

Agricultural Mechanics Career Development Event

Revised: 12/7/2017

PURPOSE

The State FFA Agricultural Mechanics Career Development Event recognizes students with agricultural mechanics competencies important to the modern workplace. The technical content and required skills continue to include all traditional areas of agricultural mechanics. Additionally, the operation of modern equipment, the application of new management strategies, and the mastering of advanced technologies are increasingly emphasized.

OBJECTIVES

- Mastery of the subject matter and skills common to the system areas
- Effective communication skills
- Superior problem solving techniques
- An understanding of modern technology
- The ability to function as team members working together and as individuals working alone.

COMMON CORE REFERENCES

7th Grade

CCSS.Math.Content.7.G.B.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

8th Grade

MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

9-10th Grade

CCSS.ELA-Literacy.SL.9-10.1c Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions.

11-12th Grade

HS-ETS1-3. Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

1. **Team Members.** A team will consist of four members with the three highest total scores making the team score.
2. **Time Limit.** A reasonable time limit will be placed on each part of the Career Development Event.
3. **Safety Equipment.** Each participant will be responsible for all personal safety equipment including
 - a. **Industrial Quality Eye Protection.** No participant will be allowed to participate in the performance skills events of the CDE without approved eye protection (spectacles or goggles). **Safety Glasses must be Type B Z87 Plus**
 - b. **Clothing.** Each participant shall furnish and wear coveralls, shop coats or shop work suits as the official approved uniform for this event. Clothing must be in good repair and fit properly. Long sleeve clothing must be worn when welding or cutting.
 - c. **Specialized Equipment.** Welding equipment such as helmets, goggles, face shields and gloves will be furnished.
4. **Written Materials.** All written materials will be furnished for the CDE. Participants will be provided with clear plastic clipboards at the State Event.
5. **Calculators.** Calculators will be furnished by contest Superintendent at the State Event.
6. **Rotation System.** A rotational system will be used for the CDE. The subject matter for State Events is included in the rules book. Each of the divisions will have a value of 100 points.
7. **Problems Solving.** Each participant will complete 20 activities from the three skill areas designated each year. A problem solving activity is defined as follows:
A mental activity involving the gathering or search of information, the use of logical solution process based on commonly accepted standards and available information to solve a problem specific to particular subject matter. A four-item multiple choice response will be used for each activity.
8. **Tool Identification.** The tool identification will include 50 items selected from all categories, from the 50 items selected to be identified a four item multiple choice question will follow relating to its identity.

9. **Ag Mechanics/Construction Math.** Each contestant will compete 25 four item multiple choice questions. Questions will pertain to the designated skill areas for the year.

References

NCCER Core Curriculum - Chapter 2

Supplement

NCCER Applied Construction Math (A Novel Approach)

NCCER Welding Level I

NCCER - New Mexico Core

Basics of Electric Motors ISBN 0-89606-360-7

Agricultural Wiring handbook 15th ed Available from the Rural Electricity Resource Council www.nerc.org

Service and Repair Instructions, Briggs& Stratton Corp.

Modern Carpentry: building construction details in easy-to-understand form, Wagner, Wills, Goodheart-Willcox Company, Inc., 1992

Practical Farm Buildings, Boyd, James S., Revised by Reynolds, Carl L., Interstate Publishers, Inc., Danville, IL 61834-0050, Third Edition, 1993.

House Wiring Simplified: tells and show you HOW, Mix, Floyd M., Goodheart-Willcox Co., Inc., 1981

2018 Contest Additional References

Carpentry

NCCER Carpentry 5th Edition Level 1 Pearson Publishers NCCER Carpentry 5th Edition Level 2 Pearson Publishing
Level 1 Book - Modules 27101-13 thru 27110-13 Level 2 Book - Modules 27201,27205,27204,27203,27202,27206,27208

Arc Welding

NCCER Welding Level 1 Pearson Publishers NCCER Welding Level 2 Pearson Publishers NCCER Welding Level 3 Pearson Publishers
Level 1 Book - Modules 29101 thru 29111 * WE WILL NOT USE MODULE 29102
Oxyfuel Cutting
Level 2 Book- Modules 29201,29202,29203,29204

Level 3 Book - Modules 29301, 29306

Notes: Know the Standards of Construction as per NM Constructions Industries
(Codes)

Look at material found on Internet concerning construction Materials

Know how to interpret an AWS- WPS (Welding Procedure Sheet)

Know how to read and interpret welding symbols, plans , and prints.

State FFA Agricultural Mechanics Skill Rotation

2017

Plumbing
Shop Equipment & Maintenance
Oxy-Acetylene Welding/Cutting

2018

Carpentry
Arc Welding

Will use 2 skills from either area

2019

Residual Wiring
Electric Contrls/Motors
Mig Welding

2020

Small Engines
Concrete/Masonry
Oxy-Acetylene Welding/Cutting

2021

Residential Wiring
Electric controls/motors
Arc Welding

2022

Small Engines
Concrete/Masonry
Mig Welding

* Plumbing may include Pex-Tubing

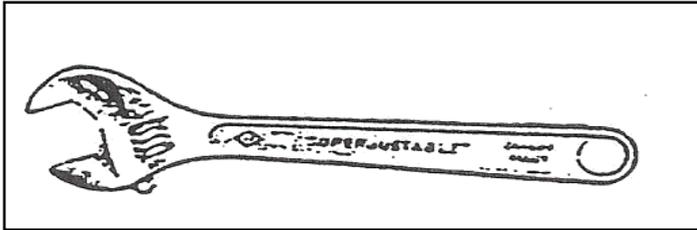
** Keep math test to skill areas and general math

*** Keep tool ID the same

Sample Tool Identification Test

Tool Identification: The identification will include 50 items selected from those listed in all categories developed by New Mexico State University. (see attached list). From the 50 items selected to be identified, a four-item, multiple choice question will follow relating to the use of its identity.

Example



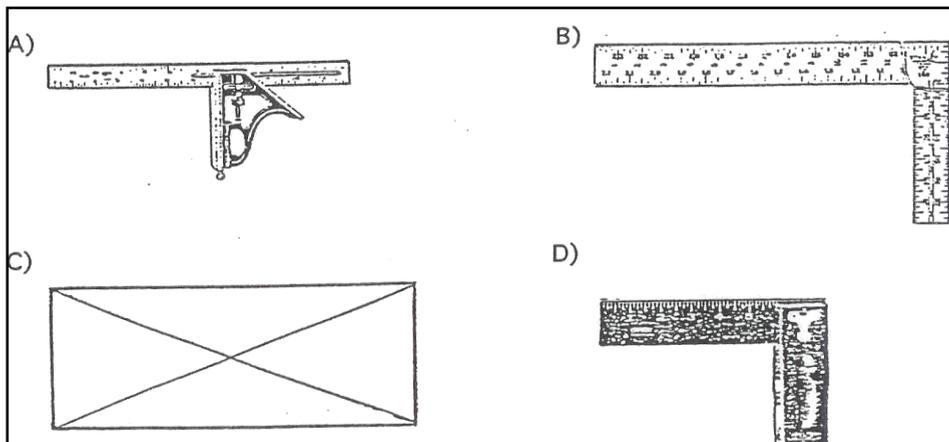
Identify The Tool

- A Crescent Wrench
- B Monkey Wrench
- C Adjustable Wrench
- D Adjustable Wrench

***Correct answer is "C"**

A four-item multiple choice response will be used for each activity.

Example- The most accurate method of squaring a trailer frame is the use of :



Measurements from corner of each are the same

***Correct Answer is "C"**

Sample Agricultural Mechanics Test

Question Sheet

Instructions: Read all questions carefully and select the most correct answer. Record your answer on the sheet provided with quiz by darkening the appropriate blank. **ONLY ONE** answer per question. Answer will be counted incorrect if more than one blank is darkened. **ERASE VERY CAREFULLY AND THOROUGHLY.**

- 1 Working Drawings are also called:
 - A Orthographic Drawings
 - B Isometric Drawings
 - C Oblique Drawings
 - D None of the Above

- 2 In the numerical Classification for electrodes the "E" refers to :
 - A Welding Position
 - B Special Characteristic of the Electrode
 - C Tensile Strength
 - D Identifies the Electrode for Arc Welding

Answer Sheet

- 1 A () B () C () D ()
- 2 A () B () C () D ()

Sample
Skill Sheet - Agricultural Mechanics Contest
Score Sheet - Oxy Acetylene Welding & Cutting

	<u>Possible Score</u>	<u>Earned Score</u>
Skill No. 1 Oxy Acetylene Welding of Steel		
1 Safety and Operation of equipment----- Factors: setting of gauges, adjustment of flame, distance inner cone to base metal, speed of travel and angle of tip.	12	_____
2 Appearance of bead----- Factors: uniformity of ripple, uniformity of width, freedom from undercut or wagon tracks and overlap on edge of bead.	12	_____
3 Uniform penetration -----	12	_____
4 Bent Test -----	12	_____
Total Welding Score -----		
Skill No. 2 Oxy Acetylene Cutting		
1 Safety and Operation of equipment----- Factors: setting of gauges, adjustment of flame, distance inner cone to base metal, speed of travel and angle of tip.	12	_____
2 Quality of 90 degree cut		
A Smoothness of cut-----	8	_____
B Squariness of Cut ----- (minus 1pt. For each 1/16" error)	8	_____
C Freedom of slag-----	4	_____
3 Quality of bevel cut		
A Smoothness of cut-----	8	_____
B Uniformity of angle-----	8	_____
C Freedom of slag-----	4	_____
Total Cutting Score-----		
Total Welding and Cutting Score-----		

Judge : _____

Sample
Skill Sheet - Agricultural Mechanics Contest
Shop Skills - Oxy Acetylene Welding

Skill No. 1

Time Allotment - 10 Minutes

Butt Weld two pieces of 16 gauge mild steel

Instructions:

- 1 Place two pieces of 2" x 2" 16 ga. Mild steel on firebrick as shown in Fig 1.
- 2 The judge is observing and scoring you performance. Practice all safety precautions.
- 3 Select a welding tip and attach it to the Victor 100 torch handle.
- 4 Adjust oxygen and acetylene pressure at the pipe line regulators.
- 5 Select a steel welding rod for making a butt weld on 16 ga. steel.
- 6 Light the torch tip and adjust the flame
- 7 Make a butt weld on the two pieces of 16 ga. steel.

Note: You may make a second weld on another pair of 16 ga. 2" x 2" pieces of mild steel if you are not satisfied with your first weld
- 8 Turn off the flame, remove the welding tip and hang the torch in the position it was received.
- 9 Cool the welds.
- 10 Mark your contestant number on your best weld and submit it to the judge for his evaluation and scoring. Place scrap pieces in the waste metal container.

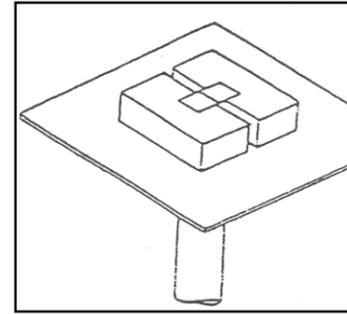


Figure 1

Sample
Skill Sheet - Agricultural Mechanics Contest
Shop Skills - Oxy Acetylene Cutting

Skill No. 2

Time Allotment - 10 Minutes

Cutting 1/2 Inch Mild Steel with Oxy Acetylene

Instructions:

1 Place a piece of mild steel 1/2" x 2" x 4" on the 16 ga. Support, over the wet sand spark trap, as shown in Fig 1.

2 The judge is observing and scoring your performance. Practice all safety precautions.

3 Attach a Victor cutting attachment to the Victor 100 torch handle.

4 Adjust the oxygen and acetylene pressures at the regulators for cutting 1/2" thick steel.

5 Light the torch tip and adjust the preheat flames

6 Make a 90 degree cut on the 4 inch side of the 1/2" x 2" x 4" piece of steel. Any number of passes may be made but not more than 1/2" of steel removed, see Fig. 2.

7 Make a 30 degree bevel cut on one end of the piece of steel. Any number of passes may be made but not more than 1/2" of steel removed. See Fig 2.

8 Turn off the flame, close the regulators, remove the cutting attachment and return all equipment to the place it was received.

9 Cool the plate of cuts.

10 Mark your contestant number on your plate of cuts and submit it to the judge for evaluation and scoring.

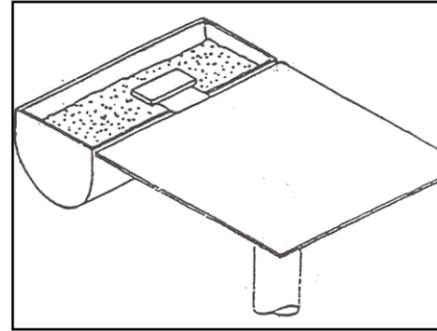


Figure 1

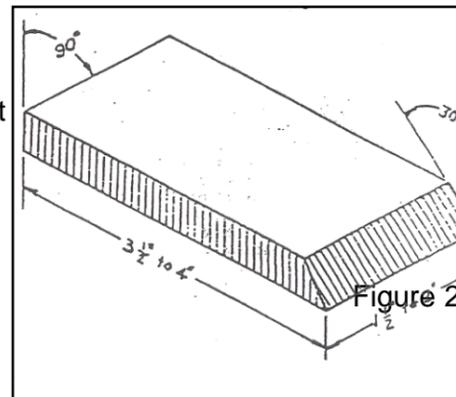


Figure 2

AGRICULTURAL MECHANICS TOOL ID AND DESCRIPTION

Asphalt Shingle	Carpentry	The most common type of roofing shingle. It generally has three tabs. The top black portion is nailed down and covered by the colored portion.
Auger Bit	Carpentry	Generally used for boring holes through wood. With a square tapered shank, it can be used in a bit brace.
Back Saw	Carpentry	Used for bench sawing of dovetail joints, dado joint, and other joints where wood is held with a vise or miter box.
Bar Clamp	Carpentry	Used to clamp glued wood joints until dry or positioning metal until welded.
Biscuit Jointer	Carpentry	Cuts a football shaped groove into the ends of lumber. A biscuit wafer is inserted into the notch to form a glue joint.
Block Plane	Carpentry	Used to plane small pieces of lumber and ends of moldings, trim, and siding.
Butt Hinge	Carpentry	Used for hanging various types of doors. The hinge is set into the grain notch flush with the wood.
Carpenter's Framing Square	Carpentry	Used for squaring boards and timbers, measuring, and laying out rafters.
Carpenter's Level or Plumb and Level	Carpentry	Used for checking, laying out, or marking vertical or horizontal level lines. It can also be used for leveling and plumbing objects.
Caulking Gun	Carpentry	Used to apply caulking for sealing cracks or applying adhesives for gluing.
Chain Saw	Carpentry	Used to cut trees, logs, and heavy timber. Chain saws are gasoline or electrically powered. The size of the saw is determined by the length of the bar and the horsepower or displacement of the engine.
Chalk Line	Carpentry	Used for marking a long, straight lines on a board, wall, ceiling or floor. A chalk line is a string that has been coated with chalk dust so it leaves a line when snapped.

Circular Saw Blade	Carpentry	Used for ripping or crosscutting wood. It forms a complete circle and has saw teeth all the way around the circular edge.
Combination Square	Carpentry	Used as a try square, miter, depth gauge, plumb level, locating the center on the end of round stock or measuring angles depending on which head is used. The three heads used on a combination square are: square-miter, center, and bevel protractor.
Corner Clamp	Carpentry	Used to hold lumber in place when gluing wood frames to a 90 degree corner.
Corrugated Fiberglass siding	Carpentry	Commonly used in greenhouses. Inexpensive wall material which allows some light to pass through. Corrugation provides strength.
Corrugated Metal Siding	Carpentry	Commonly used in barn and shed construction. Relatively inexpensive. Corrugation provides great strength.
Counter Sink	Carpentry	Used to countersink holes for flathead wood and machine screws and stove bolts.
Curved Claw Hammer	Carpentry	Used for driving and pulling nails. It is the most common hammer used by the carpenter. The size of the hammer is determined by the weight of its head.
Dado Saw BladeSet	Carpentry	Individual blades can be sandwiched together to obtain a desired thickness to cut rabbit and dado joints. Used to cut grooves/joints in lumber. Adjustable to various thicknesses.
Dowel Rod	Carpentry	Round rods which come in assorted sizes, used to insert into drilled holes when gluing wood together.
Dry Wall Screwgun	Carpentry	Designed specifically to drive drywall screws through sheetrock into the support walls behind it.
Felt Paper	Carpentry	Used as a underlayment material for shingles or rolled roofing materials. Aids in shedding water that may get under the roofing materials.
Flashing	Carpentry	Thin galvanized metal strips placed under roofing material to protect the edges of exposed lumber to prevent weathering.

Folding Rule	Carpentry	Used for taking or laying off long or short measurements where rigid support is needed.
Glass Cutter	Carpentry	Used to score and cut glass.
Hand Saw	Carpentry	Used for straight sawing in hand woodworking. The size of the saw is determined by the length of the blade from toe to heel. The coarseness for fineness of the saw cut is determined by the number of points (teeth) per inch. Available for either crosscutting (across the grain) or ripping (with the grain).
Hand Screw	Carpentry	Used to clamp flat wood joints after applying glue.
Hinge Hasp	Carpentry	Used for fastening doors or lids and a place for a lock is provided.
Hole Saw	Carpentry	Used with an electric drill to bore round holes in wood or other materials.
Insulation	Carpentry	Available in a variety of forms, used in walls and ceilings to shield warm or cold temperatures. Used in home construction to insulate between wall studs and in ceilings. May come in sheets or rolls.
Jig Saw (or Saber Saw)	Carpentry	Used to make straight or bevel cuts and cutting circles or curved shapes in lumber.
Keyhole or Compass Saw	Carpentry	Used to cut irregular shapes or work where space is limited. The blade tapers from the handle to a sharp point.
Line Level	Carpentry	Used to check the level of foundations and other construction jobs, when attached to a string line. Also used to line up bricks & blocks
Marking Gauge	Carpentry	Used when marking lines parallel to the edges of material.
Metal Stud	Carpentry	Used as a replacement for lumber framing when called for by building codes.
Miter Box and Saw	Carpentry	Used for squaring wood stock and cutting angles from 90 degrees in either direction. The miter box guides the blade when forming miter cuts and other types of joints.

Nail Set	Carpentry	Used to set heads of nails (casing and finishing) below the surfaces of wood.
Paint Roller	Carpentry	Used for applying paint rapidly over a large area.
Palm/Finish Sander	Carpentry	Sander provides the smooth surface needed before wood finish is applied.
Particle Board	Carpentry	Constructed of sawdust and wood chips which are fused together. Most commonly used in flooring.
Plywood	Carpentry	A sheet of wood that is formed by gluing thin layers of wood together. Exceptional strength. Commonly used for roofing, floors, decks, and walls.
Pneumatic Finish Nail Gun	Carpentry	Used to apply finish nails rapidly with little surface distortion
Pneumatic Nail Gun	Carpentry	Used for rapid framing of large structures.
Portable Belt Sander	Carpentry	Most powerful of the portable sanders. These sanders are used to strip off paint and varnish, and remove rust and corrosion.
Portable Circular Saw	Carpentry	Referred to as an electric hand saw. Used to cut structural lumber and rip plywood, strand board etc.
Portable Power Planer	Carpentry	Used to smooth surfaces of lumber prior to sanding.
Power Charger	Carpentry	Used to charge a variety of batteries.
Power Fastener	Carpentry	It is loaded with a nail which is propelled by a blank cartridge after the trigger is pulled.
Power Hammer	Carpentry	It is loaded with a nail which is propelled by a blank cartridge. It fires after being struck by a hammer.

Power Miter Saw Carpentry Fast cutting of lumber and trim to a specific angle.

Ring Shank Nail Carpentry The rings on the nail prevent the nail from slipping, may be used as underlayment on roofing.

Rolled Roofing Carpentry Alternative to shingles. Inexpensive, fast application.

Roofing Insulation caps Carpentry A ring shank nail with a large plastic head that will hold down roofing materials.

Roofing tins Carpentry Round pieces of sheet metal that a roofing nail is driven through to hold down an assortment of roofing materials.

Roto Zip Carpentry Used to cut out a variety of shapes or openings in stationary items such as a wall.

Router Carpentry Used to cut irregular shapes and form various contours on edges.

Router Bit Carpentry Used to shape the edges of lumber.

Scratch Awl Carpentry Used as a scribe in layout work and punching starter holes for wood screws.

Scroll Saw Carpentry Used to cut intricate designs in thin lumber.

Sheet Rock Carpentry To line interior walls. May be taped and bedded and finish texture applied prior to painting.

Sheet Rock Square Carpentry Used as a straight edge to cut sheet rock.

Sliding "T" Bevel Carpentry Used to transfer angles from one piece of stock to another and is very useful for laying out cuts on rafters.

Spade Bit	Carpentry	Used for boring large holes in soft wood with portable electric hand drills.
Speed Square	Carpentry	Used for marking, laying out angles and squaring as other types of squares.
Spiral Nail	Carpentry	Generally longer than a ring shank nail with the same purpose, to prevent slippage.
Staple Gun	Carpentry	Used to attach light gauge materials together where a nail is too heavy or time consuming.
Steel Tape	Carpentry	Used for layout work and measuring straight or curved surfaces and around corners.
Straight Claw or Ripping Hammer	Carpentry	Used to drive nails, the ripping claw, which is nearly straight, may be driven between fastened lumber to pry them apart.
Strand Board	Carpentry	An expensive substitute for plywood. Manufactured by gluing wood chips together.
Strap Hinge	Carpentry	Used on barns, doors, and gates. It is available from 2" up to 12" in light, heavy, and extra heavy steel.
Structural Lumber	Carpentry	Two inch thick materials are used for framing walls, floors, and decks. One inch thick materials are commonly used for walls, roofing, and flooring. Common widths are 4", 6", 8", 10", 12".
Stud Finder	Carpentry	Electronic device used to locate wood and metal studs that are covered with wall board of some type.
T Hinge	Carpentry	Used where the butt end of the hinge is to be fastened into a stud or timber. The hinge looks like half of a butt hinge and half of a strap hinge.
Table saw miter gauge	Carpentry	Used on a table saw to guide wood through the blade when cutting at a specific angle.
Tack Hammer	Carpentry	Used for driving tacks in canvas and screen wire. The head is magnetic.

Taping Knife	Carpentry	Used to apply joining compound on seams in sheet rock.
Torpedo Level	Carpentry	Used in limited spaces for leveling, plumbing and 45 degree miters. It has V-grooved working edge for pipe and conduit work. Overall length of 9" is most common.
Treated Lumber	Carpentry	Lumber that is chemically treated to resist moisture. Generally a dull green color. Most frequently in structural sizes 2" thick.
Try Square	Carpentry	Used primarily as a testing tool for checking the squareness of corner fits and ends of boards.
Wallboard Anchor	Carpentry	Used to attach items to a standing sheet rock wall.
Wood Chisel	Carpentry	Used to trim and cut away wood to form joints and recesses. It is held with the bevel down for a roughing cut and with the bevel up for a paring cut.
Wood Rasp	Carpentry	Used for smoothing rough work and for removing small amounts of wood on curved or irregular shaped objects.
Wood Scraper	Carpentry	Used for scraping and smoothing the surfaces of flat materials before sanding or painting.
Wooden Biscuit	Carpentry	Used to glue two pieces of lumber together. Inserted into a previously cut notch.
Woodworker's Vise	Carpentry	Used for holding wood stock.
Brick Grooving Tool	Concrete and Masonry	Used to form a clean uniform groove between masonry such as bricks and cinder blocks.
Brick Scoring Chisel	Concrete and Masonry	Used to score bricks and blocks so that they can be cut using a hammer
Brick Tongs	Concrete and Masonry	Used to carry one or more blocks or bricks to the location where they will be mortared into place.

Brick Trowel	Concrete and Masonry	Used to apply mortar to bricks, masonry blocks, and setting the masonry units.
Bricks	Concrete and Masonry	Comes in a variety of sizes and colors. They are commonly used as the finish for exterior walls. Many have 2 large holes in the middle to enhance mortar adhesion.
Bull Float	Concrete and Masonry	Used to eliminate the high and low spots or ridges left by the straight edge when striking off concrete.
Cap Block	Concrete and Masonry	Used as the top layer on a cinder block wall. It may be flat or have a rounded top.
Carbide Tipped Masonry Drill	Concrete and Masonry	Used to drill holes in masonry and concrete.
Ceramic Tile	Concrete and Masonry	Available in many colors and styles. Used for flooring and in shower areas.
Cinder Block	Concrete and Masonry	Structural block which is used for walls building footings and to support floors.
Concrete Edger	Concrete and Masonry	Used to produce a radius at the edge of the concrete which improves the appearance and reduces the risk of damage to the edge.
Concrete Finishing Trowel	Concrete and Masonry	Used to produce a dense, smooth surface on concrete.
Concrete Smoothing Tool	Concrete and Masonry	Used to remove rough edges from hardened concrete.
Deck Block	Concrete and Masonry	Large cinder block with a notch top. It is used to hold support beams for walls and decks.
Expansion Joint	Concrete and Masonry	Placed between slabs of concrete to allow for expansion and contraction due to temperature changes.
Groover	Concrete and Masonry	Used to cut a joint partly through fresh concrete.

Magnesium Float Concrete and Masonry Used to compact the concrete and remove the bull float marks.

Mud Mixer Concrete and Masonry Used to mix grout for laying tile or small amounts of mortar.

Notched trowel Concrete and Masonry Used to apply grout to a concrete floor before laying ceramic tile in place.

Plastic grout float Concrete and Masonry Used to apply grout between tile joints. The plastic edge will not scratch the tile surface.

Rebar(Reinforcing bar) Concrete and Masonry Metal rods used to reinforce concrete. It has visible ribs that concrete adheres to.

Tile Cutter Concrete and Masonry Used to score and cut ceramic and masonry tile.

Tile Wet Saw Concrete and Masonry Used to cut ceramic tile. Water circulated on the blade reduces friction and speeds up the cutting process.

Tile Pliers Concrete and Masonry Used to clip rough or crooked pieces of tile after cutting

Tile Spacers Concrete and Masonry Placed between tiles when setting on grout to maintain uniform lines.

Wire Twister Concrete and Masonry Used to twist wires together that hold rebar in place when pouring concrete.

Adapter Electricity Used for the connection of a three prong cord cap to a two prong receptacle.

Armored Cable Electricity Used mainly for inside wiring. This wire consists of metal armor, as well as each of the copper conductors which are insulated by plastic or rubber insulation.

Cartridge Fuse Electricity A device that will open a circuit and stop the flow of current when an overload or short occurs. This fuse appears in a cylinder shape with smooth ferrules at both ends.

Circuit Breaker (three pole, two pole)	Electricity	Protective device which protects the circuit from an overload.
Circuit Tester (AC or DC)	Electricity	A simple device used to test the circuit and determine if power is on or off.
Clamp on Circuit Tester	Electricity	A portable testing instrument that snaps around the conductor to measure AC amperage.
Conduit Bender	Electricity	Used to bend angles in thin-walled conduit.
Cord Cap	Electricity	Used as a male plug. The cord cap is used on power tools as well as appliances in the home.
Cord Connector	Electricity	Designed to accommodate the cord and cord cap and it sometimes referred to as the female plug.
Dimmer Switch	Electricity	A electric light switch that may be used to apply partial power to a light fixture.
Duplex Receptacle	Electricity	A plug in for electrical devices which will accommodate two plugs (cord caps) at the same time.
EMT connector/coupling	Electricity	Used to couple two pieces of thin wall conduit to on another.
EMT Elbow	Electricity	Allows a corner to be made when connecting two pieces of thin walled conduit.
Fishing Tape	Electricity	A thin rigid wire run through conduit which is used to pull electric wires.
Flexible Metallic Conduit	Electricity	A piece of spiral shaped, interlocking zinc coated steel used to protect wiring.
Flexible Non-Metallic Conduit	Electricity	Commonly used to connect stationary equipment to a power source.

Fuse Puller Electricity Used to pull cartridge and knife fuses.

Ground Fault Interrupter Electricity An electric outlet commonly used in areas where water is present. Provides additional safety as it contains a breaker mechanism.

Insulated Staple Electricity The staple is used to fasten low voltage wires to structures. a

Junction Box Electricity Device used for housing splices and mounting different types of electric fixtures.

Key Stock Electricity A square metal stock of various sizes that is placed in a groove in a round shaft to hold a pulley or pillow block in place.

Knife Fuse Electricity A heavy duty fuse used to protect circuits above 60 amps.

Multi-Meter Electricity A specifically designed meter used to measure AC and DC voltage, current and ohms with accuracy.

Non-Metallic Cable Electricity Must be used for inside wiring. Non-metallic cable consists of a thermoplastic sheath, two or three insulated conductors and is available with or without grounding wire.

Non-Metallic Cable Ripper Electricity Used to aid in the removal of the non-metallic cable insulation in order to expose the wires inside.

Non-Metallic Clamp Electricity Used to fasten non-metallic cable to boxes.

Plastic Covered Electric Cord Electricity Used for household appliances. The stranded copper conductors are covered with plastic insulation.

Rigid Conduit Electricity Used both inside and outside to provide mechanical and fire protection.

Romex Clamp Electricity Used to attach two pieces of romex type cable/wiring.

Rubber Covered Electrical Cord	Electricity	Light duty electric cord generally consisting to two wires.
Service Entrance Panel	Electricity	A panel considered to be the source for every circuit in the electrical system.
Soldering Iron/Gun	Electricity	Used to solder electrical connections and light work.
Solderless Connector	Electricity	Used for splicing electrical wiring without the use of solder or tape.
Switch Box	Electricity	Used to mount switches flush in the wall.
Thermoplastic Electric Wire (TW)	Electricity	May be referred to as "Romex". Commonly used to wire houses and buildings with out the use of conduit.
Thin-Walled Conduit	Electricity	Also referred to as Electrical Metallic Tubing (EMT) which is used inside to provide mechanical and fire protection.
Three-Way Toggle Switch	Electricity	An electrical device used to control a circuit from two different locations.
Toggle Switch	Electricity	Electrical device used to open and close a circuit from one location.
Uni - bit	Electricity	A cone shaped drill bit commonly used to drill holes for conduit in metal boxes or metal siding.
Water Proof Box	Electricity	A variety of electrical boxes designed for external use where they are exposed to weather.
Water Proof Tape	Electricity	Is a self-sealing tape which chemically bonds itself to produce a waterproof splice.
Wire Nuts	Electricity	Used to connect wires securely and rapidly without the use of tape.

Wire Solder	Electricity	Used for soldering sheet metal seams, electrical connections and other repair work. It is available in solid or flux-cored wire.
Wire Stripper	Electricity	Used to remove insulation from wire without damaging the wire.
Wire Terminal	Electricity	Crimped onto the end of a piece of wire, so that it may be attached to a terminal of some sort with a screw.
Plug Fuse	Electricity	A protective fuse device used for overload protection up to 30 amps.
Rigid Non-Metallic "Conduit"	Electricity	Commonly used to connect underground lines to a service entrance panel.
Clutch Wrench	Engine Power	A hand tool used to remove the starter clutch on small gasoline engines.
Compression Gauge	Engine Power	Used to check compression pressures of the cylinders on internal combustion engines.
Cylinder Deglazer	Engine Power	An abrasive tool used to remove the glassy glaze from the cylinder wall of an internal combustion engine.
Dial Indicator	Engine Power	A precision micrometer type instrument that gives an exact reading as the needle moves around the dial face.
Dwell- Tachometer	Engine Power	Combination meter used for measuring contact dwell and engine rpms.
Feeler Gauge	Engine Power	A precision measuring tool used to check clearances between parts. Available in either thin blades of hardened steel or wire. The thickness of the thin blades or wire is marked in thousandths of an inch or in millimeters.
Flywheel Holder	Engine Power	Used to hold the flywheel on small gasoline engines when the starter clutch is being removed or installed.
Flywheel Removal Tool	Engine Power	Designed to assist in the removal of the flywheel. It fits over the end of the crankshaft and with a sharp blow(s) on the tool with a ball pein hammer, will dislodge the flywheel from the taper portion of the crankshaft.

Micrometer	Engine Power	Available in a variety of sizes, used to measure 1 inch increments. Commonly used to measure pistons etc.
Piston Compression Ring	Engine Power	Seals the gap between the cylinder and piston wall so that combustion will take place.
Piston Oil Ring	Engine Power	Carries oil up and down the cylinder wall in an internal combustion engine.
Piston Scraper Ring	Engine Power	Scrapes and cleans the walls of the cylinder in an internal combustion engine.
Power Timing Light	Engine Power	Used to indicate the correct timing of the ignition of a spark ignition engine.
Puller Set	Engine Power	Used to remove bearings, pulleys, and other shaft hugging instruments.
Ridge Reamer	Engine Power	Tool used to cut away the ring ridge at the top of the cylinder.
Ring Compressor	Engine Power	A tool designed to force piston rings inward into their grooves so that the piston and rings can be inserted into the engine cylinder bore.
Ring Expander	Engine Power	A tool designed to force piston rings outward so the rings can be removed or installed.
Small Hole Gauge	Engine Power	Used to measure the inside diameter of small holes. The gauge is adjusted to the hole diameter and then measured with an outside micrometer.
Spark Plug	Engine Power	A device that carries the ignition spark into the engine combustion chamber.
Spark Plug Gauge	Engine Power	Used to measure and adjust the spark gap between plug terminals.
Spark Plug Wrench	Engine Power	Used to loosen and tighten engine spark plugs. A deep socket that may have internal cushioning for porcelain protection.

Tachometer	Engine Power	Used to indicate speed of engine in revolutions per minute (rpm).
Telescoping Gauge	Engine Power	Used to measure the inside diameter of cylinders or large bores with the aid of an outside micrometer.
Torque Wrench	Engine Power	Used to draw or tighten nuts and bolts to specified tensions by measuring the torque.
Valve Spring Compressor	Engine Power	Used to compress the valve spring in order to remove or install valve retainer.
Adjustable Wrench	General	Used to loosen or tighten hexagon and square nuts. This wrench adjusts to fit a variety of sizes.
Air Pressure Hose	General	Small diameter, thick walled hose that carries compressed air.
Pneumatic Grease Gun	General	Grease insertion is controlled by pneumatic air flow. Generally used in areas where a number of fittings need to be serviced.
Airless Spray gun	General	A spray gun that may be used without the need for compressed air.
All Thread Rod	General	A metal rod (usually 36" long) threaded from one end to the other, generally cut to a specific length.
Allen or setscrew wrench	General	A piece of hexagon stock that is used to tighten or loosen female, hexagon hollow type st screws.
Anvil	General	Used to shape bend, rivet, or cut steel. This tool provides a hard surface for hammering.
Aviation Snips	General	Used to cut compound curves and intricate designs out of sheet metal.
Double Bit Axe	General	Has two cutting edges. Used to cut small trees, trim trees, and logs.

Single Bit Axe	General	Used for building and construction work. This tool has a single cutting edge and one flat hammer head side.
Hand Axe	General	Used for cutting small limbs and brush and sharpening stakes. This tool has one sharp edge and one hammer side.
Shinglers Hatchet	General	Used for cutting and trimming shingles, and nailing shingles in place
Ball Pein or Machinist's Hammer	General	Has various uses by the mechanic or machinist. The hammer has a round crowned hammering face at one end and a ball at the other.
Barrel Bolt	General	Generally used as a latch mechanism to keep doors closed.
Bench Brush	General	Used to clean up materials generally with a dust pan
Blacksmith's Hammer	General	Heavy duty shop hammer which was commonly used with anvils to bend and shape metal.
Bolt Clipper or Cutter	General	Used to cut bolts, round stock, reinforcing bar, wire, and chain.
Bolt Snap	General	Used to attach chain, latch doors etc.
Box End Wrench	General	Used to tighten or loosen hex-nuts and completely surround the nut.
"C" Clamp	General	A "C" shaped clamp used for holding materials together when welding or gluing materials.
Cape Chisel	General	Used for cutting keyways and grooves because it has a narrower cutting edge than the flat chisel.
Center Punch	General	Use to mark the center point for drilling.

Chain Hoist	General	A device used to lift heavy objects by working an endless chain through two or more chain sheaves.
Chuck Key	General	Tightens the drill bit in the drill chuck.
Clevis or Shackle	General	Used to fasten an implement or material to various objects such as draw bar or tow cable for pulling.
Closed S Hook	General	Connects two pieces of chain together, the ends are open so that the chain may not be removed easily.
Combination End Wrench	General	Widely used tool and is popular because the wrench has the advantage of having both the open and box end on the same wrench.
Come-Along	General	Used to hoist and pull objects where temporary assistance is needed.
Crow Bar	General	Used for removing nails and prying materials apart.
Cup Brush	General	Used for cleaning metal surfaces, especially useful in cleaning pipe.
Die	General	Used to cut threads on solid metal rod. A variety of sizes are available to cut either fine or coarse threads.
Die Stock	General	Used to hold the thread cutting dies.
Tap and Die Set	General	All of the tools needed to thread rod and tap threads in holes.
Disc Grinder	General	Used to remove slag burrs and smooth welds on large metal surfaces.
Dividers	General	Commonly used to transfer a specific measurement from one surface to another.

File Card

General

Small stiff brush with wire bristles used to clean the teeth of files.

Double Cut File

General

Use to remove metal faster than single cut files. A double cut file produces a rough surface and requires heavy pressure when filing.

Single Cut File

General

Is usually used to produce a smooth surface finish. Light pressure should be used when filing with the single cut file.

Half Round file

General

Used to remove metal or wood inside large holes and on concave circular surfaces.

Round File

General

Used to remove metal or wood from holes.

Taper or Three Square File

General

Used for sharpening hand saws.

Hose clamp

General

Device used to secure hoses to their fittings.

Wire hose clamp

General

A wire clamp used to attach hoses to radiators or engine water pumps.

Hydraulic Jack

General

Low setting jack generally used indoors where it can be easily moved.

Mending Brace

General

Small rigid metal strap with pre drilled holes that are used to attach/splice materials together.

Measuring Wheel

General

Used to measure linear distance between two points.

Mixing Paddle

General

Used to stir paint and other liquids, used with a portable drill.

Nibbler

General

Used to cut light gauge metals, especially useful when cutting curves or arcs.

Nut Driver	General	Used to turn small hex nuts and bolts faster and easier than a wrench.
Offset Screwdriver	General	Used where space is restricted and the screw is difficult to reach.
Open End Wrench	General	Used on all types of farm machinery and equipment. The two open ends are different sizes.
Opens "S" Hook	General	Used to attach chain or cable to a hook of some type. It is generally used where the chain may need to be removed.
Outside Calipers	General	Like the inside calipers, outside calipers need to be used with a measuring instrument. Used to measure outside diameters.
Paint Brush	General	Used to spread paint.
Paint Guide	General	Use when painting with a brush to control the flow of paint. Useful around door and window frames.
Phillips Screwdriver	General	Used to drive or remove cross or x-slotted screws.
Pillow Block	General	A bearing bolted in place to support a rotating shaft.
Pin Punch	General	A long straight shank punch, used to drive small pins, bolts and keys.
Pipe Bender	General	Can be adapted to bend various sizes and gauges of pipe.
Pipe Wrench	General	Generally used to hold pipe and pipe fitting in place to either loosen or tighten fittings.
Plumb Bob	General	Used to determine a point directly below another point or establishing a plumb line for masonry construction.

Diagonal Pliers	General	Used to cut all types of soft wire and pulling cotter pins from slotted nuts. The cutting edge is at angle to the handles to permit flush cuts.
Fencing Pliers	General	Used to cut fencing, nail staples and pull staples and stretching wire.
Lineman or Electrician Pliers	General	Used primarily for electrical work. The tool has diagonal curving edges as well as the blunt gripping end for twisting wire.
Battery Pliers	General	Used to remove nuts off the battery terminal clamps.
Long Nosed Pliers	General	Often called needle nosed pliers; long, slender jaws make it possible to work where space is limited. Some are available with jaws that are capable of cutting soft wire with straight or curved jaws.
Multi Grooved Pliers	General	Used for holding parts. The jaws are adjustable for gripping larger diameter work up to 2".
Slip Joint Combination Pliers	General	Use for cutting soft wire as well as holding various stocks, nails and wire. Slip joint allows jaws to open wider for gripping larger diameter work.
Pop Rivet	General	Use to fasten sheet metal parts together when "blind" fastening is required. The rivets are available in a variety of lengths and diameters.
Pop Rivet Tool	General	Tool used specifically to install pop rivets.
Portable Air Tank	General	used tor transport compressed air to an area where needed.
Portable Air Compressor	General	Use to provide compressed air for painting cleaning and other jobs.
Portable Electric Drill	General	Used to drill holes where a drill press cannot be used.
Post Anchor	General	A "U" shaped metal bracket used to attach a post to a deck.

Protective Face Shields General Provides protection form injurious sparks and rays. Covers the entire face.

Protractor General A measuring device used to measure and establish angles.

Pry or Fitting Bar General Use for prying and helpful in aligning bolt holes. The tool has one tapered end and one flat, curve hook end.

Putty Knife General Variety of uses such as applying putty and removing paint and gaskets etc.

Quick Coupler General Commonly used to connect air hoses to pneumatic tools.

Quick Link General chain link with a threaded nut that is used to connect two pieces of chain, cord or rope together.

Quick Snap General A snap ring quite commonly used on the end of a rope.

Ratchet Handle General Use with sockets and extension bars to allow short back and forth movement of the handle to either tighten or loosen bolts and nuts.

Ratchet Load Binder General Ratcheting device that provides tension of two chains to secure a load.

Ratchet Straps General Light weight nylon straps with a ratchet end used to tie down loads on trailers and trucks.

Ratchet Wrench General use in the e place of regular wrenches where space permits rapid movement.

Reciprocating Saw General Can be used to cut a side variety of materials. Useful in confined areas.

Reciprocating Saw
Blades General Reciprocating saw blades that cut a variety of materials.

Repair Link or Lap Link	General	used to repair chain and attach rings or hooks to the chain.
Respirator or Breathing Filter	General	Used when painting to prevent injurious fumes from entering the lungs.
Roller Chain Link	General	A repair / connection link for connection of drive links in machinery.
Rope Thimble	General	Provides protection for the eye when using rope or cable.
Sash Brush	General	A tapered paint brush used to pain around frames and along trim.
Screw Extractor or Ezy Out	General	Uses to remove broken screws or studs.
Self Piercing Screws	General	Use to attach light gauge metal to backing, Variety of drive heads available.
Set Screw	General	Small flat head screws often used on pulleys and shafts where a head is not desirable.
Sledge Hammer	General	Use for heavy hammering such as driving stakes, chisels and punches.
Sleeve Anchor	General	Threaded barrel as the bolt tightens it expands the barrel against the wall board.
Slide Bar Handle	General	Use with sockets for tightening or loosening bolts or nuts. The tool can slide from a "L" to a "T" shape.
Snap Link	General	Designed to clip one piece of rope to another.
Snap Ring	General	Fits into a groove cut on the end of a shaft, holds washers and retaining rings in place.

Snap Ring Pliers General Used to expand snap rings for removal or installation.

Snap-on or Zerk Grease Fitting General Very common grease fitting on automobiles, tractors and machinery, use to apply grease under high pressure on wearing parts.

Socket General Comes in 6,8,12 point. Used with an extension bar or with ratchet alone for loosening or tightening bolts and nuts.

Socket Adapter General use to convert from one size socket drive to another size socket drive.

Speed Handle General Attaches to a standard or universal join socket and gives a full swing that speeds up work

Split/Lock Washer General Tension against the nut above the washer helps keep it tight.

Spray Gun General Used to spray primer and pain on all types of equipment and machinery shop projects, household items, etc.

Square Drive Sockets General Offer more resistance to stripping out the head compared to a regular screw.

Standard Screwdriver General use on straight slotted screw heads. This tool is available in a variety of sizes.

Staple Gun General used to install staples quickly and easily.

Dremel Tool General Used for a variety of grinding and sanding purposes. Can be used on metal and wood surfaces.

Drift Punch General A taper shanked punch that is used to drive keys, pins, bolts, and rivets. It is also used for alignment of parts.

Drill Gauge General Simply drop the drill into the appropriate opening to determine the size of the bit.

Drill Press Vise	General	Used to hold work stationary while drilling holes with a drill press. Bolt the vise to the drill table for best result and safety.
Drive Pin Anchor	General	Inserted into a hole that has been drilled, strike the head and the anchor will expand. Generally used to attach materials to a wallboard backing.
Expansion / Adjustable Reamer	General	Used for precision reaming of piston pin bores, king pin bushings, and valve stem guides.
Extension Bar	General	Used to give working clearance between the socket and ratchet.
Exterior Deck Screw	General	A coarse thread self tapping screw designed for use in structural lumber.
Eye Protection	General	Used to protect the worker's eyes while working in shop to prevent eye injury.
Fence Wire Stretcher	General	Used stretch a variety of fencing materials.
Fencing Staple	General	A galvanized staple used to attach a variety of fencing to a wooden post.
Filter	General	Used to remove foreign matter from paint and primer before using it in spray guns.
Finishing Disc	General	Used to buff and polish metal surfaces prior to painting.
Flat Chisel	General	Used for general cutting and chipping work.
Flex Handle	General	Used with a socket, this tool provides greater leverage when tightening or loosening nuts and bolts.
Flex or Universal Joint Socket	General	Used in confined areas, and consists of a socket and universal joint in one tool.

Galvanized Hanger Strap General

A thin light weight strap with pre drilled holes, it comes in a roll and used to attach a variety of materials.

Grab Hook	General	Used to catch and fasten on a chain link.
Grinding Disc	General	Used on an angle grinder for removing burrs, slag, and cleaning up welds.
Hack Saw	General	Used to cut bolts, tubing, pipe, and chain.
Hand Level	General	Used like the surveying instrument for laying out contours and grades and forms.
Hearing Protection	General	Provide protection against loud noises that can damage your hearing.
High lift Jack	General	Used to lift vehicles and machinery for repairs.
Hitch Pin	General	Inserted through the hitch on an implement to attach it to a bumper or draw bar. Light gauge pins are used to attach a variety of materials.
Hitch Pin Clip	General	Inserted through a hitch pin so that it does not come loose allowing the pin to come out of the opening.
Impact Wrench	General	A tool that is either electric or air powered that tightens or loosens nuts and bolts.
Inside Calipers	General	Used for measuring bores or holes.
Corner Brace	General	An "L" shaped brace used to reinforce a corner.
Jack Stand	General	Used to support vehicles and equipment for long periods of time. Safer than using a jack.

Lever-Jawed Wrench	General	Used for a variety of jobs that require enormous gripping strength.
Lever-Type Grease Gun	General	The most common grease gun used to supply grease at high pressures.
Lift Arm Pin	General	The spindle used in a three point hitch to attach implements to a tractor.
Linch Pins	General	A pin inserted through a shaft or metal plate to secure items in place.
Load or Chain Binder	General	Sometimes called a boomer. The tool is used to secure loads with the use of a chain.
Log Chain	General	Used in many chores for lifting and pulling objects. The chain usually has a grab hook and a slip hook.
High Pressure Low Volume Spray Gun	General	A spray gun where the paint canister is located above the nozzle, generally requires less compressed air.
Machinist's Vise	General	Used to hold work for tapping and threading, drilling, and various other applications.
Mallet or Soft Headed Hammer	General	Used when damage to the material or surface is undesirable. Mallets are available with either brass, plastic, wood, rubber, or leather heads.
Star Drive Screws	General	Allows greater rotation force when tightening compared to slotted or Phillips head screws.
Star Drive Tool	General	Used to tighten star screws.
Straight Shank Twist Drill	General	Used to drill holes in metal. The shank is straight and can be used in all types of drills with a standard chuck.
Surveying Instrument	General	a surveying tool used for laying out contours determining elevation differences, laying out grades, and checking level of various construction forms.

Surveying Rod	General	Used to determine difference in elevations by reading the graduations which are commonly feet, tenths, and hundredths of a foot.
Surveying Tripod	General	Used in conjunction with the surveying instrument.
Tap Wrench	General	Hold the bolt or pipe tap and serves as a handle when threading by hand.
Taper Reamer	General	Used to ream holes at a taper for tapered pins.
Tapered Shank Twist Drill	General	Used to bore holes in metal. The tool looks like the straight shank twist drill except for the tapered shank.
Tapper Screw/Tap con	General	Generally blue in color inserted into a pre drilled hole in concrete for anchoring purposes.
Tension Pin	General	A sleeve like pin used to align and attach two pieces of machinery.
Tin Snips	General	Standard tin snips are used to cut straight lines or large outside curves on sheet metal up to 22 gauge.
Toothed Lock Washers	General	may have external or internal teeth, designed to maintain tension when tightened.
Tow Chain	General	Used to tow vehicles and machinery and secure loads with the use of a chain binder. The chain has brab hooks a both ends.
Turn Buckle	General	Use to take up slack and tighten cable, rod or chain.
Twist Link Chain	General	Links are twisted slightly to provide a smooth chain and widely used for small animal leashes etc.
"U" Bolt	General	Uses to attach axles to trailers, attach round stock to flat surfaces.

Universal Joint	General	Use with a socket and extension bar to make work possible in confined areas.
Utility Knife	General	Use to cut and trim a variety of thin materials.
"V" Belt	General	use to convey power from a drive pulley to an implement.
Wedge Bolt	General	Use to anchor items to concrete where a shallow hold is desired.
Wheel Dressing Tool	General	Use to square and clean stationary grinder wheels.
Wire Brush disc	General	Can be used to clean metal surfaces prior to painting.
Wire chain	General	A light inexpensive chain used to hang light weight objects.
Wire Lock Pin	General	metal pin with an attached wire loop that is pulled over the end to keep it in place.
Wire Rope Clamp	General	used to clamp two cables together or for clamping a loop in one end of the cable.
Wire Rope Clamp	General	Also called cable, used to lift, tow or move objects.
Tinner's Hammer	General	Used when working with rivets and sheet metal.
Steel Rule or Bench Rule	General	A common rule used in metal working for laying out measurements and making straight lines.
Prick Punch	General	Used for marking agauge metals.

Single/Double Sheave Blocks	General	Used with cable or rope to lift, lower move or change directions of travel.
Bottoming Tap	General	use to complete threads in blind holes. The tool cuts female threads and should be used after the taper and plug tap have been used to start the threads.
Plug Tap	General	Used to continue cutting female threads in a blind hole after threads are started with the taper tap.
Taper Tap	General	A taper tap is the first tap used when starting threads in a blind hole.
Portable Power Washer	General	Useful for cleaning equipment and shop areas.
Push Broom	General	Floor Cleaning.
Tape Measure	General	Used for measuring surfaces and lay out work.
Plumbing		
Bell Reducer	Plumbing	A means of connecting two lines of different sizes together.
Black Iron Pipe	Plumbing	Available in many sizes. May be used for water but is more commonly used for plumbing gas lines.
Boiler Drain	Plumbing	Use to release waste liquids from some type of storage vessel such as a hot water heater.
Bushing	Plumbing	Commonly used to connect two pipes of different sizes. It is available in many sizes.
Chain Wrench	Plumbing	Used to hold pipe and other round objects and for tightening or loosening of pipe and fittings.
Check Valve	Plumbing	A check valve allows liquids to flow in only one direction.

Clear Vinyl tubing Plumbing Clear vinyl tubing is used to carry fluids that are under high pressure.

Compression repair coupling Plumbing Should be used to make temporary repairs on PVC and metal pipes where a break or leak occurs.

Copper Hot Water Heater Pipe Plumbing Use to attach a hot water heater to inlet and outlet valves.

Copper Tubing Cutter Plumbing Used to cut and de-burr copper tubing

Coupling Plumbing Used to connect two joints of pipe that are the same size. May be found in black galvanized or PVC.

Cross Plumbing A means of connecting four lines together.

Drum Auger Plumbing Quite often referred to as plumber's snake. May be electric or hand powered and is used to clear stopped up drains.

Flange Plumbing A rim or collar used to hold a pipe or shaft in place.

Flexible copper Tubing Plumbing Generally used in plumbing where curves and turns are common. May be bent by hand and jointed together with compression fittings.

Float Valve Plumbing Used for controlling water levels in a storage reservoir.

Forty Five Degree Ell or Elbow Plumbing Used to make a 45 degree turn in pipe. It is available in many sizes and may be found in black pipe, PVC, black plastic, galvanized, and copper tubing.

High Pressure Tubing Plumbing Used to prevent hose rupture on implements such as sprayers and power washers.

Hose Bib Plumbing A threaded male end faucet also known as a wall hydrant.

Lawn Faucet/Sillcock	Plumbing	A threaded female end faucet, generally used on the exterior wall of a building.
Gate Valve	Plumbing	A valve in which the line-closing element is a gate that is raised or lowered to regulate flow
Ball Valve	Plumbing	A valve in which the line-closing element is a gate that is raised or lowered to regulate flow
Globe or Stop Valve	Plumbing	A valve in which the closing element is a sphere, or a flat or rounded gasket, which is moved into or onto a round port
Nipple	Plumbing	Used to join two pieces of pipe together in conjunction with a coupling. The length may vary from 2"-6"
O Ring	Plumbing	An "O" ring is used to form a seal between two metal parts.
Perforated sewer pipe	Plumbing	Usually in 3" or 4" in diameter. Used to disperse fluids in the drain field. It is also used in landscaping for drainage.
Pipe Plug	Plumbing	Closes off the end of a pipe similar to a cap but fits inside the pipe. May also be used in a flat metal surface such as an oil pan.
Pipe Cap	Plumbing	Closes off the end of a pipe by threading onto the outside of the pipe.
Pipe Thread Compound	Plumbing	A putty applied to pipe threads before fittings are tightened. Aids in forming a water tight seal.
Pipe Vise	Plumbing	Used to hold pipe securely when cutting, threading, or reaming.
Plastic Pipe	Plumbing	Black in color and comes in rolls. Size may vary and it is joined together using clamps and fittings.
Pipe Dies	Plumbing	Used to thread a variety of sizes of pipe by hand when a power threader is not available.

Plastic Pipe Cutter	Plumbing	A plier like tool designed to cut plastic and PVC pipe.
Pressure Switch	Plumbing	A electric control mechanism that activates a pump when water levels drop in a storage reservoir.
Propane Torch	Plumbing	Generally used to heat copper tubing for sweating purposes.
PVC Coupling	Plumbing	A glue on fitting used to connect two pieces of pipe.
PVC Elbow	Plumbing	May be 45 degree or 90 degree to form corners in pipe.
PVC Pipe	Plumbing	Rigid plastic pipe, generally white in color and used for a variety of diameters. Usually available in a 20' joint.
Rigid Copper Tubing	Plumbing	May be used to water and some gases. It is normally connected with sweat on fittings.
Stop and Waste Valve	Plumbing	This type of valve allows you to turn off the flow and drain the system.
Street Ell or elbow	Plumbing	Used to connect two different sizes of pipe while making a 45 degree turn. Generally found in black and galvanized pipe.
Submersible Pump	Plumbing	An electric powered pump that is placed inside a well casing to pump water to the surface.
Sucker Rod	Plumbing	Rods used to connect a wind mill to the pump at the bottom of the well casing, or to connect a pump jack to a pump inside casing.
Sump Pump	Plumbing	A pump that is used to remove water that has accumulated in some type of pit.
Sweat On Copper Fittings	Plumbing	Copper fittings that are connected using heat and solder rather than threads.

Tee	Plumbing	Used to connect three joints of pipe. May be found in black galvanized or PVC.
Teflon Tape	Plumbing	A thin, flexible tape attached to pipe threads to form a water or gas tight seal. Used in place of plumbers putty.
Thermocouple	Plumbing	A sensor for measuring temperatures. Used in hot water heaters and furnaces to activate the heating elements in gas units.
Union	Plumbing	Most commonly used to connect two gas lines or pipes together. May be black pipe or galvanized.
Washing Machine Hose	Plumbing	A short heavy duty hose used to connect a washing machine to a hose bib.
Angle Iron	Supplies/Materials	One of the most common shapes of hot-rolled mild steel. It is used for the construction of metal projects.
Barbed Wire	Supplies/Materials	Used for fencing on farms and ranches.
Box Nail	Supplies/Materials	Used for nailing stock that splits easily and toe nailing in frame construction and light work. It has a flathead like the common nail, but the shank is slightly smaller.
Cap Screw	Supplies/Materials	Is a fastener that joins two parts together without the use of a nut.
Carriage Bolt	Supplies/Materials	Used primarily in wood where the square neck can sink into the wood for holding purposes.
Castellated Hex Nut	Supplies/Materials	Used with a cotter pin to insure tightness and safety. The nut has a hex-head with slots in the castle-like top for the cotter pin to be inserted.
Caster	Supplies/Materials	Available from 2" to 10" in diameter. Some casters will turn and lock. A caster is used to place under equipment so that it may be moved from one place to another.
Chain Link Fence	Supplies/Materials	A woven wire fence commonly used for yards, security, and pets.

Chain Link Fence Bullet Cap	Supplies/Materials	Covers the top of the fence post to prevent moisture from being retained in the pipe.
Chain Link Fence Eye Cap	Supplies/Materials	Covers the top of the fence post and also serves as the retainer for the top rail.
Chain Link Fence Gate Hinge	Supplies/Materials	Allows the hanging of a gate in a chain link fence by bolting onto the fence post.
Chain Link Fence Tension Band	Supplies/Materials	Metal bands used to attach chain link fencing to a post.
Chain Link Fence Corner Cap	Supplies/Materials	A protective cap that fits on top of a post that allows for changing the direction of the fence.
Channel	Supplies/Materials	Common shape of hot-rolled steel used for all types of manufacturing.
Coated Nail	Supplies/Materials	Used for greater holding power.
Cold Rolled Steel	Supplies/Materials	Commonly used for making bolts and shafting and where close tolerances or metals of smooth finish are needed.
Common Nail	Supplies/Materials	Used for rough framing. It has a flat head with a diameter about twice the diameter of the shank.
Cotter Pin or Cotter Key	Supplies/Materials	Used to prevent the part(s) from slipping or turning off when fitted into a hole drilled crosswise in a shaft.
Drywall Screw	Supplies/Materials	Used to provide a firm, tight attachment of drywall (sheetrock) to wood framing. Self-tapping screws are available for metal-framed wallboard systems.
Duplex-Head Nail	Supplies/Materials	Double headed nail used in forming lumber for concrete and other construction jobs which are taken apart and reused.
Eye Bolt	Supplies/Materials	Used for lifting heavy objects and/or anchoring cables or wire rope.

Finishing Nail	Supplies/Materials	Used to attach door and wooden window frames and various types of wood trim. Its shank is smaller than a box nail and has a very small, straight head designed to be set below the trim surface. The hole is then filled, sanded and finished.
Flat Head Screw	Supplies/Materials	Used as a fastener for most all types of materials. The flat head screw is designed to be countersunk which leaves it flush with the surface.
Flat or Cut Washer	Supplies/Materials	Used to increase bearing surfaces for bolt heads and nuts, distribute the load over a larger area and prevent marring of the materials surface.
Furring Nail	Supplies/Materials	Used for stucco and installing wire on the outside of structure.
Roofing Nail	Supplies/Materials	Used to nail asphalt shingles, rolled roofing, and saturated felts (tar paper).
Galvanized Steel	Supplies/Materials	Steel which consists of a coating of zinc from .0002" to .002".
Gang Nails or Truss Clips	Supplies/Materials	Used in place of nails as a quick means of fastening flat joints of wood for such parts as roof trusses.
H beam	Supplies/Materials	Like the I beam, it is used in heavy construction like main framing members. The flange width and beam height is the same.
Hand Tamper	Supplies/Materials	Used to compact soil back in place after a line has been laid.
Hex Nut	Supplies/Materials	Commonly used on farm equipment and tractors, trucks, and automobiles. It is six sided and fits in close clearance places. Available with NC or NF threads.
I Beam	Supplies/Materials	Common shape of hot-rolled steel used in heavy construction such as main framing members. The flange width is less than the height of the beam.
Lag Bolt or Lag Screw	Supplies/Materials	Is a heavy duty screw designed for fastening large objects to various types of structures, wood, concrete, etc.
Livestock (woven wire fence)	Supplies/Materials	Designed to enclose areas where small animals such as sheep, goats, and swine are housed.

Lock Washer	Supplies/Materials	Used under nuts to prevent the nuts from becoming loose and keep tension on the bolt.
Machine Bolt	Supplies/Materials	Used where a wrench can hold both head and nut and is available with a square or hex head and nut.
Masking Tape	Supplies/Materials	It's rubber-based pressure sensitive adhesive, peels off clean when used for masking around areas to be painted.
Mild Steel, Hot Rolled	Supplies/Materials	Most common type of steel used for the fabrication of farm machinery and equipment.
Oval Head Screw	Supplies/Materials	Used like the flat head screw. When used to install hardware, the head protrudes slightly above the surface to give an ornamental look.
Peg Board	Supplies/Materials	Masonite sheeting with lines of holes which hold hooks. Commonly used to hold tools.
Plastic Tape	Supplies/Materials	Used as an insulator for wire splices because of its high insulating value.
Plow Bolt	Supplies/Materials	Used to secure wearing parts on tillage equipment. The head is tapered or counter sunk to fit flush with the surfaces.
Poultry Wire Netting	Supplies/Materials	Used for fencing poultry, rabbits, and other domestic animals and game birds.
T-Post/Metal Fence Post	Supplies/Materials	Used for fast and inexpensive fence construction
T-Post Driver	Supplies/Materials	Used to drive T-Posts
Post Hole Hand Digger	Supplies/Materials	Used to dig holes for fence posts
Post Hole Auger	Supplies/Materials	Used to dig holes for fence posts mechanically

Round Head Screw	Supplies/Materials	Used like the flat and oval head screw but is not countersunk.
Screw Eye	Supplies/Materials	Used to hang objects, for line anchors and to connect screen door springs.
Self-Locking Nut	Supplies/Materials	Used without a lockwasher. The neck of the nut locks down on the bolt threads and prevents loosening.
Sheet Metal Screw	Supplies/Materials	Used for all types of sheet metal fabrication. They are known as self-tapping screws because they cut their own threads as they are driven into mild or soft sheet metal.
Smooth Galvanized Wire	Supplies/Materials	An all purpose galvanized steel wire commonly used for electric fencing.
Square Nut	Supplies/Materials	Used with carriage, machine, stove and plow bolts.
Fencing Staple	Supplies/Materials	A u-shaped piece of galvanized wire used to fasten fencing materials to posts and other structures.
Stove Bolt	Supplies/Materials	Used as a fastener for gauge metals.
Strap/ Flat Steel	Supplies/Materials	A common shape of hot-rolled mild steel used for light manufacturing.
Swivel	Supplies/Materials	A chain accessory consisting of two links and a riveted pin which prevents chains from kinking.
Toggle Bolt	Supplies/Materials	Fastener designed to anchor objects to hollow walls where the nut cannot be reached.
Tubing, Round	Supplies/Materials	Used like square tubing, but it is round in shape.
Tubing, Square	Supplies/Materials	Used for construction of all types of equipment. The height and width of the tubing is the same.

Welded Wire Fabric	Supplies/Materials	Used to increase the tensile strength of concrete and help maintain slab alignment
Wing Nut	Supplies/Materials	Used on bolts that are loosened or removed frequently.
Wire Brad	Supplies/Materials	Used for light carpentry work. Generally less than one inch in length and very small diameter
Slotted Hex Nut	Supplies/Materials	Used with a cotter pin for safety just like the castellated nut. However, the slots are in the hex-head instead of the castell-like top of a castellated nut.
Abrasive Cut-Off	Welding / Cutting / Hot & Cold Metals	Used to cut all shapes and types of metals. The abrasive cut-off uses a thin (1/8 inch) cutting disc and is often called a chop saw.
Abrasive Cutoff Saw Blade	Welding / Cutting / Hot & Cold Metals	Most commonly used to cut a variety of metal products. Masonry blades are available.
Cut off Saw	Welding / Cutting / Hot & Cold Metals	Holds metal in place to be cut with an abrasive blade.
Acetylene Regulator	Welding / Cutting / Hot & Cold Metals	Used to reduce the high acetylene cylinder pressure to a workable constant pressure. Hose and cylinder connections are left-handed threads.
Brazing Rod	Welding / Cutting / Hot & Cold Metals	Used as filler rod for brazing or braze. They are made of copper and zinc and are used with a flux. May be purchased as a bare rod or flux coated.
Copper Coated Mild Steel Welding Rod.	Welding / Cutting / Hot & Cold Metals	Used as a filler rod for mild steel oxy-fuel Welding Metals. The copper coating prevents rusting and adds a cleaning agent to the molten puddle.
Cutting Tip	Welding / Cutting / Hot & Cold Metals	Used with the cutting torch when oxy-fuel cutting steel.
Cutting Torch	Welding / Cutting / Hot & Cold Metals	Used with the cutting tip when oxy-fuel cutting steel.
Cylinder Wrench	Welding / Cutting / Hot & Cold Metals	Used for tightening and loosening regulator, hose, and packing nuts.

Electrode	Welding / Cutting / Hot & Cold Metals	A coated metal wire used for shielded metal-arc Welding / Cutting / Hot & Cold Metals of many metals.
Electrode Holder	Welding / Cutting / Hot & Cold Metals	Used to mechanically hold the electrode while conducting current from the electrode lead.
Electrode Storage Container	Welding / Cutting / Hot & Cold Metals	Stores electrodes in a stable moisture free environment.
Flashback Arrestor	Welding / Cutting / Hot & Cold Metals	Used to limit damage from a flashback by allowing the gases to flow in only one direction thus preventing the flame to burning back into the equipment.
Friction Lighter	Welding / Cutting / Hot & Cold Metals	Used to light the torch for cutting or welding instead of using matches which are unsafe to use.
Ground Clamp	Welding / Cutting / Hot & Cold Metals	Used to connect the ground lead (cable) to the work. This provides a completed electrical circuit.
Heating Tip, Multi-Flame	Welding / Cutting / Hot & Cold Metals	A oxy-fuel tip used for heating.
Inert Gas Flowmeter	Welding / Cutting / Hot & Cold Metals	Regulates inert gases that are generally used when TIG welding. Recognized by the glass tower.
Inert Gas Regulator	Welding / Cutting / Hot & Cold Metals	Used to regulate shielding gases used in Mig and Tig Welding.
Leather Gloves	Welding / Cutting / Hot & Cold Metals	Used to protect the hands from the ultraviolet rays and spattering hot metal.
Mig Gun Nozzle	Welding / Cutting / Hot & Cold Metals	Directs the flow of gas onto the weld surface.
Mig Tips	Welding / Cutting / Hot & Cold Metals	Mig tips guide the wire from the gun through the gas cup.
Mig Welder Pliers	Welding / Cutting / Hot & Cold Metals	Used to remove a variety of mig tips and gas nozzles from MIG guns.

Mig Welding Gun	Welding / Cutting / Hot & Cold Metals	Used to deliver the wire and Shielding gases.
Mig Wire	Welding / Cutting / Hot & Cold Metals	Used as filler wire for gas metal-arc Welding.
Nozzle Gel	Welding / Cutting / Hot & Cold Metals	Lubricates the welding wire for smoother wire flow.
Oxygen Regulator	Welding / Cutting / Hot & Cold Metals	Used to reduce the high oxygen cylinder pressure to a workable, constant pressure.
Pipe Cutting Guide	Welding / Cutting / Hot & Cold Metals	There are a variety of different types of guides that clamp around pipe to aid in cutting angles etc.
Plasma Torch	Welding / Cutting / Hot & Cold Metals	A torch that generates an electric arc that is forced through the metal with compressed air.
Porcelain Gas Cup	Welding / Cutting / Hot & Cold Metals	Non-metallic cup that directs the flow of shielding gases when TIG welding.
Protective Leather (Sleeves, Apron, Coat)	Welding / Cutting / Hot & Cold Metals	Used to protect the body from harmful ultraviolet rays and hot molten spatter while welding.
Slag or Chipping Hammer	Welding / Cutting / Hot & Cold Metals	Used for slag removal from shielded electrode weld.
Tig Torch	Welding / Cutting / Hot & Cold Metals	Attachment on a tig machine that holds the tungsten electrode which generates the arc.
Tip Cleaner	Welding / Cutting / Hot & Cold Metals	Used to clean and partially recondition both Weldings. The tip cleaner is made of a series of fine round wire files each of decreasing diameters.
Torch Handle	Welding / Cutting / Hot & Cold Metals	Used to mix fuel gases and oxygen in the correct proportions.
Tungsten Electrode	Welding / Cutting / Hot & Cold Metals	Non consumable electrode that generates the arc when TIG welding. Can be purchased in a variety of sizes.

Vise-Grip "C" Clamp	Welding / Cutting / Hot & Cold Metals	With its flat and u-shaped jaws, it is used to clamp metals quickly and firmly while Welding.
Cutting/Gas Welding Goggles	Welding / Cutting / Hot & Cold Metals	Used to protect the eyes from light rays of great intensity and heat rays.
Welding Helmet	Welding / Cutting / Hot & Cold Metals	Used to protect the eyes and face from the harmful arc rays and molten spatter produced when arc Welding.
Welding Tip	Welding / Cutting / Hot & Cold Metals	Used for all types of oxy-fuel Welding and brazing. The tip size is determined by the thickness of the metal to be welded.
Wire Brush	Welding / Cutting / Hot & Cold Metals	Used to prepare metal for Welding, remove slag, and clean parts of machinery.
