

Tulane MakerSpace

Wood-1 Training Presentation

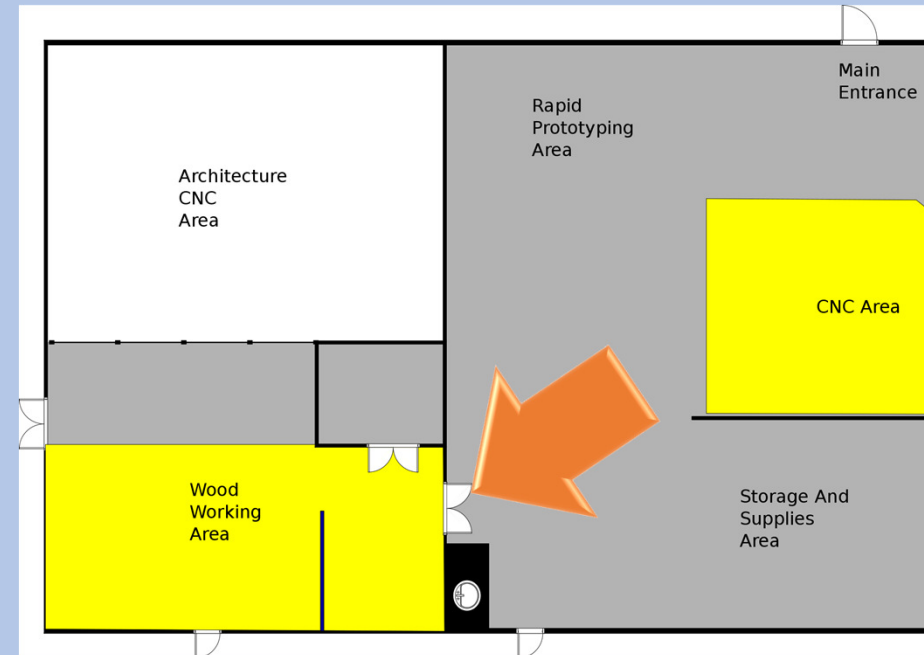


Wood-1 Training



➤ MakerSpace Layout:

- **This presentation will focus on tools in the “Wood Working Area”, which are used primarily for wooden materials.**
- **Training for Wood Working Tool access involves two parts:**
 - **Part One requires completing this presentation and the quiz that follows.**
 - **Part Two requires an in-person demonstration where you will use each of the tools to make a small part.**



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➤ MakerSpace Safety:

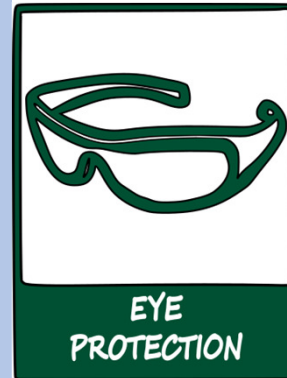
➤ Anyone standing in a yellow zone must be wearing:

* safety glasses

* long pants

* closed-toe shoes

➤ Long hair must be tied back, and no dangling clothes or jewelry are allowed.

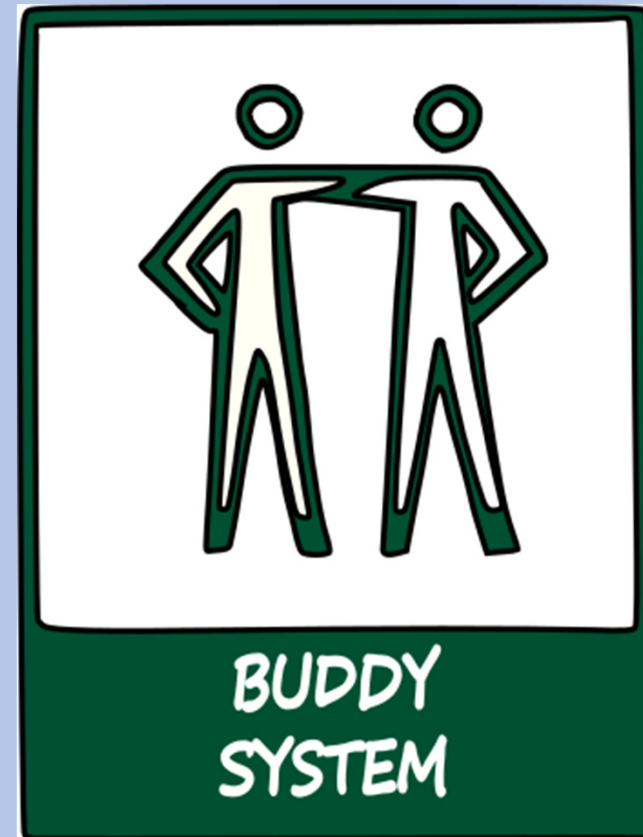


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➤ MakerSpace Safety:

- The “buddy system” requires that - at all times - **there has to be someone in the same room who can both hear and readily see you, and can come to your aid.**
- For example, someone in the Mezzanine is not a “buddy” for someone working on the Main Floor. Buddies must be able to immediately see and hear if a problem arises.



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➤ **MakerSpace Safety:**

- **Be aware** of other people in the vicinity, and what they are doing. This rule applies to tool operators, helpers, and bystanders.
- **Maintaining control of the workpiece is the most important way to operate tools safely and effectively.**
 - **Clamp any parts that can remain stationary during a cutting or drilling operation.**
 - **Keep parts/workpieces pressed against the table and/or fence.**
 - **Consider the motion of cutting surfaces and the forces they apply to your workpiece.**

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➤ Tools: Band Saws

- **There are two vertical band saws in the Wood Working Tool area.**

The larger band saw is best used for straight cuts on larger material.



The smaller band saw is best used for rounded or angled cuts on smaller material.



Please do not attempt to cut metal on either saw. It will damage the blade and may destroy the machine.

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➤ Tools: Band Saws

- When using a band saw, first adjust the height of the guard so that it covers as much of the blade as possible without interfering with your cut.

Turn the knob on the right side to loosen the guard, then adjust height with your hand and tighten the knob.



Release the guard lock on the right side, then turn the knob to adjust height and re-lock the guard.

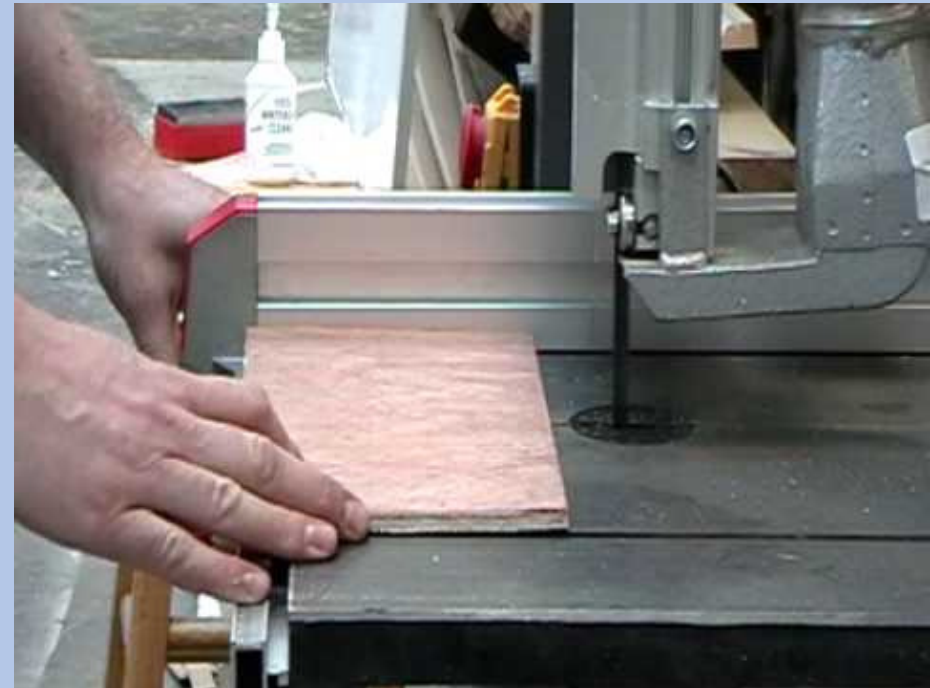


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➤ Tools: Band Saws

- **Turn the saw on, then slowly move your workpiece toward the moving blade while keeping it flat on the work surface.**
- **Do Not** attempt to hold your workpiece above the work surface, the saw will rip it from your hands and likely injure you.
- **Guide your workpiece through the blade carefully, pushing it too fast can break the blade.**

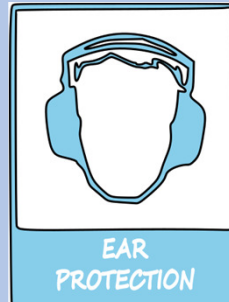


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➤ Tools: Band Saws

- **KEEP YOUR HANDS AS FAR FROM THE MOVING BLADE AS POSSIBLE.** If you need to use a cutting guide, push stick, clamp, or whatever helps, **USE IT.**
- Depending on the wood being cut, you may want to wear ear protection.
- Band saws can cut curved paths, but it's important to avoid putting too much horizontal stress on the blade by cutting sharp curves.



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➤ **Tools: Jig Saws/BladeRunner**

- **The Rockwell BladeRunner is a simple tool which can make a wide range of different cuts without much setup.**
- **By simply changing the blade, it can make curved, square, cross, or rip cuts with ease and accuracy.**
- **It is perfect for small parts and delicate cuts, and even has attachments for circular cuts, defined-angle cuts, or straight cuts.**



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➤ **Tools: Jig Saws/BladeRunner**

- **The BladeRunner works much like a band saw, with similar guards and blade guides.**
- **It is important to keep your hands and fingers clear of the blade while it is in operation.**
- **While this machine can use blades for cutting plastic, it is best served for cutting thin sections of wood (like plywood).**



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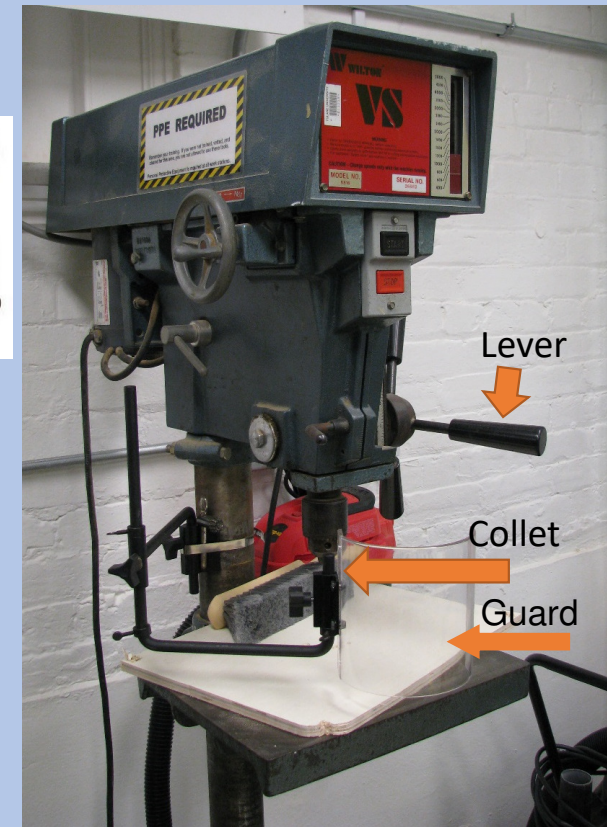


➤ Tools: Drill Press

- When using a drill press, insert the drill bit into the collet and tighten it by hand.
- Once you're sure the bit is straight, use the chuck key to securely tighten the bit in place.
- Secure your workpiece in place, and move the guard in front of the drill bit.
- Turn the machine on and rotate the lever to lower the drill bit into place.
- Slowly apply pressure, allowing the bit to cut the hole through the workpiece.



Chuck Key



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➤ Tools: Drill Press

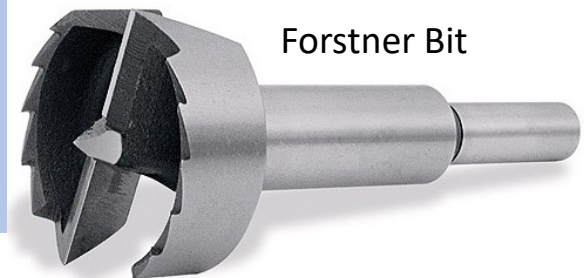
- An index of standard drill bits is available for holes up to 1/2" in diameter.
- For larger holes there are a number of other options to use in the drill press
 - Spade bits, Forstner bits, and hole saws are among the most common.
- Choose the appropriate type of tooling for the job.



Standard bits



Spade Bit



Forstner Bit



Hole saw

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➤ **Tools: Power Sanders/Combination Belt & Disk Sander**

➤ **There are two large sanding tools in the Woodworking area.**

The spindle sander has a sanding drum that rotates. It is useful for sanding small diameter curves and inside curves on flat stock.



The combination belt & disk sander is used for sanding outside faces of a workpiece.



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➤ **Tools: Power Sanders/Combination Belt & Disk Sander**

➤ **Using a power sander can produce a lot of dust which can irritate the throat and nasal cavities, and can also be toxic.**

➤ **Remember to always use a dust collection system and/or a dust mask when sanding.**

➤ **Be aware that sanders can easily pull work objects out of your hands and turn them into projectiles.**

➤ **Always use the tables for support, and wear a face shield if you feel it is appropriate.**

➤ **WARNING: When you turn on the combination sander, BOTH parts will start! Clear both tables before starting.**



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➤ **Tools: Dust Collection**

- **Some species of wood contain sensitizers or toxins, some individuals are more sensitive to the oils or airborne particles than others, but all sawdust presents a potential hazard.**
- **Dust collection should be considered for every operation in the wood shop:**
 - **Every running tool can and should be connected to the central dust system, a portable collector, or a shop vacuum.**
 - **Consider using a dust mask or even a respirator for personal protection.**

