

# Robô 1: Wooden Toy B

A Quick & Fun Weekend Parent-Kid Collaboration Project

## Safety Reminder First

**Always wear PPE** (safety goggles are mandatory for both parent and kid during all steps!). Keep sharp hand tools and power equipment strictly in parent control. Work in a well-ventilated area, and minimize sawdust by using a vacuum or working outdoors. Enjoy crafting safely!

## 1. Project Overview

Welcome to the **Robô 1** build manual! This charming, custom-designed wooden robot is engineered as an ideal entry point for young woodworkers. Using basic dimensional scrap wood (such as standard pine craft blocks) and small round dowels, this project teaches layout marking, sorting, manual sanding, finishing, and safe hardware assembly. All dimensions are explicitly tailored in **centimeters (cm)** to provide clean, manageable scale metrics for children.

## 3. Tools Needed

Tool Name	Primary User
Hand Saw / Coping Saw	Parent Only
Electric Drill or Hand Drill	Parent Only
Drill Bits (matching dowel/screws)	Parent Only
Bench Vise / Quick-Clamps	Parent / Joint Use
120-Grit & 220-Grit Sandpaper	Kid Friendly 🌟
Ruler & Sharp Pencil	Kid Friendly 🌟

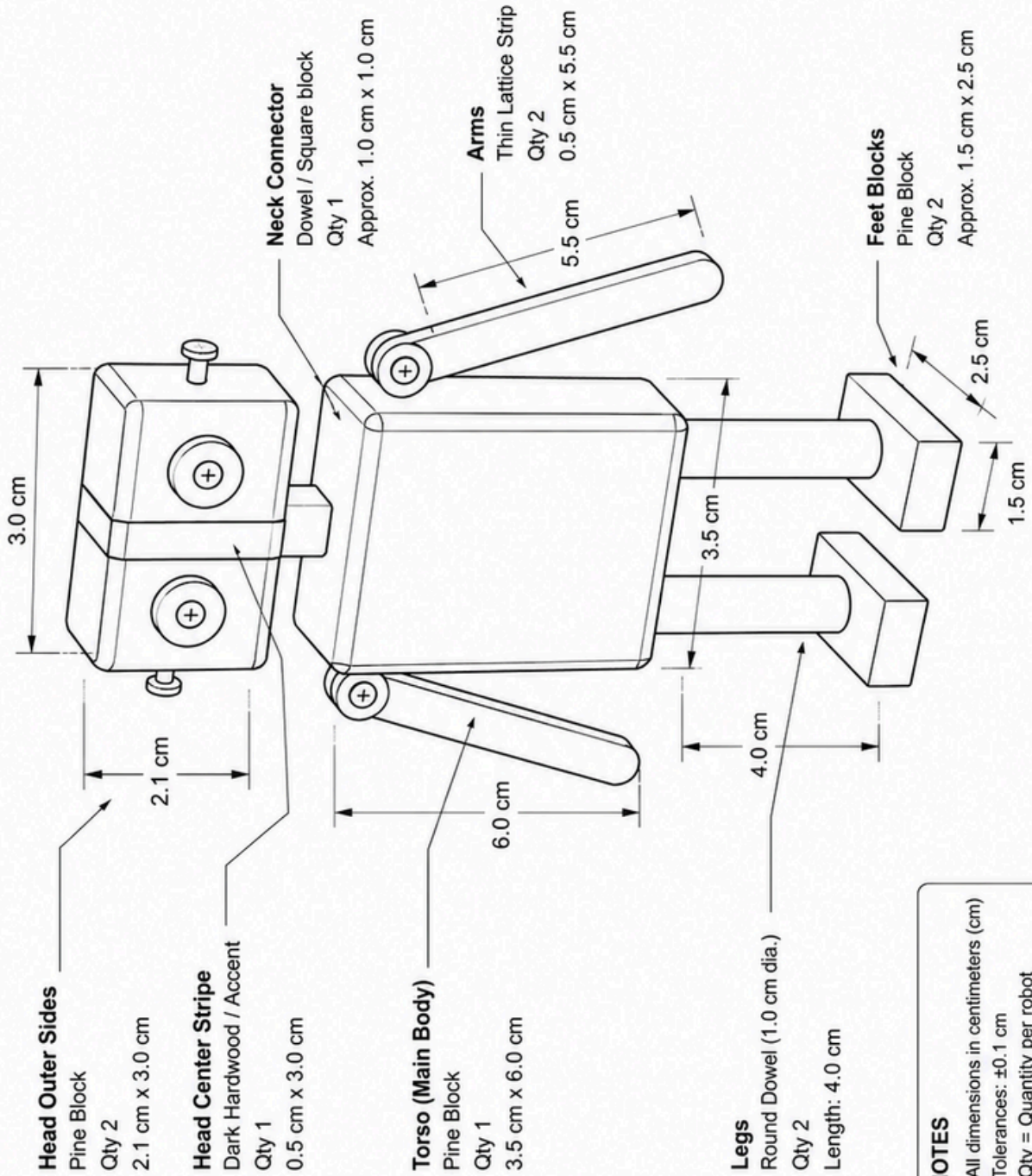
## 2. Materials List

Material Description	Qty	Suggested Source
<b>Pine Craft Blocks</b> (approx. 2cm thick scrap wood)	1	Scrap box / Local lumberyard
<b>Dark Accent Lattice Strip</b> (Walnut or pre-stained Pine)	1	Craft supply / Accent strip box
<b>Wooden Round Dowel</b> (1.0 cm diameter)	1	Home Depot / Craft dowels stock
<b>Assorted Washers &amp; Screws</b> (For customized eyes & arms)	4	Workshop spare hardware bin
<b>Small Brass Eye-Screws</b> (For ear details)	2	Hardware store drawer stock
<b>Non-Toxic Wood Glue</b>	1	PVA Wood Glue (Kid-safe)

## 4. Detailed Cut List

Component	Material	Qty	Exact Dimensions (cm)	Visual Notes
<b>Head Outer Sides</b>	Pine Block	2	2.1 cm x 3.0 cm	Sandwiches the central accent band
<b>Head Center Stripe</b>	Dark Hardwood / Accent	1	0.5 cm x 3.0 cm	Gives the iconic "Robô 1" face look
<b>Torso (Main Body)</b>	Pine Block	1	3.5 cm x 6.0 cm	Main block, corners rounded later
<b>Arms</b>	Thin Lattice Strip	2	0.5 cm x 5.5 cm	Pre-drilled at top for rotation
<b>Legs</b>	Round Dowel (1.0cm dia.)	2	Length: 4.0 cm	Clean square cuts on ends
<b>Feet Blocks</b>	Pine Block	2	Approx. 1.5 cm x 2.5 cm	Provides a stable standing base
<b>Neck Connector</b>	Dowel / Square block	1	Approx. 1.0 cm x 1.0 cm	Hidden inner alignment piece

# Wood Robot Technical Illustration



PARTS SUMMARY	
①	<b>Head Outer Sides</b> Pine Block Qty 2 2.1 cm x 3.0 cm
②	<b>Head Center Stripe</b> Dark Hardwood / Accent Qty 1 0.5 cm x 3.0 cm
③	<b>Torso (Main Body)</b> Pine Block Qty 1 3.5 cm x 6.0 cm
④	<b>Arms</b> Thin Lattice Strip Qty 2 0.5 cm x 5.5 cm
⑤	<b>Legs</b> Round Dowel (1.0 cm dia.) Qty 2 Length: 4.0 cm
⑥	<b>Feet Blocks</b> Pine Block Qty 2 Approx. 1.5 cm x 2.5 cm
⑦	<b>Neck Connector</b> Dowel / Square block Qty 1 Approx. 1.0 cm x 1.0 cm

**NOTES**

- All dimensions in centimeters (cm)
- Tolerances: ±0.1 cm
- Qty = Quantity per robot

## 5. Step-by-Step Parent-Kid Construction Guide

Follow these sequence steps explicitly to construct your robot with zero guesswork. Roles are assigned to maximize learning while protecting small hands.

### Step 1: Measuring & Marking Layout Lines

KID TASK

PARENT SUPERVISION

Using a sharp pencil and standard workshop ruler, measure out the dimensions onto your raw pine block scraps as indicated on the Cut List. Have the child write down numbers to practice metrics measurement.

### Step 2: Processing the Rough Cuts

PARENT ONLY

Secure your wood pieces firmly into a bench vise or quick-grip clamps. Using a small hand saw or fine-toothed pull saw, execute all straight cuts safely. Keep the kid at a safe observation distance (~3-5 feet away) wearing eye protection.

### Step 3: Edge Deflashing & Smoothing

KID TASK

JOINT TASK

Wrap 120-grit sandpaper around a small block block. Have the child sand away any rough splinters from the edges. For the main torso block, guide them to sand down the vertical edge corners repeatedly until they appear softly rounded and pleasant to hold. Upgrade to 220-grit for a sleek feel.

### Step 4: Drilling Internal Connectors & Pilot Holes

PARENT ONLY

Chuck a drill bit matching the leg dowel diameter. Drill structural holes approximately 1cm deep into the lower face of the torso block and the tops of both feet blocks. Drill miniature pilot holes for eyes, arms, and ear-hardware locations to ensure easy screw insertion without splitting wood blocks.

### Step 5: Composite Face Gluing & Assembly Assembly

KID TASK

JOINT TASK

Apply premium non-toxic PVA wood glue to the internal face blocks of the head unit (Pine - Accent Strip - Pine). Let the child slide the pieces together before a parent clamps them flat. Place a dab of glue inside the dowel holes, insert the leg/neck components, and wipe down excess glue using a wet sponge.

## Step 6: Hardware Application & Personalization

### JOINT TASK

This is where Robô 1 comes alive! Let the child sort through your washer and bolt collection to choose the eye shapes. The parent will carefully drive screws through the eyes and loose arm links so they remain fully articable. Hand-screw the small brass ears into place.

## 6. Finishes & Eco-Friendly Tips

To keep this toy entirely safe for regular play inside a family home, skip toxic VOC oil stains or polyurethanes. Instead, choose an organic **beeswax block** or food-grade **mineral oil**. Warm the wood slightly and let your child rub the natural finish on using an organic cotton rag. It deepens the wood grain beautifully, smells outstanding, and is completely chemical-free!

## 7. Pro-Tips for Fun Customizations

- **Magnetic Add-ons:** Embed tiny neodymium magnets inside the hands or chest so the robot can hold small paperclip tools!
- **Reclaimed Materials:** Look through old old furniture pieces or pallets for varied types of wood strips to build a colorful, multi-toned modern scrap army.