Wood Shop Safety Handout, Dec 2023

Emergency Info:

- Exits
- First-aid
- AED location
- Fire extinguisher
- Address:Unit 618
- Restrooms
- PPE

Purpose:

This class is to prepare you for safe use of the most common tools in the shop. For each tool we will discuss the following:

- When to use the tool
- Proper tool set up
- Tool safety while in use
- Key points to be aware of
- How to leave the tool in good condition for the next user

Shop rules:

1. Proper personal protective equipment is non-negotiable, including
   - Closed toed shoes while inside the woodshop
   - Safety glasses or goggles are required when any tool is running in the shop
   - No gloves while operating machinery
   - Dangling objects must be tied back/removed to reduce being caught in machinery (long hair, hoodie strings, jewelry, etc)
   - Hearing protection is required.
2. Remain aware of your surroundings and others in the shared space
3. Clean as you go, not last minute. Make sure you are managing your time with clean up in mind. This space is used by many people, leave it better than you left it.
4. It’s your responsibility to inspect tools prior to use to confirm they are in proper working order.
5. When finished with a tool, put it away cleaner then you found it.

6. Any wood brought in needs to be checked with the metal detector before it is put through ANY tool, no breaking down pallets on makerspace property.
7. Pressure treated wood is strictly banned from use in the woodshop.
    - Use of pressure-treated wood in the shop will result in loss of access to the space until you retake the orientation class.
8. Keep your fingers at least 3” from any cutting surface.
9. Make sure dust collection is connected and on before you start using a tool.
10. Never leave a machine running while you are not using it.
11. Wait until someone steps away from their machine and turns it off before approaching them.
12. Headphones are not allowed while operating machinery.
    - This is so that in case of an emergency everyone can be made aware of what is going on without additional distractions.
13. No oil based paints/stains (allowed paints/stains/cleaners/solvents are posted).
14. Do not use a tool you are not trained on. Please ask a tool champion for instruction.
15. If you have to be asked to clean up/take care of this space multiple times, you will lose access and be required to retake the safety class at your own expense.
16. Follow all Makerspace code of conduct rules
17. Be aware of where cords are, do your best to keep them out of walkways.

Sliding Miter Saw

When to use:

Miter saws are used mostly for:

- cross cuts against the grain
- to cut thin material down to length
- Of the finished material.

Safety:

1. Keep fingers at least 3” from the blade
2. Make sure your piece is firmly held in place, against the fence
3. Check that anything that could get caught in the blade is out of the way
4. Confirm blade is facing correct direction prior to use

Procedure:

1. Confirm dust connection is connected and on
2. Make sure your piece is pressed up to the fence, and is held securely
3. Engage the saw, make the cut, pulling out the saw blade before lowering and pushing into the material.
4. Raise the blade while it is still on until the material is cleared.

5. Turn off the machine.
6. Clean up tool and surrounding space

Jointer

When to use:

Jointers are used to make sure your board is true after using the planer. This is important to make sure your end result will be square and fit together properly.

Safety:

1. Boards must be no shorter than 12” to use this tool
2. A push block must be used 100% of the time when operating this tool
3. Keep fingers 3” or more away from the cutting blade

Procedure:

1. Attach dust collection
2. Adjust depth of the cut
3. Adjust fence for board width and angle
4. Turn on dust collection
5. Place “Wide” side of the board on the jointer, run it through until it is true
6. Run the just jointed face on the fence to joint the short edge of the board
7. Turn tool and dust collection off
8. Clean up tool and surrounding space

Planer

When to use:

This tool is used as a way to make a board true on both faces. This is a useful tool for cupped boards, and is also a good tool to create a smooth surface to start sanding from.

This tool is often used for cleaning up panels that have been glued together. Be sure to remove any excess glue before use.

Safety:

1. Boards must be no shorter than 12” to use this tool
2. Boards need to be supported as they exit the other side of the planer
3. Remove material in reasonable increments. Removing to much material at once will cause binding and cause the tool to not work correctly
4. You should only be taking off 1/16 of an inch at a time with this tool, any more then that will result in damage of the tool, wood, and potentially injury

5. This tool us only used to plane the wide side of a board, do not stand wood on end and pass it though the planer

Procedure:

1. Attach dust collection
2. Adjust the cut depth of the blade.
3. I generally bring the blade down to the depth of my board for the first pass and then move them down 1/4 turn
4. Face the previously jointed edge down on the planer belt
5. Turn on dust collection
6. Turn on machine
7. Pass the board though the planer until the results you desire are achieved 1/4 turn at a time
8. This tool should not be used to “sand” the board
9. Turn off machined and dust collection
10. Clean up tool and surrounding space

Drill Press

When to use:

The drill press is used when you need high accuracy with drilling holes, making plugs, or need more power then a hand drill can offer. A stop can be set easier then can be done on a hand drill.

Safety:

1. Make sure whatever you are drilling is secured to the table, with a clamp. This prevents spinning of your piece around the drill bit as it’s being used.
2. If material is pulled up by the drill and starts to spin DO NOT try and grab the piece, DO turn the drill press off
3. Gloves should absolutely **not** be worn for this machine. They can get caught on the drill bit and draw your hands into the rotating bit.

Procedure:

1. Insert drill bit into chuck and tighten with chuck wrench.
2. Adjust table height to accommodate your piece and scrap (if using)
3. Place and secure your piece to the table, either by hand or clamp.
4. Set your stops to the depth desired if in use
   - You can do this by pulling the drill down when it is off next to the board to get the depth correct.
5. Turn on on drill
6. Drill, holes as needed making sure the drill is back in top position before moving the piece for the next hole
7. Turn the drill off, clean up and return the drill bit to its respective home.

Table Saw

When to use:

When ripping boards (cutting along the grain). This can be done either to achieve desired widths, or as the final step in truing up a board. A fence is almost always used. Sleds and jigs can also be used with and without the fence on the table saw.

Safety:

1. Our table saw is a SawStop saw and is equipped with an electrical sensor in the blade. This means that if your fingers come into contact with the blade, the table saw will detect it and drop and stop the blade. This destroys both the blade and cartridge in the saw (a fantastic safety measure, but is pricey to replace! Best to try and keep your fingers away regardless).
2. Push sticks should be used with boards less than 3”
3. A board needs to be supported between the blade and fence. Unsupported boards will eject backwards with impressive speed

Procedure:

1. Attach dust collection
2. Move blade well above table top to check square / required angle.
3. Move blade back down so the bottom of the teeth are just above the top of your board
4. Adjust your fence, and make sure there is a push stick with quick reach
5. Turn on dust collection, once the front panel light turns green the saw is ready to go.
6. Turn on the saw
7. Rip board using the previous joined edge / face (this is done for 2 reasons)
8. To prevent binding of the saw on the bored
9. To ensure that the cut you are making is square
10. Support board through the whole cut
11. Turn off saw and dust collection
12. Lower blade back down to under the table
13. Clean up tool and surrounding space.

Band saw

When to use:

Band saws are great for curved cuts and very thin cuts. This tool is mostly used for smaller cuts and is one of the least accurate saws available.

Safety:

1. Cuts that have a tight curve can make the blade bind, this should be avoided by notching the cut as demonstrated in class

2. It is difficult in many cases to keep your fingers less than 3” away from the blade on the Bandsaw, if this is the case consult me or a tool champion
3. Do not have your hands in front of the blade at any point using the bandsaw, if you slip or are bumped your hand can move into the blade
4. Keep blade guard down when tool is not in use

Procedure

1. Attach dust collection
2. Adjust the blade guard as close as possible to the piece you are working on.
3. Turn on dust collection
4. Turn on band saw
5. Make cuts using fence or drawn guidelines
6. Turn off machine and dust collection
7. Clean up tool and surrounding space

Other notes

- Dust collection should always be used on tools that it can be used, if no dust collection is available for use wait until it becomes available before use.
- Keep track of time, make sure you leave enough time to finish what you are doing and clean, don’t rush, take your time, there is always tomorrow and fingers don’t grow back
- If something breaks or isn’t working as expected ask me or a tool champion first.
- If something happens DON’T panic DO turn the machine you are using off immediately
- All of the saws have a kerf. This is the width of the saw blade, determined by the width of the saw blade and the layout of the teeth, any cut you make will be reduced by this width. It's important to make sure you account for this width when you are making cuts.
- Turn on shop wide filter when sanding or making dust.
- We have hand tools, please see me or anyone else who experienced in the shop on proper use of them
- Most every thing taught in this class applies to multiple tools including ones not specifically though in this class, when in doubt about proper use / safety of any tool please reach out in Slack or look around the makers space for someone who is trained.
- Have fun!

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