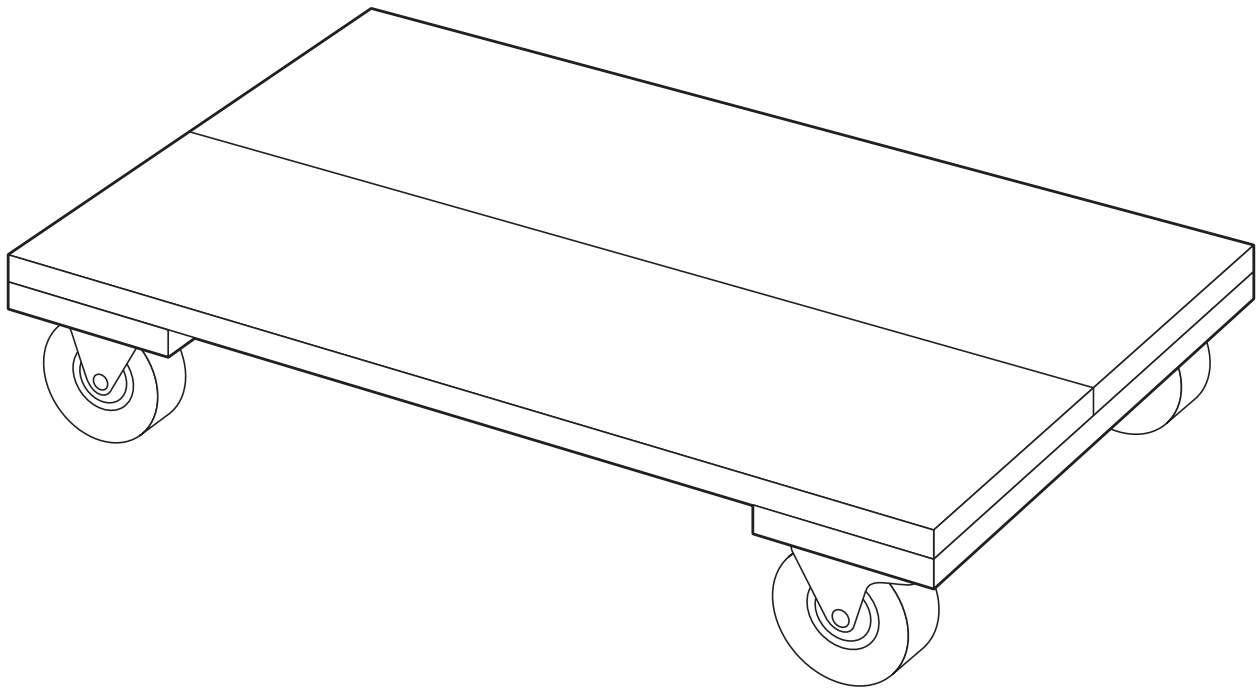




## WOODWORKS PROJECT PLANNER: 2015-2016 BEGINNER PROJECT **DOLLY**



Every once in a while, when you have to move some heavy stuff, a dolly can be your best friend. Fitted with smooth-running casters, the sturdy wood platform will ferry your loads across the room, across the street and beyond. And it's easy to build, perfect for those with beginner-level skills. Along with basic ripping and crosscutting, this project includes biscuit joinery and some simple but precise assembly with screws. And after you build it, you'll learn more about applying stain and using clear finishes to protect the wood and keep it looking beautiful.

## TOOLS REQUIRED

### Hand Tools

- Adjustable square
- Tape measure

### Power Tools

- Table saw
- Miter saw
- Biscuit joiner
- Drill
- Orbital sander

### Miscellaneous

- Pencil
- Wood glue
- Assorted clamps
- Safety glasses
- Sandpaper, 100-, 120-, 150-, 220-grit
- Sanding block
- Gloves for staining and finishing
- Clean, lint-free cloths
- Respirator
- Paint scraper

## SHOPPING LIST

### Recommended Wood: Ash

Parts	Material	Quantity
A	1 x 10 solid ash	6
B	1 x 6 solid ash	4

## OTHER MATERIALS

- Four #20 biscuits
- Four 3" Rubber-wheeled swivel casters
- 16 #10 x 1 ¼" Phillips-head wood screws
- 16 #12 x 1 ¼" Phillips-head, pan-head screws (for casters)

## CUTTING LIST

Part	Name	Dimension	Quantity
A	Top	¾" x 9" x 30"	2
B	Rails	¾" x 5" x 18"	2

## WOOD FINISHING PRODUCTS

### Recommended Products

Stain & Clear Protective Finish: Minwax® Wood Finishing Cloths, Natural Oak  
 Additional Clear Protective Finish: Minwax® Water Based Wipe-On Poly, Gloss

## BEFORE YOU BEGIN

Good craftsmanship begins and ends with good work habits, so make the following steps part of your routine workshop practice. If you have any doubts or questions about how to proceed with a project, always discuss them with your shop instructor.

- Carefully and fully review plans and instructions before putting a tool to the project lumber.
- Work sensibly and safely. Wear safety goggles. Wear the appropriate respirator whenever making sawdust or working with thinners or other solvents.
- At the end of every work session, clean up your shop area and put away all portable tools.

## CUTTING AND ASSEMBLY

1. See Fig. 1 for overall guidance. Use a table saw to rip the top pieces, A, to 9" wide.
  2. Use a table saw to rip the rails, B, to 5" wide.
  3. Use a miter saw to cut the top pieces to 30 ½" long.
  4. Use a miter saw to cut the rails to 18" long.
  5. Lay out cuts for four biscuits on a long edge of each top piece. To do this, put the two top pieces together and mark the centers for each biscuit on the top faces. Center the end biscuits 3" from the ends and space the other two biscuits equally between them.
  6. Set up a biscuit joiner, making sure it cuts the slots in the middle of the edge. Center the joiner on your marks and make the cuts. See Fig. 2.
  7. Apply glue to the biscuit slots and along the two edges to be joined. Clamp the top pieces together as shown in Fig. 3 to ensure that the resulting panel is flat. Be sure to keep the clamp bars above the wood to make it easier to scrape off excess glue. After 15 to 20 minutes scrape off any visible glue while it's still flexible.
  8. Let the glue cure for at least four hours and then remove clamps and scrape off any remaining glue with a paint scraper.
  9. Use a table-saw sled to make the final cuts to square up the top. Set it on the sled so the saw blade will cut the entire 18" edge. See Fig. 4. Make the cut. Then measure 30" from that edge to the other end and position the panel on the sled so as to make that cut.
- Woodworker's Tip:** You can check the squareness of your top by measuring diagonally from corner to corner. On a truly square piece, the measurements will be equal.
10. Sand the top panel with the orbital sander. Start with 100-grit paper and work your way through 120-grit and finally 150-grit. Lightly sand all edges to ease their sharpness.
  11. Check that the length of the rails equals the width of the top, make any necessary crosscuts to get the length right and then do the same sanding you did on the top.
  12. Lay out the screw holes for joining the rails to the top. They should be ¾" from the edges and the ends and equally spaced in between.
  13. Lay out the holes for attaching the casters to the rails. Position each caster so it's in the middle of the rail's width and centered 2 ¾" from the ends. Mark the holes in the caster plates for drilling.
  14. Drill and countersink the holes for the rail screws. Drill the holes for the casters.
  15. Secure the rails to the top with clamps, making sure they're perfectly aligned. Drive the screws through the rails into the top. If you are using a power screw gun, be careful not to over tighten the screws and risk stripping the heads.

16. Install the casters temporarily and then remove them for the staining and finishing. See Fig 5.

## STAINING AND FINISHING

**Woodworker's Tip:** Though you may be tempted to cut short your sanding, preparation, and application time, don't do it. These tasks are very important steps in obtaining a high-quality finish. Remember, it is the finish, just as much as the fit and smoothness of the parts that will have an impact on how people judge your craftsmanship. To ensure excellent results, follow the steps listed in this section and the instructions the wood finishing manufacturer puts on its products.

### FINISHING TIPS

- Test the stain and clear protective finish you are planning to use on an inconspicuous area of the project or on scraps of wood to verify desired color and look.
- All stains and clear protective finishes must be allowed to dry thoroughly between coats. Remember that drying times can vary due to temperature, humidity, and other climatic conditions.
- If you have some leftover stain or finish, wipe the can rim so that stain or finish in the rim won't dry out and prevent the lid from forming a tight seal.

### Before You Stain

Carefully sand the parts in the direction of the grain. Start with 100-grit sandpaper, proceed to 150-grit and finish with 220-grit. Remove all the sanding dust. Then proceed with the stain and clear protective finish of your choice.

### RECOMMENDED STAIN AND CLEAR PROTECTIVE FINISH

Stain & Clear Protective Finish: Minwax® Wood-Finishing Cloths, Natural Oak  
Additional Clear Protective Finish: Minwax® Water Based Wipe-On Poly, Gloss

17. Minwax® Wood Finishing Cloths are cloths premoistened with stain and clear protective finish, making wood finishing quick and convenient in one easy step! To keep your hands clean, wear the gloves that are provided in the package. Open the package at the front label and remove a single stain cloth. Close the flap to keep the rest of the cloths from drying out.

18. After sanding the surface smooth, use the stain cloth to simultaneously apply both color and clear protective finish to the wood by wiping in the direction of the grain and working the color into the wood surface. To get color into sharp corners or other areas that are difficult to access, wrap the cloth around a small putty knife and gently work the stain in, still wiping in the direction of the grain whenever possible.

19. When the entire piece is stained, remove any excess with a clean, dry rag, lightly wiping the surface to even out the coverage. For an even deeper and richer color and sheen, wait one hour, and then apply a second coat with a fresh cloth. Wait overnight before subjecting the wood to normal use.

20. For extra protection and added sheen, apply Minwax® Water Based Wipe-On Poly. Shake the container thoroughly before use. Put a liberal amount of Minwax® Water Based Wipe-On Poly on a clean, soft, lint-free cloth and rub into the wood.

21. Allow to dry at least 2-3 hours. Sand entire surface lightly with 220-grit sandpaper. Remove all sanding dust.

22. Apply a second coat in the same manner as the first. If a third coat is desired, repeat the application steps.

23. Allow final coat to dry 24 hours before normal use.

### PRODUCT SAFETY

For your safety and the safety of those you work with, always read and follow the safety warnings that manufacturers print on their labels.

**WARNING!** Removal of old paint by sanding, scraping, or other means may generate dust or fumes that contain lead. Exposure to lead dust or fumes may cause brain damage or other adverse health effects, especially in children or pregnant women. Controlling exposure to lead or other hazardous substances requires the use of proper protective equipment, such as a properly fitted respirator (NIOSH-approved) and proper containment and cleanup. For more information, call the National Lead Information Center at 1-800-424-LEAD (in U.S.) or contact your local health authority.

When using water-based wood finishing products:

**WARNING! VAPOR HARMFUL. IRRITATES SKIN AND RESPIRATORY TRACT.**

**CAUTIONS: CONTAINS ALCOHOLS**

**VAPOR HARMFUL.** Use only with adequate ventilation. To avoid overexposure, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches, or dizziness, increase fresh air, or wear respiratory protection (NIOSH approved) or leave the area. Avoid contact with eyes and skin. Wash hands after using. Keep container closed when not in use. Do not transfer contents to other containers for storage.

**FIRST AID:** In case of eye contact, flush thoroughly with large amounts of water for 15 minutes and get medical attention. For skin contact, wash thoroughly with soap and water. In case of respiratory difficulty, provide fresh air and call a physician. If swallowed, call the Poison Control Center, a hospital emergency room, or a physician immediately.

**DELAYED EFFECTS FROM LONG-TERM OVEREXPOSURE.**

Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

**WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

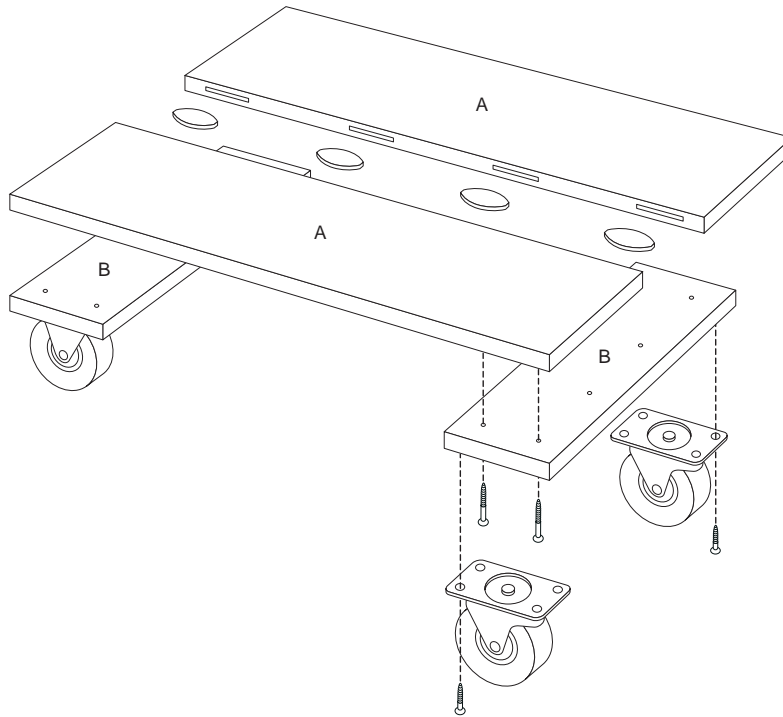
**DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.** CONFORMS TO ASTM D-4236. Contact a physician for more health information.

**CAUTION: CONTAINS DIMETHYLETHANOLAMINE AND 1-METHYL-2-PYRROLIDONE.** (Contains material that may cause reproductive effects and may adversely affect the developing fetus based on animal data.)

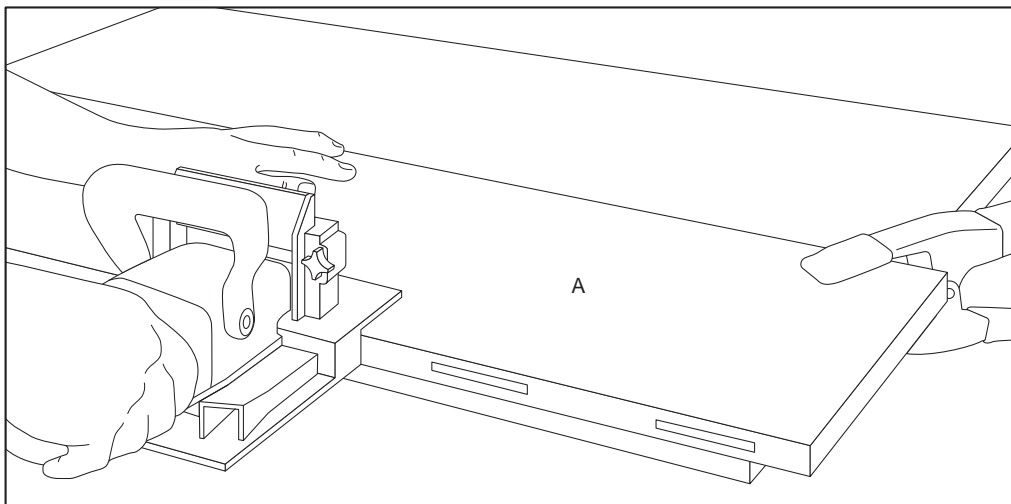
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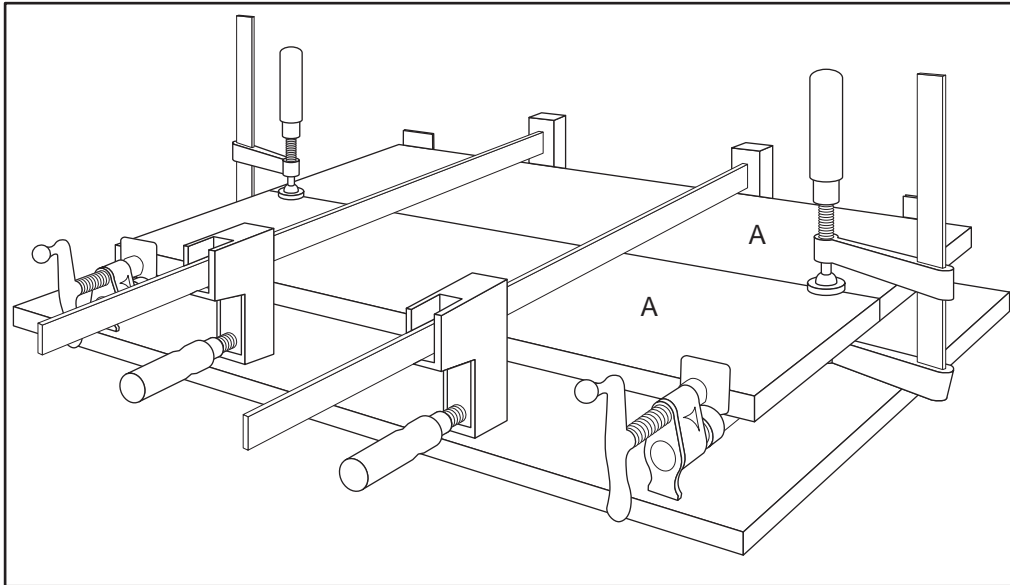
**FIG 1.** EXPLODED VIEW



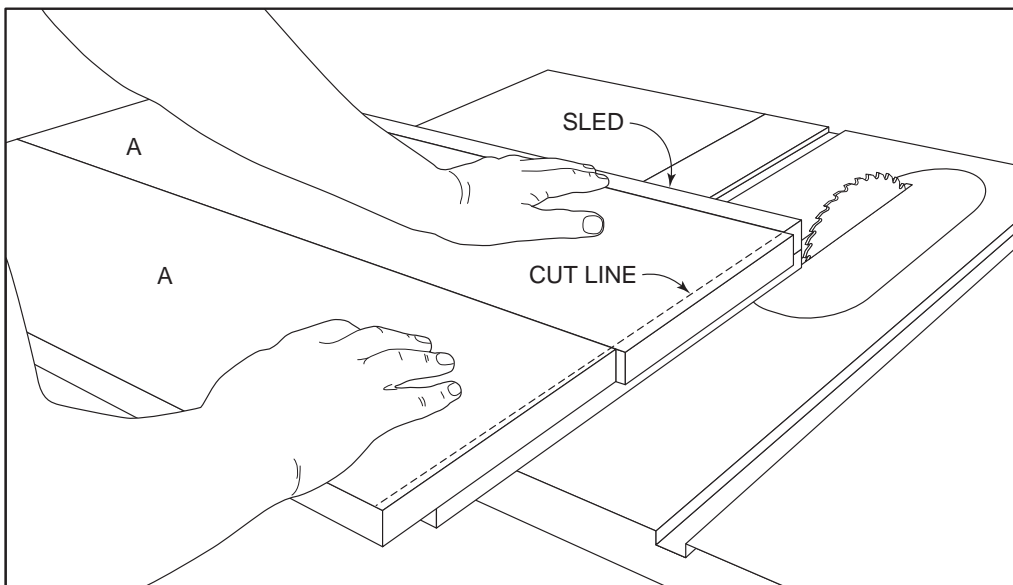
**FIG 2.** BEFORE CUTTING THE BISCUIT SLOTS, MAKE SURE THE CUTTER IS CENTERED ON THE THICKNESS OF THE WOOD.



**FIG 3.** CLAMPING ACROSS BOTH THE TOP AND THE UNDERSIDE OF THE PIECE HELPS TO KEEP IT FLAT.



**FIG 4.** A TABLE-SAW SLED MAKES EASY WORK OF LONG CROSSCUTS, ENSURING THEY'LL BE STRAIGHT AND SQUARE.



**FIG 5.** WHEN DRIVING SCREWS WITH A DRILL, KEEP THE SPEED SLOW TO KEEP THE BIT FROM SLIPPING OUT OF THE SCREW HEAD AND POSSIBLY MARRING THE WOOD.

