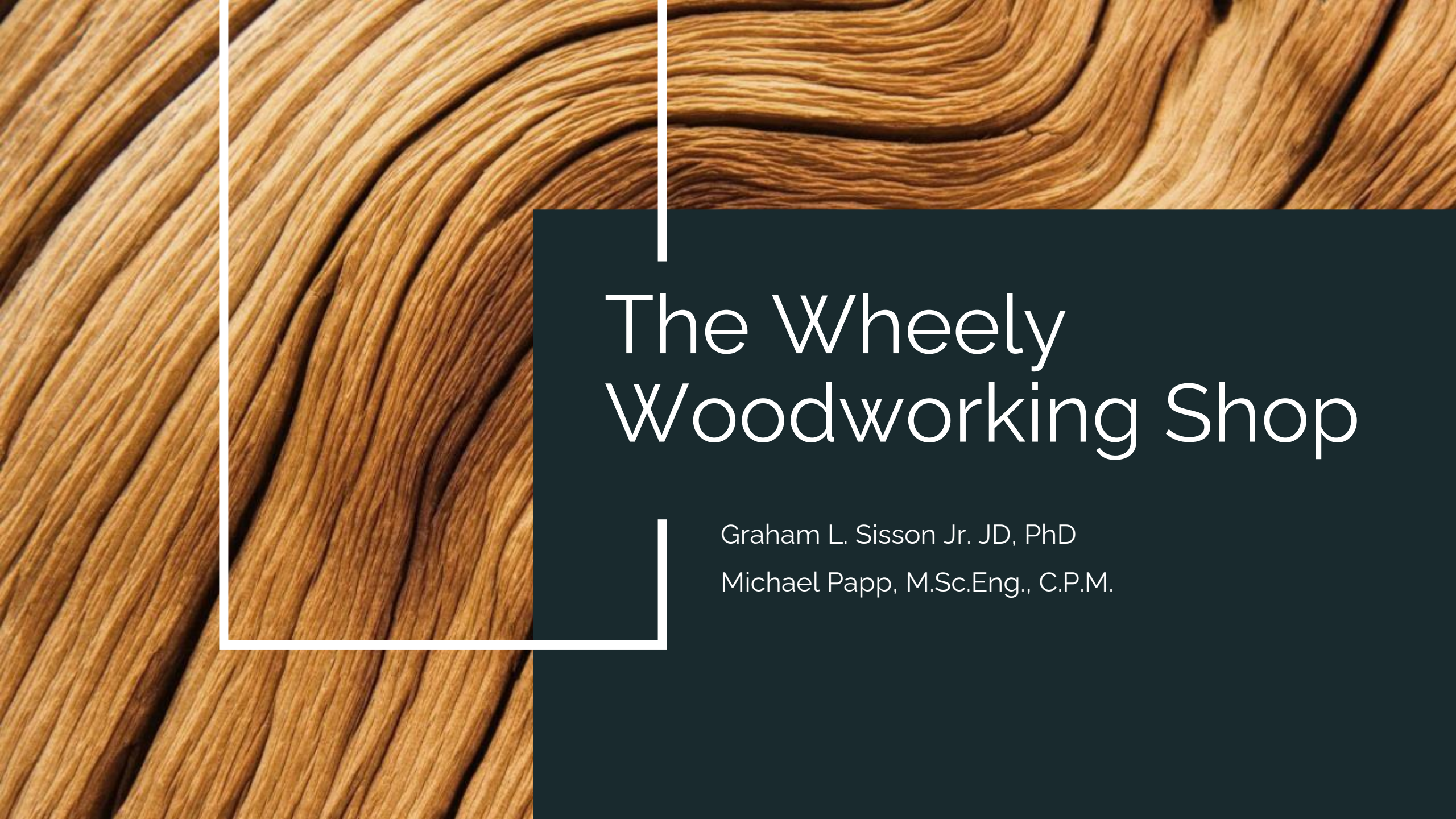


The background of the slide is a close-up photograph of a wood grain, showing wavy, concentric lines in shades of light brown and tan. A dark blue rectangular box is positioned on the right side of the image, containing the title and names in white text. A white L-shaped graphic element is located on the left side of the blue box, with a vertical line extending upwards and a horizontal line extending to the left.

# The Wheely Woodworking Shop

Graham L. Sisson Jr. JD, PhD

Michael Papp, M.Sc.Eng., C.P.M.



# About Graham



Dr. Sisson has been a person with a disability since a 1982 motor vehicle collision caused by a drunk driver. He uses a wheelchair for mobility. He has degrees as follows: University of North Alabama, BS (accounting) 1987; Vanderbilt Law School, JD 1990; Auburn University, PhD (rehabilitation counseling and leadership) 2016. His hobbies are woodworking, vegetable gardening, fast cars, and scuba diving.



# About Michael



Michael Papp is a Rehabilitation Engineer with 26 years of experience in the application of Assistive Technology for individuals across their lifespan. He has been woodworking for over 30 years and shares some of his tips and tricks on his YouTube Channel, Access Woodworx.

Undergraduate degree in Biomedical Engineering and Master's degree in Engineering, with experience working in medical device manufacturing.

<https://www.linkedin.com/in/michael-w-papp>

<https://www.youtube.com/@accesswoodworx>

<https://www.rehabengineer.com/>

# Agenda

Introduction

Shop layout

Lighting

Material storage

Tools

Safety

Additional considerations

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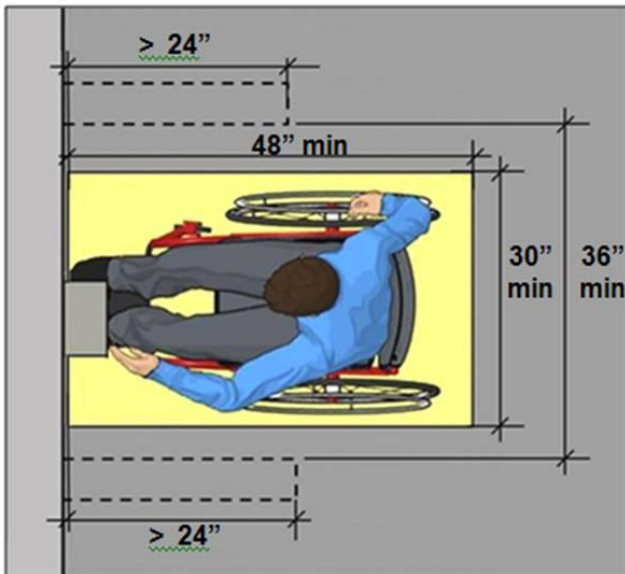
# Introduction

Our goal is to discuss tips and techniques to help you build and expand your accessible woodworking shop. We will discuss how to set up a workshop for accessibility, how to choose accessible tools, how to adapt tools for better accessibility, and shop safety.

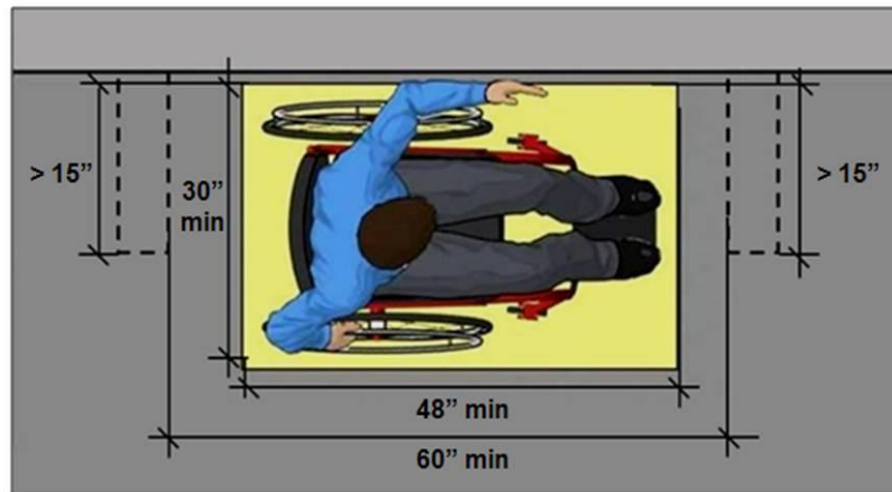


# Clear Floor Space

Forward approach must extend up to operable parts, such as a switch



Clear floor space may be oriented for side approach

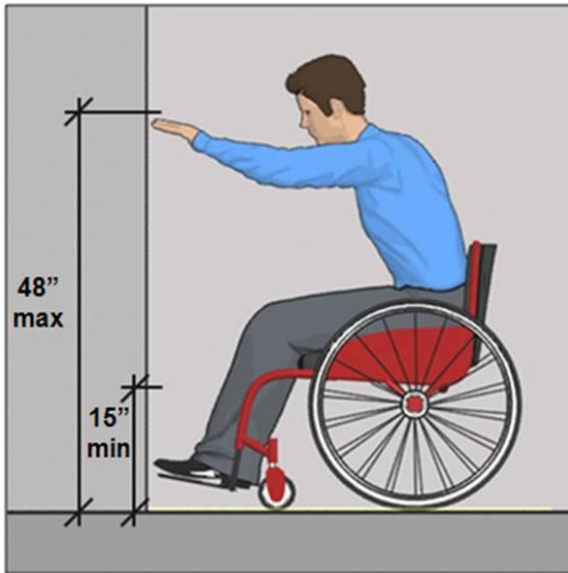


Reach over obstruction must have knee and toe space at least equal to reach distance

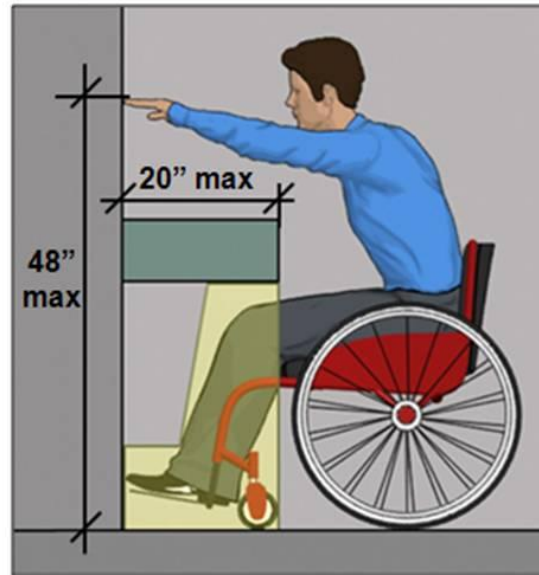


# Forward Reach

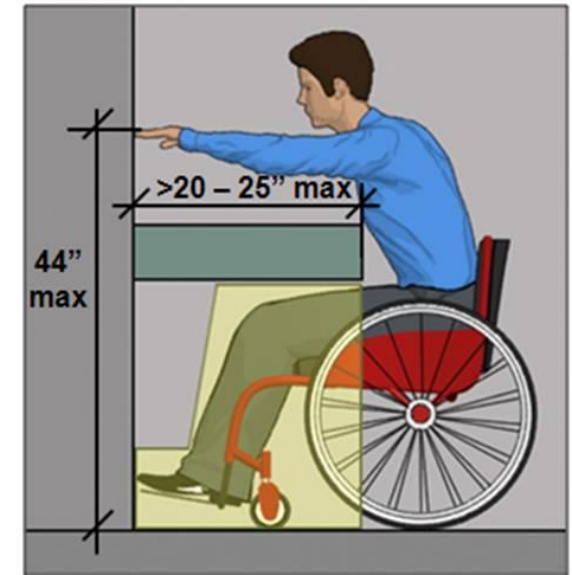
Unobstructed reach applies only to those portions of elements that are operable.



Obstructed High Reach, less than 20" obstruction

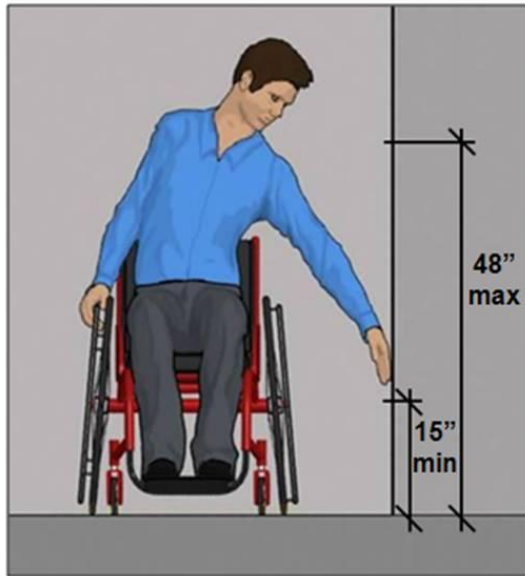


Obstructed High reach 20" to 50"

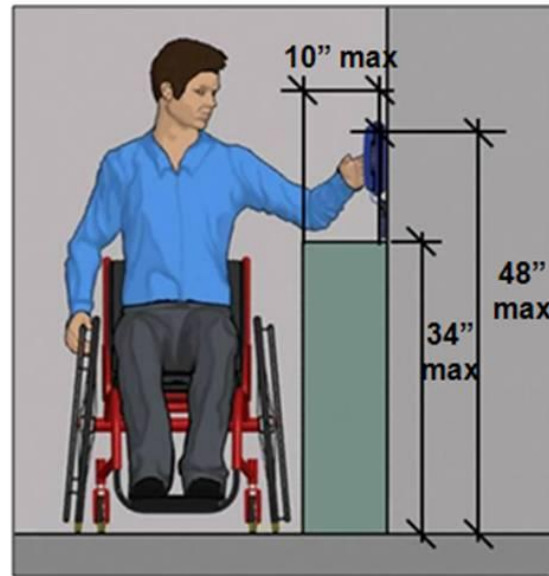


# Side Reach

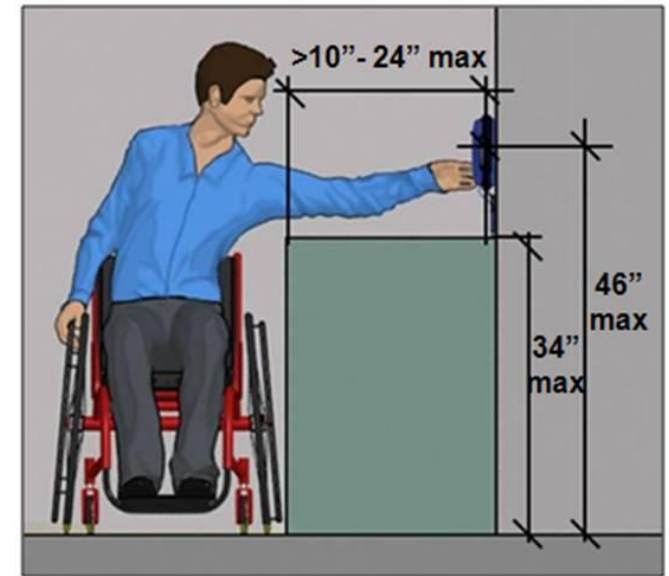
Unobstructed reach applies only to those portions of elements that are operable.



Obstructed High Reach, less than 10" obstruction

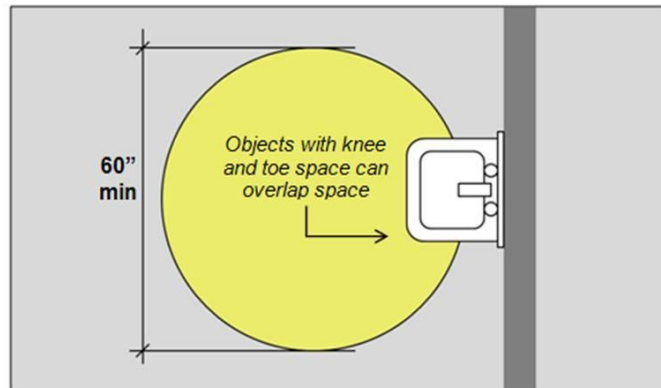


Obstructed High reach 10" to 24"

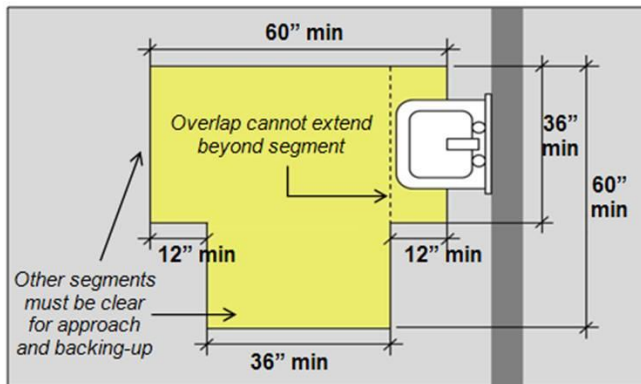


# Turning Space

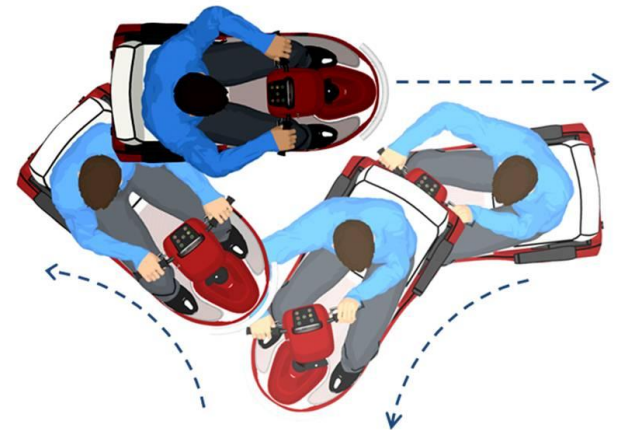
Circular turning space at least 60"



T-shaped turning space



Additional space for 3-point turn



# Shop Lighting

- Sufficient illumination to work safely, 50-150 lumens/sq ft
  - Position over work to minimize shadows at a seated height
  - Large print, bold labels, and color coding can help people with low vision
  - Accessible power outlets
- 



## **EXAMPLE:**

5500 Lumen Shop Light

10' x 10' Shop

$5500/100 = 55 \text{ lumen/sq ft}$

# Task Lighting

- Natural vs artificial
- Environmental vs task lighting
- Color temperature
  - Daylight, or >6500K – overhead
  - Bright White, or 3000-4000K for tasks
  - Incandescent < 3000 minimizes glare





# Storage

Accessible storage solutions

Moving materials around

Pre-cut lumber



# Accessible Tools

## HAND TOOLS

- Lower workbenches
- Adapted handles
- Modify power switches

## POWER TOOLS

- Use benchtop tools when possible
- Adapted stands
- Accessible controls
- Integrated tool mounts

# Accessible Workbenches



# Work Holding

## JIGS

- Guides the cutting tool during operation.
- Used for drilling, routing, sawing..
- Often include guiding elements like bushings and rails.
- Specialized to guide the tool,

These specialized work holding devices that provide stability, accuracy, and repeatability in manufacturing processes by securely holding and positioning a workpiece.

These tools are helpful for safety and ensuring identical parts

## FIXTURES

- Hold or support the workpiece in a fixed position,
- Commonly used in shaping, drilling, and assembly
- Consists of a body, locators to establish the part's position, and clamps to secure it.
- Typically customized to a particular part or shape and are built to hold one type of workpiece.

“After all, Al, a  
safe workplace  
is a happy  
workplace,  
right?”

- TIM “THE TOOLMAN”  
TAYLOR, AKA TIM ALLEN



# Shop Safety

## SAFETY EQUIPMENT

- Push sticks
- Safety guards/barriers
- Safety switches in easy reach

## EMERGENCY EQUIPMENT

- Accessible fire extinguisher
- Clear egress path
- First aid kits
- Emergency call for help

# Other Considerations

## VOICE ASSISTANT

- Alexa or Google Assist
- Hands-free calculator
- Hands-free reference
- IoT tool control

“Alexa, start woodworking”  
turns on lights, air filter,  
and radio

## TABLET MOUNTS

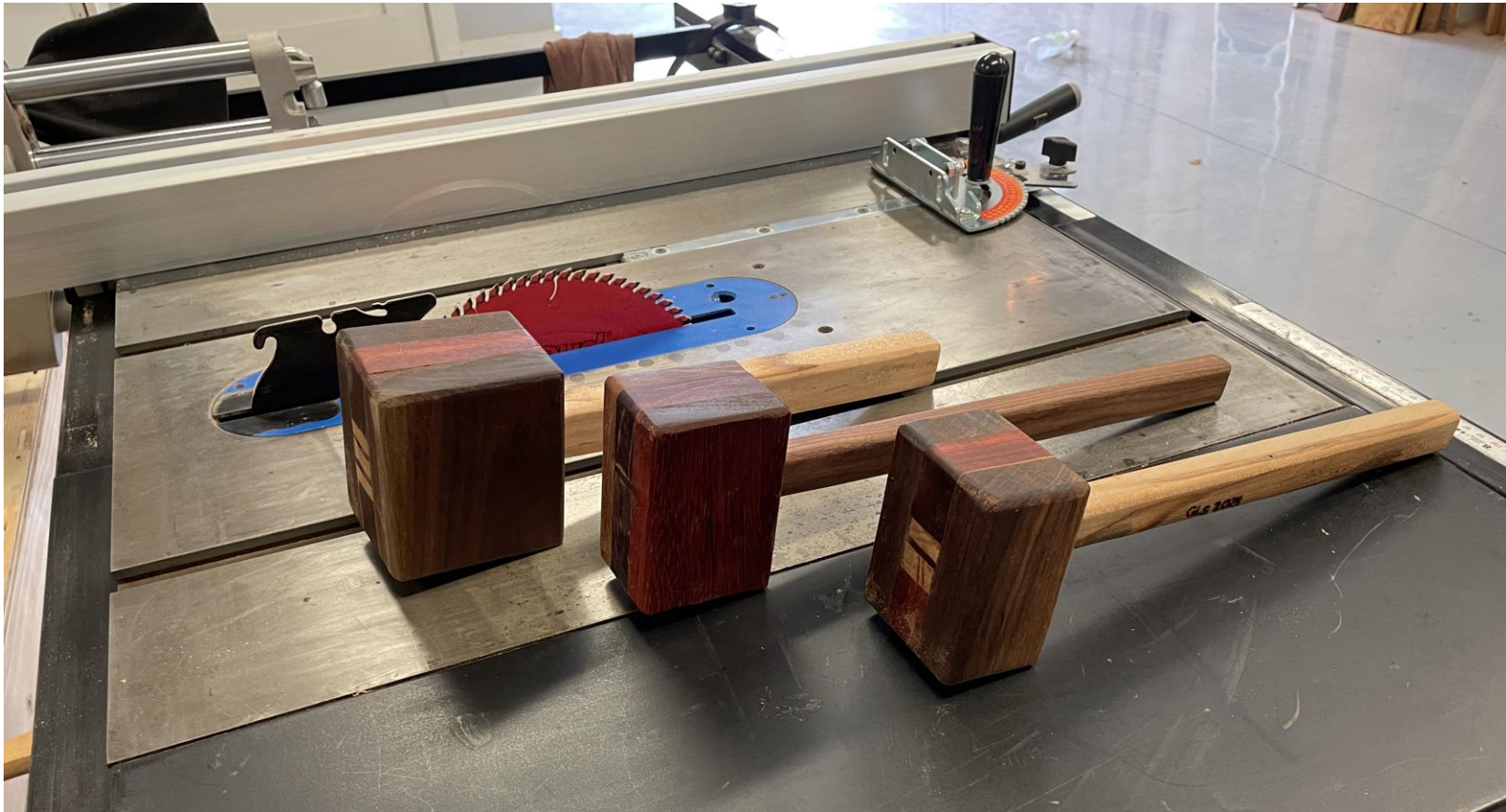
- Position plans
- Quick reference
  - Drill bit sizes
  - Wood reference
- How -to videos

## LOW TECH SOLUTIONS

- Grabbers
- Magnetic tool rack
- Silicone tape for grip
- HDPE tape for slip
- Double Sided Carpet Tape



# Wood Mallets



# Tables



# Steamer Trunks



# Cutting Boards



# Cabinetry



2025



THE WHEELY WOODWORKING SHOP

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A photograph of a wooden wheel-like structure, possibly a part of a larger project, resting on a metal workbench. The wheel is made of light-colored wood and has several spokes. It is positioned on a dark metal surface with a red safety stop. In the background, there are shelves with various tools and materials.

# Summary

Woodworking offers significant benefits for people with disabilities, providing opportunities for creativity, problem solving, skill-building, and personal achievement. An adapted workshop give people control over their tools and materials, empowers independent project completion and boosts confidence. Woodworking supports emotional wellness, releases stress, increases social participation, and allows people to pursue a meaningful hobby, all from a workspace intentionally designed for accessibility and safety.



# Thank you

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<https://www.youtube.com/@accesswoodworx>  
<https://www.rehabengineer.com/>