

Tools of the Trade



Inside the Carpenter's Toolbox

SHOPWARE

Instructor's Guide

Introduction

This Teacher's Guide provides information to help you get the most out of *Inside the Carpenter's Toolbox*, part of the *Tools of the Trade* series. The contents of this guide will allow you to prepare your students before they use the program, assist them as they navigate through the program, and present follow-up activities to reinforce the program's key learning points.

Tools of the Trade is a 6-part series of programs that present inventories of the most common and most basic tools used in specific trades. Each program opens the trade's "toolbox" so students can delve into its basic tools and materials, including their purpose and proper usage. Students will view brief demonstrations of rudimentary tasks with the tools, and gain an understanding of safety precautions, code concerns, and industry tips, if applicable.

Inside the Carpenter's Toolbox is a 19-minute video targeted to students (vocational students, in particular) in grades 9-12. Its content is appropriate to such curriculum areas as Technology Education, Trade, and Industrial Education. The information presented in the *Tools of the Trade* series could also be presented in vocational/technical schools or "Do it Yourself" adult education courses.

The *Tools of the Trade* series consists of the following titles:

- *Inside the Plumber's Toolbox*
- *Inside the Carpenter's Toolbox*
- *Inside the Mason's Toolbox*
- *Inside the Welder's Toolbox*
- *Inside the Automotive Mechanic's Toolbox*
- *Inside the Electrician's Toolbox*

Learning Objectives

After watching this program, students will be able to:

- Identify and understand basic safety standards within general carpentry.
- Identify and understand proper use of building materials including wood building materials, fasteners, and adhesives.
- Demonstrate proper use and maintenance of basic carpenter's tools, including the many hand- and power-operated tools used by carpenters, including power-actuated fasteners.
- Be able to explore carpentry career opportunities.

Educational Standards

This program correlates with the following standards:

- The competency standards for Core Introductory Craft Skills from the National Center for Construction Education & Research (NCCER)
- The NOCTI/SkillsUSA Examination Standards
- The standards of Essential Knowledge and Skills for Trade and Skills for Career Orientation, High School, for the State of Texas
- The standards of Essential Knowledge and Skills for Trade and Industrial Education—Construction-Maintenance Systems, High School, for the State of Texas
- The standards of Technology Education—Tools, Resources, and Technological Processes, for the State of New York.

- Standard 2.0 Career Cluster: Architecture and Construction Careers in designing, planning, managing, building and maintaining the built environment. (Competency Standards for Core Curriculum and Carpentry from the National Center for Construction Education & Research.)
- The student shows an acceptable level of competency—includes demonstrating safe use and knowledge of the following tools and carpentry processes for final certification: hand tools, power tools, blueprints and specifications, building materials and fasteners, measuring and layout operations, foundations, rough framing, exterior finish, interior finish, basic mathematics, and interior system installation. (General Carpentry Competency Standards for the 2015 Certification Examination from NOCTI/SkillsUSA.)
- The student analyzes the effect of personal interest and aptitudes upon educational and career planning, and knows how to locate, analyze, and apply career information. (Texas State Standards: Essential Knowledge and Skills for Trade and Skills for Career Orientation, High School.)
- The student knows the employability characteristics of a successful worker in the modern workplace, and demonstrates the ability to identify employment opportunities, including entrepreneurship, and preparation requirements for the field of building carpentry. (Texas State Standards on Building Carpentry: Essential Knowledge and Skills for Trade and Industrial Education—Construction-Maintenance Systems, High School.)
- The student knows the concepts and skills that form the core knowledge of building carpentry. The student can identify the uses of carpentry hardware and fasteners; demonstrate knowledge of fire ratings in construction materials; and demonstrate knowledge of the appropriate building codes that apply to residential and commercial construction. (Texas State Standards on Building Carpentry: Essential Knowledge and Skills for Trade and Industrial Education—Construction-Maintenance Systems, High School.)
- The student knows the function and application of the tools, equipment, technologies, and materials used in construction carpentry. The student can: safely use hand and power tools and equipment commonly employed in carpentry; properly handle and dispose of humanly and/or environmentally hazardous materials used in carpentry; safely use the different types of scaffolding employed in building carpentry; and demonstrate knowledge of new and emerging technologies that may affect construction carpentry. (Texas State Standards on Building Carpentry: Essential Knowledge and Skills for Trade and Industrial Education—Construction-Maintenance Systems, High School.)
- The student applies the concepts and skills of the trade to simulated and actual work situations. The student can: square, measure, and cut materials to specified dimensions; apply the essential knowledge and skills in building carpentry to work-based learning experiences including, but not limited to, cooperative education, job shadowing, mentoring, and apprenticeship training. (Texas State Standards on Building Carpentry: Essential Knowledge and Skills for Trade and Industrial Education—Construction-Maintenance Systems, High School.)
- The student applies technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs; uses a variety of materials and energy sources to construct things; understands the importance of safety and ease of use in selecting tools and resources for a specific purpose; and develops basic skills in the use of hand tools. (New York State Standards on Technology Education: Tools, Resources, and Technological Processes.)

Program Summary

Given the wide range of trades in the world today, the *Tools of the Trade* series is a welcome addition to the Shopware brand. Its overview and demonstration of the basic tools used in each trade help lay the foundation of understanding for the trades, and pique student interest in developing "do it yourself" practical knowledge that can also lead to carpentry as a possible career choice.

Inside the Carpenter's Toolbox provides an introductory level overview of carpentry, carpentry basic skills, and related concepts. The program includes basic safety standards, technical knowledge of building materials, use and care of tools and equipment, and touches upon carpentry processes and eventual career opportunities.

Main Topics

Topic 1: Introduction

The program's host, Alan Pratt, introduces the viewer to carpentry, including the various types of carpenters and what they wear while on the job.

Topic 2: Carpentry Materials

The viewer is familiarized with a range of carpentry materials, from wood and manufactured wood products, to new and substitute materials, to the fasteners used to hold everything together.

Topic 3: Carpentry Tools

In this section, after a brief review of general safety precautions, the carpenter's toolbox is opened to reveal the tools and materials for planning and drawing, measuring and marking, cutting and shaping, and fastening and assembly.

Topic 4: The Future

Alan offers some closing remarks on the program and on how to learn more about jumpstarting a career in the carpentry industry.

Fast Facts

- General carpenters (or contractors) are jacks-of-all-trades, skilled in both rough and finish work. About 60% of general contractors go into housing construction.
- According to the Bureau of Labor Statistics, in 2004 one-third of all carpenters worked in building construction, the largest construction trade; roughly one-fifth worked for special trade contractors, and the rest worked for government agencies, retail establishments, manufacturing firms, or other industries. In total, about one-third of all carpenters were self-employed.
- Although one might think wood buildings cannot stand the test of time, there are some wood buildings in Japan that were built in the 7th century A.D. which are still standing.
- Carpenters don't just work on houses. Within the film industry, they play a key role in production. Tasks include building realistic on-set structures, including window frames and staircases, as well as futuristic or ancient creations. In addition, they construct off-screen support structures for the crew and set and help 'strike' (dismantle and remove) everything that was built upon the conclusion of the filming process.

- Another profession one might not normally associate with carpentry is that of ship's carpenter. A ship's carpenter can be hired as a contractor to remodel or repair a private boat or yacht, or be employed full-time on a freighter or cruise ship for ongoing repairs and maintenance while at sea.
- The United Brotherhood of Carpenters and Joiners of America began in 1881 when 36 carpenters from 11 cities formed a union and 2,000 members immediately joined. Today, the union represents over 520,000 members, and is a driving force in setting safe, regulated standards for wages, benefits, and working conditions for U.S. carpentry projects.
- Hurricanes Katrina and Rita damaged, destroyed, or left inaccessible 850,791 housing units. The number of homes destroyed equaled roughly 17% of an entire year of normal home construction. After Katrina, prices for materials jumped and wages soared after an influx of out-of-state carpenters arrived to help with the shortage in the required repair workforce.
- One of the oldest carpentry tools in the world is the plumb bob. Ancient Egyptians used them for building. As it was made of lead, it was called a "plumbum" (Latin for "lead"), which evolved into plumb rule, plumb line, plummet, and plumb bob. This tool is now typically made of brass or bronze with a steel tip.
- A relatively new carpentry tool is an adjustable wrench which comes in three sizes, and grips/adjusts to as many as 38 different-sized nuts without slipping or stripping nut heads.

Vocabulary Terms

adhesive: A substance that is capable of bonding material together via surface attachment. It can range from wood glue for general-purpose work, to construction adhesive available in tubes.

anchor bolts: Bolts that are used to secure a wooden sill plate to floors or walls.

awl: A pointed instrument useful for marking positions when laying out a project.

band saw: A saw with a looped blade running around two or three wheels. It uses narrow blades for cutting freehand shapes, and wider blades and a guide for re-sawing material.

basic nails: Used for general framing, these nails include common, sinker, and box.

batter boards: A pair of horizontal boards attached to posts at the corner of a site to indicate desired levels. Often strings are stretched between them to create an outline for foundation walls.

beam: A structural piece of wood that supports a load horizontally.

biscuit joiner: A power tool designed to notch or mortise holes in two pieces of wood to be joined together. Biscuits are inserted into the notches along with wood glue to bind the two pieces of wood together.

blueprint: A type of paper-based reproduction, usually of a technical drawing documenting an architecture or engineering design.

butt joint: The junction between two ends of timber/members that meet in a square-cut joint.

C-clamp: A clamp with a C-shaped frame and an adjustable screw used for holding objects in place or together.

carpenter's level: Also known as a spirit level, it is an instrument designed to indicate whether a surface is level or plumb.

carpenter's pencil: Rectangular shaped pencil, about 1/4" x 1/2", with a 1/16" x 3/16" lead, which lies flat on surfaces to avoid rolling.

carpentry: The art and profession of measuring, cutting, and joining wood and other materials into pre-planned structures and fixtures.

cat's-paw: Also called a nail-puller, it is a short pry bar with a metal claw that can be driven beneath the head of an embedded nail and then used to pull the nail head above the surface.

chamfer: To bevel the corner of a board at a 45° angle.

chisel: A tool used for semi-fine work such as making mortises, dadoes, or notches.

circular saw: A power saw having a disk-shaped blade, usually with a toothed edge.

claw hammer: A tool primarily used for pounding nails into, or extricating nails from, some other object.

combination square: A square that measures both 90° and 45° angles.

compass: An instrument used for drawing circles, consisting of two legs joined at a pivot hinge.

compound miter: An angled cut with the blade sloped at a specified angle.

countersink: To drill a screw so its head sits flush with the face of the material into which it is driven.

crescent wrench: An adjustable wrench designed to fit hexagonal nuts with the adjusting screw built into the head of the wrench.

crosscut: A cut which runs across the board perpendicular to the grain.

cross peen: A wedge-shaped hammer face used to forge or raise metal. In practice, the blows of the cross peen cause the metal to move perpendicular to the face.

crow's foot: A marking in the shape of a "V" on a piece of board to show exactly where to cut.

crowbar: Also called a wrecking bar, it is a tool consisting of a metal bar with one curved end and flattened points, often with a small fissure on the curved end for removing nails. It is used as a lever either to force apart two objects or to remove nails.

crown molding: Molding used to cover any interior angle.

dado: A groove in the face of a board, usually to accept another board at 90 degrees as in shelf uprights.

dovetail joint: A joint where the fingers are shaped like a dove's tail, used to join pieces at 90°.

dowel: A wood pin used to align and hold two adjoining pieces.

drywall knife: Also called a rock knife or utility knife, it is a knife that is used by drywall hangers to cut drywall.

dust mask: A mask that provides protection against breathing in sawdust and fine powders.

fascia: The flat front board which caps the rafter tail ends and fly rafter edges.

finish carpenter: A carpenter who works on the polished details that are placed over the house's skeletal "guts" (e.g., door and window casings, parquet flooring, wainscoting, trim, roof sheathing, and siding).

finish lumber: Lumber, such as trim molding, used for finish work.

floor joists: The main subfloor framing members which support the floor span. Typically, joists are made from I-beams or 2x8 (or larger) lumber.

framing hammer: A larger hammer used for framing houses. The hammer heads typically weigh from 20 to 32 ounces. Heavy heads, longer handles, and milled faces allow for driving large nails quickly into 2x material.

general carpenters (contractors): Carpenters who are jacks-of-all-trades, skilled in both rough and finish work.

girder: A large beam of wood or steel which acts as the principal support for loads along its span.

gouge: A chisel-like tool with a curved cutting edge.

grain: The appearance, size, and direction of the alignment of wood fibers.

grit: The grade of particles in sandpaper or sharpening stones which determines the aggressiveness of the cut.

hand plane: A hand tool to smooth and shape wood surfaces, consisting of a blade fastened in a frame at an angle with hand grips to slide it along the board.

hardwood: Lumber from the group of trees with broad leaves. The name itself does not denote the actual hardness of the wood.

header: A beam which is perpendicular to wall studs above doors, windows, or other openings. It carries the weight of structural loads.

hydro level: Used primarily for leveling foundations, the hydro level is an instrument for measuring changes in elevation for surfaces up to 100 feet apart.

joist: A parallel framing member installed horizontally to carry floor and ceiling loads.

keel: Lumber crayons. Blue and red keels are typically used on rough lumber and concrete, while white keels are usually used on new concrete.

kerf: The width of a saw cut, determined by the thickness and set of the blade.

kickback: A sudden, uncontrolled movement of a machine, tool, or other device, as on starting or in striking an obstruction.

laminate: The product of bonding two or more sheets or layers together, as in beams or plywood.

laser level (laser line level): A tool that combines a spirit level and/or pendulum with a laser to indicate a leveled line against a surface.

manufactured beams: Man-made wooden beams, such as I-beam joists, engineered laminated-veneer lumber (LVL), glued-laminated timbers (or glu-lams), and parallel-strand lumber (PSL).

manufactured sheet products: Man-made sheet building products such as plywood, waferboard and its stronger counterpart, oriented-strand board (OSB), particleboard, medium-density fiberboard (MDF), and hardboard.

marking knife: A woodworking layout tool.

miter: A 45-degree cut. Unlike a compound miter cut, the saw blade remains at 0 degrees.

miter box: An apparatus to guide a saw to make miter joints.

miter gauge: A guide with an adjustable head that fits in a slot and slides across a power tool table to cut material at an angle.

miter joint: A joint made from pieces cut on an angle.

molding: A strip of material with a profile cut on the facing edges, used for trimming.

mortise: A cavity or hole cut to allow a tenon to pass through to make a joint.

nail gun: A type of tool used to drive nails into wood or some other kind of material.

plane: A woodworking tool used to shave wood.

plumb: A vertical element that is perfectly perpendicular to a level surface.

plumb bob: A tool used to check if something is perfectly perpendicular.

plunge router: A router that can be pushed down to insert the bit in the material.

pressure-treated wood: Usually identifiable by its greenish color, it is wood that is used for structures where the wood will contact (or be buried under) the ground.

pry bar: A tool used to lever or pry stone or heavy objects.

rabbet: A groove in the edge or face of a board.

radial arm saw: A circular saw that runs on an overhead track, where the track mechanism swings in relation to the table to make miter cuts.

rasp: A long and flat steel tool with raised teeth for shaping wood

rip cut: A cut which runs through the length of a board parallel to the grain.

rotary planer: A power hand tool with rotating blades that smoothes the surface of material.

rough carpenter: A carpenter who does the “rough skeletal” work of making frames for the studs, joists, and rafters; forms used for foundation walls; concrete footings; and retaining walls.

rough lumber: Boards which are cut, edged, and trimmed but not run through a planer.

router: A high-speed cutting and shaping tool with handles and an adjustable base with a collet that accepts profile bits to cut dados, rabbets, or shapes.

sawhorse: A trestle usually used in pairs to hold wood for cutting.

scaffold: A temporary arrangement erected around a building for the convenience of workers.

screwdriver: A tool (either standard or Phillips-head) used to drive a screw.

shaper: A machine with an interchangeable rotary cutter head to cut profile shapes on the edge or face of material.

sheathing: Structural covering for studs, rafters, or roof trusses.

sill: A structural wood piece which forms the lower side of a window opening.

softwood: Wood manufactured from trees with needles or scale-like leaves. It does not reference the actual hardness of the wood.

spade bit: An inexpensive drill bit, suitable for general use, in the shape of a spade.

span: Distance between the structural supports in floors, ceilings, and roofs.

special-purpose nails: Nails used for finish work (e.g., roofing nails, casing nails, finishing nails).

squares: Tools used to lay out or test right angles, with two arms at 90 degrees to each other. Examples include the speed square, the combination square (used to check a 45- or 90-degree angle), the T-bevel square (which has an adjustable blade that can be locked so you can duplicate and transfer any angle to a board), and the try square. There are also specialty squares, such as the framing square and the drywaller’s T-square.

staple gun: A hand-held machine for driving staples.

string lines: Lines used to check and straighten framing, or measure and mark distances. Examples include drylines and chalklines.

structural lumber: Lumber used to construct wood-framed houses.

stud: A 2x4 or 2x6 vertical framing member used to assemble walls.

subfloor: Boards or plywood mounted over joists on which the finish floor is laid.

table saw: A circular saw mounted under a table with height and angle adjustments for the blade.

tack: A temporary nailer. Something is lightly “tacked” into place in order to aid in positioning, measuring, handling, etc.

tape measures: Also called push-pull rules, these are measuring tools used to measure distances.

tearout: The tendency to splinter the trailing edge of material when cutting across the grain.

Pre-Program Discussion Questions

1. List examples of common carpentry projects and the kinds of carpenters who perform the tasks.
2. What are the different kinds of lumber that can be used in housing construction?
3. What are the various ways materials can be fastened together?
4. What safety considerations should you keep in mind on any carpentry task?
5. What do you think the four basic steps are for any carpentry project?

Post-Program Discussion Questions

1. Review and identify the types of manufactured sheet products, beams, and framing lumber used in carpentry.
2. Name ten safety considerations or precautions you should keep in mind on any carpentry task.
3. What tools are used when drawing up building plans?
4. What tools are used when measuring, marking, and arranging materials?
5. What tools are used for cutting and shaping?
6. What tools are used for fastening and assembly?

Individual Student Projects

- Plan the building of a house, from the concrete footings to the finish details, in relation to the roles carpenters play at each step along the way. Create a project, presentation, or a paper that depicts and labels the jobs in the various “layers” of the house (i.e., concrete, rough framing, finish work, etc.).
- Choose what you think are the most and least essential tools in carpentry and write a paper describing why you believe that is so. How would the trade change if the most essential tool were not available, and what tool could be used instead of the least essential tool?
- Select a room in your home. Explain what carpentry tasks went into the building of the room, and then create a blueprint that details the room’s dimensions, as well as the materials and fasteners used. Make sure you use appropriate carpentry tools to measure the room accurately.

Group Activities

- Name and demonstrate the proper use of each of the various squares. Discuss which ones are multi-purpose, and which ones are designed for specialty tasks.
- Create a poster that discusses the safety considerations to keep in mind when using a pneumatic nailer. Then, take a turn using the power tool, practicing both kinds of nailing modes. Finally, practice extracting some nails using appropriate tools. Which worked best, and why?
- Utilizing the tools mentioned in the program, practice the various ways of measuring, marking, and cutting wood.

Internet Activities

- Investigate a carpentry specialty (e.g., kitchen cabinetmakers, ship carpenters, etc.), and write a paper or presentation that describes what the job entails, and what general and specialty tools are used in the profession.
- What innovative carpentry tools are at the forefront for tomorrow's carpentry tasks? Using the Internet, research this topic; then write a paper, citing specific Web sites and including pictures of the latest technology and tools available today.
- Using the Internet, investigate carpenter opinion regarding which power tools are the best for finish work. Ensure that you research both professional carpentry Web sites and personal blogs. Then, write a paper that details your findings, citing the resources used, and adding what, in your opinion, you believe are the best tools to use and why.

Assessment Questions

Q1: Which of the following is a rough carpentry task? (Select all that apply.)

- a) Construct concrete footings for chimneys, retaining walls, or basement floors
- b) Frame studs and joists
- c) Build forms used for foundation walls
- d) Add roof sheathing

Q2: Which of the following is something a carpenter should not wear on-the-job?

- a) A hard hat
- b) Ordinary work clothes
- c) Full face shield, hearing protectors, and a dust mask
- d) Loose clothing
- e) Jewelry
- f) Safety shoes or sturdy, high-top work shoes

Q3: Which of the following is a finish carpentry task? (Select all that apply.)

- a) Create cabinetry, furniture, and fine woodworking
- b) Frame rafters
- c) Build stairs, and door and window casings
- d) Work on parquet flooring, wainscoting, and trim
- e) Add siding

Q4: Match each wood type with its corresponding description.

- | | |
|----------------------|--------------------|
| a) construction | b) number 2 common |
| c) pressure-treated | d) select |
| e) select structural | f) standard |
| g) structural lumber | h) utility |

- 1) Carpenters use _____ to construct wood-framed houses.
- 2) For a very high-quality grade of wood, choose _____ or _____.
- 3) For shelving, use _____.
- 4) Use _____ or _____ for wood for general framing.
- 5) The economy grade is _____, used for non-structural building components.
- 6) For jobs where wood will contact (or be buried under) the ground, _____ wood is used.

Q5: Name five tools used during planning and drawing.

Q6: True or False: Lumber is graded as softwood or hardwood by how easily it bends.

Q7: For the greatest accuracy when marking with a carpenter's pencil, create a _____ so you know exactly where to cut.

Q8: Why is a circular saw such a wonderful tool to use for finish work?

Q9: True or False: Sequential firing mode dispenses a single nail with each squeeze of the trigger.

Q10: Which of the following is a true statement regarding extracting a nail or ripping out old wood before assembling and fastening a new piece?

- a) Use a flat pry bar to pull out old wood.
- b) Use a flathead screwdriver to extract a nail.
- c) Use a crowbar to extract a nail.
- d) Use a nail-puller ("cat's-paw") to extract a nail.
- e) Wear safety glasses when striking any bar with a hammer.

Assessment Questions Answer Key

Q1: Which of the following is a rough carpentry task? (Select all that apply.)

- a) Construct concrete footings for chimneys, retaining walls, or basement floors
- b) Frame studs and joists
- c) Build forms used for foundation walls
- d) Add roof sheathing

A1: *The correct answers are (a), (b), and (c). (d) is not a rough carpentry task, as it is a finish carpentry task.*

Q2: Which of the following is something a carpenter should not wear on-the-job?

- a) A hard hat
- b) Ordinary work clothes
- c) Full face shield, hearing protectors, and a dust mask
- d) Loose clothing
- e) Jewelry
- f) Safety shoes or sturdy, high-top work shoes

A2: *The correct answers are (d) and (e). Loose clothing and jewelry should not be worn. In addition, long hair must be tied back, especially when working with power tools.*

Q3: Which of the following is a finish carpentry task? (Select all that apply.)

- a) Create cabinetry, furniture, and fine woodworking
- b) Frame rafters
- c) Build stairs, and door and window casings
- d) Work on parquet flooring, wainscoting, and trim
- e) Add siding

A3: *The correct answers are (a), (c), (d), and (e). (b) is not a finish carpentry task; it is a rough carpentry task.*

Q4: Match each wood type with its corresponding description.

- | | |
|----------------------|---------------------|
| a) construction | b) number 2 common; |
| c) pressure-treated | d) select |
| e) select structural | f) standard |
| g) structural lumber | h) utility |

- 1) Carpenters use _____ to construct wood-framed houses.
- 2) For a very high-quality grade of wood, choose _____ or _____.
- 3) For shelving, use _____.
- 4) Use _____ or _____ for wood for general framing.
- 5) The economy grade is _____, used for non-structural building components.
- 6) For jobs where wood will contact (or be buried under) the ground, _____ wood is used.

A4: 1g; 2d, e; 3b; 4a, f; 5h; 6c.

Q5: Name five tools used during planning and drawing.

A5: *Ruling pens and pencils, squares, triangles, and various types of compass instruments are used during the planning and drawing of plans from which the carpenters will work.*

Q6: True or False: Lumber is graded as softwood or hardwood by how easily it bends.

A6: *False. Hardwood and softwood refer to the type of tree from which it is taken (either trees with broad leaves or trees with needles or scale-like leaves). Lumber is graded by the number of knots it has and the quality of its surface appearance.*

Q7: For the greatest accuracy when marking with a carpenter's pencil, create a _____ so you know exactly where to cut.

A7: *For the greatest accuracy when marking with a carpenter's pencil, create a carpenter's crow's foot so you know exactly where to cut.*

Q8: Why is a circular saw such a wonderful tool to use for finish work?

A8: *A circular saw is perfect for cutting the lumber used in framing, but it can also be used for crosscutting, ripping a board, making bevels, miters, chamfers, and even plunge cuts.*

Q9: True or False: Sequential firing mode dispenses a single nail with each squeeze of the trigger.

A9: *True. Sequential firing mode dispenses a single nail with each squeeze of the trigger, and bump fire mode dispenses a nail each time the nosepiece contacts the work.*

Q10: Which of the following is a true statement regarding extracting a nail or ripping out old wood before assembling and fastening a new piece?

- a) Use a flat pry bar to pull out old wood.
- b) Use a flathead screwdriver to extract a nail.
- c) Use a crowbar to extract a nail.
- d) Use a nail-puller ("cat's-paw") to extract a nail.
- e) Wear safety glasses when striking any bar with a hammer.

A10: *The correct answers are (a), (c), (d), and (e).*

Additional Resources

Associated Builders and Contractors

www.abc.org

Finish Carpentry Tools

www.carptool.com

American Design Drafting Association International (ADDA)

www.adda.org

Associated General Contractors of America (AGC)

www.agc.org

United Brotherhood of Carpenters and Joiners of America

www.carpenters.org

National Center for Construction Education and Research (NCCER)

www.nccer.org

Skills USA

www.skillsusa.org

Occupational Safety and Health Administration (OSHA)

www.osha.gov

U.S. Department of Labor, Bureau of Labor Statistics

www.bls.gov

International Building Code (IBC) of the International Code Council

www.iccsafe.org

Additional Resources at www.films.com

Available from Films Media Group • www.films.com • 1-800-257-5126

Carpenters

- VHS/DVD/Digital On-Demand
- Preview clip online (search on 32261)
- Correlates to educational standards
- Order #32261

What's it like working as a carpenter? How do you get started and what kind of wages can you expect? This program takes you to actual work sites to provide a real-world introduction to carpentry. Apprentice and journeyman carpenters discuss what they enjoy about their trade and how they began their careers. Footage of ongoing projects highlights the work itself, while interviews answer many practical questions students might have about the trade. From the series *Made with the Trades*. A Shopware Production. (13 minutes) © 2003.

Carpentry (from the series Vo/Tech Ins and Outs)

- VHS/DVD/Digital On-Demand
- Preview clip online (search on 24221)
- Correlates to educational standards
- Order #24221

This fast-paced, entertaining, and intriguing series introduces several occupations in the vast career pathway of vocational and technical trades. Viewers are taken on a journey through many different areas including welding, masonry, electrical, residential construction, and HVAC. Each program focuses on one of these particular trades and includes interviews with students preparing for each career and working professionals on the job. The programs carefully define how the participant began in the field, what the vocation means to them, educational requirements, immediate job opportunities, and how they envision the future of each particular occupation. Important contact information is also provided for students interested in finding out more about vocational training programs. A Shopware Production. (15 minutes) © 2001.

Residential Carpentry Framing

- VHS/DVD
- 4-part series
- Order #26204
- For Spanish narration and English subtitles; and English narration with Spanish subtitles, use Order #36055

A step-by-step how-to series that shows your students how to build. Viewers get a first-hand look at construction procedures, safety issues, and proper tools. A clear explanation of each step provides in-depth information while viewers watch actual carpenters do the work. Notes are given throughout offering tips and safety warnings. Carpenters carefully review the plans for layout, materials, and any variations. The series includes *Residential Ceiling Framing*; *Residential Floor Framing*; *Residential Roof Framing*; *Residential Wall Framing*. (9 to 12 minutes each) © 1998.



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