**Introduction: Wood Shop**

* General shop safety: safety glasses at all times, never wear gloves/loose clothing, jewelry and tie hair back if necessary
* Keep hands clear from moving blades, use push sticks, a small vise, or hold downs on small pieces
* Always familiarize oneself with machine, encourage people to make practice cuts on excess/scrap material
* Never start machines with blades in contact with work pieces

**Table saw**: Good for ripping down long pieces of wood, cross cutting and cutting sheet goods. Can make angled cuts with tilting blade and/or adjusting miter; demonstrate ripping, cross cutting and proper use of fence and miters.

Ripping:

* minimum stock length determined by diameter of exposed blade
* Set blade height ¼”-1/2” above stock
* In general, don’t use rip fence for stock wider than it is longer, especially for smaller pieces
* Rip with larger amounts of material in piece to the right of the blade
* Use push stick with narrower stock (<6”)
* When pushing the piece through, keep the piece flat on the table with light pressure against the fence
* Either let the pieces drop to the floor or have someone to help catch them, do not reach behind blade
* Helper supports the stock, doesn’t guide, let the saw operator steer

Cross cutting:

* use miter gauge for straight and angled cuts, no free hand cuts
* keep a flat side against miter, putting pressure against miter and table
* do not use fence as a stop unless a spacer is clamped to fence

Extra notes:

* + Use a guard or riving knife (on Sawstop)
  + Watch for kick back, feed material to a side whenever possible
  + Never use warped or twisted material
  + Make sure fence is tightened and calibrated correctly
  + For a piece not square, make sure the larger dimension is against the fence
  + Unisaw vs. Saw Stop: conductive vs. non-conductive materials (wood and plywood on Saw Stop only, plastics, metals and pressure treated lumber on Unisaw)
  + Saw Stop-left tilting, Delta Unisaw-right tilting (less chance of kickback on left-tilting)
  + Get shop help to change blades, Unisaw has left-hand threads on arbor, Saw Stop has right-handed threads

**Miter Saws:** Meant for cross cutting and angle cuts of long(er) pieces; demonstrate adjustments, locks, various cuts, safe use of stops and dust collector

* + Slider vs. Chop saw, straight, angled and compound cuts, slider has wider cutting capacity, but tendency to climb
  + Only use the sliding feature of the saw when necessary and if so, pull all the way forward and down, then feed into piece (avoid climb cutting)
  + Cut through the pieces and allow blade to stop before raising saw and grabbing piece
  + Use Clamps on shorter pieces
  + Use stops for repetitive cuts, test and calibrate before making cuts

**Panel saw:** Ripping or cross-cutting of large sheet goods down to an approximate size; demonstrate ripping and cross cuts

* Rough cut on panel saw, finish cut on table saw
* Minimum size of ~4’

**Circular Saws:** General purpose saw for making straight cuts; demonstrate setting up saw, free hand, plunge cuts and guided cuts, if time allows

* + Straight cuts only (no curves), free hand or guided (speed square and clamped fence)
  + Secure stock, clamp or have someone help
  + Check blade guard, and use of guard lever
  + Set blade depth with ¼”-1/2” protruding through stock
  + Always make sure of proper blade clearance beneath the saw, keep hands and cord away from blade path
  + Plunge cut by using front as pivot point and hold back blade guard with lever
  + Briefly mention jig saw (for curved cuts), Versacut, Double cut saw

**Routers:** Shaping edges, profiles, rabbets, making dados and pocket; demonstrate use of both stationary base and plunge router, setting heights, cutter mechanics

* Unplug router when making adjustments, setting heights
* Want as much shank in collet as possible, drop all the way in and then pull out slightly
* Keep base flat on material cutting, do not operate one-handed
* Clamp or secure material being cut, keep cord out of path of cutter
* Avoid climb cutting, show blade rotation and proper feeding of clockwise on interior edges, counter-clockwise on exterior
* Make two cuts if hogging off lots of material
* Larger bits, lower rpms, smaller bits higher
* Mention bits with bearings for trim cuts and templates

**Biscuit Cutter:** Tool used to join wood/sheet goods with a manufactured biscuit of wood; demonstrate layout, adjustments and make a simple joint

* + Different sizes of biscuits depending on joint
  + use largest biscuit possible, glue in both pockets/sides
  + Make sure reference points for biscuits are correct, referencing from fence (top) or base (bottom), or from clamped guide
  + Clamp down and/or support pieces being worked on

**Band saw:** Already probably had it, but at least show setting blade tension (not on ones in discovery center) and to set it before turning on the saw