

Carpentry: Measurement/Tools Activity

Welcome to Carpentry! Who knows what a carpenter does?

Solicit ideas from learners. As they suggest ideas, encourage them to consider the world around them and how it was constructed (and by whom).

General List

- Residential Carpenter – homes, apartments, small buildings
- Framer – walls, floors, roofs
- Finish Carpenter – detailer (trim/molding)
- Drywaller
- Flooring
- Commercial Carpenter – offices, schools, large buildings
- Industrial Carpenter – factories and infrastructure projects
- Cabinetmaker/Millworker
- Furniture Maker
- Scenic/Set Builder
- Marine/Shipwright – boats, ships, docks

Carpenters are skilled tradespeople that utilize a variety of tools to construct precise products, buildings, and homes using specialized techniques. Carpenters ensure the designs laid out on blueprints become reality by allowing other tradespeople to do their job.

As with all trades, you will need to be proficient in the use of your tools as well as the relevant math used on the job. “Has anyone asked when will I ever use this?” As a carpenter, you won’t necessarily need calculus, but you’ll use geometry every day.

So, what tools does a carpenter use? (Take a couple of guesses) – The list could go on for a long time, but an abbreviated list includes:

- Tape measure
- Speed Square/Combination Square
- Carpenter’s Pencil
- Level
- Cutting Tools
- Hammer
- Power Drills
- Shaping/Finishing Tools
- Personal Protective Equipment (PPE)
 - Safety Glasses

- Hearing Protection
- Respirator
- Gloves
- Steel-Toe Boots
- First Aid Kit

As students identify tools you have on hand, show them the tool (safely).

The level can be used to demonstrate the value of a carpenter. Determine the age of the space where you are holding the event. As buildings age, things shift and tend to become less than level (plumb).

- Can you find a part of this building that isn't level? Yes/No?
- What does that tell you about how it was built?
 - If the building is older and is still level, the quality of its construction is very high. That can be attributed to the carpenters that framed the foundation and the rest of the building that prevented it from settling.

Tape Measure Activity

Who has used a tape measure? (everyone raises hand)

Who has used a tape measure to a 32nd of an inch? (most hands go down)

Every tape measure is different, but as a carpenter you are expected to be very precise. Has anyone heard the phrase, "measure twice, cut once?" That is the motto of every carpenter.

Hold a tape measure open showing the markings and describe that within each inch there are 32 marks that help a carpenter be as precise as possible.

Pairing up, you will each take two boards and be responsible for getting the measurement of each board within 1/32 of an inch (do not let them move the boards – the answers are on the back)

Use carpenter pencils to write the length they came up with on the board (it will need to be erased before the next group)

Encourage students to reduce their measurements (if possible – 2/32 to 1/16) and explain how even the smallest variance in measurement can create gaps/overlaps or other issues.

Have students return all tools and PPE.

If time, ask if they have any questions.

Carpentry: You Nailed It!

How to play:

- Safety Glasses on.
- Stand at the edge of the carpet until it's your turn.
- When the hammer is passed to you, step up and take your swing at the nail in the stump.
- One hit per turn, then pass the hammer onto the next person.
- The first person to get their nail in flush to the tree stump gets to call "Nail It".



Hammer

- Grip the **end of the handle** (not close to the head) for better swing and power.
- Keep a **firm but relaxed grip** to avoid strain.