

Knock-down Student desk

 woodgears.ca/student-desk/index.html



I built this student desk back in 1990 in my [dad's workshop](#) while I was still a Co-op student at the University of Waterloo. Being a co-op student involved moving every four months, so my goal was to build a desk that was easy to move, especially with a car.

This desk comes apart completely without the use of any tools. It is to some extent just held together by gravity. But loaded up with enough stuff on top, its quite stable. Its also much sturdier than the average student desk made out of particle board.



Watch Video At: <https://youtu.be/hopJHWVkvR0>

Desk assembly (2017 video)

Desk dissassembly stop motion animation (2007 video)

Desk frame



The desk's design is based on a simple rectangular frame on either side, with rungs spanning the two frames and a pair of crossbraces on the back. The frames on either side are joined via mortise and tenon joints, although dowels would work just as well, as these joints are not really strength critical. The desk top is supported by rungs that sit in notches on the frame pieces (see image above right). The notches keep everything aligned and rigid when assembled.



To give the desk lateral stability, two crossbraces tie the two frames together. The crossbraces each plug onto dowels on the back. When I built it, I fixed the crossbrace on the back with clamps, and then just drilled through the crossbrace into the frame. I then glued dowels into the holes in the frame, and tapered them slightly, so the cross braces could be slid onto the dowels easily.

A steel pin is inserted through the crossbrace and into the frame. These pins are inserted from the top on both top and bottom, so gravity holds them in place. The pins are actually just nails, with the point ground off.



The two crossbraces overlap where they cross in the middle. I just cut out a notch, so they form a sort of lap joint, except that the 'joint' is just loose. There's no attachment where the pieces cross.

The desk top



The desk top consists of 3/8" Oriented strain board, also known as "Aspenite" at the time. I used OSB because there wasn't a suitable piece of plywood kicking around my dad's shop when I built it, and I figured it would be an interesting experiment to try to use OSB. Surprisingly, it actually makes for a pretty good desk surface. The main reason I haven't used it for a similar purpose since is that it's an awful lot of work to make it suitable for a desk. I spent a lot of time sanding the top with a belt sander, and then put on seven coats of varnish to seal it up. Although I probably could have done with less work varnishing it by just putting on a really really thick coat. Contrary to general wisdom, for table tops, putting a really thick final coat of varnish produces beautiful results. But this technique only works for horizontal surfaces, otherwise the varnish just runs and drips.

I surrounded the OSB with a frame of maple. The OSB top actually sits in a rabbet in the maple frame, so I had more gluing surface.

After I mounted the trim around the OSB, I reinforced the corners of the frame with a dowel at a 45 degree angle. I wasn't totally happy with how that turned out, but I drilled them from the sides and back, so the dowels can't be seen from the front.

If I was doing it again, I'd cut a slot into the end pieces similar to [This technique](#).



Because the frame around the OSB is thicker than the OSB is, there's a 1 cm ridge at the bottom. This ridge fits exactly over the rungs underneath the desk frame, and also locks the front rung in, so it cannot slide out. On the back edge, the supporting frames end flush with the frame, and the back-most rung is actually inside a bit, so that it still fits inside the frame around the OSB. The desk top, with its frame fitting around the rungs keeps everything aligned square.

Continued... [Drawer assembly](#)

See also [Plans for this desk](#)

Back to my [Woodworking website](#) .



Drag and Drop

The image will be downloaded

×

