

**It is a thrill to say,  
“I made it myself.”  
Your article may  
not be as beautiful  
as one made by  
an expert, but you  
can be proud of it  
because it is your  
own.**

*—Girl Scout Handbook, 1953*



# Woodworker

**W**oodworking gives you a feeling of accomplishment—you can make stylish, useful things for yourself and others. Plus, it's fun! In this badge, add to your talents with a skill Girl Scouts have been refining for 100 years—the ability to do it yourself. You'll develop or refine your skills with a hammer, saw, and level, and complete the badge by creating a fantastic and unique wooden piece of your own design.

## Steps

1. Swing a hammer
2. Keep it level
3. Use a screwdriver
4. Saw some wood
5. Build something yourself

## Purpose

When I've earned this badge, I'll know how to use some basic tools to make simple woodworking projects.



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Every step has three choices. Do ONE choice to complete each step. Inspired? Do more!

## TIPS BEFORE TAKEOFF

- ▶ Always pay careful attention when using tools, especially power tools!
- ▶ Before you begin, **find someone with woodworking skills to help you** with the steps. Perhaps a:
  - Shop teacher at school
  - Carpenter
  - Staff at a home improvement store
  - Housing contractor
  - Furniture maker
  - Family member or friend with woodworking knowledge

### STEP

## 1 Swing a hammer

Get some scrap lumber at a lumberyard or hardware store and learn to hit a nail on the head—without ending up with a sore thumb. This can be tougher than it sounds, but learning a few tricks will have you hammering in no time. Practice in one of these ways.

### CHOICES – DO ONE:

- ☐ **Write your name in nails.** Hammer nails into wood in the shape of the letters in your name.

**FOR MORE FUN:** Try it in cursive!

**OR** .....

- ☐ **Make a design with nails on wood.** Hammer nails in the shape of a spiral or star, for example.

**OR** .....

- ☐ **Create a sculpture.** Nail together a dozen pieces of scrap lumber to make an interesting art piece.

**“Hammer blossom”** is the term carpenters use to describe the dents caused by swinging your hammer, missing the nail, and hitting the wood.



How to drive a nail



## STEP

# 2 Keep it level



On every project, whether you're building a bench or hanging a picture, you want to make sure your work is **level** (straight horizontally) and **plumb** (straight vertically). Use a measuring tape, level, plumb line, and L square to do one of the following choices.

### CHOICES - DO ONE:

- ☐ **Level up.** Put four pieces of paper on a wall about an arm's length apart. Mark a dot on each and try to make sure they're level by sight. Use your tools to check if you were right.

**FOR MORE FUN:** With permission, hang three pictures along a straight line on a wall and check to make certain they're level.

OR .....

- ☐ **Make it right.** Using two pieces of scrap lumber, a hammer, and nails, build a level letter T.

**FOR MORE FUN:** Make more level letters—perhaps your initials or a full name? Paint them for a gift!

OR .....

- ☐ **Do a survey.** Check five different spots around your house or Girl Scout meeting place to see if the structure is level and plumb. For example, use your level to check a floor, window frame, hanging picture, countertop, and porch rail.

**FOR MORE FUN:** If you find a piece of furniture that's wobbly due to uneven floors, such as a dining room or kitchen table, use a small piece of wood, a furniture coaster, or cardboard to help level it.

## Settling In

Old houses settle over time, and doors, windows, or even floors and walls that started out level and plumb may no longer be so. In some older buildings, a marble will roll from one side of a room to another—without a push!



## Different Types of Wood

**Softwood** lumber comes from evergreen or coniferous (cone-bearing) trees. Spruce, hemlock, cedar, and pine are all softwoods. Beginning woodworkers often use softwoods because they are soft and easy to work with.

**Hardwood** lumber comes from deciduous trees, which lose their leaves. Some hardwoods are maple, oak, cherry, and ash. Objects made from hardwood are more solid, but they may take longer to make. You cannot drive a screw into hardwood without boring a hole first.

**Think Green!** Recycled or reclaimed softwood or hardwood is often available at a lumberyard, recycle center, or architectural salvage store. Or, are there wooden boxes, barn wood, or other wood you can repurpose in your home or neighborhood? (Ask permission before you use it.)







# FUN PHRASES



## PHRASE

## MEANING

## WHERE IT CAME FROM

**A SCREW  
LOOSE**

not making sense

the early Industrial Revolution— if a machine was not working properly, there was often a screw loose

**HITS THE NAIL  
ON THE HEAD**

does or says the  
perfect thing

if you hit a nail square on the head, it goes in straight; if you miss a bit, you bend the nail

**YOU'VE GOT YOUR  
WORK CUT  
OUT FOR YOU**

you have a lot  
of work to do

woodworking (or dress-making) pieces have been cut out and now must be put together

**DEAD AS A  
DOORNAIL**

quite dead

nails through doors were purposely bent to withstand constant opening and closing, but that meant the nails could never be reused

**FLY OFF  
THE HANDLE**

go into a  
fit of rage

when an axe is swung so hard and fast that the head comes right off the handle

**ON THE  
LEVEL**

honest, true

when a level shows a surface to be level, or "true"

**RULE OF THUMB**

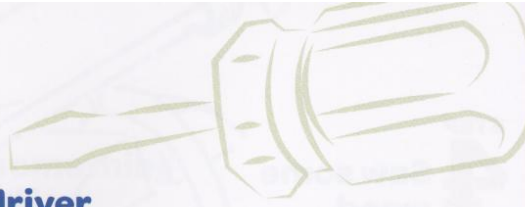
loose rule

refers to using one's thumb as a rough measure (the tip of a thumb to its first knuckle is roughly an inch; the distance from one's nose to a fingertip is roughly a yard—that's how people used to measure fabric!)



### STEP

## 3 Use a screwdriver



Try out a regular and a power screwdriver (also known as a cordless drill). Most woodworkers reach for their cordless drill more than any other tool, because when you use different bits it drives the screw *and* makes a hole! Still, it's important to know how to use a regular screwdriver, since that's usually what you'll find in the kitchen drawer.

#### CHOICES – DO ONE:

- ☐ **Fix loose screws.** Find at least three loose screws and tighten them. Here are a few things that often need fixing: pot handles, knobs, drawer pulls on dressers and cabinets, and door hinges. Be sure to get advice from an adult about what needs tightening—and get permission to try!

OR .....

- ☐ **Attach it, detach it.** Screw together two or more pieces of wood. Use the power drill on six screws and the hand-powered screwdriver on six more. Then take the pieces apart the same way.

OR .....

- ☐ **Build with a screwdriver.** Find a simple DIY project that requires a screwdriver, such as a bookshelf, toy, mirror, or clothes rack. Build it with help.

### CAREERS TO EXPLORE

- architect
- framing carpenter
- finish carpenter
- cabinet maker
- set designer
- furniture maker
- boat builder
- musical-instrument maker
- fine-art sculptor
- lathe craftsperson  
(maker of wooden bowls, pens, etc.)
- marquetarian  
(wood-mosaic maker)

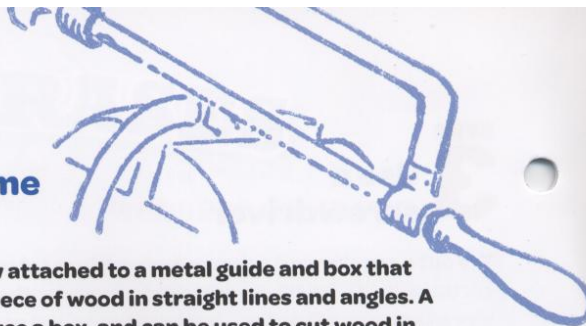


## Sanding Tips

Sandpaper comes with grit numbers, or grades. Usually the package will tell you whether the paper is fine, medium, or coarse grade and give the number. Coarse sandpaper is the roughest and is used for heavy sanding. Medium is for smoothing surfaces and removing any small imperfections in the wood. Fine sandpaper is usually used for sanding between coats of finish or to smooth any marks after the final finish has been put on.

- Always sand in the same direction as the grain
- Work with coarse to medium to fine grades of sandpaper (80 grit to 120 grit to 150 grit works for most projects)
- "Ease," or slightly round off, the sharp edges of your wood with sandpaper
- If you're painting your creation, sand it again after the primer has dried and before adding the finish coat of paint

## STEP 4 Saw some wood



A miter saw is a saw attached to a metal guide and box that accurately cuts a piece of wood in straight lines and angles. A handsaw does not use a box, and can be used to cut wood in different shapes. Practice using a miter saw or handsaw in the choices below.

### CHOICES - DO ONE:

- ☐ **End the alphabet.** Cut the letters X, Y, and Z with the miter saw and box.  
**FOR MORE FUN:** With your Cadette group, have a contest to see who can cut the straightest lines.

**OR** .....

- ☐ **Square it off.** Compare the miter and the handsaw by cutting a 6" x 6" square out of a piece of plywood. First use a miter, then a handsaw.

**OR** .....

- ☐ **Make a simple doll.** Using the miter saw and box, cut geometric shapes to create a simple figure (like a girl or dog made of triangles, rectangles, and squares).

**FOR MORE FUN:** Cut out more creatures to make a zoo or village. You could sand and paint them to make fun toys for younger girls.





## STEP

# 5 Build something yourself

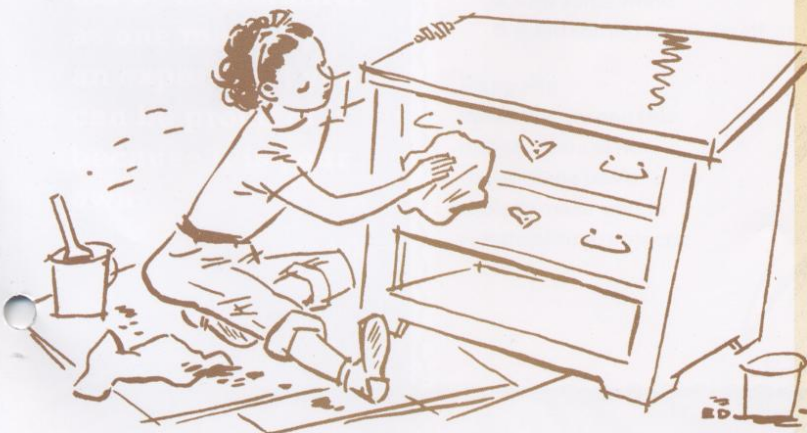
Now you're ready to make something you can actually use!

### CHOICES – DO ONE:

- ☐ **Build with your expert.** Ask for good project ideas and assistance from the woodworker helping you on the badge. There are many beginner plans available in magazines and online.  
**OR** .....
- ☐ **Build with home improvers.** Find a beginner class or workshop at a local home improvement, lumber, or hardware store.  
**OR** .....
- ☐ **Build at a crafts store or artisan workshop.** Some woodworkers teach courses in their workshops, and crafts or framing stores in your area might also offer guidance.

### More to Explore

Pretend you're a Girl Scout from 1980. As girls did to earn their DIY badge, have someone tell you about five or more kinds of wood joints, or look at pictures of them in a do-it-yourself book. Make an inspection tour where you live or where your group meets, and try to find as many different kinds of wood joints as you can. You might look at the backs of drawers, or at a wooden box, table, chair, or picture frame, or around the molding on a door or window. Share what you find. Then make something that has a wood joint.



## Finishing Your Project

It's called "finishing" in woodworking, and that's literally what it is—adding a final layer to your project to protect it and make your hard work beautiful. After sanding (see tips on page 6), you might use a brush to varnish or stain your project. Ask an expert to help you choose the best varnish or stain for your project, and the appropriate brush to apply it.

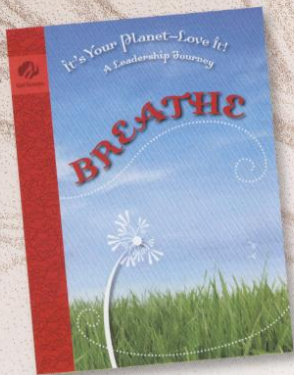
**Varnish:** Add a clear, hard protective finish

**Stain:** Add color to the wood, usually with polyurethane

## Project Ideas

These are just some simple ones to start your mental wheels turning. Ask your expert for other fun ideas or about the difficulty level of something else you'd like to make.

- Birdhouse
- Jewelry box
- Lap desk
- Picture frame
- Easel
- Nesting trays
- Magazine rack
- Baseball cap rack
- Table hockey board
- Coat or mitten rack
- Small bench
- Tree swing
- Doll cradle
- Jigsaw puzzle



### Add the Badge to Your Journey

As you become aware of your air through *Breathe*, notice where you have little piles of dust and clutter in your spaces. In step 5, enjoy making something that helps you breathe better. Simple bookshelves, a special keepsake box for mementos, or a rack for your papers and magazines can help you clear your air. (Try to keep the air free of sawdust, too!)

#### Now that I've earned this badge, I can give service by:

- Making bookshelves for classrooms, libraries, or other organizations that could use them
- Helping around the house by taking on small home-improvement tasks
- Giving a photo gift in a frame I made myself



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#### I'm inspired to: