



Learning Objectives:

- The features and benefits of the products you sell.
- How to answer your customers' product-related questions.
- How to help your customer choose the right products.
- How to increase transaction sizes by learning more about add-on sales and upselling techniques.

Chapter 1: Fastening Tools

Module 1: Hammers

Product Knowledge:



Claw Hammer

- Use for general carpentry, household chores and nail pulling.
- Curved claw offers leverage in removing nails.
- Use only with non-hardened, common or finishing nails.
- You can choose 16 or 20 oz. weights for general carpentry. For fine cabinetry or light-duty driving, choose 7, 10 and 13 oz. nail weights.
- Available with a smooth face for finishing jobs, or a waffled face for more control when hammering large nails into lumber.



Framing (Rip) Hammer

- Use for ripping apart wooden components and demolition work.
- Use only with non-hardened, common or finishing nails.
- Choose weights from 20 to 32 oz. for framing and ripping.
- Available with milled or waffled faces to grip the nail head and reduce the effect of glancing blows and flying nails.



Ball Peen (Ball Pein) Hammer

- Use with cold chisels for riveting, center punching and forming unhardened metal work.
- Striking face diameter should be about 3/8" larger than the diameter of the head of the object being struck.
- Popular sizes are 12 and 16 oz.
- Variations include a cross-peen hammer (with a horizontal wedge-shaped face) and a straight-peen hammer (with a vertical wedge-shaped face).



Sledgehammer

- Use for jobs that require great force, such as breaking up concrete or driving heavy spikes.
- These hammers have long handles from 14" to 36" and heavy heads weighing from 2 lbs. to 20 lbs.
- Double-face sledgehammers feature two identical faces.
- Single-face sledgehammers have one flat face for striking and one wedge-shaped face for splitting wood.



Hand Drilling Hammer

- Use with star drills, masonry nails, steel chisels and nail pullers.
- Has a short handle. Use it for pounding hardened nails into concrete or for using with tools that drive nails and pins into concrete or brick.
- Weighs between 2 lbs. and 4 lbs.
- Larger striking surface, generous bevel and special heat-treating minimize chance of chipping the striking face.



Bricklayer's Hammer

- Use for setting or splitting bricks, and chipping mortar from bricks.
- Features a curved, chisel-like pick and a small, square striking surface.



Shingler's Hammer

- Drives roofing nails, assures proper shingle spacing and trims composition and fiberglass shingles.
- Typically includes a slotted, replaceable cutting blade.



Drywal Hammer

- Use to score, sheet and set nails for drywall work.
- Use the notch in the blade to remove exposed nails.
- Features a scored head and a notched blade instead of a claw.



Mallet

- Use to drive chisels or hammer joints together.
- Has rubber, plastic, wooden or rawhide head.
- Sizes are specified in head weight or diameter with the exception of wooden mallets, which are specified by head diameter only.
- Comes in variety of shapes and sizes for specific tasks.

Taking it to the Floor:

Frequently Asked Questions

Q: What weight hammer should I buy?

A: Buy the heaviest hammer that you can control because the heavier the hammer, the easier it will drive nails. However, the heavier the hammer, the harder it is to hit nails on the head and the more quickly your arm muscles will become fatigued. A 16 oz. curved-claw hammer is a good choice for general use.

Q: Which is better: wood or fiberglass handles on hammers?

A: Some people say the wood provides a better feel and absorbs shock. While wood is durable and affordable, fiberglass is stronger and less prone to overstrike.

Q: How do I hammer small nails into trim without damaging the wood?

A: Try lightly tapping the tip of the nail with a hammer to flatten it out.

Q: Do you have a hammer I can use with a chisel.

A: Yes, small sledgehammers weigh between 2 lbs. and 4 lbs. A 2-lb. model would be a good choice.

Upselling Skills

- Some high-quality hammers feature forged, double-bevel on hammer claws, which provide clearance to allow claws to slip easily under nail heads close to the wood surface.
- A 16 oz. titanium-head hammer carries the striking power of a 20 to 24 oz. steel hammer, making it light and easier to carry and swing. It also transmits less shock than a steel hammer, reducing the risk of repetitive-motion injuries.
- In a professional, top-quality hammer, the head and handle are assembled with a wooden wedge and steel wedges.
- Fiberglass and tubular steel hammers should feature a non-slip, cushioned PVC grip molded to the handle.
- Solid-steel handles should feature an air cushion grip for comfort and shock absorption.
- Convertible hammers let pros do framing or finish work by simply screwing on the appropriate striking cap—either milled or checkerboard face—to the front of the hammer head.
- Professional framers tend to prefer hammers with wooden ax handles. The flared handle end helps prevent them from losing their grip while working.
- Jacketed handles reduce shock and vibration while providing good overstrike protection.

Add-on Items

- If the customer needs the **hammer** for remodeling work, suggest a nail puller to help with any demolition.
- You may also suggest a **tool belt** for holding the customer's new hammer as well as other tools need for a project.
- **Nail sets** will help the customer achieve a smooth finish to the project if he or she is driving finishing nails.
- If the customer is hanging shelves, pictures or attempting some other project involving a finished space, suggest an **electronic stud finder** to help locate a solid nailing surface.
- Ask the customer if he has the proper **nails** for the project.
- Also, remind the customer to wear **safety glasses** and **gloves** for eye and hand protection when using a hammer.

Module 2: Pliers

Product Knowledge:



Cutting Pliers

- Use for cutting wire or other thin metals. There are several different types of pliers available depending on the application.
 - **Side cutters** have a cutting blade on one side only and are available in long-, curved- and short-nose types.
 - **End cutting nippers** have cutting blades on the end to make sharp, clean cuts close to the surface on wires, bolts and rivets.
 - **Diagonal cutters** have two cutting blades set diagonally to the handle. They offer leverage when pulling cotter pins. Mechanics and electricians use them for general cutting.



Fence Pliers

- Use to pull and cut staples in fencing and other work involving wire.
- Feature flat, heavy head for hammering, staple-pulling hook, wire cutters on each side and pliers jaws to pull wire.



Lineman's Pliers

- Use for cutting, holding, shaping and twisting wire.
- They have gripping jaws in addition to cutting edges.
- Professionals engaged in electrical, communications and construction work use these heavy-duty pliers. They are also called electrician's pliers.
- High-leverage lineman's pliers have rivets placed closer to the cutting edges to provide more leverage.
- Two head patterns are available: standard (bevel nose) and round nose, which is more streamlined.
- Sizes range from 6-1/4" to 9-1/4".



Locking Pliers

- Use these adjustable, vise-type locking pliers to lock on to a work piece and operate like a clamp.
- Feature an adjustment screw that changes the jaw size to apply the correct clamping pressure.
- Some use a mechanism that allows one-handed release; others require two hands to disengage.
- Pliers with a curved jaw put pressure on any style nut or bolt head. Some include a wire cutter to allow user to cut wire.
- The straight jaw type provides maximum contact on flat, square or hex work.
- Those with a long nose provide easy access in hard-to-reach places.
- The C-clamp allows you to clamp a wide variety of shapes. It's handy for plumbers, welders and mechanics working with large objects use pliers with a large jaw.



Needle-Nose (Long-Nose) Pliers

- Use for electrical and electronics work.
- They have a pointed nose for doing work in tight places.
- Most have side cutters for cutting wire.
- A variation is the thin-nose, or bent-nose pliers, with the nose bent at an 80° angle so it can be used to grip and force wire through odd angles or reach around objects.



Slip-Joint Pliers

- General utility pliers with two jaw-opening size adjustments.
- Some have a shear-type wire cutter to cut small-gauge wire.

Tongue-and-Groove Pliers



- Use for gripping and applying limited torque to round, square, flat and hexagonal objects.
- Feature multiple size adjustments.
- Jaws may be straight, smooth or curved.
- Sizes generally range from 4-1/2" to 20-1/4" in length.
- Plumbers, electricians and other professionals use this tool.

Wire Strippers



- Use for general-purpose wire cutting and stripping insulation from wire.
- Feature adjustable stops to remove wire insulation without damaging conductors.
- Feature pre-cut holes to cut different wire gauges.
- Plier-style nose permits pulling and looping of wire.

Taking it to the Floor:

Frequently Asked Questions

Q: What type of pliers should I buy for general use?

A: There are many different types and sizes of pliers because they are each designed to do a specific job. A complete set of pliers would include a pair of 6" slip joint pliers, 10" tongue and groove pliers, needle nose and locking pliers as the best buy for general household use.

Q: I need a pair of pliers that I can use in tight quarters. What do you suggest?

A: Use a pair of needle-nose pliers, which are good for this task as well as gripping small items, precision work, cutting wire and bending wire to wrap a terminal. Curved needle-nose pliers are especially good for inserting and removing small screws stuck behind pipes.

Q: What are the advantages of locking pliers?

A: They can turn many parts that no other tool can and they are especially suited for clamping onto small parts and gripping pipe fittings. You can also use them when a nut or bolt head strips. But be careful because you can deform some parts if you over-tighten them.

Q: I need a tool that will last a long time. Which one do you suggest I buy?

A: Quality pliers are judged by the type of metal used in its construction. Higher-grade tools are generally made of fine polished, high carbon drop-forged steel. I also recommend features such as an insulated handle to protect against electrical shock, a rust resistant finish and a handle hole for easy storage.

Add-on Items

- Ask if the customer needs a lubricant to loosen rusted bolts or fasteners.
- Also, remember that gloves are also a good add-on sale for someone working with their hands.
- Finally, ask the customer if he or she needs any other pliers. Since each plier has a different purpose, sometimes buying an entire set is a good idea so you'll be prepared for any task.

Product Knowledge



Slotted Tip Screwdriver

- Use for driving and removing standard, slotted fasteners.
- Slots generally range in size from 1/6" to 1/4".
- Tip is flared at shoulder of blade so it is wider than the driver bar. Blades should not taper too sharply from the tip, because an improperly tapered tip has a tendency to rise out of the screw slot.
- Variation is the Cabinet Slotted Tip, which has a straight tip with no flare. For use with small screws and countersinking screws where regular tips with a flare would mar the wood or material on the side.



Phillips® Tip Screwdriver

- Use on cross-slotted screw heads with modified U-shaped slots of uniform width.
- Sizes range from 0 to 4, with 0 being the smallest.
- Similar tip configurations include Frearson tips that have V-shaped cross slots with tapered sides, and Pizidriv® with additional, smaller slots at 45° angles to the main cross slots.



Star (Torx®) Tip Screwdriver

- Use with star head screws and bolts to reduce slippage.
- Tips have six lobular drive surfaces to provide additional contact surface with the screw head.
- Vertical sides transmit torque perpendicularly to the driven element so there is no slipping.



Hex Nut Screwdriver

- Use mainly on small hex nuts and in confined areas such as electronic equipment, car ignitions and plumbing jobs.
- Similar to a screwdriver, but has a tip like a wrench socket.
- Available in several sizes and styles, with a fixed-size or variable-size "socket" at the end to adjust to various nut sizes.



Hex (Hexagonal) Tip Screwdriver

- Use to tighten socket set (hex head) screws and usually comes in sets.
- Also called a hex key or hex wrench.
- Some hex sets are attached to and fold into a metal carrying case.
- Other variations include T-shaped hex tools with vinyl grips and L-shaped keys for greater torque power.



Offset Screwdriver

- Removes and inserts screws in places where it is impossible to use a straight shank screwdriver.
- Available in two- or four-blade varieties, with one end slotted and one end Phillips.
- Some models have a reversible ratcheting mechanism to turn screw tip and magnetized tips to guide screws into holes or otherwise inaccessible areas.
- Others have split-points that can be expanded in width to fill the screw slot and hold screws when guiding into inaccessible areas. A spring clamp that fits over the screw head, holding the bit in the slot, serves a similar purpose.



Ratcheting Screwdriver

- Features a reversible ratchet mechanism in the handle that eliminates the need to grip and re-grip during the driving process.
- Usually comes with interchangeable tips.
- One variation is the spiral-ratchet (or Yankee) screwdriver. It drills and removes screws using a ratchet mechanism similar to a push-pull drill.



Jeweler's Screwdriver

- Has a rotating head that is held by the forefinger to steady the screwdriver while the thumb and middle finger turn the screwdriver to remove or install small screws.
- Jewelers, hobbyists and others who work with very small screws use this tool.
- Usually available in sets with Phillips and slotted tips.

Taking it to the Floor:

Frequently Asked Questions

Q: What size straight-slot screwdriver should I buy?

A: That depends on the size of the fastener. A screwdriver is most effective when the width of the tip of the driver matches the width of the slot in the head of the fastener.

Q: Can I get by with just one slotted and one Phillips screwdriver?

A: If you are going to buy just one of each, get a No. 2 Phillips tip screwdriver and a quarter-inch slotted tip. However, you really should get at least two or three sizes of each. In fact, you should have a complete set of screwdrivers in your workshop to match the variety of jobs that occur around the house.

Q: I've been told that using a pair of pliers on the shank of the screwdriver can help loosen fasteners that are stuck. Is this true?

A: No. Pliers are prone to slip, even on square-shank screwdrivers. It is OK to use a wrench, but only on square-shank screwdrivers.

Upselling Skills

- Always remind the customer that there are many different types and sizes of screwdrivers because there are many different types and sizes of screws, and that they should always use the right size and type of screwdriver for the right job. Therefore, a complete set of screwdrivers is probably the best buy. Or, recommend a ratcheting screwdriver with interchangeable tips.
- Quality screwdrivers are judged by the kind of metal in the blade, finish and amount of grinding on the tip. If blade metal is poor quality, it will chip and crumble under pressure. If the tip is improperly ground and flares too much, it will rise out of the screw slot. Precision tips have a more consistent symmetry than conventional tip screwdrivers and provide better fit and torque without the danger of slippage.
- Recommend higher-grade screwdrivers where the shank penetrates deep into the handle. If the blade is not attached firmly to the handle, it will eventually loosen and slip in the handle.

Module 4: Wrenches & Sockets

Product Knowledge



Combination Wrench

- Combines both a box-end and open-end style of wrenches.
- The open-end side of the wrench provides gripping power on two sides of the fastener head with another side open so the wrench can be placed on a nut, which might not be accessible to a closed or box wrench.
- It should fit the nut exactly to prevent mutilating the nut edges.
- One type is the flare nut wrench, which is flared to fit hex fittings and flare nuts.
- The box-end side of the wrench has an enclosed head and provides more leverage by completely enclosing the nut.
- Some types are offset to provide knuckle room and clearance over obstructions.
- Wrenches are available with either 6- or 12-point rings.
- While the combination style is common, you can also get a wrench with a box-end on both ends, or an open-end on both ends. There are typically different sizes on each end.
- Has a box and an open end on opposite sides of the same wrench. Both ends are usually the same size.
- Also available is a reversible ratcheting combination wrench that allows you to quickly tighten nuts and bolts without lifting the wrench off and repositioning it after each rotation.



Adjustable Wrench

- Adjusts to grip a range of fastener sizes.
- You can easily adjust the jaw opening with a knurl operated by your thumb. Gradations on the jaw indicate the size of the opening.



Ratchet Socket Wrench

- Use with sockets to make turning nuts and bolts easier than with a conventional wrench.
- Available in a variety of handle shapes and lengths.
- Drive size is 1/4", 3/8" or 1/2".
- Available with a round or teardrop-shaped head and contains a reversing mechanism to facilitate tightening or loosening a fastener.
- Sockets are available with 6-, 8- and 12-point gripping ends, in a full range of inch and metric sizes.
- One type has a hinged head for more versatility.
- Popular accessories include flex handles, speeder handles, T-handles, extensions of various lengths and universal joints to work on fasteners in hard-to-reach locations.



Hinge Handle Socket Wrench

- Another type of socket wrench does not ratchet, but combines a jointed hinge male drive piece with a handle. It has a spring-loaded bearing to lock on various size sockets.
- Common square drive sizes are 1/4", 3/8" and 1/2".



Torque Wrench

- Permits you to determine applied torque on bolts, nuts and other fasteners.
- Torque value (generally measured in foot pounds) is set to a micrometer scale on the handle or preset by an adjusting screw in the handle.
- Typically has square drives to use standard detachable 3/8" and 3/4" sockets.
- Available with audible signal (clicking sound) or visual display.
- Many torque wrenches are available with dual scales for conventional and metric measurements.

Taking it to the Floor:

Upselling Skills

- Recommend top-quality wrenches forged from carbon alloy steel with Chromium and Vanadium (Cr-V) for corrosion resistance and strength.
- Many better-quality wrenches come with coated grips for ease of handling.
- Wrenches may be sized in metric or SAE. Having a complete set of both sizes will ensure your customer is ready for whatever fastener he may encounter. The wrench needs to be an exact fit to the fastener it is tightening or removing, otherwise it could damage the fastener's head. Therefore, having a complete set of wrench sizes is the best policy.

Module 5: Pry Bars, Punches, & Nail Sets

Product Knowledge



Wrecking Bar

- Use in construction, demolition and where pulling nails, ripping wood and similar tasks are done.
- Also known as ripping bars or crowbars.
- Those with curved ends are also known as gooseneck bars.
- Because of their length, usually 24" or 30", they have more leverage than hammers, enabling them to pull much larger and longer nails.
- One variation is the **utility bar**, which includes two jaws for grabbing lumber.



Pry Bar

- Use to remove nails with exposed heads and to pry paneling or molding without marring the surface.
- Smaller and flatter than a wrecking bar and not designed for heavy-duty prying.
- Features beveled notches in each chisel-like end and ranges in size from 6" to 21".
- One type of pry bar features an extra curve, which makes it useful for lifting and holding such things as drywall panels in place.
- Double claw models provide equal force on push or pull.



Cats Paw

- Use to pull nails when nail heads are buried beneath the wood's surface.
- To use it, hammer the forked chisel end into the wood surrounding the nail head until the nail head is positioned between notches. You can then pull it from below the wood surface.



Pin Punch

- Use for driving or removing bushings, pins and keys that have been loosened.
- Also called a drive pin punch.
- Shaft has a long taper to the tip, which is flat.



Prick Punch

- Use to make a very light starter mark that can then be enlarged by a different type of punch (usually a center punch).
- Also used to mark layout lines.
- The point of a prick punch has a long bevel.



Center Punch

- Use for starting holes in wood or metal, or to align rivet or bolt holes.
- Also use for driving rivets after rivet heads have been removed.
- This is a good all-around punch useful for most jobs requiring a punch.
- One variation is the automatic center punch, which has a spring-actuated internal drive that pushes the attached punch point into the material to be center punched.



Nail Set

- Use to countersink nails before filling with putty, plastic, wood or other filling materials for a smooth surface.
- Nail sets are sized by 1/32" and range from 1/32" to 5/32". It is important that the correct size set be used for each size nail to prevent enlarging of a small nail hole by too large a set.
- The pointed end of the nail set should be cupped or hollowed out to avoid splitting the nail head. Self-centering nail sets are available.

Taking it to the Floor:

Frequently Asked Questions

Q: I want to hide the nail head in some molding that I am installing.

A: Use a nail set to sink the nail head into the molding. Then you can fill the hole with a spackling compound, sand it smooth and paint it. If you need to buy one, try one with a rubber grip. This will make it easier to handle. It's always a good idea to buy a set of three nail sets instead of just one so you can set different size nails.

Q: How can I remove the molding from my wall without damaging either the drywall or the molding?

A: A pry bar is more efficient than a claw hammer, and its smooth base keeps it from damaging the wall.

Q: I need a punch for general use, what type should I buy?

A: The center punch is probably the most versatile and can handle a variety of jobs that require a punch. Try a punch made of heat treated, high carbon steel. It's a better quality.

Add-on Items

- Suggest **safety glasses**, which you should always wear when using a pry bar or punch.
- **Gloves** offer protection from the rough work associated with using a pry bar. You'll also want hand protection when using a punch.
- A **ball peen hammer** is a tool typically used with a punch.
- Finally, use a **hand file** or **whetstone** for redressing punches or chisel ends of pry bars.

Module 6: Staplers

Product Knowledge



Staple Gun

- Shoots a variety of staples or brad nails with a one-hand lever operation.
- Good for a variety of jobs requiring material to be held with one hand and fastened with the other, such as lining closets, installing insulation, tacking ceiling tile or fastening roofing paper.
- Other models are designed to fasten a variety of materials, such as different types of wire, including telephone wire, heavy-duty wire and insulated wire.
- Always recommend an electric staple gun whenever a project calls for shooting a multitude of staples, such as for an upholstery project or installing roll insulation in walls.



Hammer Tacker

- Use like a hammer and automatically drives a staple with each blow.
- Resembles a hammer in design, with the stapling mechanism in the head and the staples stored in the handle.
- Also called a “slap tacker”.
- Construction crews commonly use this tool to install roll felt roofing paper under roofing materials.



Glue Gun

- Electrically operated glue gun consist of a heating element, nozzle and glue chamber.
- Glue or caulking sticks are put in the chamber, where they are melted by heat and released through the nozzle. The adhesive cures by cooling. Cordless models are also available.



Rivet Tool

- Plier-type tool that fastens materials together using rivets. The tool flattens the rivet heads to create a flange that sandwiches the material together.
- Use in place of screws, nails and other fasteners in many applications, such as thin metal, leather and canvas.

Taking it to the Floor:

Frequently Asked Questions

Q: Are staples interchangeable with different staplers?

A: Although there is a wide variety of staple types and sizes, each staple gun will only accept a certain range of sizes and styles. In choosing the proper staple for the job, you need to consider the thickness of the material to be stapled and its hardness.

Q: Why do the staples I am using not go far enough into the wood?

A: Your stapler does not have enough power to drive the staple into the hard surface. If you can, use a shorter staple or you will have to use a more powerful tool.

Q: Can I use a staple gun to install molding and trim?

A: Some staple guns handle round-crown as well as regular staples, while electric staple guns can handle brads for molding and trim work.

Upselling Skills

Staple Gun

- Handle technology that makes it easier to squeeze.
- Mechanism that prevents staples from jamming in the tool.
- A wire guide so you don't accidentally staple into a wire.
- Ergonomic handles.

Hammer Tacker

- Striking edges that won't damage the work surface.
- Mechanism to prevent staples from jamming.
- Ergonomic grip
- Double-magazine capacity for quicker reloading.

Glue Gun

- High and low temperature settings.
- The trigger mechanism closes the nozzle to prevent dripping.
- Ergonomic handle.
- There are a variety of glues available, including heavy-duty types for wood joints requiring about 60 seconds drying time and lightweight for products like paper, with shorter drying time.

Rivet Tool

- Purchase in a set containing interchangeable nosepieces that set multiple sizes of rivets. Fixed nosepiece models are only capable of setting one size of rivets.
- A pivoting nosepiece for attaching rivets at multiple angles.
- Some models allow for stainless steel rivets for marine applications.
- Handle allows for self-storage of the extra nosepieces.
- Longer, curved handles allow for easier operation.

Add-on Items

- Recommend **staples**, for anyone buying a staple gun.
- Recommend **rivets**, for those customers buying a rivet tool.
- Offer **glue sticks**, to accompany the purchase of a glue gun.
- Always recommend your customer wear **safety glasses** while using a tool.



Chapter 2: Cutting & Drilling Tools

Module 1: Drills

Product Knowledge:



Bit Brace

- A hand-drilling tool with a crank handle generally used to drill large holes in wood.
- To use, apply pressure to the knob, or head, of the tool and turn the handle or center section in a circular motion. The knob turns freely from the rest of the brace and remains stationary when turning the tool.
- Generally used with auger bits or as a screwdriver.



Hand Drill

- Generally used for precise drilling in fine woodworking applications.
- Drilling action comes from turning a hand crank on the side of a drill frame.
- Also called an eggbeater drill.
- Features adjustable drill chuck to permit easy changing of drill bits ranging in size from 1/16" to 1/2".



Awl

- Use to make screw-starting holes for drilling, screwing or nailing when lightly tapped by palm of hand or with hammer or soft-face mallet.
- Also use for scribing or scoring along a straight edge to produce a sawing or layout line on wood or soft metal.
- A gimlet is a variation of the awl with threads like a screw on the tip.

Taking it to the Floor:

Frequently Asked Questions

Q: Are hand drilling tools used very much anymore?

A: With the advent of cordless drills, both hand drills and bit braces aren't used very much anymore. However, they are still used on some job sites where there is no electricity for re-charging batteries and in fine woodworking applications.

Q: What drill should I use to drill a precise hole and not risk damaging the work piece?

A: The hand drill with a brad point bit is the tool to use when precision counts. Since a hand drill is turned manually, it can be stopped easily and precisely.

Q: Can I use a staple gun to install molding and trim?

A: Some staple guns handle round-crown as well as regular staples, while electric staple guns can handle brads for molding and trim work.

Module 2: Saws

Product Knowledge



Rip Saw

- Best for cutting wood with the grain.
- Not for finish work as the ripping action of the saw produces a coarse, ragged cut.
- Typical blade length is 24" to 28", usually 5-1/2 tpi (teeth per inch).

Crosscut Saw



- Best for cutting wood across the grain.
- Produces a smoother cut than rip saws, so it's often used to cut plywood.
- Saws are 10 to 12 tpi for fine work and 7 or 8 tpi for faster cutting. 10 tpi is a good general purpose saw.
- Blade lengths range from 20" to 28", with 26" the most popular.
- A shorter version is the **panel** or **short cut saw**. It can be used for ripping, crosscutting and general cutting of lumber, plywood and particleboard and plastic materials.

Hacksaw



- Cuts metal or plastic.
- Consists of a blade held in a steel frame with relatively high tension to hold the blade rigidly straight.
- Blades come in coarse-, medium (18 tpi), fine (24 tpi) and very fine-toothed (32 tpi). Regular or standard blades are used for general-purpose cutting; high-speed or bi-metal blades for cutting hard, extra-tough steel.
- Most models can be adjusted to hold various blade lengths. Some have both horizontal and vertical positions for blades. Others provide blade storage.
- A close-quarter (or utility) hacksaw holds and positions a hacksaw blade so it can be used effectively in narrow spaces and slots.
- Replacement blades include rod saw blades capable of cutting through most hard materials—spring and stainless steel, chain, brick, glass and tile.
- Another type of saw used to cut PVC and plastic is the plastic pipe saw.

Compass Saw



- Cuts curved or straight-sided holes.
- Saw blades are narrow, tapered nearly to a point to fit into most spaces.
- Blades come in multiple styles for various jobs.
- One type is the **keyhole saw**, a small compass saw with finer teeth that can cut metal.

Coping Saw



- Cuts irregular shapes, curves and intricate decorative patterns.
- Saw consists of a thin blade and a C-shaped steel tension frame.
- The removable blade is typically 6-1/2" long



Backsaw

- Use with miter boxes to cut miters.
- Has a stiff, reinforced back to provide the rigidity necessary in precision cutting.
- It varies in length from 10" to 30" and may be 7 tpi to 14 tpi.



Bow Saw

- A lightweight utility saw for fast cutting of all woods.
- Consists of a tubular steel frame and a saw blade.
- Some bow saws are designed to hold hacksaw blades as well as standard bow saw blades. These multi-purpose saws can be used to cut wood, metal or plastic.



Dovetail Saw

- Use for fine finish cuts, such as cutting dovetail joints in woodworking.
- Use for trimming molding, furniture repair, or cutting plastics and laminates.
- Similar to a backsaw, with stiff reinforced back, only smaller with finer teeth.



Drywall Saw

- Cuts drywall and plasterboard in the same fashion as a keyhole saw, such as for sawing holes for electric outlets and switchplates.
- The saw is self-starting with a sharp point for plunge cuts.



Pull Saw

- Teeth cut with a pulling motion.
- Pull saws cut wood faster and with less effort because of the thinner and more flexible blade.
- Because of the flexibility of the blade and the minimal set to the teeth, the saws are excellent for flush cutting.
- The saws feature teeth diamond-ground on three cutting edges.



Miter Saw

- Helps cut exact angles for wood trim and rafters.
- Made of plastic, hardwood or aluminum.

Taking it to the Floor:

Frequently Asked Questions

Q: I want a hand saw for all-around use. What do you recommend?

A: A 7- or 8-point crosscut would be a good choice. Look at the teeth per inch to tell you what type of cut it will make. Fewer teeth work more quickly but provide a coarser cut with rough edges. Saws with more teeth work more slowly but provide a finer cut.

Q: Is there a saw I can use to cut pipe?

A: You can use a hacksaw, which cuts metal or plastic. You can also buy a plastic pipe saw, which cuts PVC and ABS plastic. It can also cut wood and drywall.

Q: Can hacksaws cut other materials besides metal?

A: Yes, the fine teeth of a hacksaw can cut other materials too tough for wood saws, such as bricks. The higher the number of points, the finer the cut. As a guide to selecting the right blade, find out what material will be cut; then find a blade that will have at least three teeth in contact with the material.

Q: What do I need to cut a hole in my wall for a new electrical box?

A: You want to use a keyhole saw.

Upselling Skills

- Better saws have a blade coated with Teflon™ or other proprietary coating to reduce binding and residue buildup problems inherent to wood cutting. Reduced friction or drag makes for smoother, easier cutting.
- Look for induction hardened blades. The way the teeth are ground should improve cutting speed as well as rapid removal of sawdust.

Module 3: Knives

Product Knowledge



Retractable Blade Utility Knife

- Cuts materials such as drywall, cardboard cartons, laminates and plastic.
- Blade retracts into body of knife for safer operation and storage.
- Handle generally unscrews or swivels open to permit blade changes. Usually has extra blade storage in the handle.



Fixed Blade Utility Knife

- Blade locks between the halves of the knife to provide more blade stability than retractable models.
- Handle generally unscrews or swivels open to permit blade changes.
- Unlike retractable knives, accepts larger or special-purpose blades that can't retract into the handle.



Snap Blade Knife

- Cuts light- and medium-duty materials such as wallpaper, rubber, vinyl and leather, or materials with adhesive backing that will stick to the blade and prevent sharp, accurate cutting.
- Blade sections snap off without having to open the tool to change blades. There are generally between 8 and 13 blade sections per blade.



Carpet Knife

- Trims and cuts carpet and other flooring materials.
- Angular design provides easier access to hard-to-reach places.
- Many models feature retractable blades and blade storage in handle.



Precision Knife

- A pencil-sized tool used for precision cutting of lightweight materials, such as paper or poster board.
- Also called a hobby knife or X-Acto® knife.
- Ultra-sharp blades made from surgical steel come in a variety of sizes in triangle and curved shapes.
- Contains a built-in chuck to hold and secure blades.
- Some models feature blade storage in the handle.

Taking it to the Floor:

Upselling Skills

- Higher end utility knives have ergonomic designs for better gripping and easier handling.
- Knife folds to make it easier to carry. A quick-change feature makes it easy to change blades.
- Some have a built-in wire stripper.

Add-on Items

- Suggest your customer buy an extra package of **blades** for replacing dull blades.
- Ask if your customer will need **specialty blades** suited for specific projects.
- Recommend buying several utility knives, as they are one of the most commonly used tools in the home. They should be located in the toolbox as well as the utility drawer in the kitchen for opening boxes, etc.

Module 4: Chisels

Product Knowledge



Wood Chisel

- Carves and cuts wood. You cut by striking one end of the chisel with a hammer.
- Comes in a variety of sizes and styles. The butt chisel has a short blade that ranges from about 2-1/2" to 3" long. Use for carving and paring, particularly in tight spots. It can be used with hard-faced hammers.
- A firmer chisel is square-sided, medium-duty chisel and has a longer blade, usually from 3-1/2" to 6" and is used mainly for cutting deeply into wood. It should be used with soft-faced hammers.
- Another type is a **paring chisel**, use for light-duty, detailed work such as trimming cabinets.



Cold Chisel

- A cold chisel should be used only for cutting and chipping cold metal (unhardened steel, cast and wrought iron, aluminum, brass and copper), never masonry.
- Also comes in a variety of styles, including flat (the most widely used), cape, diamond-point and round-nose.



Masonry Chisel

- Use when cutting masonry, such as concrete block and brick.
- Some types have teeth for cutting soft stone.
- One variation is the star drill, used for making holes in masonry to anchor fasteners



Floor Chisel

- Removes flooring material.
- Larger head design, generally 3", increases striking area.

Taking it to the Floor:

Frequently Asked Questions

Q: Is there one chisel that you can recommend to handle most household jobs?

A: No. Chisels are grouped according to the material they cut—either wood, metal, stone or masonry. The two main types, however, are wood and cold.

Q: I need to buy a chisel for a woodworking job. What size do you recommend?

A: You can handle most of your needs with a 1/4" model and one larger one—either a 3/4" or 1".

Upselling Skills

- Blades should be of high-quality carbon, heat-treated steel with a precision-ground cutting edge.
- Quality woodworking chisels should have crowned steel strike caps to help center the blow.
- Since different size chisels are often necessary, remind customers that a set of wood chisels is probably the best buy.
- Always recommend chisels with protective strike guards to protect the hand.

Add-on Items

- Recommend the proper **hammer** used with the type of chisel the customer is buying, whether it's a Ball Peen Hammer, a Hand drilling hammer or a Wooden Mallet.
- Medium- or Fine-Grit **Whetstone File** for Redressing
- Always recommend **gloves** and **safety glasses** when selling chisels.

Module 5: Planes

Product Knowledge

Bench Plane



- An adjustable tool to trim, bevel, fit and shape wood, and smooth rough spots left by sawing and drilling.
- Blades are positioned bevel side down at a 45° angle.
- Models range in size from 9" smooth planes to 24" jointer planes.
- Higher-end planes have lateral, as well as fore and aft cutter adjustments and a movable frog to vary the mouth opening.



Block Plane

- Is much smaller than bench planes and used for smoothing the end grain of boards and shaping small pieces of wood.
- Blades are positioned bevel side up and set at a low angle (12° in low angle models and 20° in standard models) to permit very thin shaving of work piece.
- Available in both adjustable and non-adjustable models.



Surface Forming Plane

- Use for quick, single-handed trimming and cutting, particularly on drywall and PVC.
- Also called a pocket plane, the blade files away material like a cheese grater.
- Blade design makes them much safer than most cutting tools and easier to use than a conventional plane.
- Leaves a rough surface on wood.
- Available in regular, round and half-round patterns.



Spokeshave

- Use for detailed shaping of curved work, such as chair legs and seats, as well as for chamfering edges.
- Replaceable cutters adjust for depth of cut and shaving thickness.
- Generally 10" in length.



Rabbet Plane

- Cabinetmakers and do-it-yourselfers use this tool to cut rectangular recesses (called rabbets or rebates) out of the edges of boards and to make grooves in flat surfaces.
- Also called a rebate plane.
- Has an adjustable mouth for either fine or coarse work.
- Cutter is positioned at front of plane to enable tool to fit closely into corners.

Taking it to the Floor:

Frequently Asked Questions

Q: My door is rubbing the frame at the top. What should I do?

A: You can shave off the top with a block plane, which is the right tool when you need to trim wood but not enough to use a saw. However, be sure to clamp a block of wood at the edge of the door to avoid splintering the grain.

Q: I need to plane a piece of plywood. What type of plane should I use?

A: When using a plane on plywood, be sure to use a double-edged disposable blade. The adhesive in plywood will quickly dull a regular cutting iron.

Q: How can I tell if the plane I'm buying is a quality product?

A: The quality of a given plane is determined by the steel used in the cutter, cap iron, sole and body. The cap iron should be of hard steel so adjustment screws will not strip. Hard steel cutters hold an edge longer. Also, the sole of the plane should be perfectly flat and the mouth opening narrow and precisely ground for the plane to shave wood flat without splitting the grain.

Add-on Items

- Remind the customer to pick up some **sandpaper** for smoothing the rough work done by the plane.
- A **sharpening stone** or a file will help keep the plane blade sharp.
- Recommend the customer use **safety glasses** and **gloves** when using these items.

Module 6: Snips & Bolt Cutters

Product Knowledge



Straight Snips

- Use for all straight-line cutting jobs or very wide curves.
- Also called regular snips.
- Range in size from 7" to 16" in length.
- One type, the combination snip, will make straight and moderately irregular cuts in either direction.



Duckbill Snips

- Use for cutting tight circles or other curved designs in either direction.
- Also called circular snips.
- Feature long nose design.



Aviation Snips

- Cuts easier because of double fulcrum, compound leverage action.
- Also called compound leverage snips.
- Available in right-handed, left-handed or straight models corresponding to the various directions of the cut.



Offset Snips

- Have offset handles to keep hands above work.
- Cut easier because of compound leverage.
- Designed especially for long, inside cuts and are available for right or left cutting direction. However, both models will make straight cuts as well.



Bolt Cutters

- Are heavy-duty cutters that cut bolts, threaded rods, cables and other metals from 1/16" to 5/8" thick.
- Range from 12" to 36" long. 24" and 30" are most common.
- The longer cutters have greater strength.
- Special leverage joints allow great pressure to be applied with minimum effort.
- End-cut cutters operate similarly to end-cut pliers, with special jaws available to cut special metals.

Taking it to the Floor:

Frequently Asked Questions

Q: Should I use snips to cut wire?

A: No. Snips are only designed to cut sheet metal. When cutting wire, always use wire cutters.

Q: Can I sharpen the blades of my snips using a file or sharpening stone?

A: Generally no. Most do-it-yourselfers don't have the type of sharpening device needed to sharpen the blades of snips. It's probably best to purchase a new pair and properly maintain the blades.

Q: Why do snips come in right- and left-handed models?

A: The different types of snips are used to make cuts in different directions. Different snips are designed to cut different thickness of metal in different directions. You may want to have more than one pair on hand for the different needs you may encounter.

Q: What kind of snip is good for general purpose use?

A: If you're not sure of the specific use for the tool, but would like to have a pair of snips in the toolbox, I recommend a pair of 10" straight tin snips.

Module 7: Axes & Hatchets

Product Knowledge



Single-Bit Axe

- Use to fell, trim or prune trees, and to split or cut wood.
- The other end of the head, the poll, forms a hammer for driving wooden or plastic stakes. Never use it to strike splitting wedges, steel posts, stone or any hard object.
- Handles for single-bit axes are curved to help increase leverage. Axe handles are made of hickory and range from 20" to 36" long. The most common is 36".
- Common head patterns include Michigan, Dayton, Kentucky, Connecticut and New Jersey.



Double-Bit Axe

- Performs the same function as single-bit axe, but has two cutting edges—one on each end of the head.
- Professional lumbermen generally use this tool.
- Double-bit axes have straight handles because the handle must be symmetrical with the double-edge head.
- Common head patterns include Western, Michigan, Swamping and Reversible.



Carpenter's Hatchet

- Use to cut down or trim trees or notch wood.
- Also called a half hatchet.
- Other popular hatchet types include **hunter's hatchets**, **broad hatchets** and **camping hatchets**.



Splitting Maul

- Makes a starting notch in wood.
- Similar to a sledgehammer, but one end of the head is wedge-shaped.
- To use, insert the wedge and strike with the hammer end of the maul head to finish splitting the wood.

Splitting Wedge



- Use to finish splitting wood when struck with splitting maul after you make a starting notch.
- Strike a wedge with a sledge or woodchopper's maul having a larger striking face than the head of the wedge.
- Never strike the steel wedge with the cutting edge of the maul.
- Steel wedges are forged from a solid piece of high-carbon steel and may be heat-treated.
- Aluminum and plastic wedges are designed primarily for use with chain saws and crosscut saws to hold the kerf apart to prevent binding.

Taking it to the Floor:

Frequently Asked Questions

Q: Can I replace the handle without buying a whole new axe?

A: Replacing the handle of an axe is quite common. However, you need to replace it with a handle of the same size and quality as the original.

Q: What's the best way to sharpen the head of my axe?

A: With a file, restoring the head to its original shape.

Q: Should I buy a single- or a double-bit axe?

A: If you aren't going to be using it very often, I would recommend a single-bit axe. It does the same job and it's safer to use than a double-bit axe.

Q: How can I tell if the axe I'm buying is high quality?

A: The grade of steel used in the head of higher-end axes and hatchets is generally heat treated and forged. The quality of a hatchet or axe is also determined by the handle material and how the head is attached to the handle.

Add-on Items

- **File** for redressing sharpened edge.
- **Whetstone** for removing scratches on head.
- Customers that already have an axe but who might need to repair it will want a **replacement handle**.
- If the customer will be splitting wood, suggest a splitting **wedge** to make the job easier.
- Always recommend safety gear, such as **safety glasses** and **gloves**.



Chapter 3: Marking & Measuring Tools

Module 1: Distance Measuring Devices

Product Knowledge:



Tape Reel

- Used by builders for measuring foundations.
- Tape is typically 100' long and designed to measure long distances.
- Tape is contained in durable case and is generally rewound by a crank on the side of the case with a small hook on the end for hooking onto objects to be measured.



Retractable Tape Measure

- A general purpose measuring tool with a spring mechanism contained in the housing to automatically retract the tape.
- A locking mechanism holds the tape in place. Some models have buttons that slide to lock the blade, while others have levers and toggles that permit the tape to retract when squeezed.
- Many have markings for laying out studs on 16" centers or other specialized markings.
- Ranges in blade length from 6' to 35', with 10', 16' and 25' being common sizes.
- The concave blade measuring rule varies in width from 1/4" to 1-1/4"—wider tapes are easier to extend over longer distances without collapsing.



Ultrasonic Measuring Device

- Tapeless electronic devices allow a single person to measure spaces (generally up to 100') without assistance.
- These electronic tapes often include built-in calculations for area (square footage) and volume (cubic footage) and can store measurements in memory.



Folding Rule

- Measuring device consisting of 6" to 8" hardwood, steel or aluminum lengths connected by spring joints that unfold for measuring distances.
- Some models include an extension slide for measuring closed-in areas such as doorways and window frames where a regular folding rule will not work. The rule is unfolded as far as possible, then the slide is extended and its measurement added to the overall measurement for a total measurement reading.
- Different models are designed for specific measuring needs of masons, engineers, carpenters and plumbers.



Measuring Wheel

- Makes lengthy exterior measurements—up to 10,000'. Consists of a wheel, handle and odometer.
- A push button reset returns the counter to zero.
- Wheel diameters range from 4" to 25", with professionals generally opting for the large-wheeled units that are suitable for rough terrain.
- Features include collapsible or telescoping handles, gear-driven counters, a variety of wheel sizes, different types of tread materials and optional carrying cases.



Metal Rule

- Measures and cuts roll and sheet material using straight edge as a fence.
- Also called a straight-edge rule, as thicker, rigid models can be used as a saw guide.
- Some models measure in 1/8" and 1/16" increments on one side and in 1/32" and 1/64" increments on the other.

Taking it to the Floor:

Frequently Asked Questions

Q: How long a tape measure should I buy?

A: A 16' tape is handy for most household work, but I recommend a 25' one because it can also be used for carpentry, plumbing and other major projects.

Q: Why does the hook of the tape slide back and forth?

A: This movement is calibrated for the thickness of the hook blade to allow the tape to be accurate on both outside and inside measurements.

Q: I've heard that you shouldn't let the tape recoil back into the housing at full speed. Why?

A: When the blade of the hook slams into the housing at full recoil speed, the angle of the hook can be compromised, which will jeopardize its ability to measure accurately.

Upselling Skills

- Suggest tapes with Mylar, acrylic or nylon blade coatings to preserve the integrity of the blade. Also, high-visibility tape measures allow for easy spotting on the job site.
- Quality features also include wide blades and blades with a long standout.

Add-on Items

- Suggest a **carpenter pencil** for marking lines to be cut on lumber.
- Suggest a **lumber crayon** for those customers who may need to mark measurements on metal, concrete or wet lumber.
- Customers buying a measuring wheel may need **marking paint** to mark their measurements.

Module 2: Squares

Product Knowledge

Framing Square



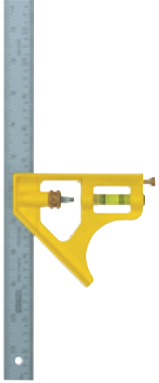
- Also known as carpenter's or rafter square because this tool is generally used for laying out rafters and marking stair stringers. Use anywhere you need to mark a square angle.
- 90° L-shaped tool made from one piece of material (steel or aluminum). The long end (blade) is usually 24" and the short end (tongue) is 16".
- Similar squares are also available in other sizes (8" x 12").
- Generally has framing tables (rafter and Essex tables) etched into the body to provide information on roof framing.
- Also has ruler increments printed on the inside and outside edges.

Try Square



- Use this L-shaped tool as a guide for pencil markings of 90° cuts and to check the edges and ends of boards for “squareness”. Also use to determine whether a board is the same depth for its entire length.
- Try squares have broad 6” to 12” blades set at right angles, with wood, plastic or metal handles.
- Another type is a try/mitre square, which features a 45° corner edge.

Combination Square



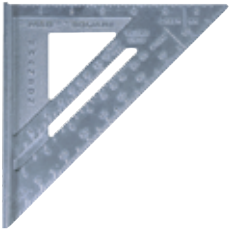
- Has a grooved blade and head that can be adjusted (by loosening the thumbscrew) to many locations along the 12” blade to provide different measurements and for scribing.
- One edge of the head (which is usually metal or plastic) has a 90° fence to measure for crosscuts.
- The other side of the head has a 45° angle for use as a mitre square.
- The head also contains one level vial to check for level and plumb
- Usually includes a scratch awl for scribing.
- Some combination square sets are available with an attached protractor that is movable throughout 180° for setting the blade at any angle within that range.

Sliding T-Bevel Square



- Use for locating and transferring any angle between 0° to 360°.
- Also use for bisecting angles for mitering when used with a compass.
- Has a movable blade that can adjust to any angle by loosening and tightening wing nut or locking mechanism.
- Available with plastic or wooden handles.

Speed Square



- A small triangle-shaped square with a flanged edge for butting against the edge of a work piece to draw 90° or 45° angles.
- Also use as a cutting fence for circular power saws.
- It has different angle measurements marked on its surface and edges.
- Markings on diagonal edge correspond to layout dimensions for rafters and stairs.
- Generally available in 7” and 12” sizes.

Drywall Square



- Useful tool for measuring and marking 4’x8’ sheets of drywall, plywood and other 4’x8’ building materials.
- Often used as a guide to score drywall.
- Some models available with adjustable bevel for marking and scoring angles.

Taking it to the Floor:

Frequently Asked Questions

Q: What type of square should I use to mark the 2x4s I'm cutting?

A: A speed square is probably your best option. It has a flange on one side that butts up to the edge of the board to allow making square marks. It can also be used as a guide for your circular saw.

Q: What are all the markings on my framing square used for?

A: They consist of rafter tables, which are used to figure lengths and cuts of rafters, and the Essex Board Measure table, which shows board measurements of almost all sizes of boards and timbers.

Q: What square should I use to duplicate an existing angle?

A: This is what a sliding bevel T-square is designed for. You don't have to calculate the angle, using this tool you can just copy and transfer it to the piece you're working on.

Q: What's the best square to use to find the exact center of a circle?

A: A framing square is the proper tool. Place the corner of the square anywhere on the circle's edge. Then mark where the tongue and the blade intersect the edge of the circle and connect those two marks. Repeat the process at another point on the circle and the point where the two lines intersect is the exact center.

Q: How can you check to see if an old square is still accurate?

A: Simply find a straight edge and make a mark at 90°. Then flip the square over and make another mark next to your first mark. If the two lines are parallel, the square is still square.

Upselling Skills

- Clarity and legibility of graduations is a key factor in choosing any type of square. Modern techniques enable manufacturers to etch graduations into the blade and create high-visibility markings that are durable as well.
- Always recommend higher end squares made of steel or aluminum over plastic counterparts. They will last longer.
- When selling either a try square or a sliding T-bevel square, recommend one with a hardwood handle for durability.

Module 3: Precision Measuring Instruments

Product Knowledge



Calipers

- Use for transferring measurements from a model or prototype to a part being produced.
- Tool consisting of two curved pieces of metal that are joined at one end with a pivot that has a screw to adjust the distance between the two pieces.
- Outside calipers measure outside of holes or objects that cannot be reached easily with a graduated measuring device.
- Inside calipers measure the inside.



Dial Calipers

- Measures inside and outside diameters of cylinder-shaped objects, such as drill bits and pipe.
- Dial readout provides accurate measurements in 1/64" or .01".
- Metric models are also available.
- Other types include **veneer calipers**, which don't have a dial and require the user to read from measurements on a linear scale, and **electronic digital calipers**, which have a digital display readout.



Micrometer

- A caliper shaped like the letter “P” used for close tolerance work on tools such as drill presses and lathes.
- These devices can make inside, outside and depth measurements to within .001.”



Pitch Gauge

- Use to determine the exact thread pitch needed for replacing screws and nuts.



Stud Finder

- Stud finders are devices that help locate wall studs, enabling you to hang pictures, mirrors and shelves securely.
- Come in two basic types—electronic, which finds the stud by measuring the density of the wall, and magnetic, which detects nails and/or metal studs in the wall.
- In addition to wood and metal studs, some advanced electronic stud finders will locate pipe, conduit, electrical wires and even reinforcing bar buried up to 6” in concrete.

Taking it to the Floor:

Frequently Asked Questions

Q: How can I find studs in the wall so I can hang some pictures?

A: By using a stud finder with a built-in AC current detector, you can trace hot wiring behind walls to make sure you drill in the right place. There are a lot of options on stud finders today, such as depth of scan, AC voltage detector and stud centering capabilities. These options make it a more versatile tool.

Q: What’s the best tool for measuring the inside diameter of a piece of copper pipe?

A: A pair of dial calipers will do the job, using the inside measurement blades. I recommend you buy aluminum or steel dial calipers instead of plastic ones. While the plastic ones can be much less expensive, a quality metal tool will last longer.

Module 4: Levels

Product Knowledge



Carpenter’s Level

- Uses bubble vials positioned in the center and both ends to check vertical and horizontal surfaces for level or plumb.
- Made of either hardwood with brass binding, metal (aluminum, magnesium) or high-impact plastic.
- Typically 24” to 48” long, but some models (generally mason’s levels) are longer and can be up to 72” in length.
- Some models include split level or graduated vials that have two sets of lines, with the outside line representing a 2% grade that conforms to the slope required for gutters and waste lines to drain properly.



Torpedo Level

- Use for obtaining readings in close quarters where a typical carpenter's level won't fit.
- Because of its compact size, mechanics, plumbers, electricians, hobbyists and homeowners often choose torpedo levels.
- Usually 9" long and 1" wide.
- Some include a magnetized base.



Laser Level

- Use to level and provide reference lines for hanging pictures, tile work, etc.
- Also called laser chalk lines.
- New features for electronic levels include having preset angles commonly used in construction, a self-leveling feature, and offering a graphical display that tells the user the direction and extent to rotate toward level or plumb.
- Accessories include a variety of mounting devices such as clamps and magnetic mounts that make setup and use easier and more convenient.



Rotary Laser Level

- Rotates 360° and projects a level reference point on all vertical surfaces within range
- Most units come with either a self-leveling or manual leveling base as well as floor and wall mounts.



Plumb Bob

- Use in construction and framing.
- A small, tapered, pointed weight suspended from string or cord used to measure true vertical plumb or depth.
- Many chalk line reels can also be used as plumb bobs, hanging the tool from its string.



Laser Plumb Line

- A self-leveling device that projects a vertical laser line onto any surface.
- The laser line is always visible because it is not covered up with a pencil mark and it is not affected by wind like a plumb bob.



Line Level

- Use for checking level over distances, such as when installing a patio, floor or a suspended ceiling, and when there is no flat surface available.
- Generally attached to a string stretched between two points, allowing the user to make an accurate height comparison between the two points.



Circular Level

- Circular in shape, this tool is used for leveling flat surfaces over a 360° plane, such as table tops and appliances.
- Also called bull's eye or surface level.
- When bubble appears in center of circular vial, piece is level.



Angle Level

- Use when installing drain lines to check for proper fall of pipe.
- Locates angles and pitches (slopes) from 0° to 90°.
- Generally reads slope or pitch with inches per foot rise scale.



Post Level

- Use to set and plumb posts and columns.
- Attaches to post and displays level in two directions.
- Also available in magnetic models for positioning waste lines in plumbing applications.

Taking it to the Floor:

Frequently Asked Questions

Q: What type of level should I buy for use around the house?

A: A 9" torpedo level is good for hanging pictures and other small household tasks. A complete home toolbox should also include a 2' or longer carpenter's level for larger projects like checking walls, bookshelves and fence posts.

Q: How do I know if my level is accurate?

A: To check a level for accuracy, place it on a level surface and check to make sure it reads level from one end. Then flip it over and read the other end. Both readings should be identical.

Q: How can I make sure the studs for the interior wall I'm adding are plumb?

A: You can layout the top plate of the wall (generally with studs spaced 16" on center) and then use a plumb bob to plumb down to layout the corresponding bottom plate. Then you can begin installing the studs.

Upselling Skills

- Better wood levels come with brass edges. These edges prevent chipping and help to protect the frame from distortion due to warping.
- Better levels have features such as shatterproof vials and shock-absorbing endcaps to protect the level from rough treatment at the jobsite.
- The rail or body of the level may be solid, I-beam or box-beam. Better grades of levels are determined by the strength and rigidity of the frame and the type and accuracy of the vials or other measuring devices.



Chapter 4: Specialty & Workshop Tools

Module 1: Drywall & Plaster Tools

Product Knowledge:



Drywall Taping Knife

- Use for taping drywall joints and spreading drywall joint compound between wallboard seams.
- Also use for covering nail spots and other indentations in the board.
- Tempered stainless steel blades bow for feathering.
- Blades range in size from 4" to 14", with the most popular blade widths being 8" and 10".
- Handles are constructed of either wood, plastic or ergonomic foam rubber for added comfort.



Hawk

- Trowel designed for holding plaster and drywall joint compound during application.
- Generally made of lightweight aluminum or magnesium in 13" or 13-1/2" square sizes.



Drywall Finishing Trowel

- Smooth the various layers of joint compound when finishing drywall.
- Has a slight concave bow in the blade that helps to feather mud when making drywall joints.
- The tempered, flexible steel blade is securely attached to a lightweight aluminum mounting.
- Handle varieties include smoothly turned basswood handle and ergonomic plastic.
- The most popular size is 11" x 4-1/2".



Drywall Corner Trowel

- Use to apply compound to both sides of a corner at one time.
- Comes in both inside and outside corner models.
- A flexible one-piece blade of stainless steel eliminates tape snagging.
- The blade angle is set at 103° to give perfect 90° corners when flexed in use.



Drywall Pole Sander

- Use for sanding drywall joints, especially ceilings and side walls without having to use a ladder or stilts.
- Swiveling head design allows for excellent maneuverability and easy access into corners.
- Some models feature a hammerhead tip to easily set drywall nails.
- Sandpaper or sanding screens clamp to head.
- Extension pole is often sold separately.



Drywall Hand Sander

- Use for hand sanding drywall joints.
- Generally accepts 1/2 sheet of sandpaper or sanding screens.
- Some models come equipped with a 6" flexible hose adapter that can be connected to a shop vacuum to suction drywall dust during sanding.



Mixer

- Use with either a 3/8" or 1/2" drill for mixing drywall mud.
- Has blades attached to a shaft that is inserted into power drill.
- Shaft lengths generally range between 16" and 28".



Mud Masher

- Hand powered device used to mix drywall joint compound.
- Features hardwood handle and square, grooved head.

Mud Pan

- Pan for holding drywall joint compound in hand during application process.
- Generally 12" in length with tapered sides for easily applying joint compound onto taping knife.
- Plastic models generally have a replaceable scraping bar for cleaning excess joint compound from taping knives and trowels.
- Galvanized steel models feature watertight seams and sheared sides.



Drywall Hopper Gun

- Pneumatic tool used for texturing and spraying joint compound on walls and ceilings.
- Generally has a multitude of spray settings and patterns for a variety of finishes.

Taking it to the Floor:

Frequently Asked Questions

Q: I'm getting ready to finish the drywall I just installed. What type of drywall taping knives will I need?

A: You will need several different sizes corresponding to the different coats that are required for a smooth finish. For the first taping course, you will probably need a 5" or 6" knife, followed with an 8" or 10" knife for applying the second and third coats.

Q: What's the best way to sand drywall without getting dust all over my house?

A: A hand sander that can be connected to a shop vacuum is probably your best bet. In addition, be sure to put up plastic sheeting on doorways to seal off the area being sanded from the rest of the house. And don't forget to close registers and seal off heat returns to keep dust from entering the home's duct work and HVAC system.

Q: Can putty knives be used as a scraper for drywall?

A: While putty knives with stiff blades can be used to scrape loose materials, a paint scraper is a better tool for the job. It has a sharp blade designed specifically for removing old paint and other materials.

Add-on Items

- **Drywall mud** for doing the finish work on the drywall.
- **Drywall tape** for covering joints between the drywall.
- During the sanding phase of the project, the customer will need **sanding sponges** and **screens**.
- Use **plastic sheeting** or a drop cloth for protecting items in the room from the drywall dust.
- Also suggest **respirators** or **dust masks** for keeping the drywall dust out of your lungs.

Module 2: Masonry Tools

Product Knowledge

Brick Trowel



- Use to pick up mortar and spread it for the next course of brick, concrete block or stone being laid.
- Two shapes of brick trowels have become almost standard: the Philadelphia pattern with a square heel and the London pattern, which has a rounded heel so the mortar is carried a little farther forward on the blade.
- Both patterns can be used for laying brick, but the Philadelphia pattern is most popular for laying cement blocks. It is wider at the heel so it holds more mortar.
- Width at the heel (back end of the trowel) is between 5" and 5-1/2". The most popular brick trowel length is 11".

Pointing Trowel



- Brick layers use this tool for pointing up their work.
- Pointing and margin trowels are used for patch work and for cleaning other tools.
- High-quality pointing and margin trowels are forged in one piece and constructed the same as a brick trowel.
- The length of pointing trowels may be from 4-1/2" to 7". Best sellers are the 5" and 6" lengths.
- A 5" x 2" is the most popular margin trowel size.

Concrete Trowel



- Use to compact and finish the surface of the concrete to the required smoothness.
- Also called a finishing trowel.
- Concrete trowels are narrower and longer than plastering trowels.
- The blade is slightly convex.
- Blades range in width from 3"-5" and in length from 11"-20". Most popular sizes are 14"x 4" and 16"x 4".

Corner Trowel



- Use to form inside and outside corners.
- The most requested sizes are square and 1/2" radius.

Tiling Trowel



- Use for spreading mortar on substrate before laying tile.
- Includes models that make both square and "V" notches.
- Notch sizes range from 1/8" to 1/4".

Brick Jointer



- Use to strike joints of brick walls for a finished appearance.
- Each end is a different size to make different size rounded joints.
- The most popular combinations are 1/2" x 5/8" and 3/4" x 7/8".



Float

- Is made of aluminum, magnesium, wood, cork or rubber.
- The most popular with concrete finishers is wood and magnesium.
- The best-selling sizes in wood are 12" x 5" and 16" x 3-1/2" while the popular magnesium float is 16" x 3-1/8".



Bull Float

- Concrete finishers use it to float large areas of concrete.
- The most popular sizes are between 42" and 48" long and are 8" wide.
- Handle sections either 5' or 6' long can be joined together so that a finisher can reach out 15' to 20' over a slab.



Grout Float

- Use to push grout into spaces between tile.
- Consists of a handle with a thick foam rubber pad that is generally 1/4" thick.



Tuck Pointer

- Use to apply new mortar between old bricks.
- Also called a joint filler.
- The best models are constructed in one piece.
- They are usually 6-3/4" long by 1/4" to 1" wide.



Concrete Edger

- Produces a radius at the edge of a concrete slab to minimize chipping.



Concrete Groover

- Use for cutting joints in concrete to control cracking.
- Common groove sizes range from 1/4" to 1/2" and are 1/2" deep.

Taking it to the Floor:

Upselling Skills

- Quality trowels are constructed of spring steel with aluminum mounting and ergonomic rubber and structural foam grips for added comfort.
- Always recommend tile trowels, which come with handles, over simple mortar spreaders, which don't. They are easier to handle and allow for more precise placement of mortar or adhesive.
- When selling bull floats, be sure to upsell the customer to models with magnesium extension handles that will resist moisture better and last longer than wooden extension handles.

Add-on Items

- Recommend a **bricklayer's chisel** and **hand drilling hammer** for cutting stone or brick.
- Tools for mixing concrete or mortar, such as a **wheelbarrow**, **shovel** and **garden hoe**.
- If the customer is doing a repair on an existing masonry structure, recommend a **sidegrinder** for removing old mortar.
- A **mallet** for setting tile or pavers.

Module 3: Files & Sharpening Stones

Product Knowledge



Flat File

- A rectangular shaped file with a single set of teeth used for general sharpening of metal objects.
- Common types include mill, flat and hand, depending on thickness and the taper.



Round File

- Cylinder shaped tool used to remove stock from round holes in order to make them larger or smoother.
- Use to remove burrs from the inside of pipe.
- Also called a rat-tail file.



Half-Round File

- Use for removing stock and rounding edges on curved metal pieces.
- Flat on one side and round on the other.
- Use on concave, convex and flat surfaces, depending on side being used.



Taper File

- Triangular shaped single-cut file generally used to sharpen gullets between saw teeth.
- Also called a taper saw or a triangular file.
- Generally 6" in length with a tapered body.



Rasp

- Type of file used to shape wood.
- Teeth are rougher than a file's teeth for rapid removal of wood stock.
- Rasp-cut files have individually punched teeth shaped like pyramids that are entirely separate from each other.



Hand File

- Handy for a wide variety of filing jobs.
- Also called a shoe rasp or four in-hand rasp/file.
- Features four files in one, including a file section and a rasp section on the flat side, and a file section and a rasp section on the half-round side.



File Cleaner

- Contains a brush used to clean out file grooves.
- Also called a file card.
- Generally used on finer cut files to remove sawdust and metal particles.



Sharpening Stone

- Available in diamond, oiled and dry models, these tools are used to sharpen various blades of cutting tools.
- Be sure to study manufacturer literature to recommend proper stones for different types of blades.
- Diamond whetstones sharpen using the diamond dust from the stone.
- Oil stones must be oiled to avoid accumulation of the metal particles from the tools being sharpened. To oil the stone, put a drop of two or lightweight household oil on the stone before each use. Also, new stones should be soaked in a bath of oil for several days before use.
- Flat whetstones are the most common type of oil stones with both a smooth side and a coarse side for various sharpening requirements.
- Dry stones wear out much faster than oil stones because the stone's surface crumbles away when sharpening.

Taking it to the Floor:

Frequently Asked Questions

Q: What type of file should I use to sharpen mower and axe blades?

A: A flat bastard file will work well. Just be sure to sharpen (redress) the blade using the existing angle or bevel of the mower blade. Also, try to remove as little metal as possible to make the blade last longer.

Q: What's the difference between a file and a rasp?

A: A file is generally used to smooth metal, where a rasp is specifically designed for shaping wood.

Q: What's the best way to sharpen the blade on my crosscut saw?

A: With a taper file, which is a triangular shaped file specifically designed to sharpen saw teeth. Just be sure to follow the saw manufacturer's recommendations for redressing the teeth and be sure the file size is the right size for the saw teeth you are sharpening.

Q: Can I use a taper file to sharpen my chain saw?

A: No. You will want to use a chainsaw file, which is specifically designed for this purpose. It is made for both round-hooded and square-hooded chain saw teeth. To sharpen round hooded teeth, the file must be held level against the bevel of the cutting surface of the tooth at an angle of 25° to 45° with the saw blade. File direction is off the cutting edge, pressing back and slightly up during the stroke.

Add-on Items

- **File handle** to make using files easier.
- **Oil** for use with whetstones.

Module 4: Clamps

Product Knowledge

C-Clamp



- The most common type of clamp. Consists of a C-shaped frame, made of either forged steel or cast iron.
- Use a sliding cross-pin handle or a wing nut to tighten the screw, which changes the size of the jaw opening.
- Measure the size of a C-clamp by its jaw capacity—the dimension of the largest object the frame can accommodate with the screw fully extended. Most range in jaw capacity from 2" to 10".
- Also important is depth of throat, the distance from the center line of the screw to the inside edge of the frame.
- C-clamps range from 3/4" to 14".

Bar Clamp



- Used for clamping large objects, making them popular with woodworkers and hobbyists.
- Has a clamping device built on a flat bar, which is usually made of steel.
- The length of the bar determines the capacity of the clamp, which is the dimension of the largest object that can be accommodated between its clamping jaws.
- "Reach" is the distance from the edge of the bar to the end of the clamping jaws.
- Screw pressure applies the final clamping load.

Pistol Grip Bar Clamp



- These are bar clamps designed with a pistol grip to allow the user to tighten or loosen the clamp instead of screwing it.
- Adjust by using just one hand on a trigger switch.
- Perhaps the most significant innovation to come about recently in the area of clamps.
- Available in jaw openings from 6" to 50" and a variety of sizes.

Pipe Clamp



- Mount to standard threaded or unthreaded pipe to clamp boards together while gluing.
- You can position one jaw anywhere along the pipe.
- The other jaw has a crank or cross-pin handle with a screw to apply pressure on the workpiece.
- You can quickly convert pipe clamps from a clamp to a spreader.
- Standard sizes are 3/4" and 1/2".



Handscrew Clamp

- Use for clamping wood, metal, plastic and fabrics.
- Also called a cabinetmaker's clamp, it consists of two hardwood clamping jaws adjusted to the work by two opposing steel screw spindles assembled into the jaws.
- The jaws adjust to a variety of angles and come in a wide range of sizes up to 10".
- Handscrew adaptors can be used to convert handscrews into miter clamps.
- Also available are handscrew kits so woodworkers can make their own jaws.



Corner Clamp

- Use for gluing picture frames, cabinets, molding and trim.
- Holds miter or butt joints at a 90° angle.



Spring Clamp

- Versatile enough for home, hobby or professional use indoors or outdoors, holding round or odd-shaped objects.
- Use with thin materials.
- Similar to a clothes pin, this clamp consists of two metal jaws to which clamping pressure is applied by use of a steel spring.
- Sizes available include 1", 2" or 3" jaw openings.



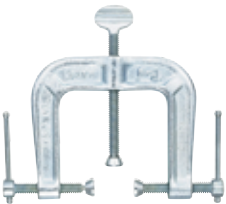
Web Clamp

- Apply even clamping pressure around irregular shapes or large objects to hold tight by means of a spring-loaded locking fixture.
- Also called band clamps.
- Use on cylinder-shapes and to hold chair legs while gluing.



Hold-Down Clamp

- Is the screw portion of a "C" clamp, designed to be secured onto any surface, with the screw used to apply clamping pressure.
- Also available in locking models, similar to locking clamps.



Edging Clamp

- Use to apply pressure at a right angle to the side of the work surface.
- Use for installing molding, face frames and trim on furniture and countertops.
- Three-way clamp resembling a C-clamp with a third screw located in the middle of the throat.



Face Clamp

- Jaws are in a "C" configuration and are designed to hold a wooden joint flush while fastening.
- To use, tighten the clamp by squeezing the handles together until they lock.
- Some models have pivoting heads to adjust to any size of material.

Taking it to the Floor:

Frequently Asked Questions

Q: What can I use to clamp two pieces of wood together and not mar the surface?

A: If you're using a C-Clamp, you can simply put two pieces of scrap wood on both sides of the work piece so that any marring of the surface will be to the scrap pieces and not the finish piece. Better yet, try a pistol-grip hand clamp. These usually have pads that protect the work piece. Also, they are easy to use.

Q: What clamp should I use to clamp a piece of laminate trim to my counter tops?

A: A Three-way edging clamp is designed for this purpose because it can apply pressure to three sides of a surface.

Q: How should I install some door casing and make sure the miters are tight?

A: By installing biscuits (with a biscuit jointer) to glue the miters together and then using a corner clamp to hold the two pieces firmly in place until the glue dries. After the glue dries, the casing can be installed as a single unit.

Module 5: Vises

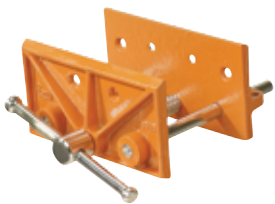
Product Knowledge

Bench Vise



- Mounts on a work bench or table to hold work pieces securely in place between two flat jaws.
- Generally used in light-duty applications.
- Available in both stationary and swivel models to hold work at various angles and positions.
- A threaded spindle opens and closes the jaws of the vise to hold and release work piece.
- Generally has jaws ranging in length from 3" to 8".
- Jaw opening ranges from 4" to 12" in different models.

Woodworking Vise



- Has jaws made of wooden pads to hold work piece securely in place without marring surface of work piece.
- Generally mounted to the side of a workbench.
- Some woodworking vises have a fast-acting screw arrangement for the rapid positioning of the movable jaw prior to clamping.
- Smaller vises have continuous screws and are light and easy to clamp on a workbench or sawhorse.



Utility Vise

- Similar to a bench vise.
- Generally has jaws ranging in length from 3" to 6".
- Better models feature swivel bases so the vise may be turned to the best angle for each particular job.
- Some utility vises either have cast-in pipe jaws or clamping pipe. Or, they, permit special curved-face pipe jaws to be inserted between the regular jaws to add versatility.



Angle Vise

- Has marked adjustments to permit clamping at different angles.
- Can also be adjusted to a flat position and used as a regular vise.
- Can be locked into any position with a thumb screw, and bolts can be tightened for permanent positioning.



Clamp Vise

- Is a combination fixed and portable vise, featuring a bottom clamp for easy attachment to workbenches, sawhorses or tables.
- The best choice for portable use.



Drill Press Vise

- Great for holding work piece still when drilling, tapping and reaming on a drill press.
- Most models have grooves machined on both sides for mounting to machine table.
- Used for 90° machining of side bodies.



Vacuum Vise

- Light-duty vise that has a lever-operated suction cup on the bottom to secure to tabletop or other work surface.

Taking it to the Floor:

Upselling Skills

- Always recommend swivel bases with double lock-downs when selling bench vises.
- Better bench vises have replaceable jaws and jaws that can grip both small and large pipe.
- Better bench vises also have fully enclosed spindles that are lubricated for the life of the tool.

Module 6: Tool Storage & Work Support

Product Knowledge



Tool Box

- Available in a variety of configurations and made from a variety of materials.
- The highest quality plastic boxes are constructed of polypropylene, and some models can hold up to 75 lbs. of tools.
- Some carpenters and precision tool users use hardwood chests because the wood absorbs condensation that could rust tools.
- Another popular variation is the tool bag, a soft-sided toolbox with multiple pockets for tools.



Tool Chest

- Typically larger than a toolbox, it stores tools as well as parts, screws, nuts, bolts and other small pieces.
- Available in a variety of drawer configurations, with four- and six-drawer configurations being the most popular.
- Many tool chests also come with casters or wheels for portability.



Work Belt

- Generally constructed of leather or nylon and has compartments to keep tools and fasteners organized.
- Can be purchased as a single unit that comes complete with a belt and separate compartments and pouches for various tools, or as individual components with the belt and pouches sold separately.
- Most work belts include a steel or leather hammer loop, a tape measure compartment or clip, and various nail pouches. They also have individual compartments of a variety of sizes. Some come equipped with compartments for mobile phones.
- The belt portion of the work belt fits standard waist sizes and is constructed of leather or padded nylon for comfort.



Folding Workbench

- A portable specialty bench that comes as a tabletop or folding bench.
- The folding benches offer easy storage and a firm, broad base.
- Many models come with a tabletop clamping device to secure work piece to the table and hold irregular pieces securely.



Folding Sawhorse

- Made of either construction-grade tubular aluminum, steel or fabricated steel.
- Most require the addition of a wooden cross-beam (generally a 2x4 or 2x6). With a metal crossbeam there is danger of ruining saw teeth.
- Most steel models have adjustable legs that fold up into the unit for easy storage.
- Plastic units generally fold flat for easy storage. Some also are equipped with a lower shelf.
- Most non-adjustable units are between 24" and 27", which is considered a comfortable working height.



Sawhorse Brackets

- Made of steel or high-impact polystyrene and convert dimensional lumber into a sturdy wooden sawhorse.
- Brackets allow user to construct a sawhorse of any height and length.
- Brackets are generally secured to wood with screws, nails or wing nuts. Other types provide flanged nail holes for easy nail removal with a claw hammer.

Taking it to the Floor:

Frequently Asked Questions

Q: I live in an apartment but I still need a work surface for projects. What do you recommend?

A: A folding workbench is ideal for general household projects, especially when you don't have much work or storage space. Folding sawhorses can also be conveniently stored away and don't take up much space.

Q: I need a toolbox that will hold a basic set of tools. What type should I buy?

A: Toolboxes come in a variety of sizes and configurations. However, it sounds like you just need a basic plastic toolbox to store a few tools and some fasteners. I would recommend a 19" model with one lift-out tray.

Q: Are folding steel or plastic sawhorses as durable as homemade wooden ones?

A: Depending on the construction of the homemade ones, they are probably more durable and can be conveniently folded and stored out of the way.

Q: My tool belt gets heavy when it's loaded with tools and fasteners, is there anything that can help?

A: Strapping a pair of suspenders to your work belt can relieve some of the strain on your back by allowing your shoulders to carry some of the weight.

Upselling Skills

- The quality of a toolbox is determined by the number of trays and whether or not it is reinforced in the corners.
- Higher-quality plastic tool boxes feature full length handles, tongue-in-groove closure and positive locking latches, as well as padlock eyes and lift-out trays.