

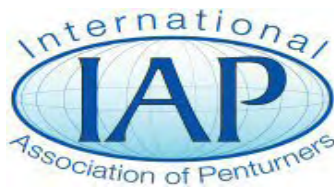
Cube-Itz Pen

A Tutorial by:

**Jeff Powell
A.K.A “workinforwood”**

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CUBE-ITZ

Tutorial by Jeff Powell (workinforwood at IAP)

Intarsias@hotmail.com



The amazing Cube-itz... it's a cutting board, it's a pen!

Based on the concept of the checkerboard end grain cutting boards, cube-bits will amaze everyone with its wild design and multiple colors. Each square is $1/8" \times 1/8"$ in size and can be arranged into a pattern or be completely random. This is a true test as to how tuned your equipment is, and requires all possible safety precautions. Be sure and square all your tools and build appropriate jigs so that you will not become "Johnnie nine fingers"!

The project begins by selecting a variety of lumber. I have chosen 15 different boards. Each board is sliced into 1x2's and then (2) slices are re-sawed from each board at $3/16"$ thick. The lengths of the boards are unimportant. Once boards are cut, each board is run through the thickness sander to a finished thickness of $1/8"$.



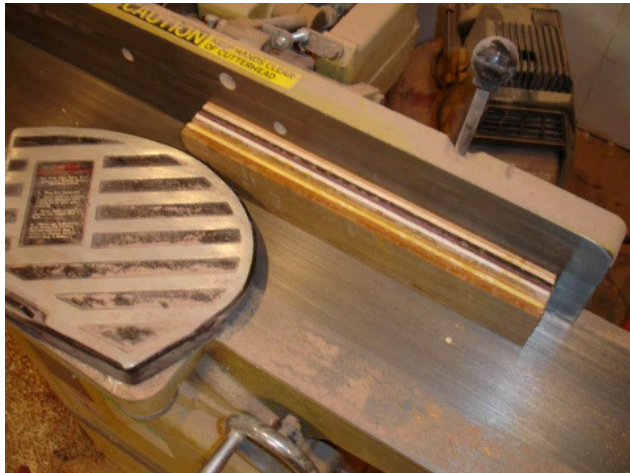
Now, create packets of ten boards each...ten different boards. Cut the packet so all the boards are basically the same length and then create another packet. If some pieces are only 8-10" long, then create a few shorter packets, it really doesn't matter as long as the packs are long enough to go through the drum sander. Once you have several packets, and then randomly re-arrange the pieces in the packets for optimum color contrasts. Try and make each packet different from the next at the same time.



Do not be sparing with the glue. Each piece must be thoroughly glued together with a lot of clamps. When I finished mine, I had 6 random stacks.



Let the stacks dry for a couple days. Wood glue causes swelling and you want the swelling to settle back to its normal state. Using the jointer, push one face tight against the face and square the bottom of the stack. Trim the other face parallel with the table saw and then run each side through the drum sander to remove any jointer or table saw marks.



A jig is used to re-saw the stacks into 3/16" wide strips. The tail on the jig assists in pushing the stack past the blade and a push stick is used to hold the stack down. I remove one strip from each stack. **This part is important!** Place the saw mark side of the thin strips in a pile facing up. Take the stacks and run them back through the drum sander to remove any saw marks and then cut one more strip from each stack. Keep repeating this process. This keeps the stacks square in case of any blade deflection. After all the strips are cut, each strip is then passed through the drum sander with the flat side down and finish sanded to 1/8" thick.



Lip on push jig

Take 2 stacks of similar length and randomly re-arrange them for a random pattern. Or take 2 stacks and alternate all the pieces for a preordained pattern. Glue the stacks together just like before, keeping them as flush together as possible so that the cubes all line up. When dry, like before, hold the face tight on the jointer and joint it square and lightly trim the other end with the table saw to remove all the glue. Run both sides through the drum sander until the outer strips on each side are the same thickness. This will allow all the inside squares to maintain their alignment during the next step. The thickness of the outside squares is not important because they will be turned off as a pen anyhow. It is the alignment of all the inside squares that you want to keep intact as much as possible.



Trim one end of each new stack flush with the chop saw. Build a jig to slice the stacks into 1/8" thick squares. The jig is important as it not only makes every slice hopefully the same thickness but also prevents blow outs from the back of the saw. Cut slowly to help reduce blade deflection which causes pieces to become like wedges. Sometimes that just happens anyhow...DOH! All that wood and these little piles of miniature cutting boards are what we are down to!



With the piles of cutting boards, randomly arrange them into a long board, or you can develop a pattern if you prefer. Some piles are bigger than others, so a little of this and a few more of that, flip this way, over and under, then Walla! You might notice in my example there is a stack that is 1/8 narrower than all the others...oops! That means I accidentally made a stack of 9 earlier instead of 10. No biggie.



Arrow pointing mistake in size

It was not easy gluing these together and keeping them aligned. I used gorilla glue because of the end grain glue up and quickly learned that an investment in some medical gloves would be nice! I found it best to just glue and clamp 10-12 pieces at a time, and then glue the larger sections together into one long board. In my case, I wanted to make a box for the pen, so I made a 7" long board and then whatever was left became the pen blanks. These boards are wide enough to make a couple pen blanks. Total squares, 1000 plus!

