Carpentry Volunteer Guide

Carpenters play a critical role in building homes and structures by creating the **frames** that give buildings their shape, strength, and stability. Before walls, roofs, or finishes can be added, carpenters carefully measure, cut, and assemble wood pieces to form a solid framework. They use **tools of the trade** such as tape measures, levels, squares, drills, and blueprints to make sure everything is accurate, straight, and safe. At this station, students will step into the role of a carpenter using real construction skills to measure, read blueprints, and build a mini house frame, just like professionals do on a job site.

Before the session begins, **please review**:

- **Carpentry Volunteer Guide**
- **Framing Blueprints, Tape Measures, Levels**
- **Mini House Frames**

Instructions: Bolded sections are to be read aloud.

Introduction

Greet students as they arrive.

Welcome to Carpentry! Today we are going to

- **Discuss what carpenters do.**
- **Learn about tools of the trade.**
- **Complete a framing activity.**

What Is a Carpenter? Discuss.

A carpenter is a skilled trades worker who

- **Builds structures using wood and other materials.**
- **Turns plans and drawings into real buildings like the walls, floors, and roofs in homes, schools, stores, and theaters.**
- **Is essential because other trades, like electricians and plumbers, rely on the structure carpenters build first.**

Carpenters in Your Community

What kinds of carpentry jobs do you see in your community?
Pause for responses, then share examples:

- **Residential Carpenter** – builds houses and apartments
- **Commercial Carpenter** – works on schools, offices, and stores
- **Industrial Carpenter** – works on factories and large projects
- **Framer** – builds the structure (walls, floors, roofs)
- **Flooring Installer** – installs hardwood, laminate, and other floors
- **Cabinetmaker/Millworker** – builds cabinets, shelves, and trim
- **Furniture Maker** – builds tables, desks, and chairs
- **Scenic/Set Builder** – creates theater, movie, and TV sets
- **Marine Carpenter/Shipwright** – builds boats, ships, and docks

Teamwork and Tools

Carpenters work in teams and must communicate clearly. They also use many tools safely and accurately.

What tools do you think carpenters use?
Review common tools:

- Tape measure
- Carpenter's pencil
- Level
- Hammers
- Cutting tools
- Power drills
- Shaping and finishing tools

Safety and PPE

What types of Personal Protective Equipment (PPE) do carpenters wear to stay safe?
Ask students to name examples, then confirm:

- Safety glasses
- Hearing protection
- Respirators or masks
- Gloves
- Steel-toe boots
- First aid supplies

What You'll Be Doing Today

Today, you're going to try out what carpenters do on real job sites. Some carpenters are responsible for building the frame of a house.

What are frames? Discuss.

Frames are the walls and structures that give it shape, strength, and stability. It can be described as the skeleton of the house.

Activity 1: Understanding Blueprints

Do carpenters just start building?

What is this?
Hold up blueprint.

Blueprints are the instructions for how the house should be built. Why do carpenters follow blueprints?
Carpenters use blueprints to ensure structures are built correctly and safely.

- Hand out blueprints
- **This is a top-down view looking from above.**

What do you see on the blueprint?

- Outside walls
- Inside walls
- Doors and windows

Key points:

- **Lines = walls**
- **Openings = doors/windows**
- **Everything must match the blueprint.**

Show the mini house frame:

- **What do you think this is?**
- **Is this the first or second floor? Why?**
- **Do you see any windows or doors?**
- **Where would the primary bedroom be located in the mini house?**
- **Where are the stairs?**
- **Where is the laundry room in the mini house?**

Show photo of completed house to connect blueprints and mini house to a finished product.

Activity 2: Measuring with a Tape Measure

What is this? Hold up tape measure.

Carpenters measure carefully when building frames. Small mistakes create big problems.

- **Can anyone read a tape measure?**
- Point out how to read measurements on the poster.
- Have 2 students measure a piece and say the measurement aloud.
- Show how to write measurements as fractions (demo on board).

Practice, if time allows:

- Hand out tape measures.
- Students measure parts of the frame or single pieces of wood (pairs or solo).
- Partners check each other's work.

Emphasize: **Accuracy matters more than speed.**

Activity 3: Adding Inside Walls

Now it's your turn to frame a house!

When framing a house, do outside walls or inside walls come first? Outside walls

- **Outside walls and frames 1 and 2 are already placed.**
- **Find frames 1 and 2 on your blueprint and in the mini house.**

Instructions:

- **Split into two groups, one group for House A and one group for House B.**
- **Each frame is labeled with a number and A or B.**
- **Match frame to blueprint by checking:**
    - **Length**
    - **Door openings**
    - **Notches**
- **Place frames gently and adjust as needed.**

Builders always:

- **Compare model to blueprint**
- **Look from the top**
- **Check walls are straight**

Activity 4: Using a Bubble Level (If Time allows)

What is this? Hold up level.

Carpenters use a level to make sure walls are straight.

- **Does anyone know how to use a level?**
- **Can you demonstrate reading the bubble?**
- **Bubble centered = wall is level**
- **Off-center = future problems like doors won't close or walls lean.**

Adjust together and ask:

What happens if we skip this step?

Wrap-Up and Reflection

You did a great job today! I witnessed all of you

- **Measuring!**
- **Problem solving!**
- **Using math!**
- **Working together!**

Discussion prompts:

- **What was hardest?**
- **Why does measuring matter?**
- **What happens next in building?**
    - Exterior
    - Plumbing
    - Electrical
    - HVAC