	Snap ring pliers.....	Removing or installing internal or external snap rings
269.	Soil auger.....	Boring into soil to get samples
270.	Soil thermometer.....	Measuring the temperature of the soil
271.	Soil tube.....	Obtaining soil for testing
272.	Soldering gun.....	Melting solder
273.	Solderless wire nut.....	Joining two or more electrical wires
274.	Spade bit.....	Wood boring bit for electric drill
275.	Spark plug gauge.....	Gauging and setting spark plug gap

276.	Spark plug socket.....	Installing and removing spark plugs
277.	Spark tester.....	Checking the condition of the ignition system at each cylinder
278.	Speed square.....	Measuring and marking 0-90 degree angles, finding roof pitches, and laying out rafters
279.	Stethoscope.....	Used to listen to heart, lungs, and digestive organs
280.	Straight shank drill bit.....	Drilling metal
281.	Strap hinge.....	Hinge used where major strength or support is required
282.	Sweep net.....	Used to collect insects from long grass
283.	Switch box.....	Used to install toggle switches or duplex receptacles
284.	Syringe.....	Administering drugs and measuring liquids with a cylinder and plunger
285.	T bevel.....	Adjustable gauge for setting or transferring angles
286.	T hinge.....	Used where strength is required but one facing is narrow
287.	Tape measure.....	Used for straight or curved measuring
288.	Tattooing instruments.....	Used to permanently identify animals with numbers or letters
289.	Thickness gauge.....	Determining gaps
290.	Three way switch.....	Turning current on and off from two locations
291.	Tip cleaners.....	Cleaning welding and cutting tips
292.	Tire chuck.....	Inflating tires
293.	Tire gauge.....	Checking tire air pressure
294.	Toggle bolt.....	Anchoring into a hollow space
295.	Torque wrench.....	Measuring amount of torque
296.	Torx screwdriver.....	Turning torx-head screws and bolts
297.	Tree diameter tape.....	Measuring circumference of tree
298.	Tree planting hoe or bar.....	Setting out tree seedlings
299.	Triangular file.....	Filing saws
300.	Try square.....	Squaring 90° angles
301.	Tube cutter.....	Cutting soft tubing
302.	Universal joint.....	Holding socket for angled turning
303.	Universal socket.....	Socket used for angled turning
304.	Valve spring compressor.....	Compressing valve spring for removal and insertion
305.	Water breaker.....	Reduces the impact of water on soil and plants
306.	Welding gloves.....	Protects the welder's hands
307.	Welding goggles.....	Protecting welder's eyes
308.	Welding helmet.....	Protecting face and eyes from welding flash
309.	Welding torch.....	Heating and fusing metal
310.	Wheel puller.....	Removing wheel from axle
311.	Wire brush.....	Cleaning metal
312.	Wire strippers.....	Removing insulation from electrical wire
313.	Wood chisel.....	Dressing and shaping wood
314.	Wood mallet.....	Driving non-metallic objects
315.	Wrecking bar.....	Ripping and prying