

# BUILDING BASICS

It's fun to build with wood and tools, but make sure you follow safety guidelines and use safety equipment because injuries are no fun at all!



- Eye protection - safety glasses or goggles
- Ear protection - foam ear buds or ear muffs
- Work gloves
- Dust mask
- Knee pads

We have a lot of rules when working with tools to keep us safe. These help keep us safe and should be common sense when working with any tool.

- Be aware of others and their projects at all times
- Follow safety protocol for all power tools
- No loose clothing/sleeves must be pushed up
- Long hair must be tied back
- Do not use earphones/listen to loud music.
- Tie up the strings from hoodie sweatshirts
- Always wear close-toed shoes
- Wear safety goggles when using any kind of power tool
- Use ear protection with loud tools
- Do NOT wear gloves while using power tools
- **NO RUNNING EVER**
- Do not be afraid to ask your shop supervisor or teacher for help/ask questions

## SAFETY FIRST

### IN YOUR TOOLBAG

Every carpenter has her or his own bag of tools that's always expanding!

Here's a list for a good starter kit with a few extra tools that are not necessary but very useful.

- Safety equipment (goggles, gloves, etc.)
- Pencils
- Measuring tape (16' or longer)
- Hammer
- Pry bar/wonder bar
- Flashlight/headlamp
- Screw drivers (both phillips head and flat head)
- End nips
- Pliers
- Crescent wrench
- Speed square

### EXTRAS

- Bullet level
- Basic ratchet set with common sockets - 7/16", 1/2", 9/16"
- Set of Allen(hex) keys
- Multitool
- Utility knife
- Vice grips (type of spring-locking pliers)
- Bevel gauge to help cut angles that you need
- Portable screw gun (small 12V with battery and charger)
- Stud finder

### FASTENING

Fasteners hold pieces together.

**Some fasteners are:** glue, nails, screws and staples

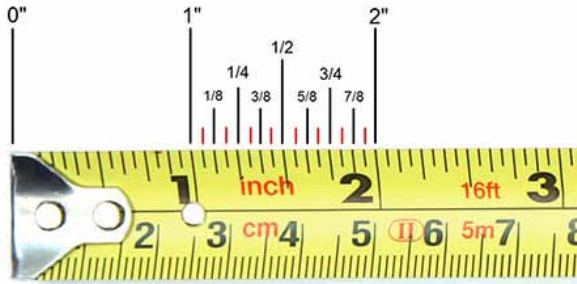
**Choosing an appropriate LENGTH of fastener:** long enough to hold all pieces, short enough to not create a hazard/be visible.

**Methods of installing a fastener:** some need to be turned (screws), some require pressure/impact (nails, staples), some are a combination (bolt/nut).

**To remove a fastener:** unscrew, pry, or use impact in the opposite direction.

**Tools to help remove stubborn fasteners:** hammer or pry bar for bent nails, pliers or end nips for staples, hammer or vice grips for stripped screws.

## MEASURING AND CUTTING



### HOW TO CUT

Measure the length that you need, and label the side that you don't need. Line up your saw to the side of the piece that you don't need. The blade will cut away the piece that you don't need.

**BLADE WIDTH** most saw blades are about 1/8th of an inch wide. Keep this in mind when measuring your materials and allow for your blade width in your measurements.

**CUT LIST** - the list you make of the lengths of wood you need. This requires you to look at your project and plan/draw what you need. This also gives you a better understanding of your project.

**CUT-OFF/SCRAP** - the piece of wood that you don't use. It can be recycled for other projects.

**MITER** - joint that forms a corner; usually both sides are bevelled at a 45-degree angle to form a 90-degree corner. Cutting a piece of wood at an angle is called a miter cut.

## MEASURE TWICE, CUT ONCE!

### LEVELS

<b>RIGHT ANGLE</b> 90°	<b>ACUTE ANGLE</b> Less than 90°	<b>OBTUSE ANGLE</b> Greater than 90°	<b>STRAIGHT ANGLE</b> 180°	<b>REFLEX ANGLE</b> greater than 180° but less than 360°

### BUBBLE LEVEL

Using the proper Vial indicator for your selected surface to see the relationship between the surface and the horizontal (or vertical) plane. The closer you are to parallel the bubble in the vial will center between the two indicator lines.

#### 180° HORIZONTAL VIAL

180°  
VERTICAL  
VIAL



45°  
ANGLE  
VIAL

### EXPLORE

- Look at the way furniture, walls, buildings and other structures (like boats) are put together. Investigate angles/geometry, materials, construction methods and strength in structures.
- Check the level of pictures, appliances, doorways, etc at home.
- Design a photo collage with your family and help hang it
- Design and install storage options for your room
- Install hangers for mops and brooms

**REMEMBER TO ONLY SECURE SHELVES INTO STUDS!**

### RESOURCES

- Introductory book: The All-New Woodworking for Kids by Kevin McGuire
- Check out free workshops at your local hardware store
- Pick up a moulding catalog or DIY magazines from your local hardware store