



Oak Jewelry Box featuring Box Joint Construction

by **KentM** on October 19, 2012

Table of Contents

Oak Jewelry Box featuring Box Joint Construction	1
Intro: Oak Jewelry Box featuring Box Joint Construction	2
Step 1: Tool and Material Checklist	2
Step 2: You'll need to make or buy a Box Joint Jig	3
Step 3: Cutting the box joints	3
Step 4: Assemble the box sides and bottom	5
Step 5: Shaping the jewelry box lid	8
Step 6: Removable upper tray and lower fixed tray design and assembly	10
Step 7: Staining and finishing	11
Step 8: Final Assembly	11
Step 9: Make it Personal	12
Related Instructables	12
Advertisements	12



Author: KentM

It's fun seeing an idea that came out of nowhere become a finished project.

Intro: Oak Jewelry Box featuring Box Joint Construction

When I decided to make a jewelry box as a birthday gift for my daughter, my goal was to make it as distinctive as possible. So, since I always enjoy learning a new woodworking technique, I decided to teach myself how to create box joints.

The box joint, also called a finger joint, is an aesthetically pleasing form of joinery that turns a simple box into a beautiful piece of woodworking. While similar to the more elegant dovetail joint, box joints are more easily fabricated and actually provide a joint of superior strength. The technique used to create them, as presented in this instructable, is straightforward and relatively easy to master.



Step 1: Tool and Material Checklist

To build a similar project you will need the following tools and materials:

ToolList:

Table Saw
Stacked Dado Blade set
Box Joint Jig - plans for building a shop made jig are available online (Google search) or one can be purchased ready made.
Block Plane - for shaping the curved lid
Electric Drill
3/4" Chisel
Small Phillips head screwdriver

Material list:

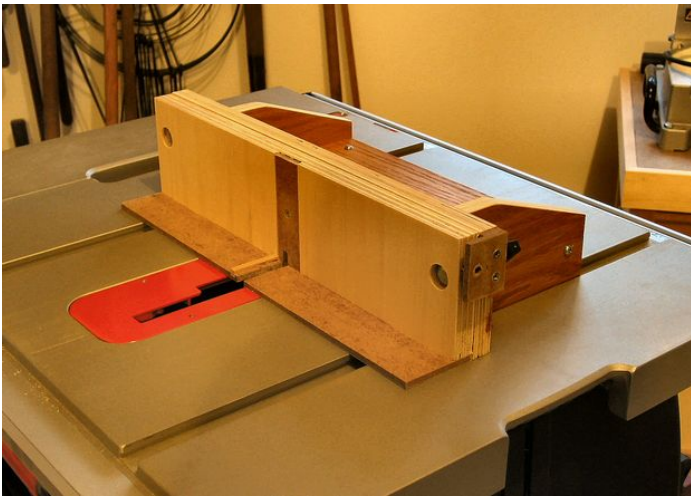
1/2" x 4" x 36" Oak for Box sides (for a box with overall dimensions of 11 1/2"L x 6 1/2"D x 3 1/2"H / interior dim. 10"x 5"x 3 1/8")
1" x 8" x 12" Oak for Top
1/4" x 4" x 48" Oak for upper and lower trays (lower fixed tray and upper removable tray each 1 1/2" H)
1/8" hardboard for box and upper tray bottoms
felt to line upper and lower trays
brass hinges - 1" wide
Titebond III (a slower curing glue)



Step 2: You'll need to make or buy a Box Joint Jig

Box joint jigs come in a multitude of shapes and sizes. Some are very basic while others are quite elaborate. You can find free plans online and build your own or purchase a nice factory made jig (check out the Woodcraft or Amazon websites).

A box joint jig like the one shown here was easy to build and, with a stacked dado blade, makes creating box joints a quick and easy process. I built this jig from left over project lumber for just a few dollars using a plan I found in Woodsmith magazine.



Step 3: Cutting the box joints

A picture is worth a thousand words but a video is even better. There are lots of videos on YouTube showing how to cut box joints a number of different ways. The photos I've posted show a 1/4" box joint which is the size I used on the jewelry box.

The photos below illustrate the basic steps in cutting two mating box joint workpieces:

- #1 - full view photo of initial setup of workpiece and jig
- #2 - closeup photo of positioning the first workpiece against the jig
- #3 - move the workpiece over the jig key for the second and subsequent cuts
- #4 - use the first finished piece to align the second (mating) workpiece

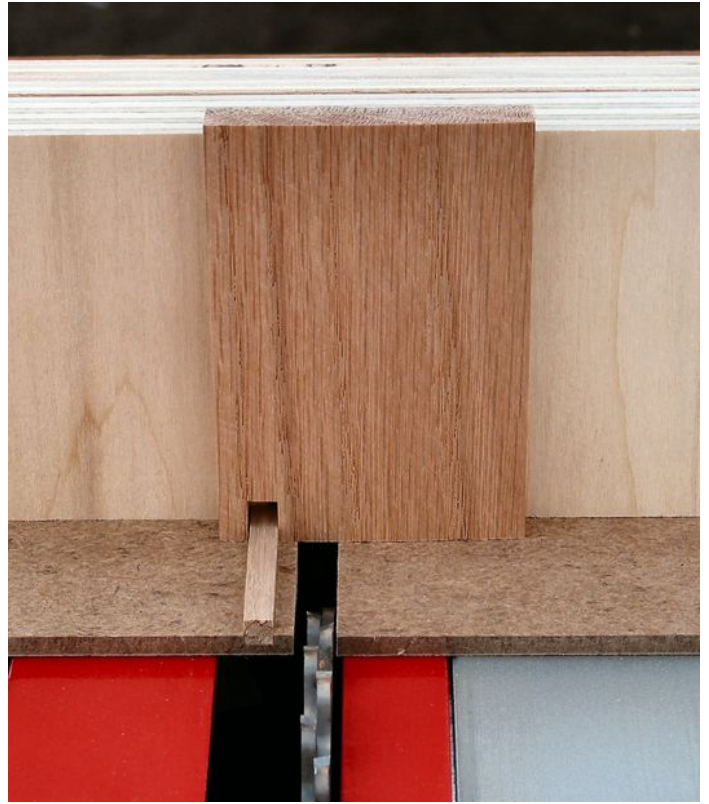
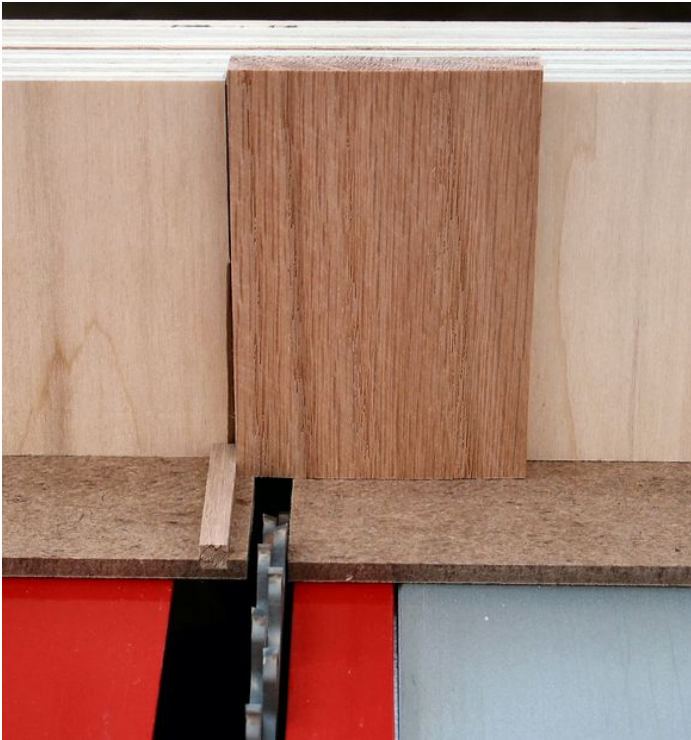
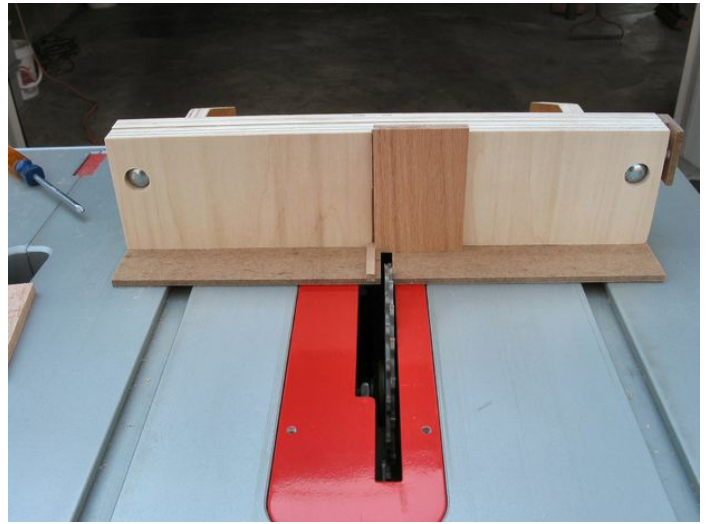
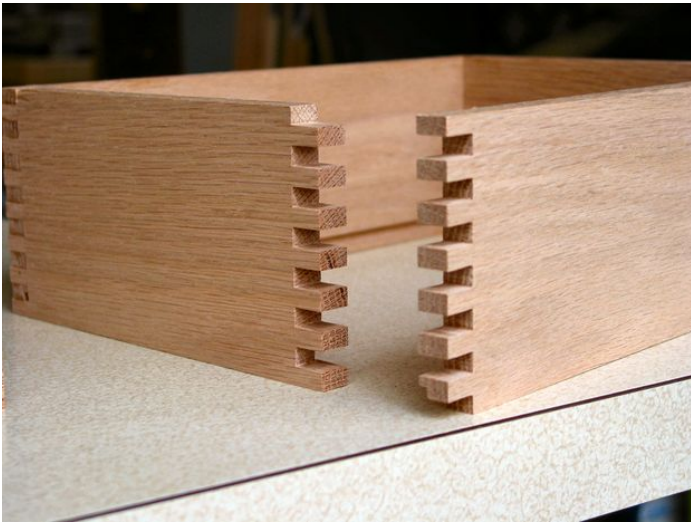
CUTTING THE SIDES

After cutting the four sides of the box to the proper length you are ready to create the box joints. This can be accomplished in a couple of different ways. One way is to number each end of each side piece of the box and cut the ends in numbered order, working your way around the box. This method corresponds to the photo sequence I've posted. However, I found it easier to cut both of the long box sides first. I then cut the short box sides using the long sides as my "spacer" as shown in step #4.

NOTE: Always test the accuracy of the jig with a few scrap pieces to be sure you are getting a good fit before using your project lumber. If they don't mate up quite right the jig will need some fine tuning.

Also, remember that all the fingers and slots must be exactly the same size (no partial fingers or slots at the top or bottom of the workpiece)

This Jewelry Box body is 3 1/2" tall: 14 joints X 1/4" joint size = a 3 1/2" high workpiece





Step 4: Assemble the box sides and bottom

This sequence of pictures provide an overview of how to assemble the box sides. Prior to assembly a few items are worth noting.

- After cutting all the box joints, a 1/8" groove needs to be cut in the box sides to accommodate the hardwood box bottom. Locate the groove 1/4" from the bottom of the box sides.
- Use masking or painters tape to wrap the box sides at the edge of the joints. This will catch any glue squeeze out and minimize cleanup time.
- Use a slow curing glue like Titebond III to allow adequate time to apply glue to all the joint surfaces before assembly.

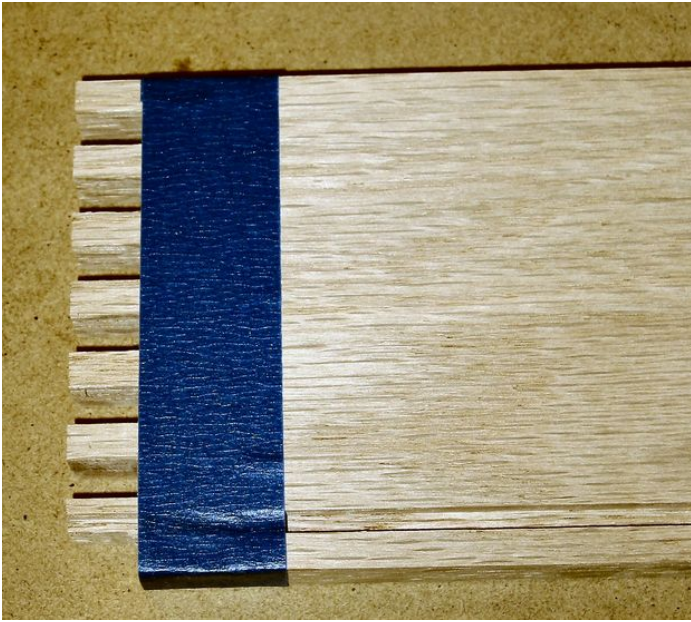
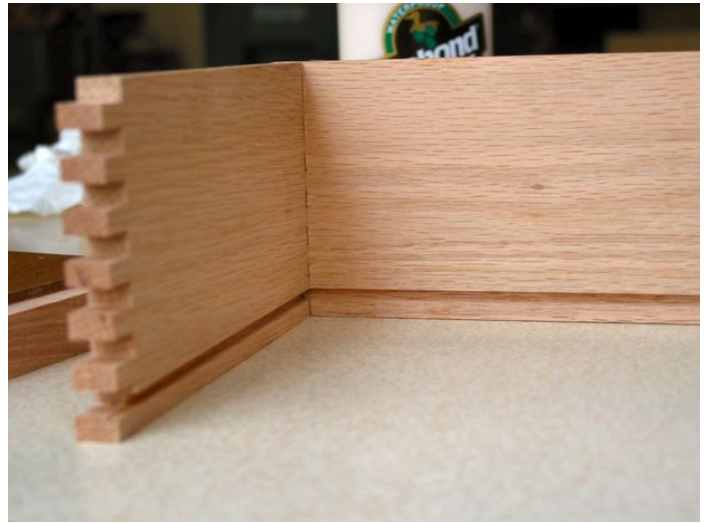
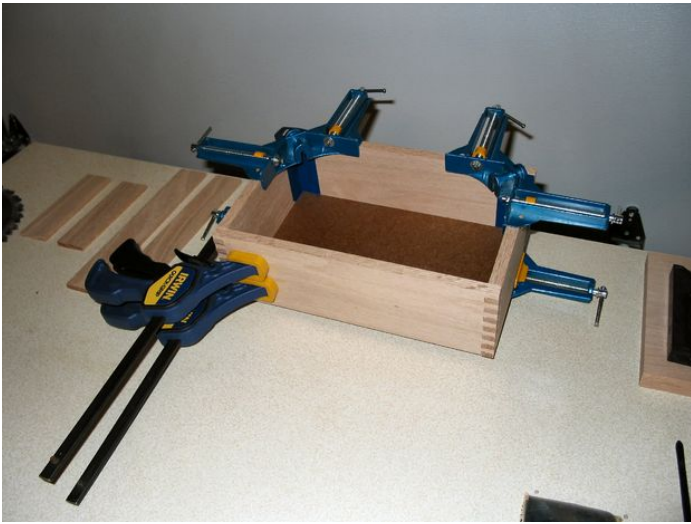
Assembly

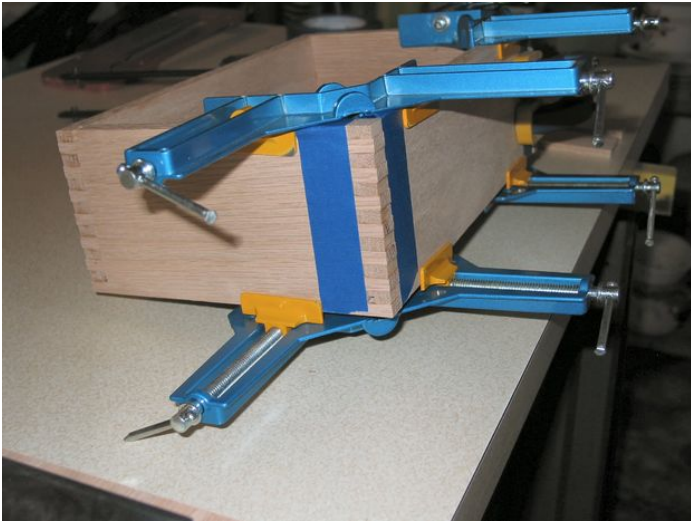
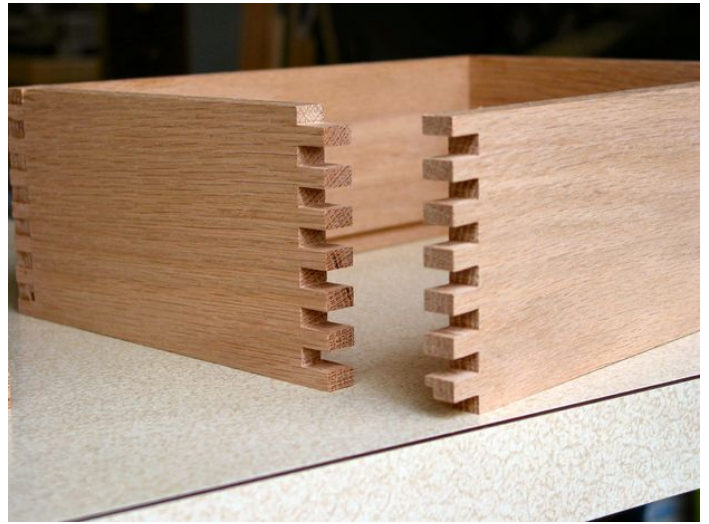
Ideally, if you have enough clamps it is best to assemble the box in a single step. As you can see I didn't and had to assemble the first three sides and do the last side later. In this case a band clamp would probably have been a better way to go.

Note: Regardless of how you choose to assemble the box, use a square to check the inside corners to insure you are getting tight joints and as square a box as possible.

The dadoses for the hinges can be cut now, if desired. They slipped my mind at the time and I did them later in the process. See the final assembly step in this instructable if you want to cut them now, which actually makes more sense.

Finally, sand the exterior of the box to even out the joints so they are nice and smooth (except for minor cleanup, you should have sanded the interior sides of the box prior to assembly). You can stain and varnish the box now or, if you prefer, wait until all the other parts (lid, trim and tray) are ready for finishing.







Step 5: Shaping the jewelry box lid

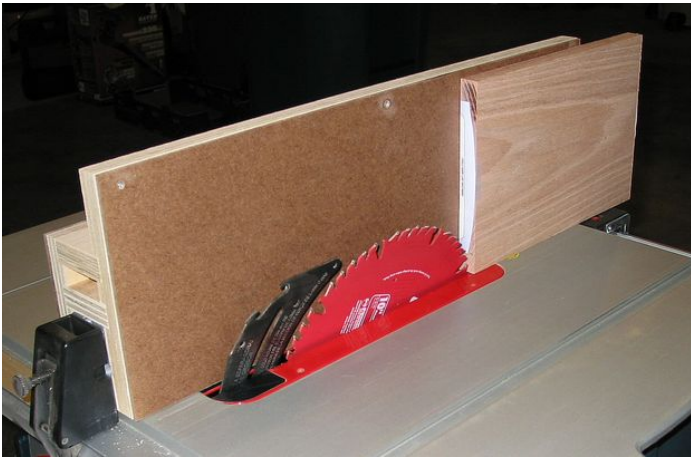
Shaping the curved lid for this project may seem like a daunting task but I was surprised at how easy it turned out to be.

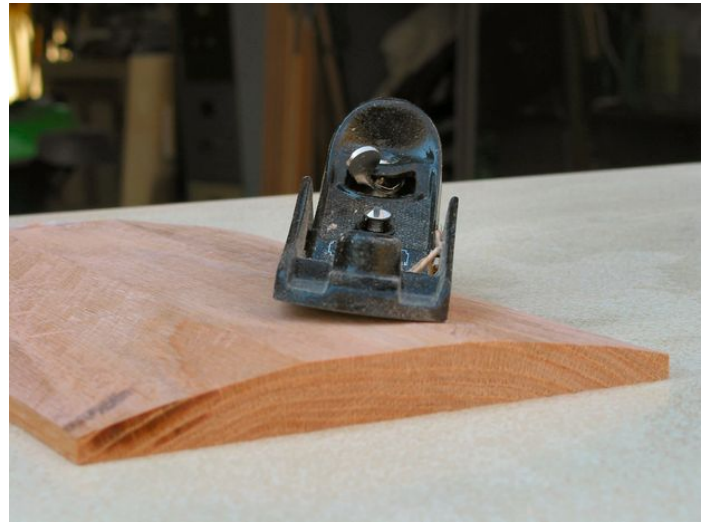
As seen in the pictures accompanying this step:

- First, a template of the desired shape must be created and attached to both ends of the wood blank. In this case I used a template from a plan I found online and modified the final shape slightly to suit my needs.
- Next raise and adjust the saw blade so the angle mirrors the angle of the template (Note the tall auxiliary fence which is recommended to help provide support for the work piece).
- Make your first cut and then rotate the work piece, front to back, to make a matching cut on the opposite side of the top.
- Adjust the angle of the blade (as needed) to remove additional material and further define the overall shape. Make this second cut on both sides of the top as in the previous step. For me, two cuts were all I needed.
- The next step involves using a block plane to smooth out the ridges created by the table saw cuts. To do this, run the block plane across the top at a 45 degree angle, working your way from the bottom of the each side towards the top of the lid. TAKE YOUR TIME! Set the plane to remove small amounts of material with each pass and continue planing until you have a shape you are satisfied with.
- Lastly, sand the work piece using several different grades of sandpaper as the final smoothing step. Stain and varnish (see the staining and finishing step for additional details).

The entire process to create the shaped lid took me only about 30 minutes and I enjoyed practicing another technique I had never done before.







Step 6: Removable upper tray and lower fixed tray design and assembly

LowerTray

The lower tray really isn't a tray at all. In reality it is just four 1 1/2" tall trim pieces glued to the sides of the box. The tray can be divided into any number of smaller compartments (I chose to break it into two sections) by cutting dadoes in the trim pieces to accept the dividers.

- First, cut a piece of felt and glue to the hardboard box bottom (I used a simple glue stick for this task)
- Next, glue the trim pieces to the four side walls. This step assumes all staining and finishing of the interior of the box and the trim pieces has already been done (see the next step for additional details).
- Finally, glue the tray dividers into place (do a dry fit before gluing, go for a snug fit and use glue very sparingly).

UpperTray

You can design the upper tray in any number of different storage configurations. The example shown here suited my needs and was easy to make.

- Like the lower tray trim, the upper tray pieces are also 1 1/2" high
- Carefully size the upper tray so it will fit inside the jewelry box. You want it to be easily removable and not snug
- Cut all the tray pieces to length and then add rabbits to assemble the four sides, and dadoes, as needed, for the dividers
- Note: the dividers will only be 1 1/4" high since the tray bottom will fit inside the tray frame as detailed in the next step
- Cut a 1/4" deep rabbit (half the thickness of the 1/4" oak trim) in the sides to accommodate the hardwood, felt covered shelf bottom
- Do a dry fit check to be sure the tray looks good and will fit the jewelry box (as seen in this photo)
- Sand all pieces prior to assembly, after assembly, touch up joints with wood putty as needed and do a final sanding
- A shop made squaring jig like the one shown in the accompanying photo will aid in assembly (with the use of a few clamps) and guarantee a square tray
- Stain and varnish the upper tray
- Glue felt to tray bottom as you did for the lower tray
- Glue finished tray bottom to tray frame



Step 7: Staining and finishing

On some projects I prefer to stain and finish the individual pieces prior to assembly. That approach wasn't practical for a box joint project so I completed these tasks after assembling the box and the frame of the upper tray.

Staining was relatively straightforward. I chose two stains, golden oak for the box and red oak for the lid.

Varnishing the box and the frame of the upper tray was more challenging. I found it best to varnish only surfaces that could all dry in a horizontal position at the same time. This meant that each coat of varnish (I ended up with three) was applied in stages to avoid dripping and running. I used a glossy polyurethane and was extremely happy with the depth it brought out in the wood pattern as well as the smooth, glass like finish. The most pleasant surprise in the long and sometimes tedious process was how easy a foam brush worked when applying the varnish. I had always used a synthetic bristle brush but would strongly recommend an inexpensive foam brush as a superior applicator when varnishing tight areas and in corners.



Step 8: Final Assembly

HingeAssembly

Cutting dados for the hinges can be done after the box is assembled or as a final step. I completed this step after the box was totally varnished and had no problem whatsoever.

You can cut a dado for the hinges in the box body on the table saw. Make it 3/32" deep. After adjusting the rip fence to the proper distance, turn the box upside down and lay the front of the box past the saw blade. Then slide the box along the rip fence to cut the dado. Turn the box around, readjust the fence and then do the other dado. In this way the saw blade will exit at the back of the box. And, while tear out isn't much of a problem at this depth, I still held a piece of scrap against the box to back up the cut just to be safe.

You will have to use a chisel to cut a recess for the hinges in the lid. Mark the location and proceed slowly removing small amounts of material at a time until you have a similar 3/32" deep cut out.

NOTE: Unless you choose to use a thicker or different shaped lid then the one in this plan, the screws that came with the hinges will be too long. I forgot to consider this, but solved the problem by simply cutting the ends off the screws to get them to a usable length. Also, when drilling pilot holes for the screws be careful not to drill too deep. Put some masking tape on the drill bit to serve as a stop mark and drill until the tape almost touches lid.

Inserttheuppertray

Place the upper tray in the jewelry box. It will rest on the fixed tray and should be recessed about 1/8" below the box sides.



Step 9: Make it Personal

On a project such as this I always feel a personal sentiment is a nice touch. A small brass plaque can be custom made at any trophy shop and comes with heavy duty two sided tape already attached. The plaque for this jewelry box cost \$7.00.

To apply: Apply the plaque before attaching the lid to the box. First, measure to determine the plaque location on the inside of the lid. Next, use a square held against the side of the lid to position the plaque at the desired (and level) height. Resting the plaque on the edge of the square, carefully lower into place and press. It's a simple process that will, hopefully, make your gift all that more special and endearing.

That's it! I hope this project will serve as inspiration to aspiring woodworkers who use the Instructables web site.



Related Instructables



Quick and Easy Mitered Box with a Lid - I made it at TechShop by wisegye



The Carvewright / Compucarve Pirate Jewelry Box (Photos) by cpumancnc



wood box fantasy anime arale jewelry (Photos) by elfreaky



firewood jewelry box by somebullcrap



How to make a wall mounted jewelry organizer (video) by EYSpace



Cardboard Jewelry Box by Muhaiminah Faiz