

The Home HANDYMAN

September/October 2024 • Vol 34 No 09



SA'S
ORIGINAL
DIY
MAGAZINE

**DIY
DELIGHTS:**

GET CREATIVE
5 STEP-BY-STEP
PROJECTS FOR
YOU TO MAKE

**A COMPREHENSIVE
GUIDE TO TILING**

PART 2:
BUILD YOUR OWN SAUNA

WOODWORK:
MAKE SALT & PEPPER MILLS

ADVICE:
ESSENTIAL GARDEN TOOLS FOR DIY'ERS



A new look; the same projects, tips and ideas which you are used to



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BUILDING TRUST



FROM THE WORKBENCH

A DIY adventure awaits

Welcome to another thrilling edition of *The Home Handyman*, your go-to guide for all things DIY. Whether you're a seasoned pro or just dipping your toes into the vast ocean of do-it-yourself projects, we're here to inspire, inform, and ignite your creative spark.

As we head into the spring months, the excitement in the air is palpable, and not just because of the warmer weather. The past few months have been bursting with sporting events that had us all on the edge of our seats. From the fast-paced action of the T20 World Cup (let's not go into what happened in the final – I have only just recovered...) to the grand spectacle of the Euros, and the seemingly non-stop action of the Olympics, it was a thrilling time for sports fans. But did you ever consider how much DIY and sport have in common?

Think about it: both require a game plan, a bit of strategy, and a lot of heart. Just as an athlete trains and prepares for their big moment, a DIY'er plans and gears up for their next big project. Whether you're painting a room, building a bookshelf, or embarking on a full-scale renovation, you're in the game, giving it your all, and striving for that glorious moment of triumph when the project is complete.

One of the beauties of DIY is its versatility, much like the diverse range of sports we've been enjoying. In cricket, a batsman's finesse and a bowler's precision are akin to the careful planning and execution required in a home project. In soccer, teamwork and strategy mirror the collaboration and creativity often seen in DIY communities. And as we look back at the Olympics, where athletes from around the world showcased their skills, we're reminded of the myriad of DIY talents and techniques we can explore and master.

This edition of *The Home Handyman* is packed with projects that are as exciting as a final match and as rewarding as a gold medal. We've got something for everyone, from quick and easy weekend tasks to more challenging undertakings that will test your DIY mettle. And just like in sport, it's not just about the end result; it's about the journey, the learning, and the satisfaction that comes with each step forward.

For those new to the DIY game, we've got starter projects that will build your confidence and skills. Think of these as your training sessions, where you learn the basics and get a feel for the tools and techniques. For our seasoned veterans, we've got advanced projects that will push your boundaries and help you refine your craft, much like an athlete honing their skills to perfection.

In this issue, you'll also find tips and tricks to make your DIY experience smoother and more enjoyable. Just as a coach offers guidance to an athlete, our expert contributors provide valuable insights that can help you avoid common pitfalls and achieve professional-looking results.

As you enjoy the sporting spectacles this season, let them be a reminder that you, too, can achieve greatness in your DIY endeavours. Whether you're crafting, building, or renovating, approach each project with the same passion and determination that athletes bring to their sports.

Gregg



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2024

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Publisher: Hannes Lindeque – admin@homehandyman.co.za
Editor Gregg Cocking – editorial@homehandyman.co.za
Advertising manager: Wilma Lindeque 065.849.3264 – advertise@homehandyman.co.za

SUBSCRIPTIONS:
Email: subs@homehandyman.co.za

LAYOUT & DESIGN:
Email: dee@stormdeezigns.co.za

About *The Home Handyman* magazine:

The Home Handyman magazine is a specialized DIY publication and caters for a well-defined niche market since November 1993. The magazine equips its readers with relevant DIY information, knowledge and skills.

Editorial includes new products for DIY'ers, along with projects, home improvement ideas and expert advice. Expert advice from various fields (such as adhesives, abrasives, power tools, welding, plumbing, paint, lighting, waterproofing, wood and metalworking), provides readers with simple, cost effective solutions and methods in a series of practical, step-by-step features that are comprehensively illustrated. All projects feature local products and metric measurements, making the ideas easy to implement.

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FROM OUR READERS

Sharing letters, ideas, and questions from our community

Drilling tip

What I find useful when drilling into a wall is to measure the length of the wall plug against the drill bit then tape around the bit so I know what depth to drill to.

Jonathan Tulipan, Claremont



A new DIY journey

I wanted to share a personal story about how your magazine has inspired me. After losing my job last year, I decided to take up woodworking as a hobby to keep myself busy. Your articles and tutorials were my go-to resources, and now I've turned my hobby into a small business! Thank you for helping me discover my passion.

Nomsa P., by email

Compliment with technical inquiry

I love *The Home Handyman*! The articles and projects are always so inspiring. I recently tackled the DIY barn door project from the November/December 2023 issue, and it turned out fantastic. I did run into one issue, though – the door seems to stick a bit when sliding. I followed the instructions exactly, but I can't figure out what's causing the problem. Any tips on how to fix this? Keep up the great work!

Nadia Booth, by email

Ed replies: Glad to hear you enjoyed the barn door project! If your door is sticking, it might be due to a few potential issues. First, check if the track is perfectly level. Even a slight tilt can cause the door to stick. Use a level to ensure the track is straight and adjust as needed.

Next, inspect the rollers. They should move smoothly along the track without any obstructions.

Sometimes debris can get caught in the rollers, so make sure they're clean. Lubricating the track and rollers with a silicone-based spray can also help improve movement.

If the problem persists, check the alignment of the door itself. Ensure that it's hanging straight and that the bottom guide is properly positioned. Adjustments to the guide can sometimes solve sticking issues.



A successful project

I wanted to share my experience with the rustic farmhouse bar/dining table project featured in your May/June 2023 edition. As someone who loves both woodworking and farmhouse décor, this project was right up my alley. The instructions were clear and easy to follow, but I did run into a few challenges along the way.

The biggest hurdle was ensuring the table legs were perfectly aligned. I ended up creating a jig to help with this, which

made the process much smoother. I also decided to use a mix of stains to achieve a unique, weathered look. I combined a dark walnut stain with a grey wash, and the results were stunning. My family loves the new table, and it's become the centerpiece of our dining room.

Thank you for the fantastic project ideas and detailed instructions. I look forward to seeing what you'll come up with next!

Ernie Wasserman, by email



Bookshelf queries

I'm working on building a custom bookshelf for my home office, and I have a few questions regarding the design and materials. I want the bookshelf to be sturdy enough to hold a large number of books, some of which are quite heavy. What type of wood would you recommend for this purpose? Additionally, should I use screws, nails, or dowels for assembling the shelves? Lastly, I'm considering adding a sliding ladder to reach the higher shelves. Do you have any tips on how to incorporate this feature?

I appreciate any advice you can offer.

Mike Laidley, Bedfordview

Our woodworking experts reply: For a sturdy bookshelf that can support heavy books, we recommend using hardwoods such as oak, maple, or birch. These woods are durable and can handle the weight without warping. For assembling the shelves, screws are your best option as they provide strong, reliable joints. Make sure to pre-drill holes to avoid splitting the wood.

Incorporating a sliding ladder is a great idea! You'll need to install a rail at the top of the bookshelf. Make sure the rail is securely attached, and use heavy-duty brackets to support the weight of the ladder. Consider a rolling library ladder kit, which includes all the necessary components for a smooth installation.



A fulfilling hobby

I've been an avid reader of your magazine for several years now, and I wanted to share how it has inspired me to transform my home. When I first started reading, I was a complete novice in DIY. However, with each issue, I gained confidence and skills to take on more complex projects.

My most recent project was converting my garage into a woodworking workshop. The idea came from an article you published about maximising small spaces. I installed proper lighting, added a workbench, and built custom storage for all my tools. This new space has become my sanctuary, where I can work on projects for hours.

One of the most fulfilling moments was building a wooden toy chest for my grandson. Seeing his face light up when he saw it made all the hard work worth it. Thank you for providing such valuable content and inspiring readers like me to create and innovate.

John Pullen, by email

Bright idea

I wanted to share a clever storage solution I came up with while organising my garage. Instead of buying expensive shelving units, I repurposed old wooden pallets. By attaching the pallets to the wall and adding a few hooks, I created an easy and cost-effective way to store

my gardening tools and other equipment. The slats in the pallets are perfect for holding everything from shovels to hoses. It's sturdy, practical, and adds a rustic charm to my garage. Hope this idea helps others looking for budget-friendly storage solutions! **Pieter Schutte, KwaZulu-Natal**



Reader's projects

Willing to share your latest project with our readers? Send your project and a picture of the finished product.

Email projects and photographs to: editorial@homehandyman.co.za



CRAFT A CUSTOM DESK

Discover how to build a bespoke desk with this detailed, step-by-step guide, transforming raw timber into a functional and elegant piece of furniture.

>> Shane Mitchell

I made this modern desk using walnut for the legs, a spalted maple desktop, and soft-close drawer slides. The desktop was made using two slabs of spalted maple attached to the carcass with dados. This is the perfect DIY desk project for any woodworking enthusiast.

A lot of thought went into the design of this modern desk and how the desk would sit in an open space or butted up against a wall. With more people working from home offices, a custom desk is in pretty high demand. This piece is unique enough that it's sure to be a talking point in anyone's home office, but it still fills the need for function from the user. I enjoyed trying some new techniques in this build that boosted my confidence for other projects moving forward. New skills and techniques are what make better craftsmen (or women). And if you have any questions, I'd be happy to answer them in the comments. Enjoy the build!



What you will need

- Hardwood of your choice
- Plywood
- Table saw
- Track saw
- Jig saw
- Band saw
- Mitre gauge
- Crosscut sled
- Dado stack
- Drill
- Screws
- Drawer slides
- Dominos or dowels
- Wood glue
- Router and bits
- Sander and sandpaper
- Finish

Step-by-step guide

Step 1: Prepare the wood

Feel free to skip this step by ordering your wood cut to size! Begin by rough cutting some 50mm thick wood to the approximate length needed for the legs. Work on the boards using a

jointer and planer to ensure they are flat and smooth. Use a table saw to cut a clean edge on the final rough side, and then cut the boards into blanks. Rough cut the mitre cuts for the legs, and use a mitre gauge on the table saw to cut the mitre angles. Once the first angle is cut, use the template to mark the final length for the top of the leg.

Step 2: Assemble the desk legs

Mark the placement for the dominos, or dowels if you prefer, and plunge the mortises. Glue the leg joints together, using blue tape and glue to attach the off-cuts from the leg mitres to ensure even clamping pressure.

Step 3: Route the legs

Attach the template to the legs and route the rounded corners. Remove the template and use a flush trim bit to remove the remaining material, repeating the process for the outside curves. At the router table, round over all the edges of the leg assemblies.

Step 4: Prepare the slabs for the desktop

Use a track saw to cut one edge of the slabs. Plane the slabs to ensure they are flat. If the boards are too wide for your planer and already fairly flat, use a sander to remove any uneven spots. Square up the other edge with a table saw.

Step 5: Assemble the desktop

Plough mortises using a domino into the boards to help keep them aligned during glue-up, although this step is optional. Apply a liberal amount of glue and join the boards together.

Step 6: Make the desktop

Square the ends of the desktop using a track saw. Cut away the bulk of the material for the curved front with a jigsaw. Use a flush trim bit in the router to remove the remaining stock, following the template. Given the thickness of the top, do this in two passes: cut the first half of the curve,

then flip the template and cut the other side.

Clean up the glue joint with a card scraper. Mark the placement for the dados, and use a track saw guide rail to plunge four 3mm dados into the bottom of the desktop. Clean up the rounded cuts left by the router bit with a chisel, and chamfer the bottom edge with a 45-degree chamfer bit to lighten the look of the desktop.

Step 7: Make the drawer carcass

Use a crosscut sled at the table saw to cut the sections to rough length. Cut in the mitres for the bottom, matching them to the exact width of the two farthest dado cuts in the desktop. Use blue painter's tape to avoid tear-out.

Cut the mitres in the oversized ends of the carcass. Using a dado stack, cut dados for the vertical partitions for the shelf supports, and plough dados into the vertical supports for the middle shelf. Cut a rabbet into the back of the carcass and glue the carcass together.

Step 8: Assemble the drawer carcass

Cut the vertical partitions to their final dimension, ensuring they are 6mm shorter than the carcass ends to allow for a secure cap to be attached to the back of the desk. Assemble and glue the carcass, and then cut and glue the centre shelf in place.

Step 9: Make the stretcher

Cut the stretcher to size and mark the placement for the dominos, measuring from the centre and foot of the rear leg. Use a strip of plywood and double-stick tape to reference the square strip and plunge the mortise accurately. Plunge the mortises into the stretcher, and use a trim router to put a 3mm round over onto the four edges of the board.

Step 10: Attach the edge banding

Cut the strips slightly thicker than the plywood. Use a pull saw to cut the vertical pieces to length, and glue the edge banding in place using blue painter's tape.

Step 11: Assemble the legs and desktop

Glue the legs to the desktop and carcass, then pre-drill and drive in five screws into the legs for added strength. Once the glue has dried for the first set of legs, glue and attach the stretcher and the remaining legs. While the glue dries, use a Forstner bit to drill a hole for cable management.

Step 12: Make the end cap for the desk back

Rip the board to width and use a sacrificial fence to cut a rabbet around the bottom of the cap. At the crosscut sled, cut a rabbet onto the two sides. Glue and clamp it in place.

Step 13: Make the drawer faces

Rough cut a chunk of timber for the drawer fronts, using an off-cut from the desktop if available. Re-saw the chunk into two pieces using a bandsaw, and sand them to the same thickness. Trim the boards to their final dimensions at the crosscut sled.

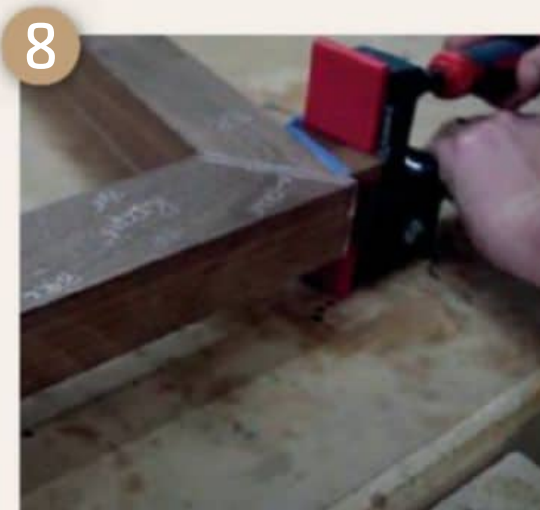
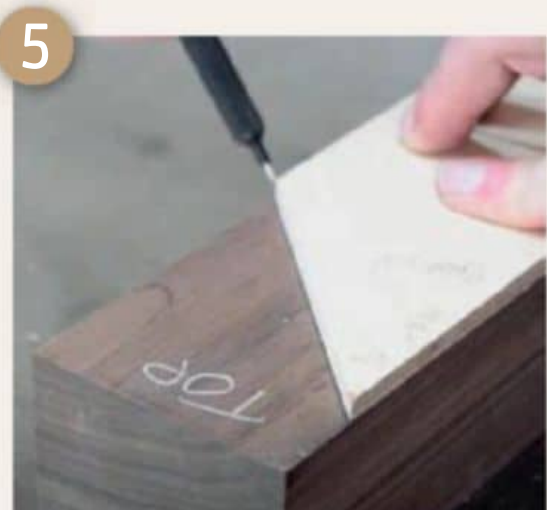
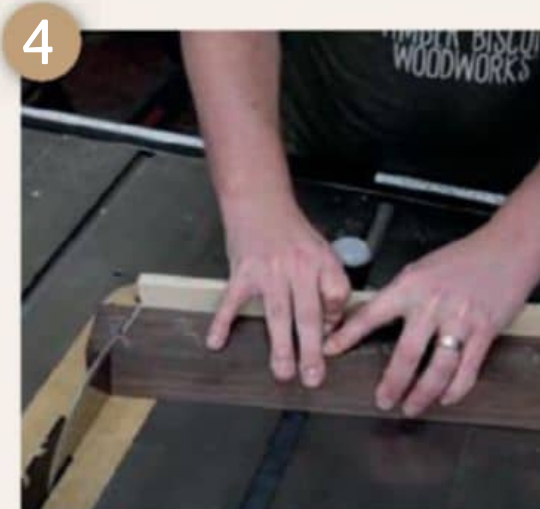
Step 14: Make and assemble the drawers

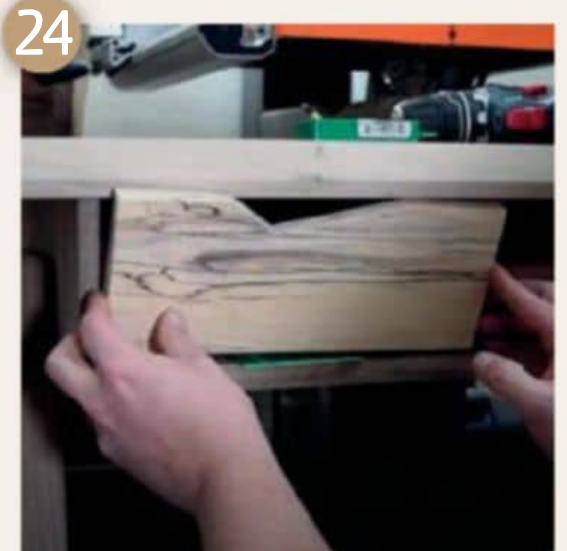
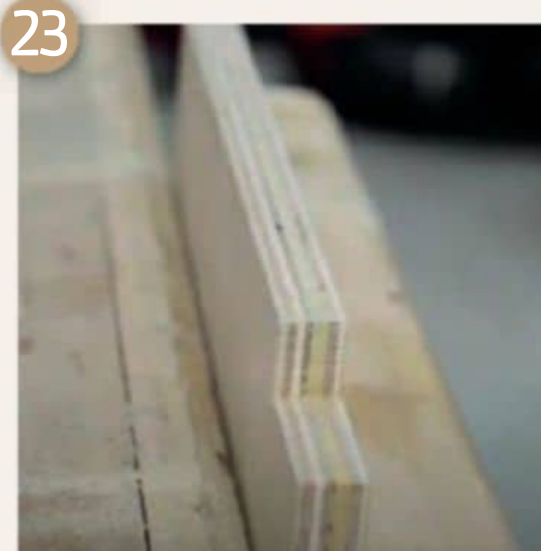
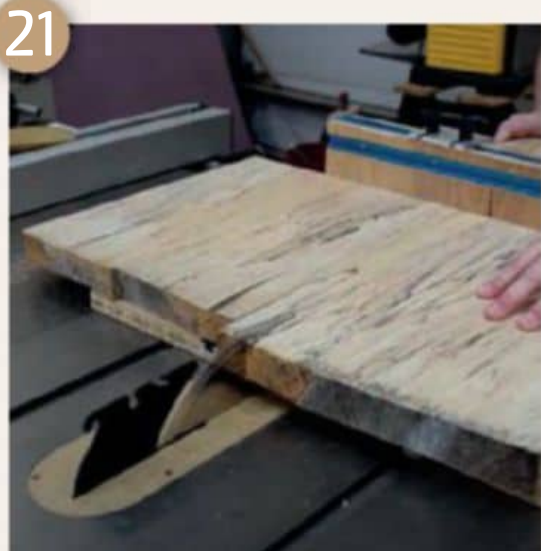
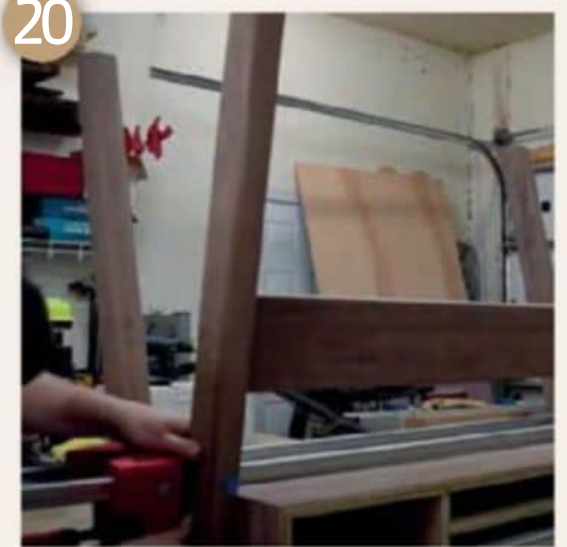
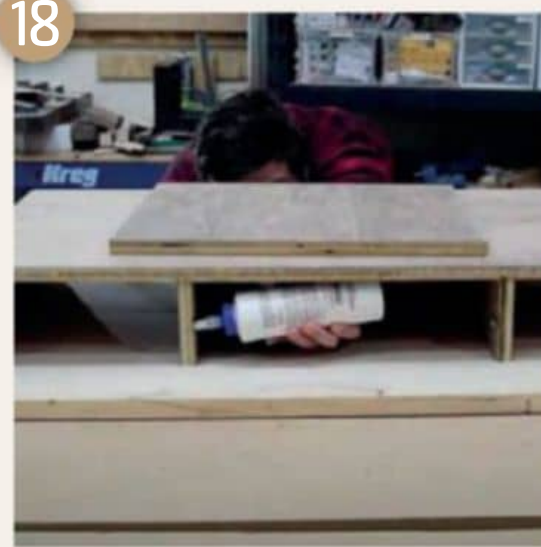
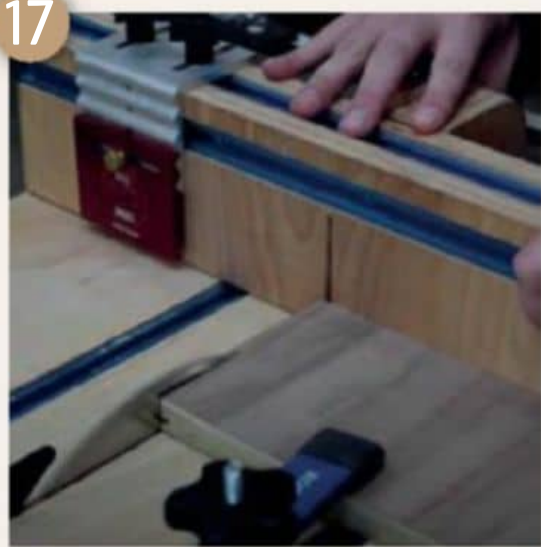
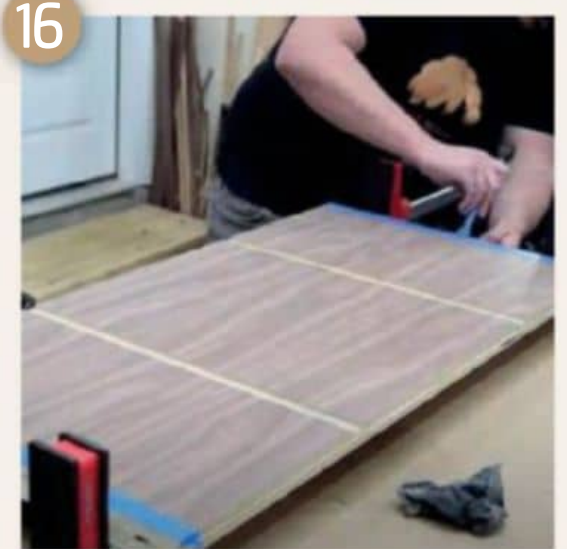
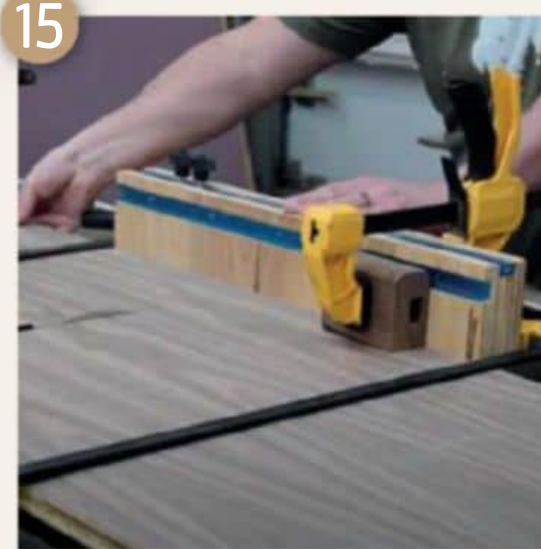
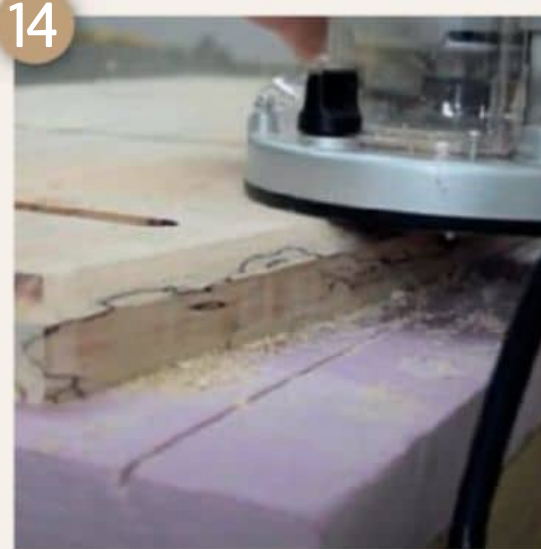
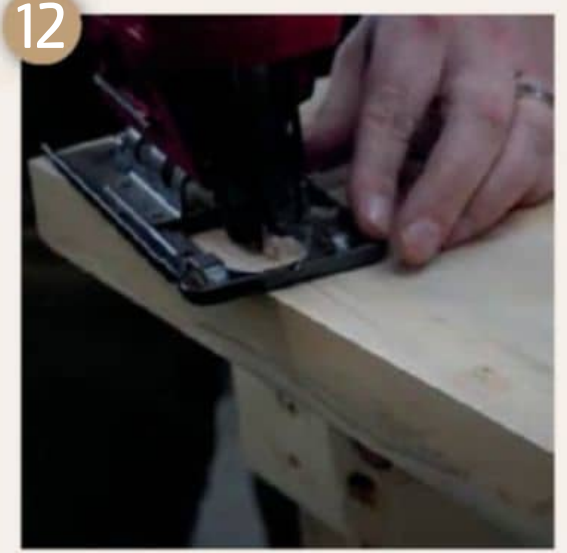
Install the drawer slides, and cut some plywood for the drawer boxes. At the bandsaw, cut the notch for the slides in the rear panel, completing the notches with a pull saw. Cut the groove for the drawer bottoms at the table saw, and cut the bottoms from 6mm birch plywood.

Assemble the boxes and glue them, pinning them together with 23-gauge nails. Attach the drawer hardware and cut the drawer pulls at the bandsaw. Using a 1mm shim and double-stick tape, clamp the fronts into position, pre-drill, and drive in two screws.

Step 15: Finish the desk

Add a 200mm round over to the top edge and sand all pieces through to 180 grit. Water-pop the grain and sand once more with 180 grit. This is recommended when finishing with a hard wax oil. Finish the desk with the finish of your choice, and enjoy your new desk!





1. Begin by rough cutting some 50mm thick wood to the approximate length needed for the legs 2. Prep your wood 3. If you have the tools available, use a jointer and a planer 4. Rough cut out the mitre cuts for the legs 5. With the first angle cut, use the template to mark a final length for the top of the leg 6. Plunge the mortises 7. Glue up the leg joints 8. Use tape and glue to attach the off-cuts from the leg mitres to get even clamping pressure 9. Remove the template and follow the cut with a flush trim bit to remove the remaining material 10. At the router table, round over all of the edges of the leg assemblies 11. Apply a liberal amount of glue and join the boards together 12. Use a jigsaw to cut away the bulk of the material for the curved front 13. Use a chisel to clean up the rounded cuts left by the router bit 14. Chamfer the bottom edge using a 45 degree chamfer bit to lighten the look of the desktop 15. Use blue painter's tape to avoid tear out 16. Glue the carcass together 17. Cut the vertical partitions to their final dimension 18. Assemble and glue 19. To cut in the dominos, I used a strip of plywood and some double stick tape 20. Glue the leg to the desktop and carcass 21. Rough cut a chunk of wood for the drawer fronts 22. Trim the boards down to their final dimension at the crosscut sled 23. Cut the groove for the drawer bottoms 24. Confirm that the drawer front fits before attaching

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In this article, we'll show you how to turn your own wooden salt and pepper mills that look like chess pieces.



- Calliper, pen, ruler
- Thin saw
- Metal saw and file
- Metal tube to push the mechanism in. The outer diameter has to be about 40mm.
- Unless you are fairly strong, you will need a vice

If you would like to mill the indents into the headpiece of the queen as I have done then you will need an indexing setup (that can be divided by 12) for your lathe, as well as a possibility to mount a milling machine. I used a milling bit with $R = 6\text{mm}/A = 12\text{mm}/B = 9,5\text{mm}$.

I used ball bearings the first time I made the mills. It was a suggestion in a German woodturning forum, but later somebody posted a picture of the gears that started to rust. Apparently, due to moisture and salt, this might happen. Luckily this hasn't happened to me, but I wanted to warn you. So, the second time I made the mills, I didn't add bearings and they turn fine. It is your choice if you would like to make super smooth mills and are willing to risk them getting rusty, go with the bearings, otherwise don't.

CROWNING ACHIEVEMENT



Tools and materials:

Materials:

- **Wood:** I used birch and walnut; both pieces need to be about 70mm x 70mm x 250mm; try to find pieces whose grain is as straight as possible
- **Mechanism:** Crush Grind (e.g. from Amazon, the 195mm one is long enough); I have used the mechanism quite a few times by now and can highly recommend it.
- **Wood oil:** Make sure it is food safe (plus a towel to apply it)
- **Sanding paper:** I used 320, 400, and 600 grid
- **Optional:** Ball bearing: 61705 2RS1 25mm x 32mm x 4mm

Tools:

- Lathe
- Safety gear
- What type of tools you need

depends on your preference. If you are experienced, you can probably mainly use a skew chisel. You can also use carbide tools, but traditional tools will give you a superior finish. I used:

- Roughing gouge
- Spindle gouge
- Skew chisel
- Parting tool
- **Crush Grind tool:** You can also glue the mechanism in place if you don't want to buy one or make your own
- **For mounting the wood:**
 - Multi prong centre
 - Tailstock live centre
 - Four-jaw lathe chuck, with jaws to hold a 60mm tenon; optional: jaws to fit into a 22mm hole
- **Drill bits:** 22mm, 26mm, 38mm, 42mm + a drill chuck (there are also special tools that do most of the drilling at once, but you don't need one unless you would like to save some time.)

>> Britt Michelsen

After turning a few wooden bowls, I was way too overconfident and decided to make these mills as my first project turning end grain. I ran into a few issues, but am really happy with the result. I remade the mills since I couldn't part with mine and I wanted to give them to my dad who has been obsessed with the series The Queen's Gambit lately and chess all his life. So, while I remade the mills, I finally took enough pictures to write an article.

Step-by-step guide

Step 1: The design

Before I started, I made a few design choices. Chess figures are supposed

to have a wide base that allows them to stay stable. A small column that doesn't obscure the pieces behind it and a clear distinguishable feature to tell them apart.

I decided to pay homage to the so-called Staunton design wood-turned by the John Jaques Company in 1849 and popularised by Howard Staunton (April 1810-22 June 1874) who was one of the best chess players of his time.

I saw that you can buy mills that look like chess pieces online, but they either had a wide base, used metal parts on the outside, or were painted.

The first choice I made was to go with a base that is smaller than the ones usually used on chess pieces. I tried using a wider one, but it didn't work well because they were hard to aim at the food. My goal for these mills was to combine design and function and a mill that is impractical doesn't serve the purpose.

The next choice I made was that I wanted to use only natural wood and no exterior metal parts, dyes, or paint. I also wanted to use a ceramic grinder mechanism, since there is no point in spending time turning them and then using a cheap mechanism.

With these parameters, I went into Fusion 360, a computer software, and came up with the design you can see here. See the diagrams.

Before starting, I 3D printed the head of the king, to make sure that the mill was comfortable to use. Luckily it was, so I was ready to begin.

Step 2: Let's get started

You made it this far, so I'll assume that you feel capable to replicate the design. My goal for this article is not to teach the fundamentals of woodturning, but to show you how I created the mills.

Woodturning is dangerous and I don't want you to get hurt, so please make

sure that you know how to use the tools and please take all necessary safety precautions.

So, let's get started. There are many different possibilities of how you can manage to make the parts. Here I am going to show you how I did it.

I started by mounting the wood between the centres and used the roughing gouge to turn it to a diameter of 64mm. Afterward, I used the skew chisel to add a tenon to the side of the tailstock that matches my 60mm chuck jaws. I had to do this because my drill bits and lathe weren't long enough to drill through the whole piece at once.

Next, I drew on lines with a pencil to mark all the low and high points of my design. The bottom of the column has to face the tailstock.

I suggest creating the column of the king and the queen at the same time. This way you will have to change the different mounting tools less often.

Step 3: Creating the profile

Next, I used the skew chisel to cut to the low points and a spindle gouge to create the profile. Use the callipers to see if you need to go any further. If you are experienced, you can probably create the whole profile with a chisel.

Don't make the wood above the neck too thin, we will need to add a 60mm tenon to it later.

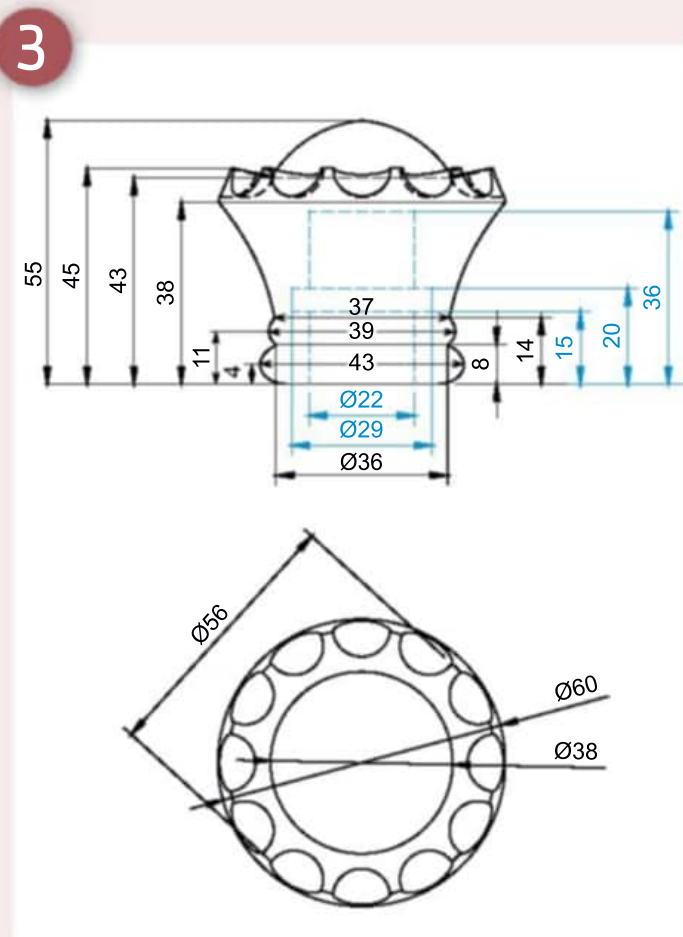
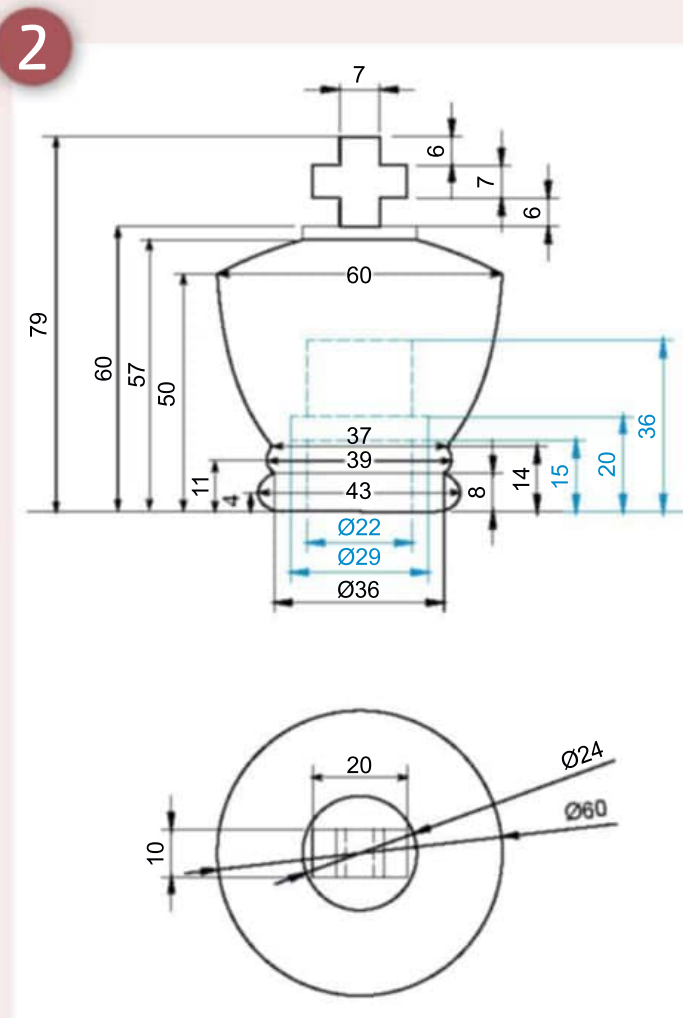
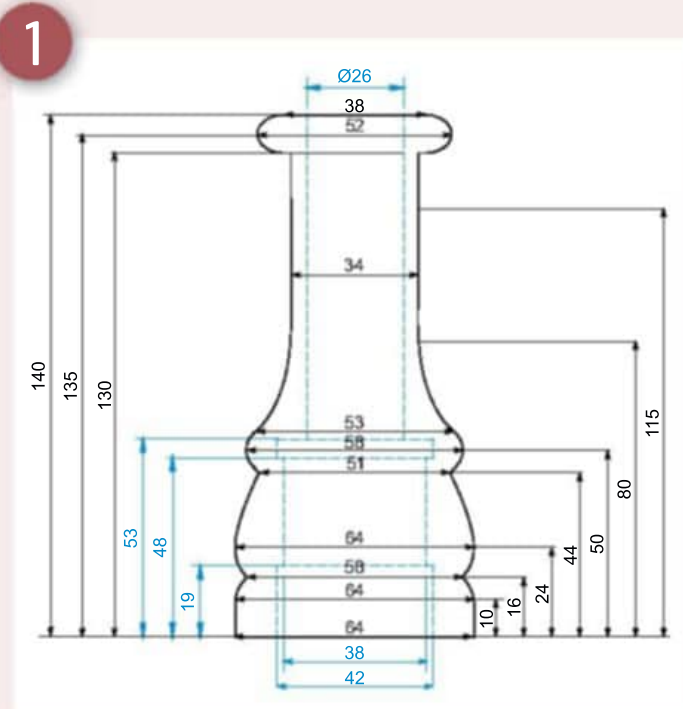
Step 4: Finishing the profile

Just move along the profile. A parting tool works great to quickly get to the right diameter. I didn't, but it is probably a good idea to sand your piece at this point.

Step 5: Parting off the column

Next, we are going to add a 60mm tenon to the other side of your piece of wood. It is going to help us to hold the headpiece in place later on.

Afterward, we are going to add another tenon right behind the neck and part



For a high res version of the drawing of this project, email editorial@homehandyman.co.za

the column off. The more space you need for the tenon and parting the piece off, the more the grain is going to be disrupted. But since the rings on the head are slightly smaller than the ones on the neck, it is not going to be too noticeable.

Once you've finished creating the tenons you can part the column of your chess figure off.

Step 6: Drilling

Now we are going to use our four-jaw chuck and place our column bottom first into it. Mount the drill chuck and a 26mm drill bit into the tailstock.

Like I wrote before, my drill bit wasn't long enough to drill all the way through. So, I drilled to about the halfway point. I only had a 25mm drill bit, therefore I had to sand the opening slightly bigger.

Make sure to go slow and to constantly remove the shavings, to prevent the drill from getting caught.

Step 7: Finish drilling

Once you have drilled to about the halfway point, you can turn the piece around and drill the hole all the way through. Afterwards, use a skew chisel to remove the tenon from the bottom.

Now you can start drilling the bigger holes that are needed for the mechanism. Start with the 42mm drill bit and drill to a depth of 19mm. Afterward, use the 38mm drill bit and drill to a total depth of 53mm.

Step 8: Cutting the notch

The mechanism needs recesses for it to work properly. You can either cut the small pieces of plastic off and glue the mechanism in place or cut the notch on your lathe.

I prefer cutting them and use a special tool by Robert Sorby to archive this. The shoulder of the tool gives an accurate position of the recess required for the base section of the mill. You can of course also create your own tool.

After I was done with the holes, I sanded the piece.

Step 9: Finishing the column

In order to remount the column, you will need a jam chuck. You can either create it from another piece of wood you have lying around or use some of the extra wood, you will have from this project since 25cm is a bit longer than what you need. Simply mount it into your chuck and turn it to a diameter of about 42mm. Constantly test if your diameter is right by trying to fit the column of your mill onto it.

Place the column of your chess figure onto your jam chuck and finish the neck of your piece, as shown in the pictures. If you would like to add a gear, you will have to do it now.

Don't forget to sand the neck and you are done with the body.

Step 10: The column of the king

As I have written a few steps ago, the column of the king is exactly the same as the one of the queen (except of course the type of wood you are using.). So, it is a good idea to create them at the same time. It doesn't really matter, if you don't follow my measurements precisely, but you should check and see whether your two figures match.

Step 11: Starting with the coronet

Usually, the queens feature a coronet topped with a tiny ball (a monde), but I decided not to create the tiny ball in order not to risk it breaking of during usage later on or during the assembly.

You can see all the measurements I used in the first image (in millimetres). Since we did add a tenon to our cylinder a few steps ago, you should be able to clamp it into your four-jaw chuck.

Start by making a clean cut on the side that is held by the tailstock with your skew chisel.

Step 12: Adding the profile to the coronet

Next, we are going to turn the profile, the same way we have done the column (adding the low points with the skew chisel and connecting them with the

spindle gouge). You can finish the top of the coronet, but as you can see, I haven't since I wanted to test the setting of my mill without ruining the piece.

Once you are happy, you can sand the parts that you have finished.

Step 13: Drilling into the coronet

Next, we are going to drill the hole. Use the 22mm drill bit and drill to a depth of 36mm. After we have finished drilling the hole, you will either have to cut a notch for the mechanism or cut the plastic tags off and glue it in place later.

I decided to cut the notch, which can also be done with the Robert Sorby tool. There is a line on the tool, that tells you at what position the notch needs to be. Simply place it straight on your tool rest inside of your hole at the correct depth and slowly move it to the outside.

Once you are done with the inside of the coronet, you can part it off. Make sure to leave enough space for the top of it.

Step 14: Setting up the mill

Next, we are going to cut the indents into the coronet. I am using a very cheap construction that uses a slide table that I can put into my tool rest base. While it may not be perfectly precise, it has worked great for everything I wanted to do with it (tell me should you be interested in seeing more pictures of it).

As you can see, I used a four-jaw chuck to hold the coronet in place. I tried using a wooden jam chuck when I first attempted making the mills but accidentally cracked the piece and didn't want to risk it again.

Before I could start, I had to make sure that everything is straight. To do so I am using a steel square with a stop. As you can see in the third image, I aligned the bit with the centre of my wooden piece.

Before milling all the way through, I made a few tests and ran into problems. The wood either showed burn marks or the cut wasn't very clean. So, I decided

to test what would happen if I would drill straight into the piece instead of milling from one side to the other and to my surprise it worked a lot better (as you can see in the fourth picture).

Step 15: Finishing the coronet

Once I was happy with the tests I did, I milled the 12 indents. Afterward, I very carefully finished turning the form. Make sure that your tools are sharp to prevent cracking.

Once you are happy with the form, don't forget to sand the piece.

Step 16: Tuning the crown

You can see the measurements I used in the first image of this step (once again they are all in millimetres).

As for the coronet, use your four-jaw chuck to hold the piece in place. Once you are happy with the profile, you can drill the hole and cut the notch on the inside. I also added the rough form of the cross. Once you are done sanding, you can part the piece off.

Step 17: Making the cross

You can of course leave the cross as is, but I didn't want it to be round. Therefore, I used my four-jaw chuck to

hold it in place and a saw and a chisel to cut it to a form I liked.

Don't forget to sand it once you are done.

Step 18: Applying the finish

If you look closely at my pictures, you can see that there were some sanding lines visible. Usually, when sanding a piece of wood, you would go with the grain to hide the sanding marks. Obviously, when you are sanding end grain pieces on a lathe, you will go against the grain.

Instead of going with the grain after switching from one grid to another (which would be the correct way). I decided to just sand with the grain once at the end with a grid of 320. Don't go any finer than that in order to allow the oil to properly penetrate the wood.

Once you are done sanding, clean the pieces to remove the sanding dust with compressed air or a towel and apply the oil according to its instructions. In my case, I used three layers, waiting 20 minutes in between them and afterward giving the pieces 24 hours for the oil to harden.

I used a special oil for light-coloured

woods on the queen because I didn't want it to go any darker.

Step 19: Shortening the mechanism

You can add the mechanism after the oil has hardened. In order for it to fit, you will have to shorten it slightly.

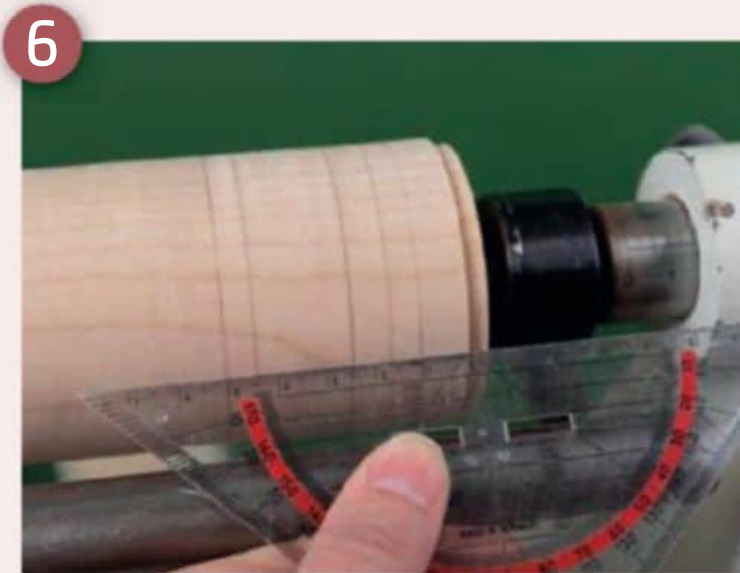
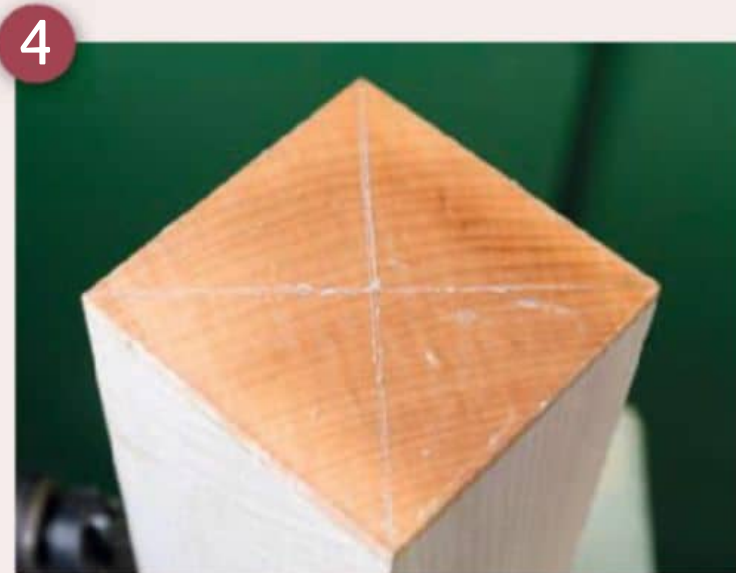
Use a ruler and mark a line at a distance of about 120mm, as shown in the first picture. Cut slightly above it with a metal saw and use a metal file to add a bevel, as shown in the third picture.

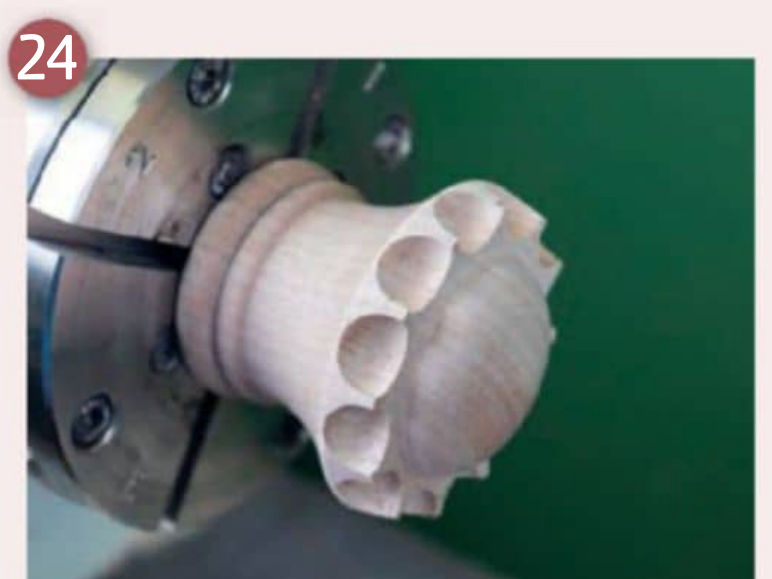
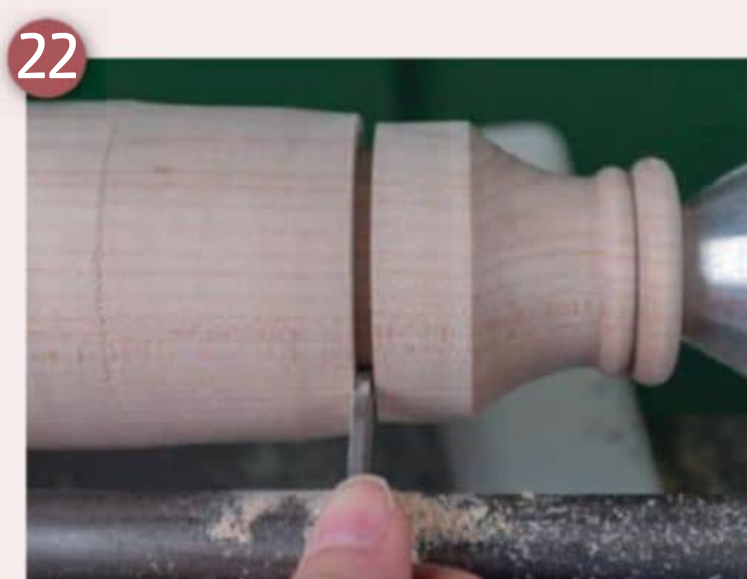
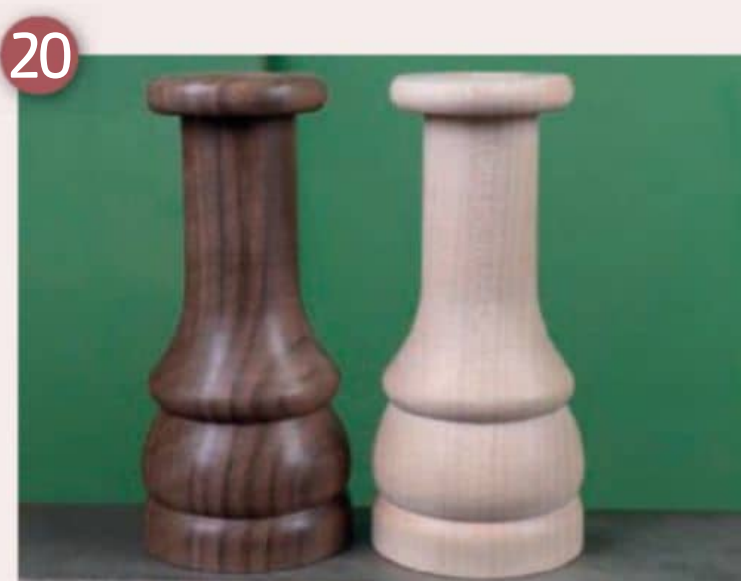
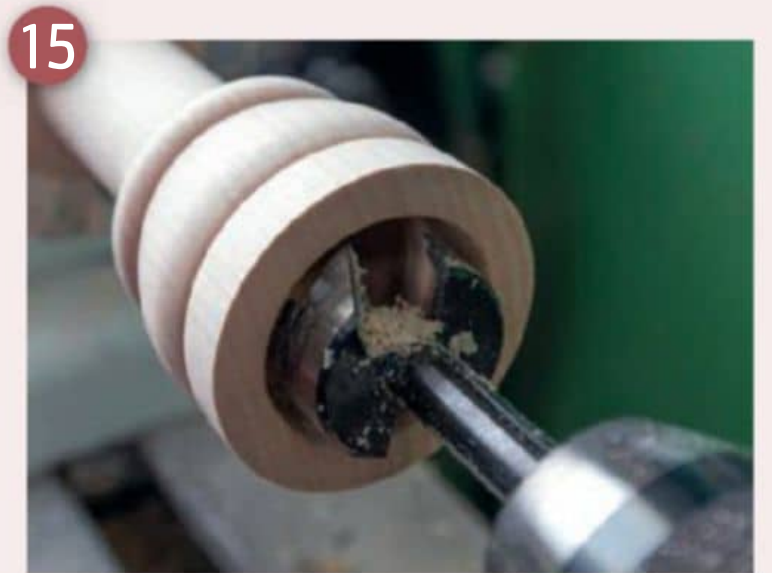
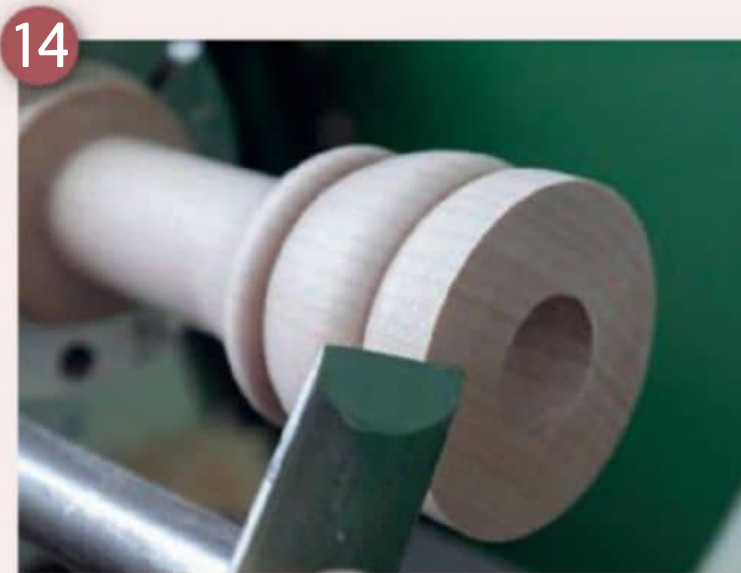
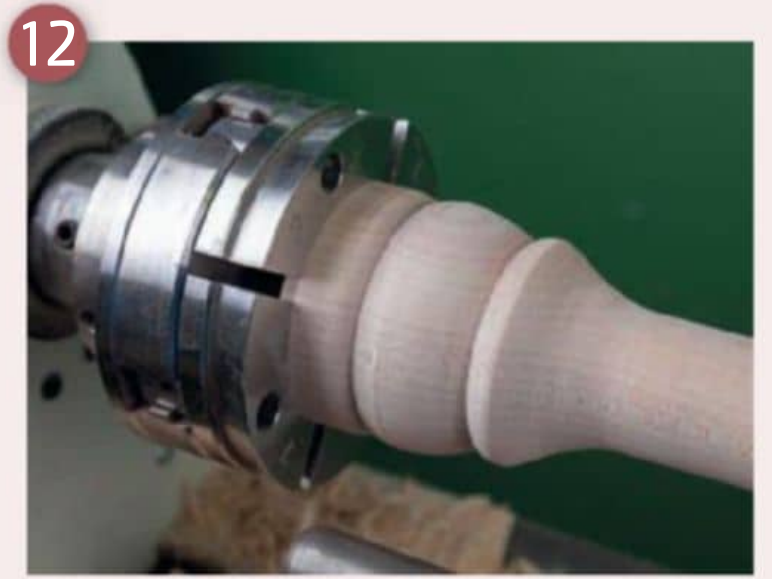
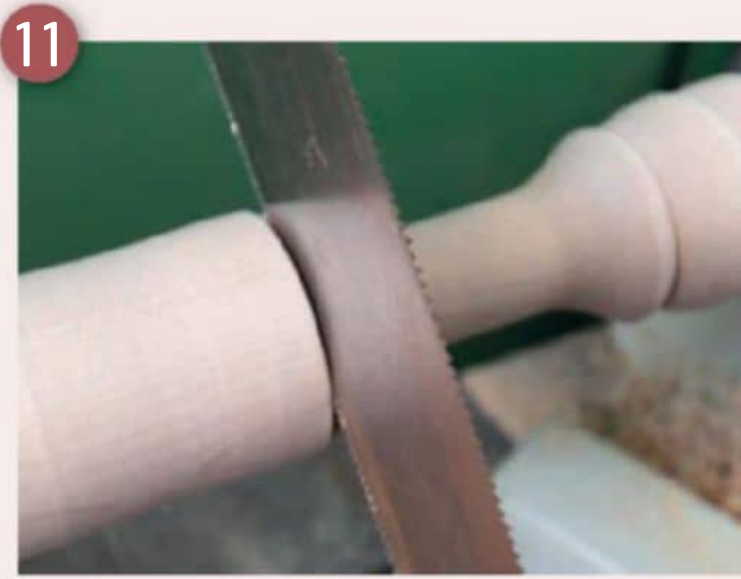
Step 20: Assembly

Now we are finally ready to assemble the mills. I placed a towel over my four-jaw chuck to prevent it from scratching up them up and cut a hole into it so that the pole from the mechanism can be pushed through it.

I used a metal tube to push the mechanism in place with my lathe. Quite a bit of force is needed and I am not strong enough to do it by hand. I used a vice to press the mechanism of the crown and coronet in place.

All that is left to do is to fill the mills with either salt or pepper and push the coronet and crown onto the columns.







1. Column diagram 2. King diagram 3. Queen diagram 4. Start by mounting the wood between the centre 5. I used the roughing gouge to turn it to a diameter of 64mm 6. I drew on lines with a pencil to mark all the low and high points of my design 7. Next, I used the skew chisel to cut to the low points and a spindle gouge to create the profile 8. Work your way along the profile 9. It is a good idea to sand your piece at this point 10. Add a tenon right behind the neck 11. Part the column off 12. Use a four-jaw chuck and place the column bottom first into it 13. Mount the drill chuck and a 26mm drill bit into the tailstock and drill 14. Use a skew chisel to remove the tenon from the bottom 15. Now you can start drilling the bigger holes that are needed for the mechanism 16. The mechanism needs recesses for it to work properly 17. After I was done with the holes I sanded the piece 18. Finishing the column 19. The column of the king is exactly the same as the one of the queen (except of course the type of wood) 20. Check and see whether your two figures match 21. Adding the profile to the coronet 22. Once you are done with the inside of the coronet, you can part it off 23. Cut the indents into the coronet 24. I used a four-jaw chuck to hold the coronet in place 25. Turning the crown 26. Making the cross with a saw and chisel 27. I used my four-jaw chuck to hold it in place 28. Once you are done sanding, clean the pieces to remove the sanding dust 29. I used a special oil for light-coloured woods on the queen because I didn't want it to go any darker 30. Use a ruler and mark a line on the mechanism at a distance of about 120mm 31. Cut slightly above your mark with a metal saw and use a metal file to add a bevel 32. All that is left to do is to fill the mills with either salt or pepper and push the coronet and crown onto the columns

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Use both your woodworking and metalworking skills to create this modern bookshelf.



MAKE AN INDUSTRIAL BOOKCASE

Did you spend a bit too much this holiday season (no judgement here, I know I sure did)? And now you're looking for a DIY project to do during the holiday break, but you need one that won't break the bank? Well, you certainly came to the right place, because today I'm going to be sharing my budget DIY bookcase build with you.

This project is actually an adaptation of a bookcase I built a couple of years ago, but with a few simple design tweaks to get the price point as low as possible. This bookcase is made of solid pine, with steel accents and cool industrial-looking exposed fasteners. It's really strong (yes, I've climbed it like a ladder for fun) and I think it makes a cool accent piece in my living room.

Step-by-step guide

Step 1: Cutting the wood –

Option 1: Mitre saw

The biggest cost item for this build was the pine I used. I bought 7,315 millimetres of 50 x 300 millimetres pine from a local hardware store.

The first step of this project was cutting the pine down to the lengths I needed. I cut five pieces that were 915 millimetres long and four that were 330 millimetres long.

There's more than one way to cut a pine 50 x 300 millimetres, but the first, and probably the best way to do it, is using a quality mitre saw.

A good sliding mitre saw makes for quick, accurate, and easy cuts. Simply mark the length you need, line up the blade with your mark, and plunge it down into the wood. Take it slow and easy, let the blade do the cutting and you should have a nice clean cut.

The mitre saw is my favourite way to make big cross-cuts like this, but because this is a budget build, in the next couple of steps I'll show you a few alternative ways you can cut your pine at home, just in case your tool collection is a little different than mine.

Step 2: Cutting the wood –

Option 2: Table saw

The second option is to use a table saw in conjunction with some sort of table saw sled. That last little bit is important, a table saw sled, try to avoid using your table saw's built-in fence for crosscuts. If you do, you run the risk of the wood binding between the fence and the blade. If that happens your saw is likely to send the piece of wood flying back at you with a lot of force behind it. Not good!

Using a sled helps to dramatically mitigate the risk of kickback on the table saw. Some people like to make their own table saw sleds, other people like to buy them. The point is there's a wide variety of options available to you.

In my case, I'm actually using a table saw mitre gauge set to 0 degrees to make my cuts.

Step 3: Cutting the wood –

Option 3: Circular saw

Finally, we have our last, and budget-friendliest option (I'm pretty sure that isn't a word, but we're going to go with it), the circular saw. Practically everyone has a circular saw, or at the very least, has access to one. If you don't, you can easily find a quality saw for under R800.

Cutting straight lines with a circular saw is a bit of a skill, and for this build, we need all of our cuts to be as close to square as humanly possible. So instead of trying to be a human mitre saw, we're going to combine the circular saw with another cheap tool, to guarantee perfectly straight cuts. Enter the speed square, these are cheap little squares used by carpenters everywhere to make quick 90-degree marks on wood or to check things for square. They can also double as circular saw guides! Simply place the speed square on your wood, place the guard of your circular saw against the flat edge of the speed square and make your cut. Make sure that the guard of the saw stays flat against the speed square the whole way through the cut and you should have a nice square cut. Easy peasy.

Step 4: Sanding the wood

After all the cutting was done, I gave each piece a quick sand using some 120 grit sanding pads on my random orbital sander. I sanded the wood for two reasons. The first was to clean up the wood. Sanding it removed any dirt and marks that might've still been left on the wood. It also just helps to smooth out the surface and make everything nice and uniform. The second was to help the stain and finish adhere to the wood better. All of those little micro-abrasions left behind by the sander really help a finish bind to the wood.

I'm using a cordless random orbital sander in these shots (along with a dust extractor, which I highly recommend if you can afford it), but there's no reason you couldn't use a cheaper corded random orbital sander or even just a

good old-fashioned sanding block along with some sandpaper. It might take a bit longer, but pine is a softwood and sands quickly, so it wouldn't take that long.

Step 5: Conditioning the wood prior to staining

You know, people like to talk a lot of trash about pine. Part of that is just because it's a cheap softwood that many beginners gravitate towards. It's readily available and easy to work with, perfect when you're just starting out. Wood snobs don't want to use the same materials that beginners use, that would be far too mainstream shudder. Another big factor that I think kind of dovetails with the first one is that pine is notoriously hard to stain. People often pick it because it's cheap and then try to stain it to look like more expensive woods. That doesn't usually work, because there are some parts of the grain in pine that just refuse to take a stain. So when your stain dries it tends to look blotchy, uneven, and unnatural. Combine both of those factors and it's no wonder the internet is filled with some pretty horrible looking projects made of pine.

Thankfully, it's 2024 and there's a solution to that problem... Or at least the blotchy stain part... not so much the first part...

By applying a pre-stain conditioner you can get pine to accept the stain much more evenly. The effect is really quite dramatic and it's well worth doing unless you're intentionally trying to create a blotchy look.

Simply brush on a generous helping of the conditioner, wait 15 minutes and then buff off any excess using shop towels. 15

minutes after that, you can apply your stain. Wood conditioner is kind of funny in that you only have a small window of time where you can apply a stain after using it, so make sure you don't wait any longer than two hours before applying your stain.

Step 6: Staining the wood

I tried to get fancy on this project and try out a new product that combined both stain and a poly finish into a single, one-coat, solution. It seemed like it might save me some time, but unfortunately, after using it, I can't recommend it. It got the job done, but it was far from a painless experience. In the future, I think I'll keep the staining and the finishing as two separate steps.

As per the instructions, I brushed on a thin coat and then let it dry over the course of a few hours.

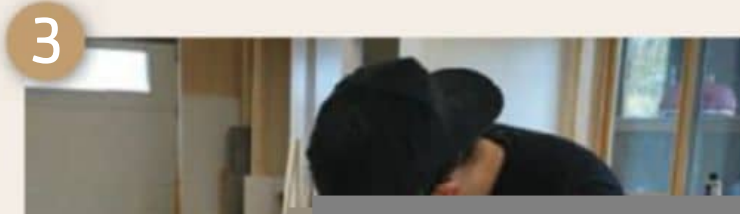
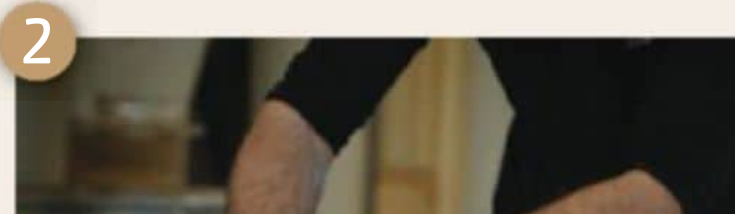
The problem with this stain/finish was that it really had a tendency to pool in certain spots. I spent a lot of time brushing it out trying to get a good even coat. It also dried VERY slowly. It was hours before I could even think about touching the wood to flip it over and do the opposite sides.

Step 7: Cutting the metal –

Option 1: Angle grinder

While the stain dried, I decided it was time to cut the metal angle iron brackets. I bought three 1,220 millimetre long 38 millimetres x 38 millimetres steel angle irons.

I needed eight 406 millimetres long brackets and, just like with the wood, I'm going to give you multiple options for cutting them.



The first of which is the angle grinder. Until very recently this was my go-to method for cutting metal. Simply mark your cut lines on the metal using a sharpie and a square and then trace those lines using a metal cutting blade on an angle grinder. Do not, I repeat, do not try to use the grinding blade that came with your angle grinder to make these cuts; you will not have a good time.

A couple of tips to keep in mind when using an angle grinder for this task. The first is, don't force it. You might be tempted to push really hard against the grinder blade to try and cut the metal faster, don't. Slow and steady wins the race here. Also, don't try and cut too close to your cut line. Leave a bit of space, like 1.5 millimetres or so, between the cutting blade and your line. Then you can come back with a grinding blade and grind the cut down to your line. This makes it much easier to get a nice clean cut.

Step 8: Cutting the metal – Option 2: Hack saw

When I was just getting into metalwork, the hack saw was my best friend. This is by far the cheapest and most low-tech way to cut metal and if you don't mind putting in a little elbow grease, it's a perfectly viable option. Simply mark your cuts on the metal using a sharpie and a square, lock the metal down in a vice or a set of clamps and start cutting with the hacksaw. A few minutes later and you'll have a nice clean cut.

In fact, the hack saw does have one small advantage over the angle grinder.



The kerf is smaller (kerf is the width of the cut made by the blade), meaning you'll waste less material when making your cuts. But in practice, I don't find this to be a huge advantage.

Step 9: Cutting the metal –

Option 3: Chop saw

Last, but certainly not least, is the chop saw with a metal cutting blade installed. This is by far the fastest and easiest way to cut metal for a build like this, but I figured it would also be the least common tool in your workshop, which is why I saved it for last. Like with the angle grinder, the goal is to let the saw do the work and go slowly.

Step 10: Cleaning up the metal brackets

After making all eight brackets I took a few minutes to clean them up using a wire cup brush in my angle grinder. Steel angle iron tends to come coated in this kind of oily film that helps prevent it from rusting during shipping. We want to clean that film off before applying a finish.

The wire cup brush will strip off most of the oily film, as well as any rust or other blemishes that might be on the angle iron. The wire cup brush will also smooth out the edges of your cuts a little bit. We're going to go a step further with that in the next step though.

Step 11: Smoothing the edges of the metal brackets

Now that our brackets are clean, we're going to smooth the edges. We're going to be using our angle grinders again, this time with a flap disc installed instead of the cup brush. A flap disc is basically a lot of pieces of sandpaper glued onto a disc that you can attach to your angle grinder.

Using the flap disc you can very quickly and easily smooth out the rough edges left behind by your cuts. This is an important step because those edges can be dangerously sharp.

Step 12: Drilling the holes for the brackets

Now that we have all eight brackets

made, it's time to drill the holes we need for attaching the brackets to the bookcase. This step is pretty straightforward, but drilling holes in metal can be a bit intimidating if you've never done it before.

Mark the hole locations using a sharpie and a square and then centre punch them. I marked the locations of my holes 25mm from the edge of the angle iron. The centre punch will give your drill bit a place to sit and keep it from wandering when you start to drill the hole. You can find these in the hand tool section of your local hardware store.

Make sure you use a sharp drill bit intended for metal. I use cobalt bits, but other types are available. Add a few drops of cutting oil (Q20 works in a pinch) to the hole to help keep the bit cool and reduce friction.

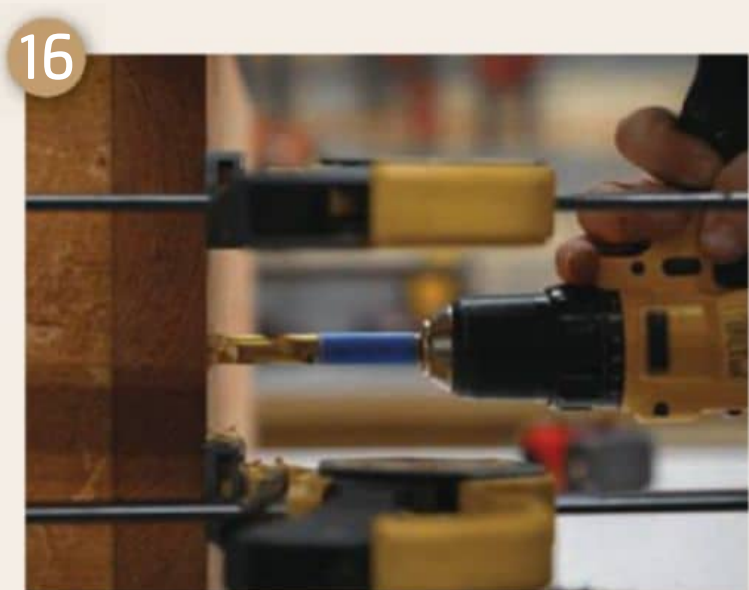
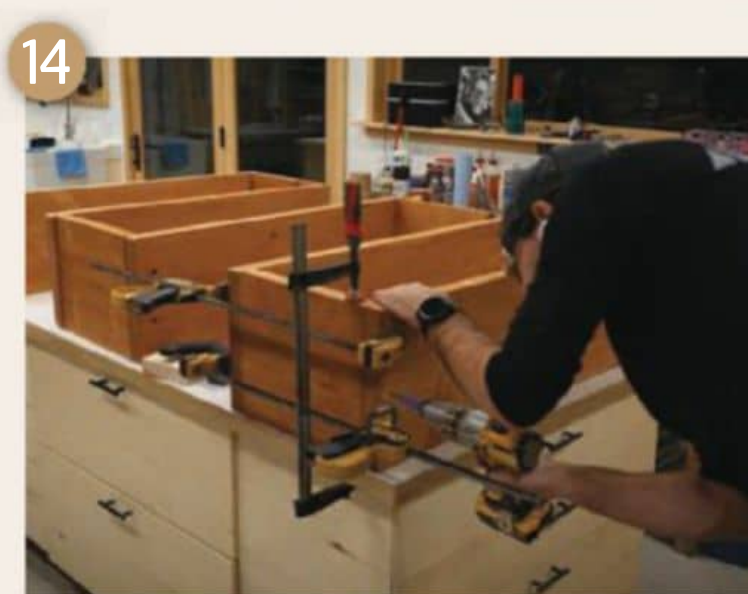
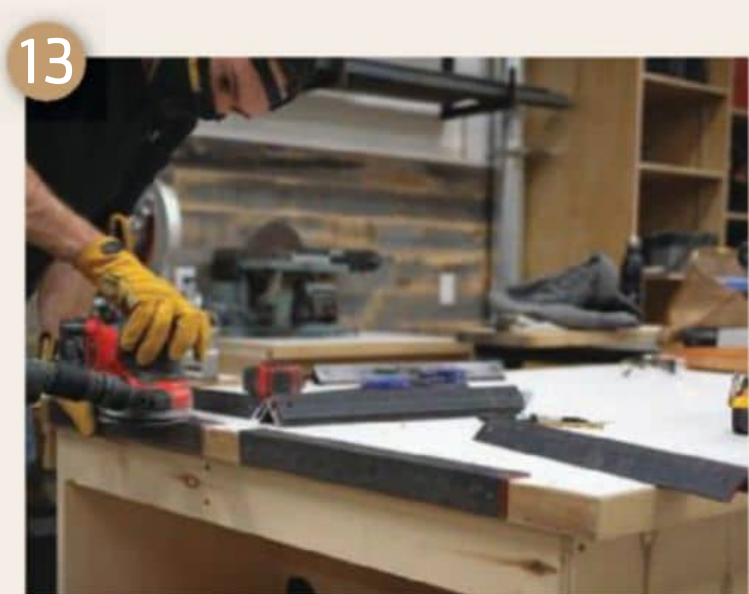
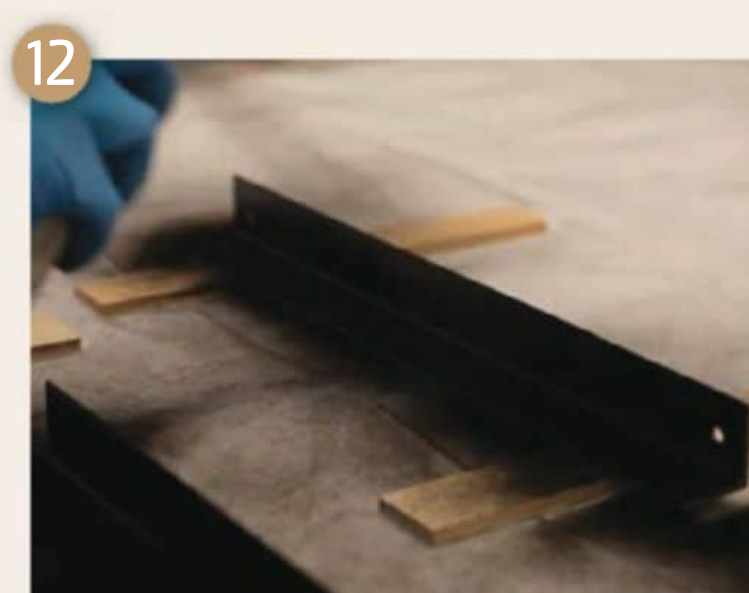
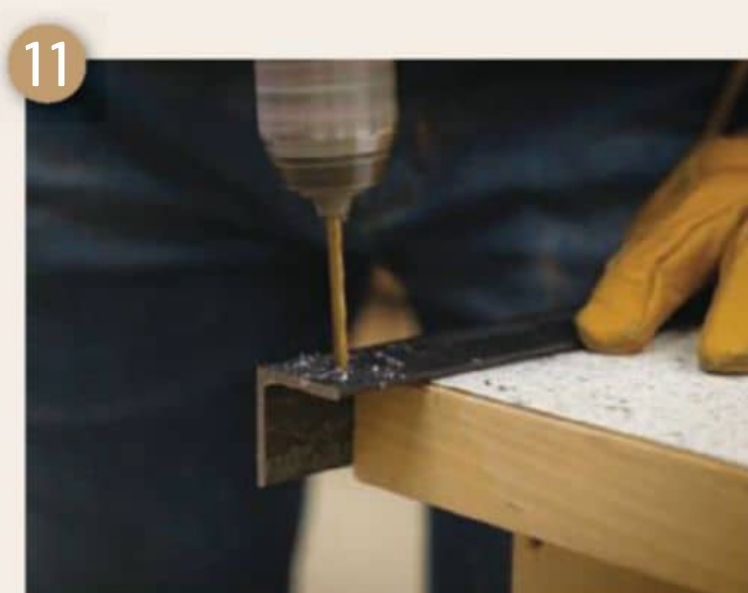
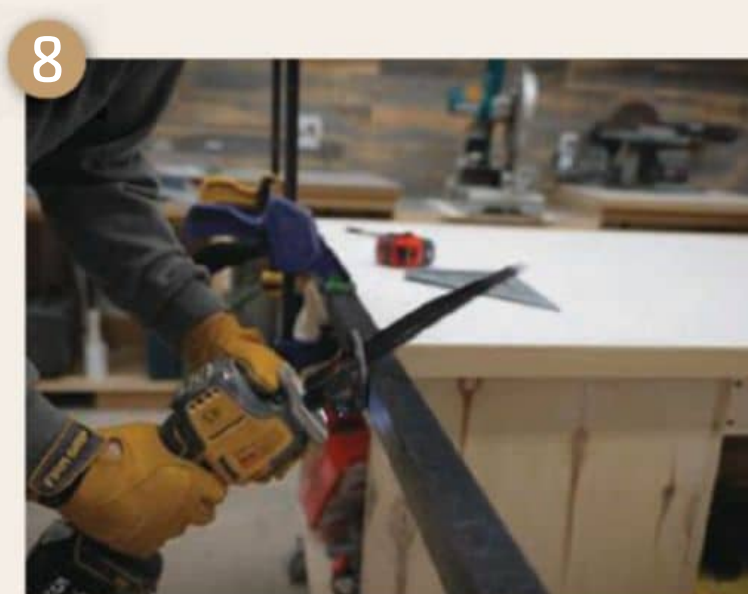
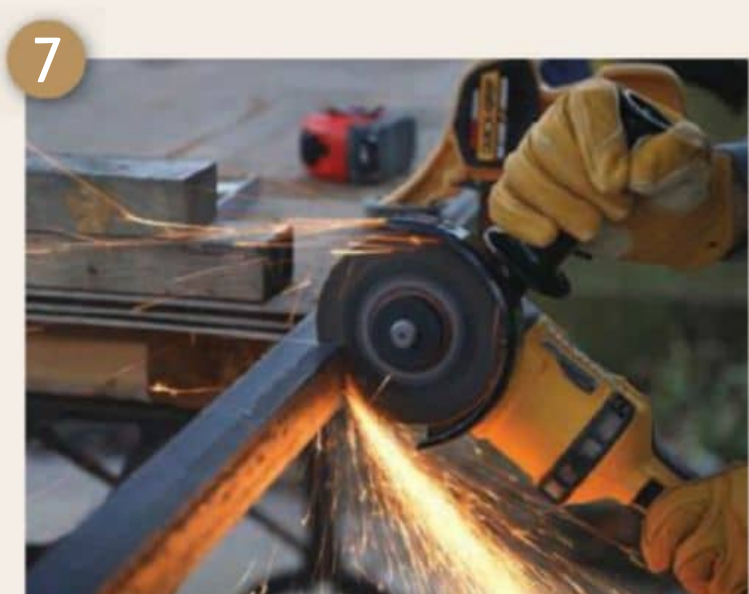
Simply drill the holes using a slow and steady pressure on your drill, letting the bit do the work. If you find that your drill bit is smoking, you're pushing too hard and you need to back off a bit. I drilled two holes per side of each bracket, so that means there are four holes in total per bracket, and 32 holes in total in the entire project.

I used a drill press for my holes because it helps keep the bit nice and straight as I drill the hole, but you could easily use a hand drill for this. Just go slow and keep the drill as straight as you can.

Step 13: Finishing the brackets

Now it's time to put a finish on the brackets. Since they're made of steel, they're going to be prone to rusting unless we apply some sort of protective finish.

In this case, I went with simple black spray paint. I like to use flat black because it has a nice industrial look to it. I sprayed on a light coat, let it dry for about an hour and then sprayed on a second light coat. It's important to do light coats when spray painting because it helps avoid drips and runs in the paint. Just take your time and apply several light coats if necessary.



Step 14: Assembling the bookcase

After the paint dried I started assembling the bookcase. I laid out the five long boards on the ground with equal spacing between each one and then used a square to make sure everything was aligned. I then laid the brackets on top of the boards and attached them using screws. I used 32 screws in total, four per bracket and eight brackets in total.

I went with pan head screws for this because I liked the industrial look of them, but you could use countersink screws if you prefer a cleaner look. The important thing is that the screws are long enough to go through the bracket and securely into the wood, but not so long that they poke out the other side of the wood. I used 8mm x 20mm screws.

Step 15: Attaching the bookcase to the wall

The last step was to attach the bookcase to the wall. This is an important step because the bookcase is tall and narrow and it could easily tip over if it's not secured to the wall.

I used two L-brackets for this, one at the top and one at the bottom. I attached the

L-brackets to the bookcase using screws and then attached the L-brackets to the wall using wall anchors. Make sure you use wall anchors that are rated for the weight of the bookcase and the items you plan to put on it.

I used 8mm x 20mm screws and wall anchors that were rated for 25 kilograms each.

Step 16: Enjoy your new bookcase

And that's it! Your new bookcase is complete. All that's left to do is fill it with your favourite books, knick-knacks, and other items.

I hope you enjoyed this build and found it helpful. If you have any questions, feel free to leave a comment below and I'll do my best to answer them. Happy building!

Step 17: Optional steps for additional customisation

1. **Adding a back panel:** If you prefer a bookcase with a back panel, you can add one using plywood or MDF. This adds stability and a finished look. Measure the back of your bookcase, cut the panel to size, and attach it

using screws or nails. You can paint or stain the back panel to match or contrast with the rest of the bookcase.

2. **Adjustable shelves:** For more flexibility, you can make some of the shelves adjustable. Use shelf pins and brackets to create adjustable shelving options. Drill evenly spaced holes along the sides of the bookcase and insert shelf pins to support the shelves.
3. **Adding trim or moulding:** To give your bookcase a more polished and custom look, you can add decorative trim or moulding to the edges. Measure and cut the trim to fit, then attach it using wood glue and finishing nails. Paint or stain the trim to match the rest of the bookcase.
4. **Lighting:** Install LED strip lights or puck lights under each shelf to highlight your books and decor. Battery-operated lights are easy to install and don't require wiring.

These optional steps can enhance the appearance and functionality of your DIY bookcase. Customise it to fit your style and needs. Enjoy your project!



1. The first step of this project was cutting the pine down to the lengths I needed – option one was a mitre saw 2. The second option is to use a table saw in conjunction with some sort of table saw sled 3. Finally, we have our last, and budget-friendliest option, the circular saw 4. After all the cutting was done I gave each piece a quick sand 5. Next, I conditioned all the wood 6. By applying a pre-stain conditioner you can get pine to accept the stain much more evenly 7. While the stain dried I decided it was time to cut the metal angle iron brackets. First option, and angle grinder 8. This second option is slightly unorthodox, but with the right blade, a reciprocating saw (or even a hacksaw) can easily cut through steel 9. You'll want to clamp your steel angle iron in position so it doesn't jump around too much as you cut 10. Finally, we have the metal chop saw 11. In order to attach the brackets to the pine, I needed to drill some mounting holes in them 12. I gave the brackets two thick coats of paint 13. Prior to painting, I gave the brackets a quick sanding using 180 grit sandpaper in order to smooth out their surfaces and remove any hard edges 14. Next, I began assembling the bookshelf into its zig-zag shape 15. In order to join all the pieces of wood together, I decided that I wanted to use wooden dowels 16. I marked my dowel locations and began drilling holes using my 1/2" drill bit 17. Unfortunately, my flush-cut saw ended up marking the pine quite a bit. This meant that I basically had to re-finish the whole bookshelf in order to fix those saw mark 18. With the wood assembled and sanded it was time to throw a little bit of metal into the mix 19. I grabbed my brackets, secured them gently in place using a big bar clamp, and then screwed them in position using lag screws 20. Pre-drilling the holes prevents large diameter screws from splitting the wood 21. Attach screw-on felt pads to the bottom

Discover the rejuvenating world of saunas, where centuries-old traditions meet modern wellness, offering unparalleled relaxation and health benefits that speak to both body and soul.

Building your own SAUNA: PART 2

In our July/August issue, we published the first part of an article on how to build your own sauna. This issue we move from the exterior to finishing the interior. Enjoy!

Step-by-step guide

Step 1: Interior framing and insulation

Insulation is pretty important in a sauna, and you've got to be mindful of moisture. So I chose an aluminium-faced mineral wool insulation for the sauna area, and aluminium-faced fibreglass in the changing room.

As I framed up the dividing wall, I also needed to bring the ceiling of the sauna side down to about 2100mm and level. I just used 50mm x 100mm to frame it up, 400mm on centre so that I could add more insulation. This created a void between the sauna and the roof, so I went nuts with the insulation and just put any leftover scraps up there. I also insulated the ceiling bays with some pretty thick fibreglass rolls of R40.

Inside the sauna room, I sealed all the foil seams with a heat-resistant, 75mm

foil tape. By the time I was done, it was practically airtight.

Step 2: Electrical wiring and the transom

I dug a trench about 600mm deep in my garden to run a line from the house to the sauna. This is an area where I don't trust myself as much, so I hired a buddy who's a electrician to run the big wires from the panel in my house out to the building. He spent some time on the project, and only charged me a few hundred rands for parts and materials.

He also helped me run all the high voltage lines for lights, outlets, and the power from the sauna control box (the brains) to the heater itself. It's good to have skilled friends! But please, leave this part to the professionals – they will know the unique electrical needs of a sauna.

Since I only had a few outlets and switches to install, I wasn't as worried

about price, and wanted something that would really make a statement. Legrand makes a series of outlets and switches that are square and have a cool and unique look to them, so I went with those.

At some point during the project, I went down the rabbit hole of research on low voltage LED lighting. It started because I wanted to run multi-coloured LED strips around the perimeter of the floor in the sauna itself. I ended up also creating a custom transom window, with a thermal pane on the outside, and a stained glass panel on the inside, with recessed LED light strips in between to make it glow. This turned out to be my favourite detail of the entire build.

The sauna controller has a connection for a fan, so I framed out an opening that would allow me to install an industrial-grade fan inside the wall in the sauna to pull air from the sauna outside, and replace it with fresh air



from the changing room by cracking the window. With the fan running, it pulls all the moisture out in minutes, and with it off but the vent open, it slowly recycles with fresh air to prevent it from becoming too musty. I framed the opening out in cedar and bought a cedar vent cover from some place I found online. On both sides, I put up some stainless mesh to keep tiny critters out, and fingers from getting into the fan.

I ended up with three outlets:

- Two that are along the outer wall in the changing room.
- The third is actually buried inside an area I framed on the back wall. This became my hiding place for all the LED controllers. There are two LED power supplies, one for the sauna lights, and another for the white LED inside the transom. I wired it up so that one plug of the outlet would be on/off at a switch on the wall for the transom, and also have a dimmer controller hiding in that cavity so I can control the brightness of the transom. The other plug of that outlet is 'always hot' and powers the sauna LED lights which are controlled by a fancy-looking LED touchpad controller I found on Amazon.

Step 3: Interior finishing

I sourced some cedar boards for the sauna, saving the clearest pieces to go on the wall where it would be a backrest. The knots can get warm, so you want those where you won't lean onto them.

I used stainless steel brad nails for everything to prevent rust. The changing room is all pine. I installed an overhead light in the changing room, and an antique-looking exterior light.

Between the sauna and changing room, I wanted to let some light in, so I went back to the local glass shop that made my transom window. I was shocked at how cheap they were, so I asked about a 1000mm x 1000mm thermal pane. It really opened up both spaces. Well worth it.

For the floor, I went with a vinyl click-together waterproof flooring. It looks like wood, but is completely waterproof. The floor of the sauna doesn't get very warm (heat rises!), so my only concern was moisture. It was cheap and went in quickly and with ease.

I added corner-round trim in the changing room to cover the gaps I left while learning how to install the pine. This wasn't needed in the sauna, as I did that room last, and learned from my mistakes in the changing room.

Around the multi-coloured LED in the sauna, I used the router to create some moulding I could hide it behind. It's raised off the floor just enough that the light simply glows from the bottom of the walls.

Step 4: Benches and interior door

The benches are the only thing I used clear cedar for. It wasn't too pricey, and considering this is what I'll be sitting on, I wanted something that would be smooth and free of knots and splinters. I sanded the heck out of each 50mm x 50mm piece, and cut them down to slats.

I designed the benches to be removable, but attached 50mm x 100mm cedar horizontally to the studs with 100mm stainless lag screws for support, while the benches themselves just ride on the rails and are held snug by neighbouring pieces. Each level is two removable pieces that make each 'L', and they're sturdy as a rock.

I custom built my own door using a sheet of 19mm plywood, and then lining each side with cedar and pine. I found some heavy-duty stainless steel gate hinges, and called it a day.

Step 5: Siding

This is the part that I struggled with the most. Cedar siding is about double the price of other siding options. Even though this is a tiny little building, I still spent a lot on cedar bevel siding. It hurt spending that much on such a small space, but I'm glad I did. Vinyl siding

would have looked terrible compared to this. I also considered a cheaper material for the back (my neighbours see it, I don't), but I would always know it's there, and it would have bothered me.

Note: Be sure to use stainless steel nails for the siding. Anything else will leave stains as it streaks over time.

For the stain, I chose a translucent (not the same as semi-transparent) stain in cedar tone. It only required a single coat. I really like the translucent look, as it keeps all the grain detail.

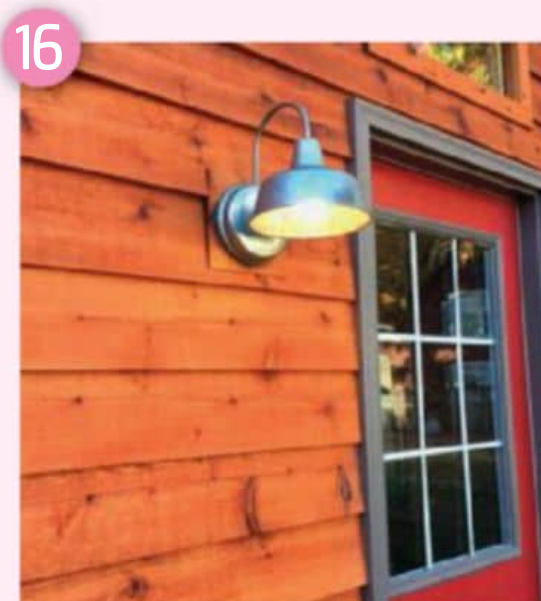
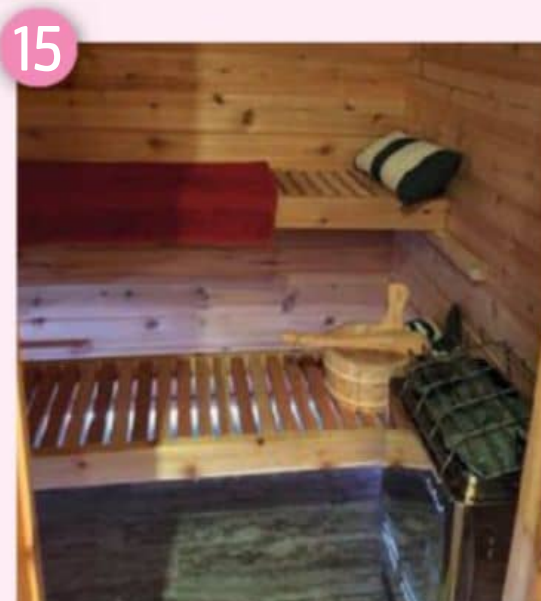
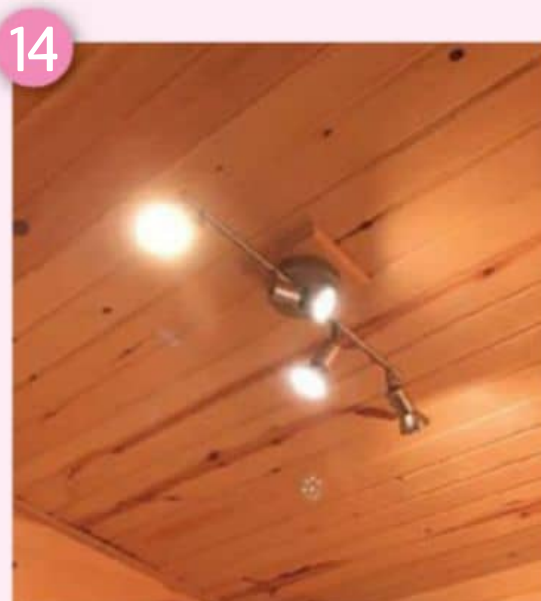
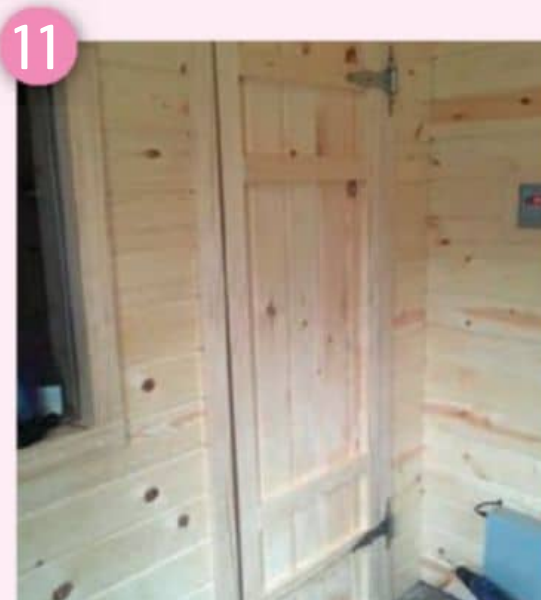
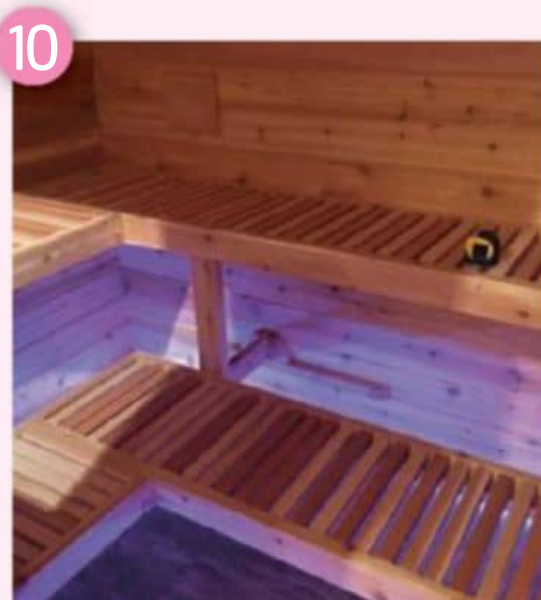
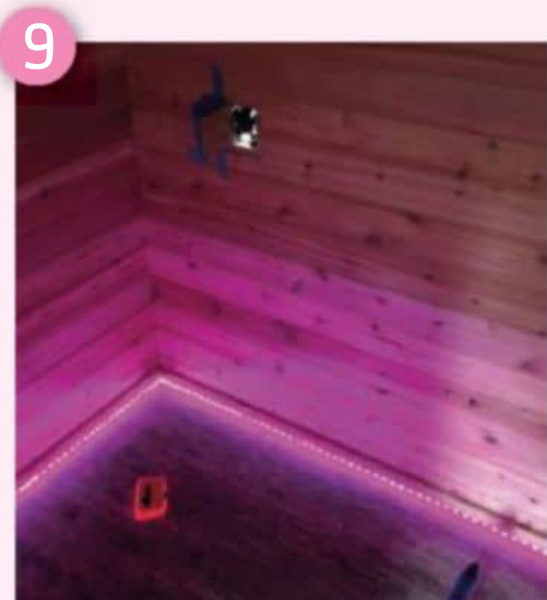
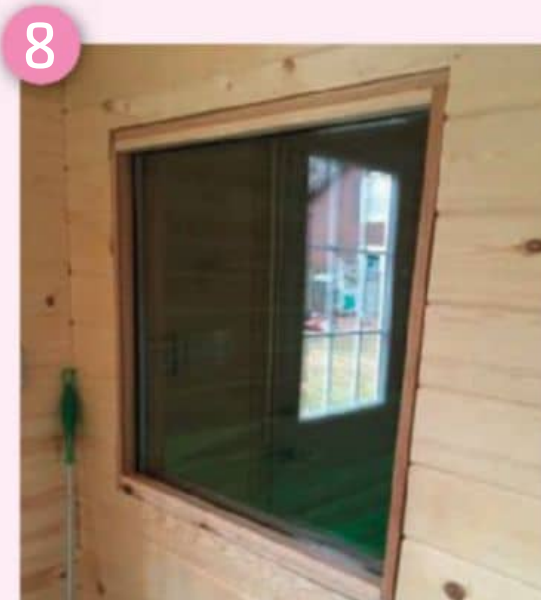
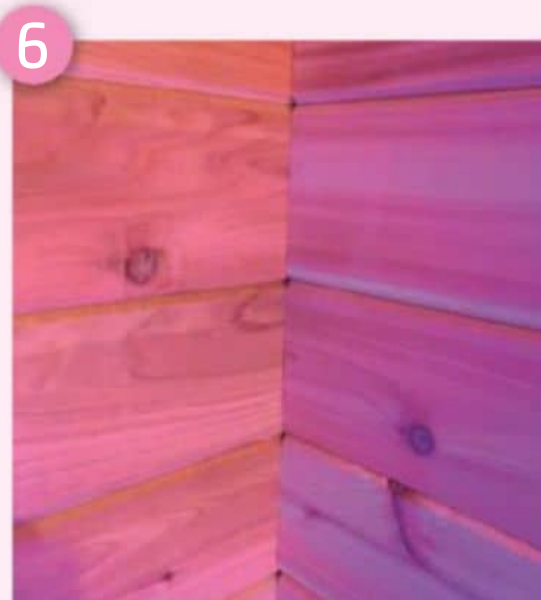
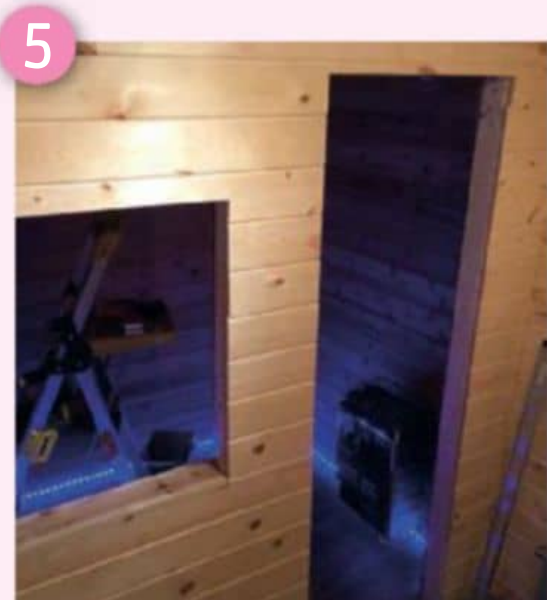
Step 6: The finished product

I painted the door to match the roof and added a flower planter in the window. For this year, I built a small landing/step, but next summer I'm going to build a large deck on the front for a hot tub.

One of the outlets is at chest height in the changing room, and we added a little shelf for a place to put a radio, and a few sauna supplies.

Building your own sauna is a rewarding project that blends traditional relaxation

techniques with modern conveniences. From framing and insulation to the final touches of interior decor and lighting, each step brings you closer to a personal wellness retreat in your own backyard. The effort put into careful insulation, wiring, and aesthetic details ensures a functional and beautiful space that will provide relaxation and health benefits for years to come. Whether you follow these steps to the letter or adapt them to your own needs, creating a sauna is a fulfilling endeavour that marries craftsmanship with comfort.



1. Insulation is pretty important in a sauna, and you've got to be mindful of moisture 2. I chose an aluminium faced mineral wool insulation for the sauna area, and aluminium faced fibreglass in the changing room 3. My 9KW heater 4. The transom window I installed – a window placed above a door or another window 5. I wanted to run multi coloured LED strips around the perimeter of the floor in the sauna 6. Corner detail of the siding 7. A framed area I built for the electrics 8. Add in the internal window 9. LEDs installed 10. Sauna benches and seating added 11. I custom built my own door using a sheet of 19mm plywood 12. The cover for the electrics 13. The switches I decided to go with 14. I installed an overhead light in the changing room 15. Almost ready for its first use! 16. Outdoor lighting added for those dark nights



Make a DIY
serviette holder.

A PINCH OF CREATIVITY



What you will need

- Wooden pegs (the clamping, spring loaded kind with two pieces, not the hold fashioned all-wooden ones)
- Wood glue
- White acrylic paint (or whatever colour you prefer)
- Paint brush
- Scissors
- Patterned napkin
- Decoupage glue (or white school glue, slightly diluted)

Have you ever been distracted while organising your home and found yourself struck by unexpected creative inspiration? This often happens to me with random household items I wouldn't usually consider for DIY projects but suddenly feel would make fantastic tools for creating something unique. This is exactly what happened when I was cleaning out

the laundry room and came across a pack of plain wooden pegs I had forgotten about. Instead of stashing them away again, I decided to use my DIY skills to give them a new lease of life, leading to the creation of a peg serviette/napkin holder! It was the perfect school holiday project to involve the kids with too.

Once I'd created one napkin holder, I became obsessed with the idea and started thinking about how I could paint and embellish more of them differently for various seasons, holidays, and occasions. By the time I made this lovely floral version for spring, my DIY friends took note and wanted to see how I made the holders, so I recorded the process to show them.

Step-by-step guide

Step 1: Disassemble the pegs

Gather about 32 plain wooden pegs and take them apart. You can easily dismantle the pieces, giving you two

wooden sides and a metal spring. Set the springs aside; they can be useful for other crafts. You'll use the wooden sides, totalling 64 once you've taken apart your 32 pegs. You can use more or fewer pegs to make a larger or smaller napkin holder, but my numbers worked well for holding regular-sized square napkins folded triangularly.

Step 2: Paint the peg halves

Use your paintbrush and coloured paint (I used white, but you can choose any colour) to paint your wooden peg halves entirely, covering all sides. Lay them out on a piece of paper, plastic, or another protective tarp to dry completely.

Step 3: Create tapered wooden shapes

Pick up one dried wooden half and turn it so the flat side faces you. Apply glue along the flat side, smoothing it up and down the entire

length. Stick a second peg half to the glued side, ensuring the edges of their top and bottom ends are even. Set this paired shape aside to dry and continue making more pairs. I made 28 inverted and double pieces, each glued back to back along their flat sides, giving you 14 shapes on each side for the fanned pieces.

Step 4: Form the fanned shape

Once the doubled shapes are dry, pick up one and apply glue on the side of its tapered end. Stick a second paired piece to the glued side, lining up the bottom edges. Repeat this process until you have a semi-circular or fanned shape. I glued 14 paired pieces to achieve the size and shape I wanted. Check your work by setting the exposed flat edge of the first piece on the left side flat on the table and ensuring the right side arches enough to sit flat on the tabletop.

Step 5: Repeat for the second fanned shape

Repeat the entire process to create a second fanned shape, using the same number of pieces so both sides are the same size. When everything has dried, you'll have two fanned shapes.

Step 6: Build the base

Use the remaining wooden peg halves

to create the base. You'll need four singular painted pieces. Hold one peg half so you're looking at its ridged side, then turn that side to face the left. Apply glue along the right edge. Stick a second wooden half to the first one along its left edge, ensuring the top and bottom ends are even. Set this double-wide piece down to dry and repeat with another two wooden halves.

Step 7: Assemble the base

Pick up your first double-wide piece once the glue has dried and hold it horizontally, with the flat sides down and ridged sides up. Apply glue on the rounded end and stick the other double-wide base piece to it, forming one double-long piece with the thinner tapered ends sticking out to the left and right. Set the piece aside to dry.

Step 8: Cut out decorative pieces

Cut out pieces, patterns, or shapes from the printed or coloured napkins to embellish your holder. I chose a floral print napkin to cut out blossoms and scatter them across the fanned sides for a springtime aesthetic.

Step 9: Decoupage the decorative pieces

Use decoupage glue (like Mod Podge) or diluted white school glue and a

paintbrush to attach the cutout napkin shapes to the fanned sides of your napkin holder. Apply a light, thin layer of glue where you want to stick the piece, place it smoothly, and cover the napkin piece with glue, pasting it firmly into place. Ensure you use thin layers of glue and a light touch to avoid wrinkling or tearing the napkin. Cover the entire shape and its edges to prevent peeling later. Do both sides and set them aside to dry.

Step 10: Assemble the napkin holder

Turn your base piece on its side, with the flat sides facing you and the side edge up. Apply glue along the side edge. Turn the first fanned side so the undecorated side faces the base and stick the two together, ensuring the centre of the base piece is even with the centre of the fanned side. Repeat on the opposite side with the second fanned side. Set the completed piece aside to dry.

Fill your holder with napkins, and voila! You've got a finished springtime napkin holder made from pegs. Feel free to use this tutorial as a base technique and get creative with the colours and embellishments.



1. Gather your supplies and remove the springs 2. Paint your pegs 3. Glue them together 4. Form the fanned shape 5. Build the base 6. Decorate your napkin holder 7. Assemble the project



Elevate your space with painting techniques for exterior walls.

Brushing BRILLIANCE

Exterior wall painting is a transformative way to refresh and protect your home. A fresh coat of paint not only enhances curb appeal but also provides a protective barrier against the elements, extending the life of your exterior surfaces. Whether you're aiming to boost your home's aesthetic or simply need to address peeling paint, mastering the right techniques can make a world of difference. This comprehensive guide covers everything from preparation to finishing touches, equipping you with the knowledge to achieve professional results.

The benefits of exterior wall painting

A well-painted exterior dramatically improves the visual appeal of your home, making it more inviting and potentially increasing its value. Quality exterior paint acts as a barrier against rain, wind, and sun, preventing damage to the underlying materials. Regular painting helps prevent wear and tear, protecting your home from moisture, mould, and mildew. Addressing minor issues through painting can prevent more significant, costly repairs down the line. Additionally, painting allows you to personalise your home's exterior, reflecting your style and creating a unique look.

Essential tools and materials for exterior painting

Before embarking on your exterior painting project, gather the following tools and materials:

- **Paint and primer:** Choose high-quality exterior paint and primer suited for your wall material (e.g., wood, brick, stucco).

- **Paint brushes and rollers:** Select a variety of sizes for different surfaces and areas.
 - **Paint trays and liners:** For holding and distributing paint.
 - **Painter's tape:** To protect areas you don't want to paint.
 - **Drop cloths:** To protect the ground and nearby surfaces from paint splatters.
 - **Scrapers and wire brushes:** For removing old paint and cleaning surfaces.
 - **Sandpaper and sanding blocks:** To smooth surfaces and ensure proper paint adhesion.
 - **Ladders and scaffolding:** For safely reaching higher areas.
 - **Silicone and silicone gun:** To fill gaps and cracks.
 - **Safety gear:** Including gloves, safety glasses, and dust masks.
- Preparation for Exterior Wall Painting

Preparation for exterior wall painting

First, inspect the surface for any damage such as cracks, holes, or rot, and repair any issues before painting to ensure a smooth, durable finish. Use silicone to fill gaps and cracks in the surface, smoothing it with a putty knife and allowing it to dry completely. Next, clean the exterior walls with a pressure washer to remove dirt, grime, and loose paint, a crucial step for proper paint adhesion. After cleaning, scrape off any remaining loose paint with a scraper and sand the surface smooth, paying extra attention to areas with peeling or blistering paint.

cont on p28

Tired of boring FLOWERPOTS?

***Cameo Decor Paint
is here to save the day!***

Imagine silky smooth paint that transforms your flowerpots from Drab to Fab in a snap!

No more sanding or priming - just pure creative fun whether on cement, terracotta, plastic to metal or glass! NO MORE GUESSING - CAMEO DOES IT!

Cameo Decor Paint is super easy to apply - even your cat could do it! (But please, don't let it.)

It adheres to almost anything - even your ex's old coffee table. (reconsider that as well ... hmmm, maybe not!)

Formulated for a silky smooth finish - you'll want to keep touching it.

Plus, we now have the perfect stencils to get you started! We're rolling them out slowly, so keep an eye out for new designs.

But wait, there's more!

Cameo Decor Paint was just the starting point! We've got a whole range of magical products to

help you unleash your inner artist: Decor Paint Paste/Modge - for adding texture and dimension. Decor Sealer/Primer protects the masterpiece! Paint Waxes, Metallic Paints, Paint Brushes, Paint Aids - we've got you covered from start to finish.

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Choose a primer suitable for your wall material, as primer helps paint adhere better and provides a uniform surface. Apply the primer using a brush or roller, ensuring even coverage and allowing it to dry according to the manufacturer's instructions.

Painting techniques for exterior walls

Use high-quality exterior paint designed for the specific material of your walls, with a colorfast paint being a popular choice due to its durability and fadeability. Consider the finish based on your aesthetic preference and the area being painted, with satin or semi-gloss finishes ideal for trim and doors, a flat or matte finish working well for larger wall areas.

Start by painting the edges and corners with a brush, a technique known as cutting in, then move to larger areas with a roller as it roller marks most the edges. For large areas, use a roller to apply paint quickly and evenly, working in small sections and applying paint in a W or M pattern to avoid roller marks. To prevent lap marks, always maintain a wet edge by overlapping the previous section while the paint is still wet. Apply the first coat of paint and allow it to dry completely, then a second coat provides full coverage, especially if you're making a significant color change.

Apply a second coat for a smoother, sturdier finish, ensuring the first coat is fully dry before applying the second to avoid peeling or uneven finish. Use smaller brushes for trim, doors, and windows, paying attention to detail to achieve a crisp, professional look. For textured surfaces, use a thicker roller cover designed for rough textures, applying paint generously to ensure even coverage in all crevices.

DIY painting upgrades and techniques

Use color blocking to highlight architectural features or create a unique look, choosing complementary colors to enhance visual appeal. Mask off sections with painter's tape and paint each section a different color, removing the tape carefully while the paint is still wet to avoid peeling.

Techniques like sponging, rag rolling, and stippling can add depth and texture to your exterior walls, practice these techniques on a small area before applying them to the entire surface. Use special brushes, sponges, or rags to create the desired effect, layering multiple colors for a more intricate look. Stenciling a flower pattern adds patterns and designs to your exterior wall by choose durable, weather-resistant stencils for outdoor use. Secure the stencil to the wall and apply paint with a stencil brush or sponge, using light, dabbing motions to prevent paint from bleeding under the stencil. If

you're artistically inclined, consider painting a mural on a feature wall, adding a unique, personal touch to your home's exterior. Sketch the design on paper first, then transfer it to the wall using a grid method or projector.

and use weather-resistant paints and sealers to protect your artwork.

Safety and environmental considerations

Ensure ladders and scaffolding are stable and secure before climbing, and never overreach or lean too far from ladders. Always wear gloves, safety glasses, and a dust mask when scraping, sanding, or painting, as dust and paint particles can irritate your eyes, nose, and throat. Proper disposal of paint cans, brushes, and other materials is responsible, checking local regulations for hazardous waste disposal.

Opt for low VOC (volatile organic compound) or zero-VOC paints to reduce environmental impact and improve air quality, and dispose of paint cans, brushes, and other materials responsibly, checking local regulations for hazardous waste disposal.

Maintaining your exterior paint job

Inspect your exterior paint annually for signs of damage or wear, looking for cracks, peeling, or fading, and addressing issues promptly to prevent further deterioration. Perform touch-ups as needed to keep your exterior looking fresh, as small touch repairs can prevent the need for a full repainting job. Clean your exterior walls periodically to remove dirt, mold, and pollutants, using a gentle detergent and a soft brush or pressure washer on a low setting.

Keep gutters and downspouts clear and free of debris to prevent water damage to your exterior walls. Apply sealants to areas exposed to harsh weather, such as doors and windows, to enhance durability and protect them. Integrate landscaping around your home to protect plants and trees from damaging the painted surfaces, trimming branches and removing stumps that may cause wear and tear.

Achieving lasting brilliance through exterior wall painting is both rewarding and impactful. With careful preparation, the right tools, and mastery of various techniques, you can transform your home's exterior into a beautiful, durable masterpiece. Whether you're updating your home's appearance, protecting it from the elements, or adding unique design elements, this guide provides the essential steps to ensuring your painting project is a success. Embrace your space with confidence and enjoy the lasting benefits of a well-painted exterior.



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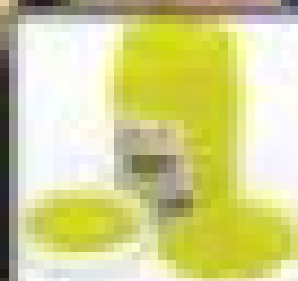
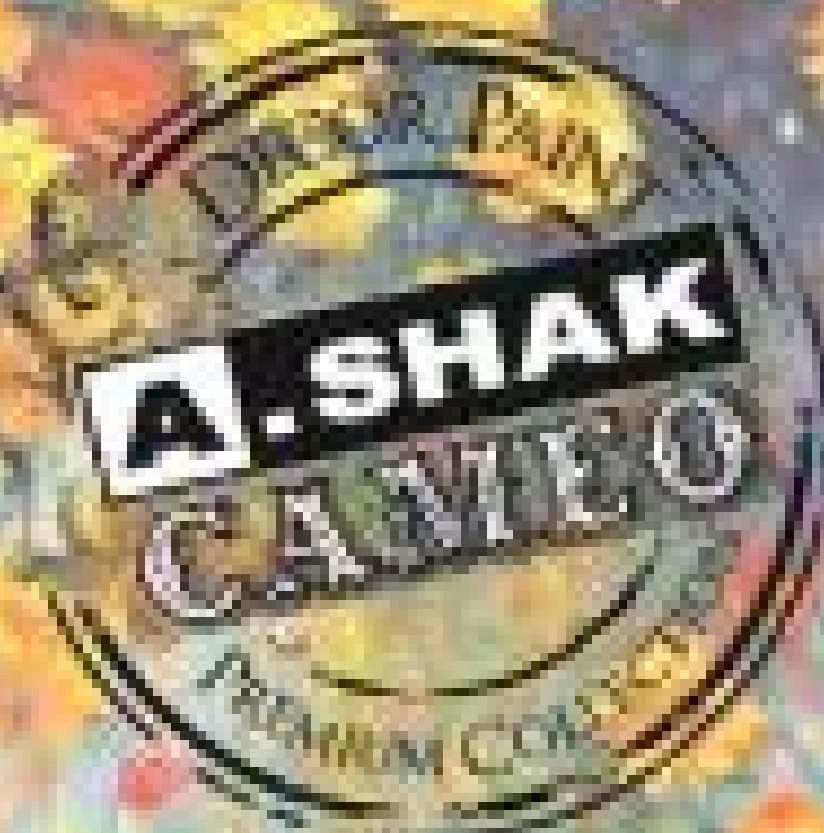
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Transform your space with tiling. Get all the background and practical guidance you need.

A COMPREHENSIVE GUIDE TO TILING

Tiling is one of the most popular and versatile ways to enhance the aesthetics and functionality of any space, be it a kitchen, bathroom, or even a living area. With a vast array of styles, colours, and materials available, tiles can cater to

every taste and requirement. Whether you are a seasoned DIY enthusiast or a beginner looking to embark on your first project, this comprehensive guide will provide you with the knowledge and confidence to undertake your tiling project with success.

The pros of tiling

- **Durability:** Tiles are incredibly durable and can withstand high traffic and wear, making them ideal for floors in busy households. They are resistant to scratches, dents, and stains, ensuring your surfaces remain pristine for years.
- **Water resistance:** Tiles, especially ceramic and porcelain, are highly water-resistant. This makes them perfect for areas prone to moisture, such as bathrooms and kitchens, reducing the risk of mould and mildew.
- **Low maintenance:** Cleaning tiles is straightforward and requires minimal effort. Regular sweeping and mopping are usually enough to keep them looking their best. For a deeper clean, occasional scrubbing with mild cleaners will suffice.
- **Aesthetic appeal:** With an endless selection of designs, colours, and textures, tiles can enhance the visual appeal of any room. From classic to contemporary styles, there is a tile to suit every décor.
- **Heat resistance:** Tiles are excellent at withstanding high temperatures, making them a perfect choice for kitchen splashbacks and around fireplaces.

- **Hygienic:** Unlike carpets, tiles do not harbour dust, dirt, or allergens, contributing to a healthier indoor environment. This is particularly beneficial for those with allergies or asthma.



When laying tiles, lay them onto the adhesive, pressing them firmly into place

Techniques for successful tiling

- **Preparation:** Start by preparing the surface to be tiled. Ensure it is clean, dry, and free of any debris. If tiling over existing tiles, make sure they are securely fixed and in good condition. For walls, apply a primer to help the adhesive bond better.
- **Planning and layout:** Measure the area and plan the layout of your tiles. It is crucial to dry-lay your tiles to determine the best placement and to minimise cuts. Start from the centre of the area and work your way outwards for a symmetrical finish.
- **Cutting tiles:** Use a tile cutter or wet saw to cut tiles to the required size. For intricate cuts around fixtures or corners, use tile nippers. Always wear safety glasses and gloves when cutting tiles to protect yourself from sharp edges and flying debris.
- **Applying adhesive:** Use a notched trowel to spread adhesive evenly over a small section of the surface. Hold the trowel at a 45-degree angle to create grooves in the adhesive, which will help the tiles bond more effectively.
- **Laying tiles:** Place the tiles onto the adhesive, pressing them firmly into place. Use tile spacers between each tile to ensure consistent gaps. Check regularly with a spirit level to ensure the tiles are level and adjust as necessary.
- **Cutting and fitting edge tiles:** Measure and cut edge tiles to fit. Apply adhesive to the back of each cut tile and press it into place, ensuring it is level with the surrounding tiles.
- **Grouting:** Once the adhesive has set (usually after 24 hours), remove the tile spacers and prepare the grout. Use a grout float to spread the grout over the tiles, pressing it into the gaps. Hold the float at a 45-degree angle and work diagonally to avoid dislodging the tiles.
- **Cleaning excess grout:** After applying the grout, use a damp sponge to wipe away excess grout from the surface of the tiles.

Rinse the sponge frequently and change the water as needed. Allow the grout to dry for the recommended time before giving the tiles a final clean with a dry cloth.

- **Sealing (optional):** Depending on the type of tile and grout used, you may need to apply a sealer to protect against stains and moisture. Follow the manufacturer’s instructions for the best results.

TOOLS AND TECHNIQUES FOR TILING

Embarking on a tiling project requires careful planning and the right tools. Here is a step-by-step guide to help you get started.

Tools you will need:

Measuring tape	Essential for accurate measurements of the area to be tiled.
Tile cutter or wet saw	For cutting tiles to the required size.
Notched trowel	Used to apply adhesive evenly.
Tile spacers	To ensure consistent spacing between tiles.
Spirit level	To ensure tiles are laid evenly.
Rubber mallet	To gently tap tiles into place.
Tile nippers	For making small cuts and adjustments.
Grout float	For applying grout.
Sponge	For cleaning excess grout.
Bucket	For mixing adhesive and grout.
Safety gear	Including gloves and safety glasses.



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- Bonding steel, iron or aluminium to itself or other metals
- Bonding wood to itself or other surfaces like metal or masonry
- Repairing joint / crack arises.
- Filling holes in mortar or concrete surfaces

Transform your space: A guide to tiling a floor

Floor tiling is a fantastic way to update the look and feel of any room in your home. Whether you're aiming for a sleek modern finish, a rustic charm, or a classic look, tiles offer a versatile and durable solution. This guide will walk you through the benefits of floor tiling, the essential tools and materials you'll need, and a step-by-step process to ensure your floor tiling project is a success.

STEP-BY-STEP GUIDE TO TILING A FLOOR

1. Preparation

- **Surface preparation:** Ensure the floor surface is clean, dry, and level. Remove any old flooring, adhesive, or debris. For uneven surfaces, use a self-levelling compound to create a smooth base.
- **Planning the layout:** Measure the floor area to determine the number of tiles needed. Plan your layout starting from the centre of the room to ensure a balanced appearance. Dry-lay the tiles to visualise the pattern and minimise cuts.

2. Cutting the tiles

- **Measuring and marking:** Measure the spaces where tiles need to be cut, mark them accordingly.
- **Cutting:** Use a tile cutter or wet saw to cut the tiles to the required size. For intricate cuts around corners or fixtures, use tile nippers. Always wear safety glasses and gloves to protect yourself.

3. Applying adhesive

- **Mixing the adhesive:** Follow the manufacturer's instructions to mix the adhesive to the right consistency.
- **Spreading the adhesive:** Using a notched trowel, spread the adhesive evenly over a small section of the floor, holding the trowel at a 45-degree angle to create grooves.

4. Laying the tiles

- **Placing the tiles:** Lay the tiles onto the adhesive, pressing them firmly into place. Use tile spacers between each tile to ensure consistent gaps.

- **Checking the level:** Regularly check that the tiles are level using a spirit level. Adjust as necessary by tapping gently with a rubber mallet.

5. Cutting and fitting edge tiles

- **Measuring and cutting:** Measure and cut the edge tiles to fit the remaining spaces. Apply adhesive to the back of each cut tile and press it into place.
- **Ensuring consistency:** Ensure that the edge tiles are level with the rest of the tiles and maintain the same spacing.

6. Grouting

- **Preparation:** Once the adhesive has set (usually after 24 hours), remove the tile spacers.
- **Mixing the grout:** Prepare the grout according to the manufacturer's instructions.
- **Applying the grout:** Use a grout float to spread the grout over the tiles, pressing it into the gaps. Hold the float at a 45-degree angle and work diagonally to avoid dislodging the tiles.

7. Cleaning excess grout

- **Initial cleaning:** After applying the grout, use a damp sponge to wipe away excess grout from the tile surface. Rinse the sponge frequently and change the water as needed.
- **Final cleaning:** Allow the grout to dry for the recommended time, then give the tiles a final clean with a dry cloth to remove any remaining grout haze.

8. Sealing (optional)

- Depending on the type of tile and grout used, you may need to apply a sealer to protect against stains and moisture. Follow the manufacturer's instructions for the best results.

Tiling a floor can dramatically enhance the look and functionality of your home, offering a durable, easy-to-maintain surface that stands the test of time. With careful planning, the right tools, and attention to detail, you can achieve professional results that will transform your space. Whether you're updating a bathroom, kitchen, or living area, this guide provides the essential steps to ensure your floor tiling project is a success.



Introduction to wall tiling

Wall tiling is an excellent way to add style, texture, and functionality to various rooms in your home. Whether you're updating a kitchen backsplash, adding a decorative feature to your bathroom, or enclosing a laundry room, wall tiles provide a durable and visually appealing solution. This guide will take you through the benefits of wall tiling, the essential tools and materials you'll need, and a step-by-step process to help you achieve a professional finish.

STEP-BY-STEP GUIDE TO TILING A WALL

1. Preparation

- Surface preparation:** Ensure the wall surface is clean, dry, and smooth. Remove any old wall paper, paint, or debris. Fill in any holes or cracks with a suitable filler and sand.
- Planning the layout:** Measure the wall to determine the number of tiles needed. Plan your layout starting from the center or a prominent edge for a symmetrical finish. Dry-lay the tiles to visualize the pattern and minimize cuts.

2. Cutting the tiles

- Measuring and marking:** Determine where tiles need to be cut, mark them accordingly.
- Cutting:** Use a tile cutter or wet saw to cut the tiles to the required size. For intricate cuts around fixtures or corners, use tile nippers. Always wear safety glasses and gloves for protection.

3. Applying adhesive

- Mixing the adhesive:** Follow the manufacturer's instructions to mix the adhesive to the right consistency.
- Spreading the adhesive:** Using a notched trowel, spread the adhesive evenly over a small section of the wall, holding the trowel at a 45-degree angle for a comb pattern.

4. Laying the tiles

- Placing the tiles:** Begin at the bottom and work your way up. Place the tiles onto the adhesive, pressing them firmly into place. Use the spacers between each tile to ensure consistent gaps.
- Checking the level:** Regularly check that the tiles are level using a spirit level. Adjust as necessary by tapping gently with a rubber mallet.

5. Cutting and fitting edge tiles

- Measuring and cutting:** Measure and cut edge tiles to fit the remaining spaces. Apply adhesive to the back and fit the tile into place.
- Ensuring consistency:** Ensure that the edge tiles are laid with the same level and maintain the same spacing.



6. Grouting

- Preparation:** Clean the surface to let the adhesive fully set usually after 24 hours, remove the spacers.
- Mixing the grout:** Prepare the grout according to the manufacturer's instructions.
- Applying the grout:** Use a grout float to spread the grout over the tiles, pushing it into the gaps. Hold the float at a 45-degree angle and work diagonally to avoid scratching the tiles.

7. Cleaning excess grout

- Initial cleaning:** After applying the grout, use a damp sponge to wipe away excess grout from the tile surface. Rinse the sponge frequently and change the water as needed.
- Final cleaning:** Allow the grout to dry for the recommended time, then give the tiles a final clean with a dry cloth to remove any remaining grout haze.

8. Sealing (optional)

- Deep sealing:** Once the grout is fully cured, you may need to apply a sealer to protect against stains and moisture. Follow the manufacturer's instructions for the best results.



When tiling a wall, begin at the bottom and work your way up. Use spacers between tiles to ensure consistent gaps.



Ford South Africa presented South African journalists with customer-inspired innovations that further enhance its practicality. I had the privilege to test drive the vehicle at the launch in June.

DRIVING THE FORD TRANSIT CUSTOM

by Hanneli Lindgren

Key features

- **Weight and dimensions:** The vehicle is 100kg lighter than previous models, and features a 100mm lower floor height, maintaining a height of under 1m overall.
- **Connectivity:** Staying connected with sales, LED interior lights, plastic and rubber flooring, and eight tie-down points for secure cargo.
- **Technology and comfort:** Standard features include a 7-inch touch screen multimedia system, Apple CarPlay, and Android Auto, a 7-inch instrument display, two USB-A and two USB-C charging ports, and steel wheels with hubcaps.

The new Ford Transit Custom boasts an enhanced load-carrying ability, a red-improved interior comfort, and convenient features, which are all matched to an exceptional safety net.

Our driving route provided several examples of how spacious the vehicle felt in the busy and congested town of Cape Town, while our journey helped to support Ford's CSR partner organisations and a few other good causes in the region, and internationally.

Target market

The new 2nd generation Ford Transit Custom commercial van targets small and medium businesses. The car combines functionality with modern amenities, making it a practical choice for various needs. Its thoughtful design improves efficiency and convenience, to also set it apart by providing for business and individual sales. The Ford Transit has claimed the top spot as the best-selling commercial van in South Africa for 2021 and 2022.

Segment rivals

The Ford Transit Custom competes in the segment of vans including the Toyota Quantum, Hyundai Santa Fe, Volkswagen Transporter, Mercedes-Benz Vito, and Renault Trafic, with the largest load volume capacity (11.5m³), payload capacity (1.125t), lowest vehicle mass (1.81t), and most designs (11).

Interior design

The new Transit Custom retains a similar interior look, but features a completely redesigned interior. Two large screens dominate the dashboard, and the flat floor allows for easy cleaning and removal. The cabin is spacious and equipped with heavy-duty tray-style floor mats, vinyl door-climate control, USB-A and USB-C charging ports, a 12-volt socket, and wireless smartphone charging, and a 10-speaker sound system.

KEY DETAILS	2023 FORD TRANSIT CUSTOM
Engine	2.0-litre four-cylinder EcoBlue diesel
Power	100kW (135hp)
Torque	140Nm (103.25kgm)
Drive type	Front-wheel drive
Transmission	6-speed manual
Power-to-weight ratio	19.4kW/t
Fuel type	Diesel
Fuel tank size	70L (about 1,100km)
Weight	2,000kg
Payload	1,125kg
Load-carrying	1.125t, 11.5m³
Space-time type	Timedrive

Ford's SYNC 4 infotainment system is located in a central instrument system at least you can control a limited set of features of both items. The infotainment system features include an Apple CarPlay, Android Auto, digital radio, satellite navigation, a full-sized radio. A pair of USB-A and USB-C ports, and an optional wireless charging pad are also available for charging. The interface is simple to use, although there are small screen control settings that into the car that may require more driver attention. The 12-inch configurable digital instrument cluster offers useful features such as a tire pressure monitoring, speed sign recognition, a speed limiter, power window control, lane keep assist, red zone navigation, and a driver fatigue detector.

Driver comfort

The driver and front passenger manual reclining seat belt seat has adjustable headrests, and a adjustable driver side and passenger side lateral armrests. The steering wheel, mounted in the center console, provides a full range of adjustment, enhancing driver comfort. The automatic shifting gear select or has been moved to the dashboard area to save floor space.

Load bay

The Transit Custom offers heavy-duty cargo loading and ample load space, with the long wheelbase version extending up to 10 cubic metres of cargo space. The load floor is 100mm lower than the pickup model, making it easier to load and unload cargo. The overall height has been reduced to 1.961m, but not, including a 2mm to 1mm reduction. The sliding doors on both sides and the two rear doors, allowing up to 100% make it the most accessible when loading and unloading. The body features eight power windows, including the driver's side, power windows, and bright LED interior lights. The load bay measurements are 1.311m between the inner wheel wells, and 1.413m between the outer.

Safety

Standard safety features include lane keep assist, blind-spot monitoring, rear cross-traffic alert, speed sign recognition, and digital rear-view mirror. The lane keep assist system performed well during testing. The Transit is fitted with ABS, ESP, and ESC. Road holding is assisted by electronic traction and stability control and automatic hill holder. With the Transit comes a full suite of safety features, including a full suite of safety features, including the blind spot.

Suspension

The new Transit rides on a new, lower platform, and independent rear-wheel suspension. This provides consistent handling and minimal body roll.

Ford notes that the new platform is 10% stiffer, and weight reductions are up to 100kg compared to the old model. Additionally, aerodynamic drag has been cut by 1.1%, making it more fuel efficient.



Engine

The 2.0T panel van is powered by a 2.0-liter 4-cylinder EcoBlue EcoBoost engine. The start-up produces 100kW at 3,000rpm, and 110hp of torque from 1,750 to 2,000 rpm, paired with a six-speed manual transmission.

Fuel efficiency

In our measuring conditions, from King's College to the north, the vehicle played 7.1L/100km on the trip computer, giving us a range of 500km on a 35-liter tank.

Driving experience

The Transit Custom is known for its pleasant driving experience, and the new model lives up to this reputation. The vehicle is easy to park, and the D-shaped steering is very light, direct, and accurate, and the suspension handles most road conditions comfortably. Inside, the cabin is very quiet, even when traveling at high speed, and visibility is good thanks to large windows and digital rear-view mirror.

Testing speed

The Ford Transit Custom can run up to 2,000kg for the standard.

Warranty

The Ford Transit Custom commercial van is currently priced at \$49,200, which is a big investment. The warranty includes a 4-year/100,000-mile Roadside Assistance, and the first 100,000-mile/100,000-mile warranty. The recommended service interval is 10,000km or annually, whichever is earlier. It is also worth noting that the panel van is 1.3L and the van is 1.3L, and the van is 1.3L.

Customers have the option of purchasing a Ford Protect service or a full-service plan upgrade up to eight years or 100,000km. The warranty can be extended up to seven years or 100,000km, while the Roadside Assistance can be extended for a maximum of 10 years.

Final impressions

The new Ford Transit Custom is a well-rounded van that competes effectively with its rivals. It's spacious interior, modern tech features, and confident handling make it a strong contender in the market. It is well-priced compared to competitors, something potential buyers should take note of. With improved look and feeling, the Transit Custom is poised to capture a larger share of the market in 2024.

For more news and developments about commercial vehicles, visit Ford's website or contact your local Ford dealer.

ENGINE & TRANSMISSION

- 2.0L Panther Diesel Engine with six-speed manual transmission
- Maximum Power: 100kW
- Maximum Torque: 360Nm

WHEELS & TYRES

- 16-inch Spare Wheel
- 16-inch Steel Road Wheels with Wheel Covers
- Tyre pressure monitoring

EXTERIOR LIGHTING

- Automatic Headlights
- Automatic High Beam Control
- Daytime Running Lights
- LED Headlights
- Rear Fog Lamps

STOWAGE & CARRYING

- 2 seats: Single Driver and Passenger Seat
- 4-Way Driver Seat Manual Adjustment

COMFORT & CONVENIENCE

- Driver and Passenger (Outboard) Heated Front Seats
- Full Width Metal Bulkhead with Window and Load-Through Hatch

COMFORT & CONVENIENCE *contd.*

- Kerbside Load Door
- Load Area Protection Kit – Full Height Walls & Moulded Floor
- Load Area Tie Down Loops (8)
- Push-button start
- Rear Twin Barn Door with Window (180-degree opening)
- Ultra Bright LED Load Area Compartment Lights

AUDIO & COMMUNICATIONS

- 12-inch Driver Cluster with 7-inch Colour Digital Instrument Cluster with Configurable Display
- 13-inch Landscape Colour Multi-Function Touchscreen
- Built-In Satellite Navigation with one year of Connected Navigation Services included
- Embedded Modem compatible with FordPass
- FordPass app connectivity
- SYNC® 4 with Voice-Activated Controls
- Wireless Apple CarPlay™ & Android Auto
- Wireless Charging

DRIVER ASSISTANCE

- Adaptive cruise control
- Autonomous Emergency Braking (AEB)
- Blind-spot monitoring
- Collision mitigation system
- Drive mode selection: Normal, Eco, Slippery and Tow
- Driver impairment monitor
- Evasive steering assist
- Front parking aid
- Lane keeping aid
- Rain-sensing wipers
- Rear view camera - digital
- Traffic sign recognition
- Wireless phone charger

BRAKES

- Electric park brake
- Front and rear disc brakes
- Front and rear parking sensors
- Front, front-side and curtain airbags

TOWING

- Trailer sway assist
- 2,500kg Maximum Braked Towing Capacity



1. The Ford Transit has a large load volume capacity and payload capability 2. The 7.0-inch instrument display 3. The 2.0-litre 4-cylinder turbo-diesel engine produces 100kW and 360Nm 4. The cabin is spacious interior with modern tech features 5. Huge side mirrors

Dive into DIY pool care and improvements for a sparkling oasis.

POOL PERFECTION

Opening a pool can be a source of great joy, offering a refreshing escape during hot summer days and a place for fun gatherings with family and friends. However, maintaining a pool requires regular care and occasional

upgrades to keep it in peak condition. Here we will explore the essentials of DIY pool maintenance, from routine care to helpful upgrades, helping you create and maintain a sparkling oasis in your back yard.

What you will need

Before diving into DIY pool care, ensure you have the following tools and supplies:

- **Pool skimmer** For removing leaves, debris, and insects from the water surface. A good skimmer can save time and effort by quickly clearing the water surface, preventing debris from sinking to the bottom and increasing maintenance.
- **Pool vacuum** To clean the pool floor and walls. Pool vacuums come in various types, including manual, automatic, and robotic. Choose one that fits your budget and pool size for efficient cleaning.
- **Pool brush** For scrubbing the walls, steps, and other surfaces. Regular brushing prevents algae and dirt from building up, keeping your pool surface smooth and clear.
- **Test kit or test strips** To monitor and adjust water chemistry. Accurate testing ensures that your pool water remains balanced and safe for swimming. Test kits provide more precise readings, while test strips offer a quick and convenient option.
- **Pool net** To scoop out large debris like twigs and other floating items.

From the water's perspective, there's also keeping the filter or vacuum clean for the pool surface.

- **Chemical dispensers** For easy distribution of pool chemicals. Floating dispensers and automatic feeders help maintain consistent chemical levels, reducing the need for manual adjustments.
- **Water tester** For keeping up the pool water level. Keeping the water level within the recommended range ensures proper circulation and filtration, preventing damage to the pump and filter.
- **Pool covers** To keep the pool clean when not in use and reduce evaporation. A good pool cover can significantly reduce maintenance efforts by keeping out debris and minimizing water loss. Solar covers also help retain heat, reducing your swimming season.



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- 1.0L Pentastar Diesel Engine with 100-hp (74.6 kW) and 200 lb-ft (271.2 N·m) of torque
- 100-hp (74.6 kW) Pentastar Diesel Engine
- 100-hp (74.6 kW) Pentastar Diesel Engine

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

- a. The results suggest no effect.
- b. The results suggest Richard McFarley used his McFarley Connection.
- c. The results indicate Richard used his

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- Acetone is a form of lipid
- Acetone is a triglyceride
- Chlorine is a form of lipid
- Chlorine is a triglyceride
- Chlorine is a triglyceride

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- 2 weeks: through the new great Pangean superocean
- 4 May: the new Great Atlantic Oceanic

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- **Disorder and Passenger (Childhood)**
First level Freud theory
- **Paul Mowbray** **Intellectual** **Stable** **and** **emotional**
Winnicott **and** **Loevinger** **The** **Good** **Friday**

U.S. 100% CASH OFFER: \$1.00 PER SHARE (100% CASH OFFER) (100% CASH OFFER)

- *Strophocaulis* L. var. *aff. linearis*
- *Leucanth. Arvens.* Fr. et coll. var. *EG* L. = *Pauli*
- *Fr. et coll. Vitis* L. & *Strophocaulis* L.
- *Leucanth. Arvens.* Th. et coll. var. *linearis* L.
- *Strophocaulis* L. var. *aff. linearis*
- *Strophocaulis* L. var. *aff. linearis* (W. & A.)
[1880] *Strophocaulis* L. var. *aff. linearis*
- *Strophocaulis* L. var. *aff. linearis* (W. & A.)
[1880] *Strophocaulis* L. var. *aff. linearis*

Received 10 November 2004; accepted 12 January 2005

- [illegible]

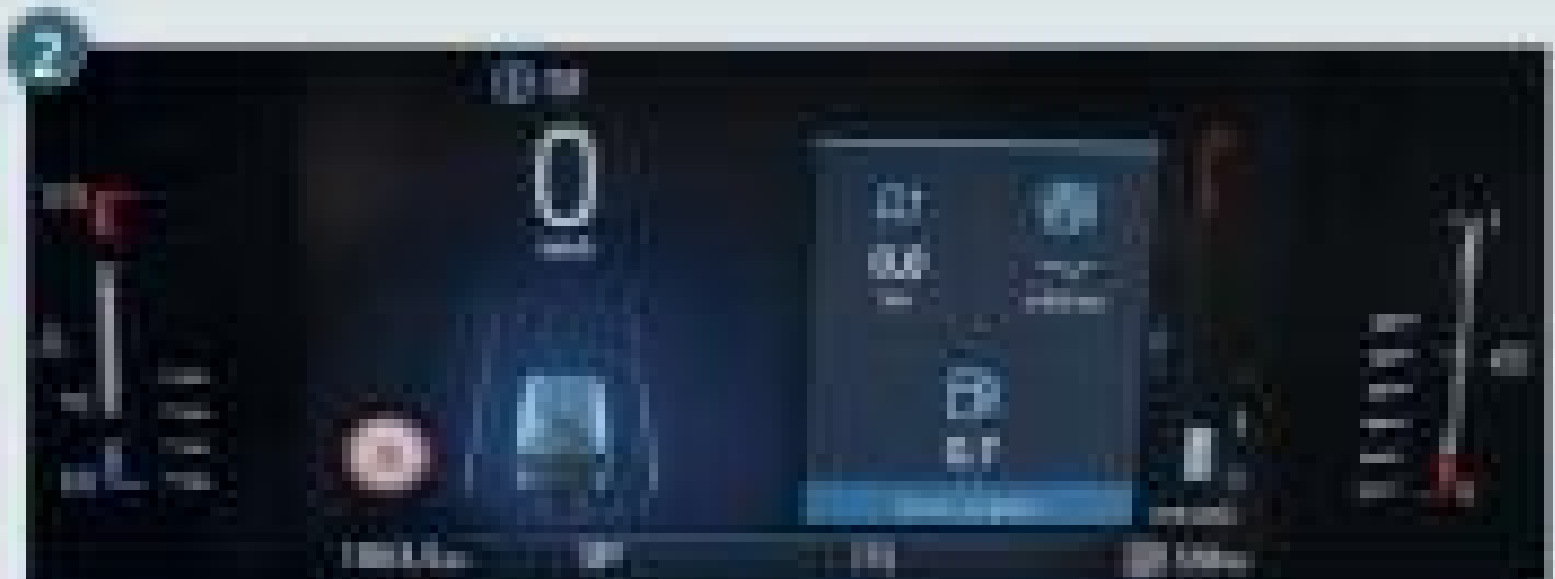
Abstract

- [illegible]

- El está en... para lo que necesito
- El está... ahora en... el... la... la...
- El está... ahora en... para lo que necesito...
- El está... la... la... la... la... la... la...

100

- The first survey failed.
- J. J. Kling, before leaving, told about something called the



1. The coefficient of the degree d column is unity and provided $\alpha \neq 0$. The 2D coefficients are unity. The 2D coefficients are calculated using equation (10) and (11) in it. The value of α can be obtained by substituting the value of α in equation (10) and (11).

Dive into DIY pool care and improvements for a sparkling oasis.

POOL PERFECTION

Opening a pool can be a source of great joy, offering a refreshing escape during hot summer days and a place for fun gatherings with family and friends. However, maintaining a pool requires regular care and occasional

upgrades to keep it in peak condition. Here we will explore the essentials of DIY pool maintenance, from routine care to helpful upgrades, helping you create and maintain a sparkling oasis in your back yard.

What you will need

Before diving into DIY pool maintenance, gather the following tools and supplies:

- **Pool skimmer** For removing leaves, debris, and insects from the water surface. A good skimmer can save time and effort by quickly clearing the water surface, preventing debris from sinking to the bottom and increasing maintenance.
- **Pool vacuum** To clean the pool floor and walls. Pool vacuums come in various types, including manual, automatic, and robotic. Choose one that fits your budget and pool size for efficient cleaning.
- **Pool brush** For scrubbing the walls, steps, and other surfaces. Regular brushing prevents algae and dirt from building up, keeping your pool surface smooth and clear.
- **Test kit or test strips** To monitor and adjust water chemistry. Accurate testing ensures that your pool water remains balanced and safe for swimming. Test kits provide more precise readings, while test strips offer a quick and convenient option.
- **Pool net** To scoop out large debris. A sturdy pool net helps you remove leaves, twigs, and other floating items

from the water, preventing them from clogging the filter or causing damage to the pool surface.

- **Chemical dispensers** For easy distribution of pool chemicals. Floating dispensers and automatic feeders help maintain consistent chemical levels, reducing the need for manual adjustments.
- **Water tester** For keeping up the pool water level. Keeping the water level within the recommended range ensures proper circulation and filtration, preventing damage to the pump and filter.
- **Pool covers** To keep the pool clean when not in use and reduce evaporation. A good pool cover can significantly reduce maintenance efforts by keeping out debris and minimizing water loss. Solar covers also help retain heat, reducing your swimming season.



STANDARD 2. TRANSPORTATION

- 2.0L PureFlex Diesel Engine with 100 speed manual transmission
- 240-hp Power Windows 100kV
- 240-hp Power Windows 100kV

STANDARD 3. TYPE 1

- 10-inch 8-spoke Wheel
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers

STANDARD 4. LIGHTING

- Automatic Headlight
- Automatic Headlight with 10-inch Wheel
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers

STANDARD 5. CARRYING

- 2-seater Single Driver and Passenger Seat
- 4-Way Driver Seat-Adjustable
- 4-Way Passenger Seat-Adjustable

STANDARD 6. CONVENIENCE

- Driver and Passenger (Child) Headrest Front Seats
- Full Width 10-inch 8-spoke Wheel with 10-inch Wheel Covers
- Full Width 10-inch 8-spoke Wheel with 10-inch Wheel Covers

STANDARD 7. 2.0L PUREFLEX DIESEL ENGINE

- Hydraulic Lift and Drive
- 240-hp Power Windows 100kV
- 240-hp Power Windows 100kV
- 240-hp Power Windows 100kV
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STANDARD 8. CONVENIENCE

- 240-hp Power Windows 100kV
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- 240-hp Power Windows 100kV

STANDARD 9. 2.0L PUREFLEX DIESEL ENGINE

- Automatic Headlight
- Automatic Headlight with 10-inch Wheel
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
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STANDARD 10

- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
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- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers

STANDARD 11

- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers
- 10-inch 8-spoke Wheel with 10-inch Wheel Covers



1. The Ford Transit has a large load capacity and payload capacity. 2. The 2.0L PureFlex Diesel Engine. 3. The 2.0L PureFlex Diesel Engine. 4. The 2.0L PureFlex Diesel Engine. 5. The 2.0L PureFlex Diesel Engine.

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From the water's perspective, there's also a lot to be said about keeping the filter in running shape for the pool's health.

- **Chemical dispensers** For easy distribution of pool chemicals. Floating dispensers and automatic feeders help maintain consistent chemical levels, reducing the need for manual adjustments.
- **Water heater** For keeping up the pool's water level. Keeping the water level within the recommended range ensures proper circulation and filtration, preventing damage to the pump and filter.
- **Pool covers** To keep the pool clean when not in use and reduce evaporation. A good pool cover can significantly reduce maintenance costs by keeping out debris and minimizing water loss. Solar covers also help retain heat, reducing your swimming season.



Mastering the art
of adhesives for
your DIY projects.

Sticking it TOGETHER

Adhesives are the unsung heroes of the DIY world, quietly holding everything together behind the scenes. From simple household repairs to intricate crafting projects, the right adhesive can make all the difference in the success and durability of your work. Understanding the various types of adhesives and their applications is essential for any DIY enthusiast. This comprehensive guide will explore different adhesives, their uses, and tips for mastering the art of sticking it all together.

THE IMPORTANCE OF CHOOSING THE RIGHT ADHESIVE

Selecting the correct adhesive is crucial for several reasons:

- **Strength and durability:** Different projects require different levels of bonding strength. Using the right adhesive ensures that your project holds together securely and lasts longer.
- **Material compatibility:** Not all adhesives work well with all materials. Knowing which adhesive to use for specific materials prevents damage and ensures a strong bond.
- **Ease of use:** Some adhesives are easier to work with than others. Choosing an adhesive that suits your skill level and project complexity can make the process smoother and more enjoyable.
- **Aesthetic finish:** The right adhesive can provide a clean, professional finish, while the wrong one can leave unsightly marks or fail to bond correctly.



TYPES OF ADHESIVES AND THEIR USES

PVA glue (Polyvinyl Acetate)

- **Uses:** PVA glue, also known as white glue or wood glue, is versatile and widely used for bonding wood, paper, and fabric.
- **Advantages:** It dries clear, is non-toxic, and is easy to clean up with water.
- **Application tips:** Apply a thin, even layer to one surface, press the pieces together, and clamp if necessary. Allow adequate drying time for a strong bond.

Super glue (Cyanoacrylate)

- **Uses:** Super glue is ideal for quick, strong bonds on small parts and non-porous materials like metal, plastic, and ceramics.
- **Advantages:** It dries rapidly and forms a strong, durable bond.
- **Application tips:** Use sparingly as a small amount goes a long way. Ensure surfaces are clean and dry before applying. Avoid contact with skin as it bonds instantly.

Epoxy resin

- **Uses:** Epoxy is perfect for heavy-duty bonding, filling gaps, and structural repairs on materials like metal, wood, and certain plastics.
- **Advantages:** It provides a very strong bond, is resistant to water and chemicals, and can be sanded or painted once cured.
- **Application tips:** Mix the resin and hardener thoroughly according to the manufacturer's instructions. Apply within the working time and clamp or secure the pieces until fully cured.

Contact adhesive

- **Uses:** Contact adhesive is excellent for bonding large surfaces and materials like laminates, veneers, and rubber.
- **Advantages:** It provides a strong, immediate bond and is flexible once cured.
- **Application tips:** Apply to both surfaces and allow to become touch-dry before pressing together. Ensure precise alignment as repositioning is difficult once bonded.

Hot glue

- **Uses:** Hot glue is versatile and commonly used in crafting, lightweight repairs, and temporary bonding.
- **Advantages:** It bonds quickly, is easy to apply, and works on a variety of materials including fabric, plastic, and wood.
- **Application tips:** Use a hot glue gun and apply the adhesive while it's still molten. Press pieces together immediately and hold until the glue cools and sets.

Construction adhesive

- **Uses:** Construction adhesive is designed for heavy-duty bonding in building projects, including bonding drywall, tiles, and panels.
- **Advantages:** It provides a strong, long-lasting bond and is suitable for both interior and exterior use.
- **Application tips:** Apply with a caulking gun in a zigzag pattern. Press materials together and secure until the adhesive cures.

MASTERING ADHESIVE TECHNIQUES

Surface preparation

- **Cleaning:** Ensure surfaces are clean, dry, and free from dust, grease, or contaminants. Use appropriate cleaning agents for different materials.
- **Sanding:** For porous or rough surfaces, lightly sand to provide better adhesion.

Application techniques

- **Thin layers:** Apply adhesives in thin, even layers to avoid excess squeeze-out and ensure uniform bonding.
- **Clamping:** Use clamps or weights to hold pieces together while the adhesive cures. This ensures a strong, gap-free bond.

Working time

- **Set and cure times:** Be aware of the adhesive's working time (how long you have to position the pieces) and cure time (how long until it reaches full strength). Plan your work accordingly.

Safety precautions

- **Ventilation:** Use adhesives in well-ventilated areas to avoid inhaling fumes.
- **Protective gear:** Wear gloves, safety glasses, and masks when handling strong adhesives or chemicals.

Storage and shelf life

- **Proper storage:** Store adhesives according to the manufacturer's instructions, usually in a cool, dry place. Seal containers tightly to prevent drying out.
- **Shelf life:** Check the expiry date and discard old or deteriorated adhesives, as their bonding effectiveness diminishes over time.

ADVANCED ADHESIVE APPLICATIONS

Laminating

- **Process:** Laminating involves bonding thin layers of material together to create a stronger, composite material. This technique is commonly used in woodworking and furniture making.
- **Tips:** Use a roller to spread the adhesive evenly and clamp the layers securely until the adhesive cures. Ensure all surfaces are smooth and clean before laminating.

Veneering

- **Process:** Veneering involves applying a thin layer of high-quality wood to a less expensive substrate, providing an attractive finish.
- **Tips:** Apply a contact adhesive to both the veneer and the substrate. Allow it to become touch-dry before carefully aligning and pressing the veneer into place. Use a veneer roller to smooth out any air bubbles and ensure a strong bond.

Gap filling

- **Process:** Some adhesives, like epoxy, can also be used to

fill gaps and cracks in materials. This technique is useful for repairs and structural bonding.

- **Tips:** Mix the adhesive thoroughly and apply it to the gap, ensuring it penetrates deeply. Smooth the surface and remove any excess adhesive before it sets.

Plastic bonding

- **Process:** Bonding plastics requires special adhesives that can effectively adhere to non-porous surfaces.
- **Tips:** Use adhesives specifically designed for plastics, such as cyanoacrylate or epoxy. Clean the surfaces with a plastic cleaner and roughen them slightly with sandpaper to improve adhesion.

Mastering the art of adhesives is a crucial skill for any DIY enthusiast. By understanding the various types of adhesives, their applications, and proper techniques, you can tackle a wide range of projects with confidence. From simple household repairs to intricate crafting, the right adhesive can make all the difference in achieving a professional, durable finish. Equip yourself with the knowledge and tools to stick it all together, and elevate your DIY projects to new heights.

The Woodworking Association of Pretoria turns 35 this year

The Woodworking Association of Pretoria was started in 1989 to foster woodworking skills, techniques, knowledge and awareness of wood craftsmanship. In 2024, the organisation will be 35 years old, and is still proudly encouraging members to interchange ideas at workshops and meetings. The association holds an annual expo where members are encouraged to enter their year's work for evaluation by judges. The public is invited to come and enjoy the beauty of the craft.

At the expo, hardware and wood suppliers exhibit wood, tools and gadgets for sale. Demonstrations are held of equipment, and several members demonstrate their skill at woodturning, hand tools and the like. It is a fun day for the whole family with something for everyone. A table is available for youngsters to try their hand at piecing together a couple of wood blocks, while non-woodworkers in the family might enjoy browsing through crafts and hobbies like painting, leatherwork, origami and bonsai trees. The main attraction at the expo is the hall where tables are loaded with members' woodwork on exhibition, and the public may enjoy looking at the work. An area in the hall is set aside where some members have items for sale. It may be the ideal place to start ticking off the year's Christmas shopping list.

The Woodworking Association has three interest groups: cabinet makers, woodturners and wood carvers. The exhibition provides specific judging criteria and comments for each interest

group which are displayed with the judged item. An award of gold, silver or bronze is given to exceptional pieces.

The Woodworking Association has established a close working relationship with the New Hope School for learners with cerebral, palsy, physical and learning disabilities. The club meetings are held at the school and the organisation has helped to establish and equip a woodworking centre where the children can learn woodwork. Several

sponsors were instrumental in making this possible. The association plans to show off some of the children's woodwork this year as well.

The 2024 expo is held at the New Hope School in Cecilia Road, Ashlea Gardens, Pretoria, on Saturday 14 and Sunday 15 September, from 9am-3pm. Lottery tickets will be for sale, so keep your number for a lucky draw on both days at 12pm. Entry tickets will be for sale at R40 per person at the school gate, or you can buy them before via Quicket at <https://qkt.io/0QizyY>



The Woodworking Association of Pretoria 2023 Trophy presentation: Corneel du Toit, Dylan van Graan and Willie Marneweck



The 2023 entry by Corneel du Toit

Gyproc South Africa launches the Saint-Gobain Pro Academy to enhance on-site training and support

Gyproc South Africa is proud to announce the launch of the Saint-Gobain Pro Academy, aimed at providing comprehensive on-site training and support for plasterers in the inland area.

“The launch of the Saint-Gobain Pro Academy marks a pivotal moment in the plasters market, addressing a critical need for comprehensive support and empowerment for contractors and applicators,” said Ryan McGinn, Product Manager at Gyproc South Africa. “Recognising the challenges faced by contractors and applicators in the field, this

specialised team has been meticulously crafted with a clear mission: to bridge the gap between product excellence and practical application.”

In response to the growing demand for hands-on product information, Gyproc South Africa recognises that nothing beats a real-time tactile experience. As such, the newly established Pro Academy will conduct on-site demonstrations, offering users an immediate understanding of product quality, applications, techniques, and results.

For more information, visit www.gyproc.co.za



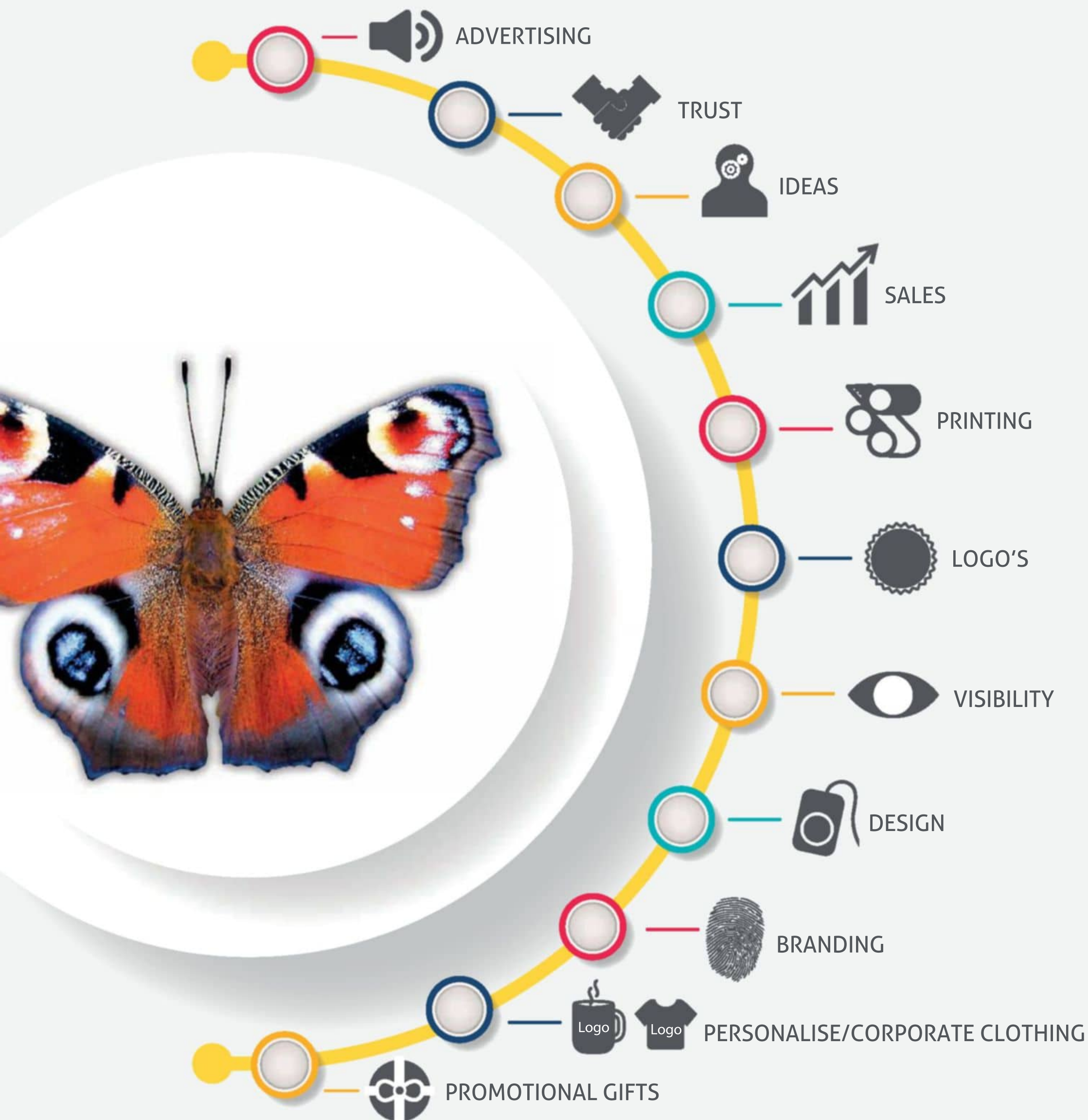
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Spring is the perfect time to freshen up your living space and tackle those DIY projects you've been dreaming about all winter. With longer days and warmer weather, there's no better opportunity to get creative and bring new life to your home. Here are nine exciting spring DIY tasks that will help you make the most of the season.

9 EXCITING SPRING DIY TASKS TO TRANSFORM YOUR HOME

1. Revamp your garden

Spring is synonymous with blooming flowers and lush greenery. Start by clearing away winter debris, pruning dead branches, and planting vibrant flowers and shrubs. Consider building raised garden beds for a more organised and accessible planting space. Adding a fresh layer of mulch will not only keep your garden looking neat but also help retain moisture and suppress weeds.

2. Refresh your front door

Your front door is the first thing guests see, so why not give it a fresh coat of paint? Choose a bold colour that complements your home's exterior and makes a statement. This simple update can dramatically improve your curb appeal and create a welcoming entrance.

3. Create a vertical garden

For those with limited space, a vertical garden is an excellent solution. You can easily build one using wooden pallets, old ladders, or even hanging planters. This not only adds greenery to your space but also creates a stunning visual display. Vertical gardens are perfect for herbs, succulents, and small flowering plants.

4. Update your outdoor furniture

After a long winter, your outdoor furniture might need a little TLC. Sand down any rough spots and apply a fresh coat of paint or varnish. If your cushions are looking tired, consider reupholstering them with new, weather-resistant fabric. This will make your outdoor space more inviting and comfortable for those sunny spring days.

5. Install a bird feeder

Attract beautiful birds to your garden by installing a bird

feeder. You can easily make one using recycled materials like plastic bottles, wooden scraps, or even teacups. Not only will this add charm to your garden, but it will also support local wildlife.

6. Build a fire pit

A fire pit is a great addition to any garden, providing a cosy spot for evening gatherings. You can create a simple fire pit using stones, bricks, or a metal ring. Be sure to place it in a safe location away from flammable materials. This project is perfect for those chilly spring nights when you want to enjoy the outdoors a little longer.

7. Create a custom planter box

Add a personal touch to your garden or patio with custom planter boxes. Build them to your desired size using wooden planks, and paint or stain them to match your outdoor decor. These planters are perfect for showcasing seasonal flowers or growing your favourite herbs and vegetables.

8. Update your lighting

Outdoor lighting can transform your garden into a magical space. Replace old fixtures with new, energy-efficient options, or add string lights for a cosy ambiance. Solar-powered lights are an eco-friendly choice that will keep your garden illuminated without increasing your energy bill.

9. Build a garden bench

A garden bench provides a charming spot to relax and enjoy your outdoor space. You can build a simple bench using reclaimed wood or cinder blocks and wooden planks. Add some colourful cushions or throws to make it even more inviting.





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