

The STRIVE Experience: Tool Familiarization & Basic House Framing Class Instructions Book

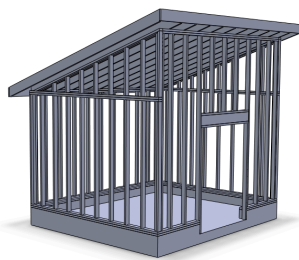


Table of Contents

Table of Contents.....	1
1. Introduction.....	1
2. Class Objectives.....	2
3. What to Bring.....	2
4. Safety Guidelines.....	2
5. Tool Familiarization.....	3
Step 1: Preparing the Foundation (taught in different class).....	6
Step 2: Building the Frame.....	7
Step 3: Installing the Roof.....	8
Step 4: Finishing Touches.....	8
8. Common Issues and Solutions.....	8
9. Additional Resources.....	8
10. Project Planning Guide.....	9
11. Texas Building Codes.....	9
12. Contact Information.....	9

1. Introduction

Welcome to the Tool Familiarization & Basic House Framing class at STRIVE Skills Academy. This instruction book is designed to guide you through the process of framing a small structure, providing you with the foundational skills to tackle your own projects.

2. Class Objectives

By the end of this class, you will:

- Understand the basics of house framing.
 - Be familiar with essential tools and their uses.
 - Know how to safely handle and maintain tools.
 - Build a small 12' x 13' structure with 8' walls and a slanted roof.
 - Have the confidence to use tools required to create framed walls.
-

3. What to Bring

Here are a few things that you can bring to enhance your experience.

- Tool Belt, pouch, or apron
- Hammer
- Steel toed boots or shoes (if you have them)
- Safety glasses (will be provided if you do not bring your own)
- Hair ties
- Gloves
- Water
- Lunch

What to Wear:

- This will be an outdoors class. It will likely be warm but you will be doing something where you also get dirty. We recommend lightweight long pants.
-

4. Safety Guidelines

The following lists will allow you to follow along, ensure you are getting all the information, and check-off what we have discussed.

Safety is our top priority. Always:

- ☐ Active job site
- ☐ Wear safety glasses, gloves, and closed-toe shoes.
- ☐ Follow the instructor's guidance.



- ☐ Report any unsafe conditions immediately.
- ☐ Use tools and equipment properly.
- ☐ Keep your workspace clean and organized.

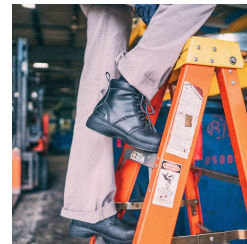
5. Tool Familiarization

Introduction

- ☐ Active Jobsite
- ☐ Safety
 - ☐ Eyewash
 - ☐ First aid
- ☐ Procedures
- ☐ Expectations

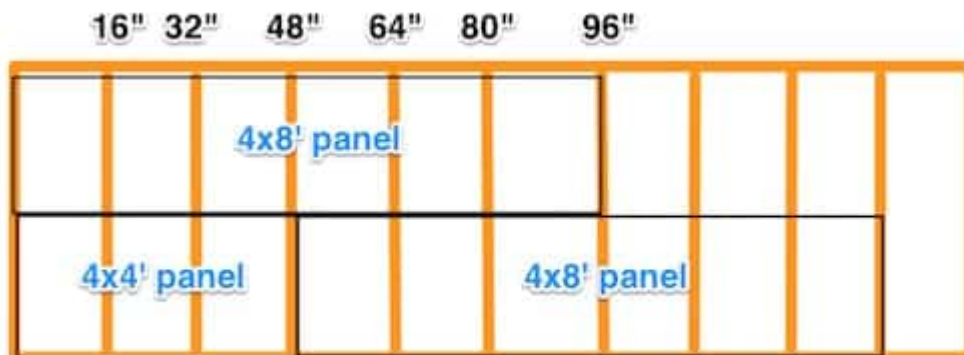
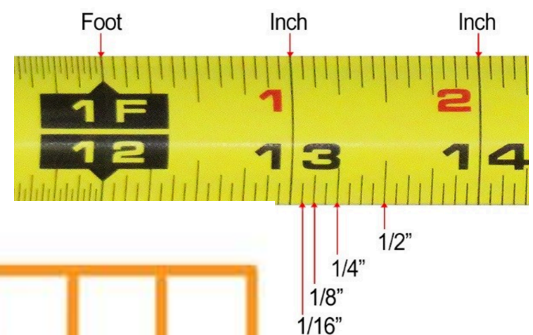
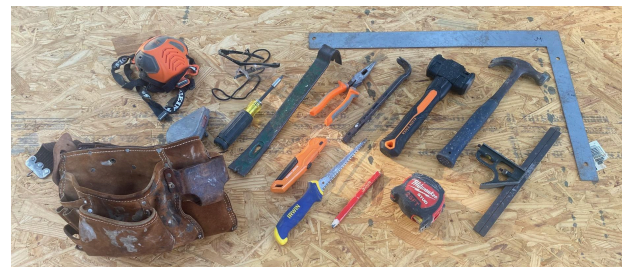
☐ Safety Equipment:

- ☐ Safety Glasses
- ☐ Ear Protection
- ☐ Foot Protection
- ☐ Clothing
- ☐ Hair
- ☐ Gloves



☐ Essential Tools:

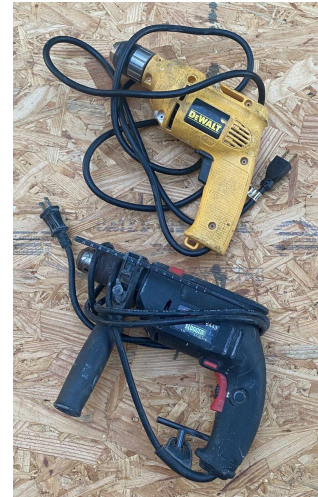
- ☐ **Hammer** - Used for driving nails
 - ☐ Claw
 - ☐ Head
 - ☐ Pulling nails
 - ☐ Holding handle
- ☐ **Tool Pouch** - Storing Tools & fasteners
 - ☐ Efficiency
- ☐ **Tape Measure** - For accurate measurements
 - ☐ How to read it
 - ☐ Inches, $\frac{1}{4}$ ", $\frac{1}{8}$ ", $\frac{1}{16}$ "
 - ☐ 16" and 24" on center



- ☐ **Pencil**
- ☐ **Utility Knife**
- ☐ **Square** - Ensures precise angles
 - ☐ [Speed Square](#)
 - ☐ Framing
 - ☐ Combination
 - ☐ Marking
- ☐ **Saw** - Cuts lumber to size
 - ☐ Safety
 - ☐ Holding work piece
 - ☐ Direction of blade
 - ☐ Power
 - ☐ Cord location
 - ☐ Cutting Straight
 - ☐ Mitre
 - ☐ 7.5" Circular
 - ☐ 4" Circular
 - ☐ Hand Saw
 - ☐ Coping Saw
 - ☐ Jig Saw
 - ☐ Sawzall



- ☐ **Level** - Ensures your structure is even
 - ☐ Reading the bubble
 - ☐ Plumb vs. Level
- ☐ **Drill** - For making holes and driving screws
 - ☐ Safety
 - ☐ Spinning chuck
 - ☐ Holding work pieces
 - ☐ Drill
 - ☐ Hammer Drill
 - ☐ Chuck Key
 - ☐ Impact
 - ☐ Bits
 - ☐ Type of bits
 - ☐ Drill bits
 - ☐ Drilling holes
 - ☐ Hole Sizes
 - ☐ Countersink
 - ☐ Counterbore
 - ☐ Corded vs. battery powered
 - ☐ Charger
- ☐ **Nail Gun**
 - ☐ Framing vs. roofing vs. brad
 - ☐ Safety
 - ☐ Needs to be in contact with surface
 - ☐ Refilling
 - ☐ Disconnect air hose
- ☐ **Air Compressor**
 - ☐ Tank Pressure
 - ☐ Relief valve
 - ☐ Hoses
 - ☐ Connections
 - ☐ Length
 - ☐ Disconnecting
- ☐ **Extension Cords**
 - ☐ Length
 - ☐ Gauge/power requirements
- ☐ **Ladders**
 - ☐ Step Ladder
 - ☐ Extension Ladder
 - ☐ Folding



☐ **Other Tools:**

☐ **Bars**

- ☐ Pry bar
- ☐ Flat Bar
- ☐ Crow Bar
- ☐ Cats Paw

☐ **Stapler**

☐ **Wrenches**

☐ **Materials:**

☐ **Lumber**

- ☐ 2x4, 2x6
- ☐ Type of wood
 - ☐ Southern pine vs. yellow pine

☐ **Nails and screws**

- ☐ Length requirements
- ☐ Nails vs. Screws

☐ **Plywood sheathing**

- ☐ 4x8 standard size
- ☐ OSB oriented strand board
- ☐ Thicknesses
- ☐ Why 4x8? Look at tape measure

☐ **J-bolts**

- ☐ Attachment to foundation

☐ **Roofing materials**









- ☐ Drip Edge
- ☐ Tar paper
- ☐ Shingles
- ☐ Vents
- ☐ nails

☐ **Adhesives/caulking/sealing**

☐ **Building plans**

- ☐ Drawings
- ☐ Building Codes
 - ☐ Under 200 square feet no permit required
- ☐ Inspections

Common Dimensional Lumber Sizes

	Nominal Size	Actual Size
	1 x 2	3/4 x 1-1/2"
	1 x 3	3/4 x 2-1/2"
	1 x 4	3/4 x 3-1/2"
	2 x 2	1-1/2 x 1-1/2"
	2 x 4	1-1/2 x 3-1/2"
	2 x 6	1-1/2 x 5-1/2"
	2 x 8	1-1/2 x 7-1/4"
	2 x 10	1-1/2 x 9-1/4"

the spruce



Step 1: Preparing the Foundation (*taught in different class*)

- ☐ Clear and level the site
- ☐ Lay out the foundation lines using stakes and string
 - ☐ Squaring

- ☐ Footers
- ☐ Walls
- ☐ Gravel
 - ☐ Compact
- ☐ Slab Floor
 - ☐ Plastic
 - ☐ Wire mesh or rebar
 - ☐ Wood forms
 - ☐ Mixing Concrete
 - ☐ Smoothing surface

Step 2: Building the Frame

- ☐ [Framing Definitions](#)
 - ☐ Sill plate
 - ☐ Studs
 - ☐ End Studs
 - ☐ Top Plate
 - ☐ Headers
- ☐ Layout of wall
 - ☐ Overall height & width
 - ☐ Cutsout for windows and doors
 - ☐ Accommodate 4x8 sheet at starting corner
 - ☐ Marking Stud spacing on sill and top plates
 - ☐ Square and mark side
 - ☐ Cut lumber to required length
- ☐ Install sill plate
 - ☐ Drill holes for J bolts
 - ☐ Add sealer or caulk to bricks to seal any air gaps
- ☐ Assemble the wall frames on the ground
 - ☐ Layout lumber as indicated in plans
 - ☐ Fasten with screws or nails
 - ☐ Move assembly on to foundation
 - ☐ Install sheathing on outer surface of wall
 - ☐ Fasten with 1.25" screws
 - ☐ Overhang sheathing on lower portion by 3"
 - ☐ Align sheathing to center of studs
 - ☐ Prepare 2x4 brace to support wall once stood up
- ☐ Raise the wall frames and secure them in place
 - ☐ Set wall on top of sill plate and fasten with screws
 - ☐ Check that wall is plumb
 - ☐ Secure brace in place
- ☐ Repeat with remaining walls

- ☐ For door cut outs keep continuous sill plate
- ☐ Cut out after secure and door is ready to install
- ☐ Ensure all walls are level and square
 - ☐ Secure corner studs with screws or nails
- ☐ Install gable walls
 - ☐ Layout
 - ☐ Cut lumber
 - ☐ Install roof beam
- ☐ Installing door

Step 3: Installing the Roof

- ☐ Cut the rafters to size
 - ☐ Notching lower end to sit on load bearing wall
 - ☐ Cut upper end to pitch angle
- ☐ Fabricate box for eaves overhang
 - ☐ Cut to length
 - ☐ Fasten per drawing
 - ☐ Lift onto roof and secure
- ☐ Add plywood sheathing to the roof
 - ☐ OSB minimum 7/16"
 - ☐ Stagger sheets to create a better interlock or shear web adding strength
- ☐ Eaves
 - ☐ Facia
 - ☐ Soffits
 - ☐ Trim

Step 4: Finishing Touches

- ☐ Install any additional framing (windows, doors)
- ☐ Check all connections and ensure stability
- ☐ Clean up the workspace

8. Common Issues and Solutions

- **Uneven Walls:** Ensure your measurements are accurate and re-check for levelness.
- **Loose Nails:** Use the correct size and type of nails for the job.
- **Misaligned Roof:** Double-check your rafter cuts and connections.

9. Additional Resources

- **Books:**
 - [*The Complete Guide to Framing*](#)
 - [*The Complete Idiot's Guide to Framing Basics Illustrated*](#)
 - **Online:**
 - [How to Frame a House](#) (1:25 min.)
-

10. Project Planning Guide

Planning Your Own Project:

1. **Choose Your Project:** Decide what you want to build (shed, playhouse, etc.).
 2. **Create a Design:** Draw up plans or use existing ones.
 3. **Gather Materials:** List all the materials you'll need.
 4. **Set a Timeline:** Plan your project schedule.
 5. **Check Codes:** Ensure your project meets local building codes.
-

11. Texas Building Codes

It's crucial to follow local building codes when undertaking any construction project. For detailed information on Texas building codes, visit the Texas Department of Licensing and Regulation.

12. Contact Information

For any questions or further assistance, please contact:

Jim Murphy

Phone: (214)771-2971

Email: jmurphy@striveskillsacademy.com

Thank you for participating in our class. We hope you find this instruction book helpful and inspiring for your future projects. Happy building!

Copyright 2024©